International Exhibition

INVENTCOR

Catalogue

6th edition

3-5 April 2025
Deva, Romania



SCAN ME

Opportunity
CORNELIUGROUP
Research-Innovation Association
Creation
INVENTCOR
Realization
Power of Creative Mind
Deva ROMANIA

www.corneliugroup.ro inventcordeva@gmail.com

Catalogue 6th International Exhibition INVENTCOR

3-5 April 2025 – Deva, Romania

International Exhibition INVENTCOR 6th edition

CORNELIUGROUP Research-Innovation Association in collaboration with **Politehnica University of Timisoara**, **"Lucian Blaga" University of Sibiu** and **Romanian Association of Alternative Technologies Sibiu (A.R.T.A. Sibiu)** is organizing in a hybrid format, the 6th edition of **International Exhibition INVENTCOR**, in the period 3-5 April 2025, at the **Cultural Center „Drăgan Muntean"** from **Deva** city, **ROMANIA**.

The event is dedicated to non-formal education for all ages. **INVENTCOR** presents inventions, research projects, products, educational programs and experimental teaching stands from universities, research institutes, companies and private inventors.

The main objective of **International Exhibition INVENTCOR 2025** is the importance of developing the **creative-innovative spirit**, through the **Power of Example** with the involvement of **young people** and the promotion of **Hunedoara County & Romania,** the theme of the 6th edition being **community**.

INVENTCOR is organized with the support of the City Hall of DEVA

Site: www.inventcor.ro **FB event page: INVENTCOR 2025**
https://facebook.com/events/s/inventcor-2025/2248073672191620/

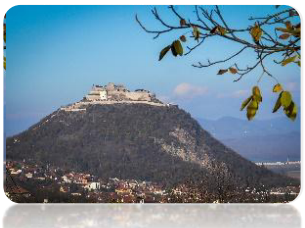
Period & Location: 3-5 April 2025, **Cultural Center „Drăgan Muntean"**

Motto: Creation **O**pportunity **R**ealization in short, **CORe**!

Promo: https://youtu.be/6pJ2zudQvNw

Hashtag: #INVENTCOR2025 #CorneliuGroup #PowerofCreativeMind

Origin: Deva City





INVENTCOR President: Corneliu BIRTOK BANEASA
https://www.facebook.com/corneliu.birtokbaneasa
Be stubborn and follow your dream!

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The **International Exhibition INVENTCOR** covers the following fields: environmental protection, materials, bio & nanotechnology, food industry, architecture, IT, electronics, computer science, automotive, aeronautics, publications, history, medicine, agriculture, textiles, includes **KidsCorner** and **InnovativeART**.

The **Power of Creative Mind Symposium** will be held within **INVENTCOR** with presentations on various topics: science, innovation, ecology, security, health, community, intellectual property, teaching methods, entrepreneurship, art and others.

The interest shown for the 6th edition of INVENTCOR 2024 is quantified in more than 450 registrations from 40 countries.

Participating Countries: Australia, Brazil, Belgium, Canada, Cambodia, Cameroon, Czech, Chile, China, Egypt, England, Finland, Georgia, Germany, Greece, Hungary, India, Indonesia, Iraq, Israel, Italy, Lebanon, Malaysia, Moldova, Philippines, Paraguay, Portugal, Romania, Saudi Arabia, Serbia, Slovakia, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, USA, Vietnam and Zanzibar.

Co-organizer

Politehnica University of Timişoara
https://www.upt.ro/Universitatea-Politehnica-Timisoara_en.html

Faculty of Engineering Hunedoara
http://www.fih.upt.ro/v4/#

"Lucian Blaga" University of Sibiu
https://www.ulbsibiu.ro/en/

Romanian Association for Alternative Technologies Sibiu - A.R.T.A. Sibiu
http://artasibiu.ro
https://www.facebook.com/mihail.titu/
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Educational partners

"Gheorghe Şincai" Socio-Human Research Institute of the Romanian Academy - Târgu-Mureş
https://www.icsumures.ro/

Westphalian University of Applied Sciences – Germany
https://www.en.w-hs.de/

Technofest Innovations & Institute of Technology- Belgium
https://www.titu.edu.eu/

Hunedoara County Directorate for Sport and Youth
https://djsthunedoara.ro/

Hunedoara County Center of Excellence
https://cexhd.ro/despre/

Middle Technical University-Iraq
College of Health and Medical Techniques
https://mtu.edu.iq/

Hunedoara County School Inspectorate
http://isj.hd.edu.ro/index.php

Technical College TRANSILVANIA Deva
https://cttdeva.ro/

Energetic Technological High School "Dragomir Hurmuzescu" Deva
https://www.energeticdeva.ro/

"Universul" Theoretical High School Chisinau
https://www.liceul-universul.md/

Territorial Aeroclub "Constantin Manolache" Deva
https://www.facebook.com/AeroclubulDeva/?locale=ro_RO

The House of Science Deva
https://www.facebook.com/Casa-Stiintei-112843810370259/?ref=page_internal

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Research and innovation partners

State Office for Inventions and Trademarks
https://www.osim.ro/en/

World Invention Intellectual Property associations
https://wiipa.org/about-us/

UPT Center for Innovation and Technology Transfer
https://citt.upt.ro/en/

The General Association of the Engineers in Romania Hunedoara Branch https://www.hunedoara.agir.ro/

The Patent - International Magazine of World Inventions
https://www.thepatent.news/

Research Center for Engineering and Management
http://www.mpt.upt.ro/eng/research/research-center.html

Romanian Inventors Forum
http://www.afir.org.ro/

Toronto International Society of Innovation & Advanced Skills
https://www.tisias.org/

Satit Chula Innovation Society
Chulalongkorn University in Bangkok, Thailand
https://www.chula.ac.th/en/

International Center for Research and Development (ICRD) Iraq
https://sites.google.com/view/drali471/

Al Amaan Al Mutahida Company - Bagdad, Iraq
www.alamaan-iq.com

Indonesian Young Scientist Association (IYSA)
https://iysa.or.id/

Macedonian Association Doza Srekja
https://www.facebook.com/djovanov24

Association of Thai Innovation and Invention Promotion
http://atip-thailand.org/

NWERA Association
https://nwera.org/our-team/

Bliss Education Center
https://www.facebook.com/blisseducationcenter?locale=ro_RO

Public Association "Innovation in Performance Education"
https://inovatie-educatie.md/

Paraguayan Institute of Telecommunications – FIUNA
https://www.ipt.edu.py/

Cultural partners

County Library "Ovid Densusianu" Hunedoara-Deva
https://www.bibliotecadeva.ro/desprenoi.html

General Directorate of Monuments Administration and Tourist Promotion of Hunedoara County – DGAMPT
https://www.dgampt.ro/?page_id=5592

Museum of Dacian and Roman Civilization
https://mcdr.ro/index.php/en/home-5

Kotsanas Museum of Ancient Greek Technology
https://kotsanasmuseum.com/?lang=en

Artă Tradițională Deva
https://www.facebook.com/artatraditionaladeva/

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Dnipro Science and Technology Museum "Time Machines" Ukraine http://mvr.org.ua/en/

Bačka Palanka Cultural Center
https://kcbp.rs/

Automuseums.info, the Motoring Museums' Lighthouse
https://automuseums.info

UNESCO International Geopark Țara Hațegului
https://www.hateggeoparc.ro/new/index.php/en/home/

Business partners

Media partners



Catalogue 6th International Exhibition INVENTCOR
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INVENTCOR Jury

President of The Jury



Prof. Eng.& Ec. Aurel Mihail ȚÎȚU, Sc.D. & Ph.D., Dr. Habil., Dr.h.c.
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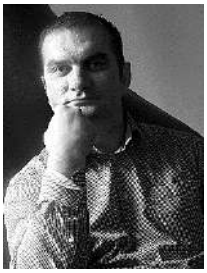
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JURY

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Professor Aurel Mihail TITU
"Lucian Blaga" University of Sibiu

INVENTCOR Awards

The following awards are presented at the **INVENTCOR International Exhibition**



- **INVENTCOR GRAND AWARD**
- **JURY AWARD**
- **UPT AWARD**
- **ULBS AWARD**
- **CORNELIUGROUP AWARD**
- **A.R.T.A. Sibiu AWARD**
- **CITT AWARD**
- **MEDICINE AWARD**
- **EDUCATION AWARD**
- **A.G.I.R. AWARD**
- **RESEARCHER AWARD**
- **PhD Student AWARD**
- **BEST INNOVATION AWARD**
- **MEDIA AWARD**
- **BUSINESS AWARD**
- **LEADERSHIP AWARD**
- **MANAGEMENT AWARD**
- **INNOVATIVE ART AWARD**
- **CREATIVE AWARD**
- **POPULARITY AWARD**
- **VOLUNTEER AWARD**
- **KIDS CORNER AWARD**



Categories Awards

Special Awards of the INVENTCOR partners

Awards

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Following the international judging process, gold, silver and bronze medals will be awarded for all INVENTCOR participants.



Guests Speakers

Catalogue 6th International Exhibition INVENTCOR

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Constantin FULGA

Prefect of Hunedoara County



Prof. Eng. Florin DRĂGAN Sc.D.

Rector of Politehnica University of Timisoara



Laurenţiu NISTOR

President of Hunedoara County Council



Prof. Maria ŞTEFĂNIE

General School Inspector Hunedoara County School Inspectorate



Lucian Ioan RUS

Mayor of Deva



A/Prof. Ovidiu Gelu TIRIAN Sc.D.

Dean of Faculty of Engineering Hunedoara, Politehnica University of Timisoara

Guests Speakers

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A/Prof. Sorin Aurel RATIU, Sc.D.

President of General Association of the Engineers in Romania Hunedoara Branch



Ioan Sebastian BARA

Manager
County Library "Ovid Densusianu" Hunedoara-Deva



Patricia KUMBAKISAKA

Foreign Policy researcher & Global advocate
Canada



Prof. Habil. Victoria-Larisa IVAŞCU, Ph.D.

Politehnica University of Timisoara
Faculty of Management in Production and Transport



Dimitrie-Cristian FODOR

BIOENG. & Ph.D. Student
"Gheorghe Asachi" Technical University of Iasi
"Dr. Iacob Czihac" Military Emergency Clinical Hospital of Iasi



Daniela DRAGOMIR

Head of Communication and Operational Marketing Service, State Office for Inventions and Trademarks



Prof. Marius PÎSLARU Ph.D.

Gheorghe Asachi Technical University of Iasi
Department of Engineering and Management



Herdiana Dewi NURfiKA

Bliss Education Center, Indonesia



Dr. Luy MITHONA

Department of Computer Studies
Norton University, Cambodia



Chef Ioana BOGDAN

Owner of
Ritual by Iona Bogdan

Guests Speakers

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Prof. Dr. Anuja MALIK

New era group of science and technology
New Delhi, India



Prof. Nada RATKOVIĆ
Croatia
Assistant Professor on Faculty of Economics, Business and Tourism Split. President of IIU Research Centre, Co-founder IIU Europe, Co-founder ICWP



Andreea RUSAN-MOTIU

Dance coach
DANSANDRA
Romania



A/Prof. Gabriel Petre GORECKI, MD, MSc, PhD, RS III

Titu Maiorescu University, Bucharest



A/Prof. Dr. Eng. Neyara RADWAN

Industrial Management Department, Abu Dhabi, UAE



Đorđe ŠTANGL

UPI ČIB – Serbia Center for Development and Application of Innovations



Dr. Inga KHARCHILAVA

Ambassador-Leader of the Global Trainers Academy from Georgia



Tiberiu STROIA

Founder of the "House of Science"



Mr. Fernando LOPES

Member of the Executive Committee Member of International Federation of Inventors Associations IFIA



Dr. Ciprian NICOLAE

Expert in nutrition and health

Program 6th International Exhibition

INVENTCOR

3-5 April 2025 – Deva, Romania

SCAN ME

Distinguished INVENTCOR 2025 participants,

The 6th edition, will take place according to the following program

For more information, notifications and catalogs follow us on the INVENTCOR 2025 Facebook page https://facebook.com/events/s/inventcor-2025/2248073672191620/ and visit www.inventcor.ro

Being an environmentally friendly exhibition, please do not print your posters, they will be displayed on the INVENTCOR virtual totem!

Participants who wish to exhibit models, prototypes, products or roll-up are expected starting from 10 AM to 4 PM on Wednesday, April 2, to set up the stand at the "Dragan Muntean" Cultural Center.

INVENTCOR Location: DEVA City, VICTORIA Square, No.7, HUNEDOARA County, ROMANIA

https://www.centrulculturaldeva.ro/contact/

Centrul Cultural Drăgan Muntean Deva



DAY 1: 3 Aprilie 2025
09:00 – 18:00

Arrival of participants starting 10:00 (AM)

Opening ceremony: 13:00 – 14:00

Symposium: 14:00 – 16:00

Visiting program / discussions: 11:00 – 18:00

Power of Creative Mind Symposium
14:00 – 16:00

The Power of Creative Mind Symposium will be held within INVENTCOR with presentations on various topics: innovation, ecology, health, community, intellectual property and others.

INVENTCOR Motto:

Creation
Opportunity
Realization

DAY 2: 4 April 2025
09:00 – 15:00

Award ceremony 11:00 – 13:00

Closing of the INVENTCOR 13:00 – 15:00
(expo will be dismantled)

INVENTCOR Gala Dinner 17:00

Restaurant CASINA

Address: DEVA City, UNIRII Square, No.9

https://www.restaurantcasina.ro/



Program 6th International Exhibition

INVENTCOR

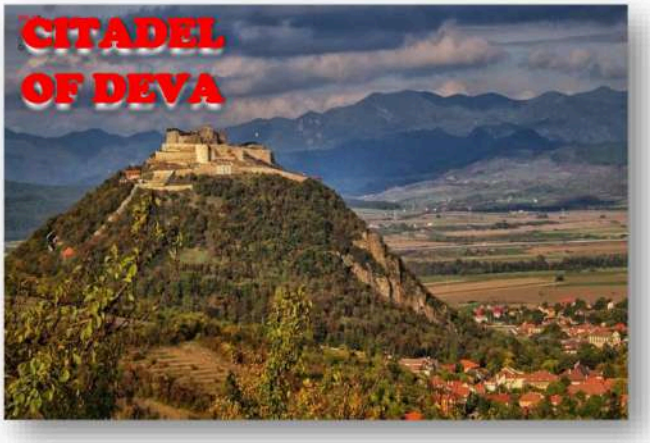
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DAY 3: 05 April 2025

The third day is dedicated for relaxation in order to enjoy our beautiful city DEVA and the Hunedoara County, we offer you four extraordinary opportunities to visit tourist / historical sites and one art gallery as follows: CITADEL OF DEVA; MUSEUM OF DACIAN AND ROMAN CIVILIZATION; GEOAGIU-BĂI; ANCIENT CITY OF SARMIZEGETUSA ULPIA TRAIANA and EM Art Gallery.









Discover Hunedoara https://www.hunedoararturism.ro/

Millions of years of stories and legends!

INVENTCOR Teaser:
https://youtu.be/6pJ2zudQvNw

SCAN ME

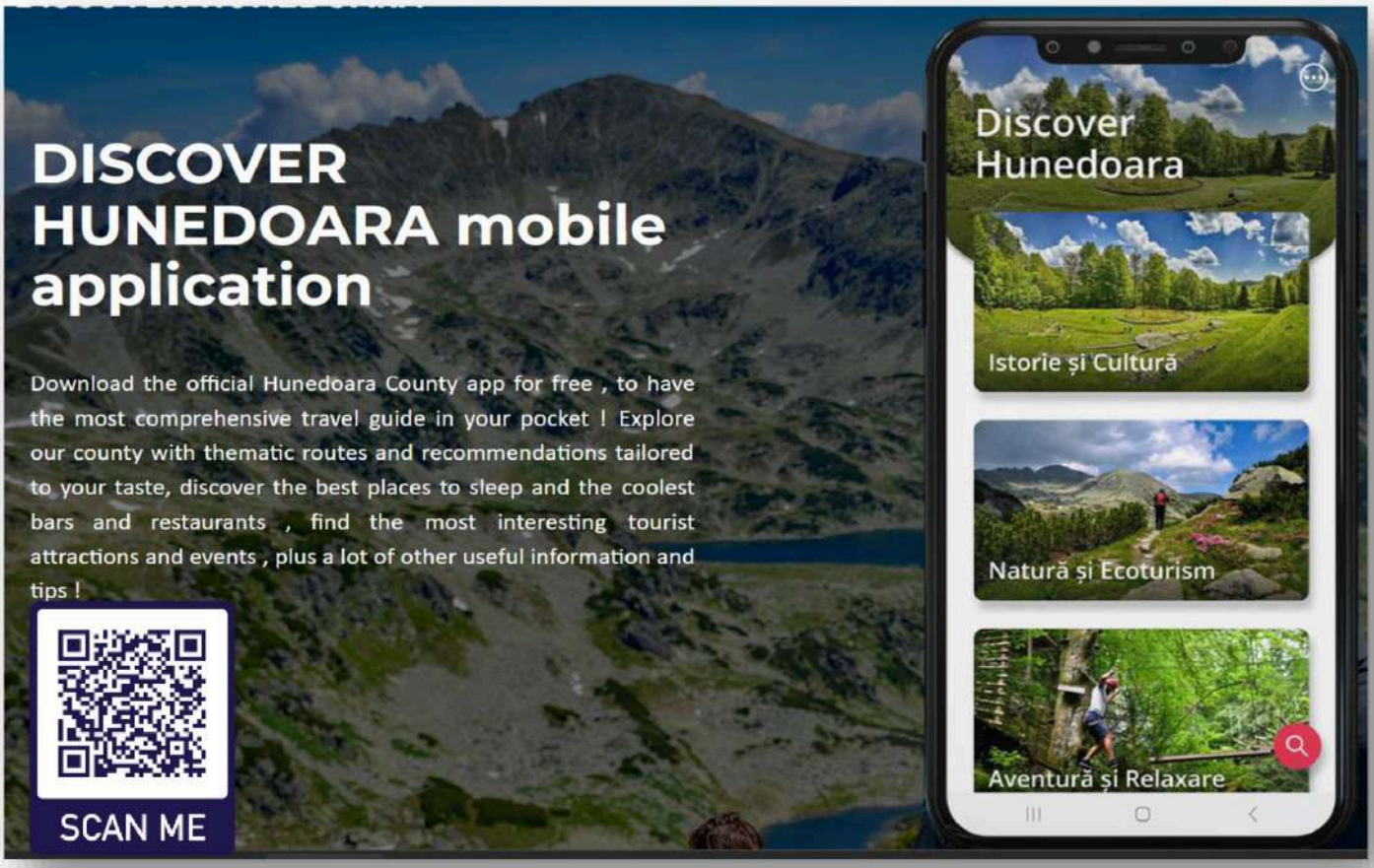




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Slow-moving traveler

2 DAYS IN THE LAND OF ZARAND



Explorer traveler

2 DAYS IN THE LAND OF THE FORESTS



Pretentious traveler

2 DAYS IN THE MUREș VALLEY



Restless traveler

2 DAYS IN THE JIUL VALLEY



Passionate traveler

2 DAYS IN THE CITY COUNTY



Enthusiastic traveler

2 DAYS IN THE COUNTRY OF HAȚEG

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Visit CITADEL OF DEVA



Address: Cetatii Street, 337450, Deva
https://www.facebook.com/telecabina.cetate.deva/
Program: Monday - Sunday: 9:00 – 17.00

For several centuries, the Deva Fortress was one of the strategic military settlements of Transylvania. The appearance of the fortress built "at the gates of Transylvania" has fascinated historians, archaeologists, and visitors over the centuries. In its history, it was considered one of the impregnable fortresses. Deva Fortress was, over time, involved in almost all major historical events of Transylvania. It was the voivodeship residence, it was under the rule of the Transylvanian princes. And the walls were a shelter, or prison, for political, military or religious personalities.

The construction included, over time, several successive enclosures, a two-story palace for the owner of the fortress, bastion platforms, a cistern, a row of casemates, towers, bellows buttresses, curtains, road gates, and also the powder magazine. Just like the Hunedoara fortress, the Corvin Castle, the history of the Deva Fortress also shows several construction stages: in this case, five in number! In parallel with the expansion works, a plan was also developed to build a Vauban-style fortification, which targeted the slopes of the fortress hill, but it remained in the project phase.



Our guide
Cristian DAMIEAN
Tel.: +40734549308



Since 1896, the Society of History, Archaeology and Natural Sciences of Hunedoara County has coordinated the arrangement of the access alleys to the fortress and the afforestation of the Fortress Hill. A major renovation was completed in the year 2024, during which the ruins were preserved and access to the fortress was made easier. The Deva Fortress, perched like an eagle's nest above the volcanic cone, at an altitude of 378 meters, sums up an architectural evolution spanning more than 700 years.



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Visit the Museum of Dacian and Roman Civilization Deva

MUZEUL CIVILIZATIEI DACICE SI ROMANE DEVA

Address: B-dul 1 Decembrie No. 39, DEVA
Web: www.mcdr.ro
Program: Tuesday - Sunday: 10:00 - 18:00



The beginning of the Dacian and Roman Civilization Museum in Deva is linked to the founding of the History and Archeology Society of Hunedoara County, in 1880. The Deva Museum operates in the Magna Curia building, known as the Bethlen Castle, an old architectural monument located at the foot of the Deva Citadel, in its southern part. The antiquity, importance and beauty of this baroque building was the reason why it was included on the List of Historical Monuments of category A.



Since 2012, in the courtyard of the Magna Curia Palace, there has been an open-air Lapidarium which houses a collection of monuments, belonging to the prehistoric, Dacian and Roman eras, from the archaeological researches of Baia de Criș, the Dacian Citadels of the Orăștiei Mountains, the Capital of Roman Dacia - Ulpia Traiana Sarmizegetusa, Micia, Germisara, Aquae or from accidental discoveries.

Our guide
Corina MUNTEAN
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Today, on the ground floor of the Magna Curia building, you can visit the basic exhibition of Natural Sciences, entitled "Past and present in Hunedoara nature" as well as a room dedicated to the history of the 19th century in Hunedoara county, called "Noble environment of the 19th century". In the other spaces, various temporary exhibitions are organized such as "Treasure objects from the collections of the Museum of Dacian and Roman Civilization in Deva" or the one dedicated to the bronze mold discovered at Sarmizegetusa Regia.

SCAN ME

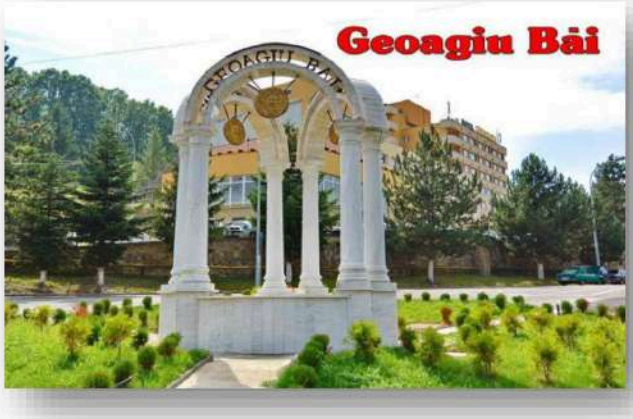


Catalogue 6th International Exhibition INVENTCOR

3-5 April 2025 – Deva, Romania

Visit Geoagiu-Băi

Address: Vilelor Street, FN, Geoagiu Bai
Web: https://www.cniptgeoagiubai.ro/
Program: Monday - Sunday: 9:00 – 17.00



European Destinations of Excellence

From an administrative point of view, the Geoagiu-Băi balneo-climatic resort is a component of the city of Geoagiu, being located 6 km. from the city of residence. The natural healing factors consist of alkaline, slightly sulfurous, bicarbonated, magnesian, mesothermal and thermal mineral waters (29 - 32 degrees C); peat mud, ferruginous, sedative climate. The ozonated air and always refreshed by mountain breezes recommends the resort for the treatment of diseases of the nervous system, in states of fatigue, overwork, anemia, neurosis.

Roman Road. This road dates back to the 2nd century and connected the Roman Castrum of Cigmău and the Roman Baths of Germisara. Today, a 165 m section is still visible.



Clocota Waterfall: The waterfall is located on the Clocota River, at the entrance to the Geoagiu Băi resort and has a level difference of almost 20 m along the water, this is due to the existence of a steep break in the terrain. It is one of the two waterfalls with mesothermal waters in our country.

Our guide

Claudiu Nicolae ȘIMONAȚI
Tel.: +40748553264



The Roman Thermal Baths "Germisara". In 1986, systematic archaeological research began in the perimeter of the site of the ancient thermal complex in the center of the Geoagiu-Băi resort. These researches identified a unique thermal complex in the world through the organization and arrangement of the pools, as well as the mobile inventory discovered here. In successive layers, it can be observed how the thermal spring was used by the Geto-Dacians even before the Roman conquest.



SCAN ME

Catalogue 6th International Exhibition INVENTCOR

3-5 April 2025 – Deva, Romania

Visit Ulpia Traiana Sarmizegetusa

Address: Principala Street, no. 1, Sarmizegetusa
Web:https://www.mcdr.ro/index.php/ro/sectii-si-compartimente/sectia-de-arheologie-sarmizegetusa
Program: Monday - Sunday: 9:00 – 17.00



Ulpia Traiana Sarmizegetusa (full name: Colonia Ulpia Traiana Augusta Dacica Sarmizegetusa) was the capital of the Roman province of Dacia. Located 40 km from Sarmizegetusa Regia, the previous capital of the Dacian kingdom, the colony Ulpia Traiana was founded after its conquest by Emperor Trajan, between 108–110. The colony Ulpia Traiana Augusta Sarmizegetusa Dacica was founded by the division of veterans. The ruins of the ancient city constitute an archaeological complex located in the town of Sarmizegetusa, Hunedoara County. Nearby is the Sarmizegetusa Archaeological Museum.

Ulpia Traiana was founded by the governor of Roman Dacia Decimus Terentius Scaurianus and had a common shape for the Romans at that time: a quadrangle with rounded sides, with an area of 32.4 ha, a length of 600 m, a width of 540 m and a wall height of 4–5 m. The wall was built of carved stone blocks, joined with mortar, and was provided with battlements in the upper part, with a gate on each side. The gates on the parallel sides were connected to each other by two main streets, which crossed the fortress from one side to the other.



Our guide

Dr. Gică BĂEŞTEAN
Tel.: +40728 025 694



The amphitheater is the most imposing building of the complex. It was built in the first half of the 2nd century. Gladiator fights, fights between wild animals and humans, theatrical performances, declamations and other public events took place inside. With a capacity of approximately 5,000 people, the benches were of two types: the cobblestone ones, near the stage, reserved for important people, and the upper, wooden ones, reserved for ordinary spectators.



SCAN ME

Catalogue 6th International Exhibition INVENTCOR

3-5 April 2025 – Deva, Romania

Visit the Corvinians Castle Hunedoara



Address: Castelului Street, no. 1-3, Hunedoara
Web: https://www.castelulcorvinilor.ro/
Program: Tuesday - Sunday: 9:00 – 17.00

The first stone fortification in Hunedoara was dated by most researchers to the 14th century (Gheorghe Anghel), although there are specialists who attribute the royal camp to the first half of the 15th century (Elemér Mályusz, Adrian Andrei Rusu, Radu Lupescu). The walls, with a thickness of up to 2 m, were built from dolomitic limestone blocks and river stone, directly on the native rock.

Ioan de Hunedoara initiates, after 1440, large-scale constructions aimed at transforming the citadel into a castle, the first stage including the erection of two curtains around the old citadel, built of dolomitic limestone blocks, provided with battlements on the upper part. These curtain walls were flanked by circular and rectangular towers, the former constituting a novelty for the military architecture of Transylvania in the 15th century.



Our guide
Harald SUSANYI
Tel.: +40770 806 840



The circular towers with the exception of the painted tower, were provided with a solid masonry ground floor, followed by two levels, the ones on the lower part being used as rooms for riflemen and the ones on the upper part as living areas and/or defense areas. It should be noted that the Capistrano tower includes the only (restored) Gothic fireplace in the Hunedorean monument. The painted tower has only one level of defense and is painted in fresco on the outside with geometric motifs and portholes, with typological correspondences in the German space.

SCAN ME



Catalogue 6th International Exhibition INVENTCOR

3-5 April 2025 – Deva, Romania

Visit EM Art Gallery Deva

Address: 1 Decembrie 1918 Street, no 27, Deva
Web: https://www.facebook.com/p/EM-ART-Gallery-100064689549014/
Program: Monday - Sunday: 9:00 – 17.00

EM Art Gallery-Deva was born from the desire to promote contemporary visual artists, on December 5, 2018.

From the beginning to the present, more than 50 contemporary professional artists have been exhibited, the gallery registering as the first private gallery in Hunedoara County!

Artists from the main cities in Romania and artists from France, the USA and the Republic of Moldova exhibited on the EM Art Gallery!Out of the desire to do more, we have created a magazine of visual arts and cultural support entitled EM Art.

Owner of EM Art Gallery
***Painter* Mircea POPITIU**
Tel.: +40723355939







SCAN ME

Organizing committee

Corneliu BIRTOK BĂNEASĂ - Politehnica University of Timisoara

Aurel Mihail ȚÎȚU - "Lucian Blaga" University of Sibiu

Erika KOLLMANN - CorneliuGroup Association

Ana Virginia SOCALICI - Politehnica University of Timisoara

Diana STOICA - Politehnica University of Timisoara

Adina BUDIUL-BERGHIAN - Politehnica University of Timisoara

Oana GĂIANU-LUCA - Politehnica University of Timisoara

Marius TOC - Politehnica University of Timisoara

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Dimitrie-Cristian FODOR - "Gheorghe Asachi" Technical University of Iasi

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Leonard-Nicolas MARARU - CorneliuGroup Association

Eugen BIRTOK - Politehnica University of Timisoara

Cristian ABRUDEAN - Politehnica University of Timisoara

InventCor Categories

A - Energy, Protection of the environment, Biotechnology *31*

B - Nanotechnology, Advanced materials, Metallurgy, Civil engineering *59*

C - Computer sciences, Electronics and Electrical engineering *89*

D - Automotive, Space science, Aviation, Ships, Mechanics *109*

E – Management, Teaching methods, Books, History and Cultural studies ... *139*

F - Medicine, Paramedical, Pharmacy, Cosmetics, Hygiene *175*

G - Agriculture, Veterinary medicine *225*

H - Foods, Drinks, Restaurants, Hotels & Spa *260*

I - Textiles, Clothing, Fashion, Handmade *277*

J - Kids Corner, Games, Toys, Outdoor activities *287*

K - Innovative ART, Music, Video, Photography, Publicity *305*

Power of Creative Mind Symposium *324*

INVENTCOR 2025 Participating Entities *336*

Remember 2018 - 2024 ..... *342*

A - Energy, Protection of the environment, Biotechnology

1.

Title: *FIELD METHOD FOR ASSESSING THE IMPACT OF VOLATILE ORGANIC COMPOUNDS ON HUMAN HEALTH*
Patent/project number: *CBI A 2022 00606*
Author/s: *Găman Angelica Nicoleta, Găman George Artur, Ghicioi Emilian, Pupazan Daniel, Toth Lorand, Prodan Maria, Kovacs Marius, Simion Sorin, Simion Alexandru, Şuvar Niculina Sonia*
Institution/Country: *NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN MINE SAFETY AND PROTECTION TO EXPLOSION – INSEMEX, Romania*
Category: *A*
Description: *The mobile real-time measurement system of volatile organic compounds (BTEX) consists of applying a method to determine the concentration of benzene and organic compounds (BTEX) in the surrounding environment (emissions) using high-performance gas chromatography with FID detector in ambient air from areas classified as rural and urban zones, traffic locations, and locations influenced by industrial sources, through a mobile unit that allows continuous measurements during movement. Understanding the concentrations of volatile organic compounds in a triaxial system of coordinates (concentrations / space / time) makes it possible to characterize / quantify the impact generated by BTEX pollutants on human health by measuring the pollution level, managing / processing data, and integrating them into an active mapping system using GIS computational environment.*
State of development: *Research Project*
Contact: *angela.gaman@insemex.ro*
Presentation link: *https://insemex.ro/home-en/*

2.

Title: *STAND FOR DETERMINING PRESSURE VARIATIONS WHEN CHANGING THE DIRECTION OF PROPAGATION OF GASEOUS EXPLOSIONS IN INTERCONNECTED SPACES*
Patent/project number: *CBI A 2022 00705*
Author/s: *Vlasin Nicolae Ioan, Găman George Artur, Ghicioi Emilian, Pupăzan Gheorghe Daniel, Găman Angelica Nicoleta, Păsculescu Vlad Mihai, Simon-Marinică Adrian Bogdan, Florea Gheorghe Daniel, Tuhuț Ioan Ligia, Prodan Maria, Şuvar Marius Cornel, Vass Zoltan, Munteanu Laurentiu, Chiuzan Emeric, Nicolescu Cristian, Manea Florin*

Institution/Country: ***NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN MINE SAFETY AND PROTECTION TO EXPLOSION – INSEMEX, Romania***
Category: A
Description: *The invention provides the possibility of recording and complex analysis of gas explosion phenomena on geometries with interconnected and volumetrically individualized spaces through different configurations of obstacle arrangements with membrane openings, the analysis of pressure and velocity variations with the modification of the direction of gas explosion propagation, and the study of chain explosions in atmospheres containing the same combustible gas or different combustible gases at different concentrations. The obtained data are useful both for explaining the phenomenon of rapid combustion in interconnected spaces and as a basis for validating computer simulations conducted on the same topic.*
State of development: The stand has been built, verified, and tested, and is currently being used to obtain explosion parameters and flame front images in the case of air-hydrogen mixtures.
Contact: ***nicolae.vlasin@insemex.ro***
Presentation link: ***https://insemex.ro/home-en/***

3.

Title: SMALL-SCALE EXPERIMENTAL STAND FOR RESEARCHING EXPLOSIONS OF FLAMMABLE GAS-IN-AIR MIXTURES
Patent/project number: CBI A 2022 00731
Author/s: Păsculescu Vlad Mihai, Ghicioi Emilian, Găman George Artur, Pupăzan Gheorghe Daniel, Vlasin Nicolae Ioan, Șuvar Marius Cornel, Prodan Maria, Șuvar Niculina Sonia, Florea Gheorghe Daniel, Tuhuț Ligia Ioana, Șimon – Marinică Adrian Bogdan, Vass Zoltan
Institution/Country: ***NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN MINE SAFETY AND PROTECTION TO EXPLOSION – INSEMEX, Romania***
Category: A
Description: *The invention refers to a small-scale experimental stand for researching explosions of flammable gas-in-air mixtures, consisting of a transparent, inflatable explosion chamber equipped with an intake valve for volumes of flammable gas-in-air mixtures at pre-established concentrations within the explosive range of the substance. It includes a spark ignition system, with the chamber enclosed inside a transparent case for studying explosion pressures and their propagation using shadowgraph techniques with a light source. An obturator disc with a central orifice allows the divergent conical light beam to pass through the transparent chamber for study, and the resulting projection is captured on a projection screen. The system is equipped with a recording system for the generated explosion pressure values.*

The problem that the invention solves consists of using shadowgraph visualization techniques for laboratory research of flammable gas-in-air mixture explosions, with the purpose of analyzing the shock wave and the flame front of the explosion, from the point of initiation in the inflatable transparent explosion chamber, the propagation in the transparent chamber for studying explosion pressures and their propagation, and up to the release into the atmosphere.

The recording of the pressures developed by the explosion provides data that are useful for understanding explosion phenomena in flammable gas-in-air mixtures, contributing to the elucidation of the causes that generate such events and to the development of measures to prevent the occurrence of similar gas explosion phenomena.

ADVANTAGES

- *Uses shadowgraph techniques for visualization and analysis of explosions.*
- *The transparent, inflatable, and consumable chamber allows easy replacement after each test.*
- *Accommodates flammable gas-in-air mixture volumes between 0.25 and 0.75 liters at preset concentrations.*
- *The transparent chamber features a pressure relief valve for safety and repeatability.*
- *The top part of the chamber is detachable for quick adjustments.*
- *Pressures are monitored by 4 sensors, connected to a computer through a charge amplifier.*

State of development: Research Project
Contact: *vlad.pasculescu@insemex.ro*
Presentation link: *https://insemex.ro/home-en/*

4.

Title: SYSTEM FOR DETERMINING THE DYNAMICS OF EXPLOSIVE ATMOSPHERE FORMATION
Patent/project number: CBI A 2023 00336
Author/s: Cioclea Doru, George Artur Găman, Ghicioi Emilian, Gherghe Ion, Ianc Nicolae, Rădoi Florin, Boantă Corneliu, Chiuzan Emeric, Tomescu Cristian, Matei Adrian, Drăgoescu Răzvan, Cămărășescu Alexandru, Vlasin Nicolae-Ioan, Șimon Marinică Adrian
Institution/Country: NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN MINE SAFETY AND PROTECTION TO EXPLOSION – INSEMEX, Romania
Category*: A*
Description: *The invention is based on a system that allows the determination of the dynamics of the formation of explosive atmospheres, respectively that takes into account the variation of gas concentrations in relation to time, by choosing a closed enclosure that meets the safety conditions, several pulleys with supporting role, more equipment for measuring gas concentrations, an explosive gas source, a pressure reducer, a rotameter-type explosive gas flow control system, a hose for introducing explosive gas into the enclosure closed, a directed gas purge system, a ventilation system for the evacuation of the created atmosphere, the data resulting from the measurements are collected, finally the dynamics of the formation of explosive atmospheres are determined graphically and numerically.*
State of development: Research Project
Contact: *doru.cioclea@insemex.ro*
Presentation link: *https://insemex.ro/home-en/*

5.

Title: ELECTROMAGNETIC RADIATION IN EVERYDAY LIFE: MEASUREMENTS AND ANALYSES
Patent/project number: Student Project
Author/s: Ana-Maria IORDACHE
Institution/Country: DECEBAL NATIONAL COLLEGE, Romania
Category: A

Description: *Constant exposure to electromagnetic fields can be potentially harmful to human health, given that some studies suggest a link between prolonged exposure to high levels of EMF and adverse biological effects. These include sleep disturbances, chronic fatigue, increased oxidative stress, as well as possible increased risks of cardiovascular disease and certain cancers. Currently, the International Agency for Research on Cancer (IARC), part of the World Health Organization, has classified radiofrequency electromagnetic fields as „possibly carcinogenic to humans" (Group 2B). This is due to a possible connection to glioma, a type of brain cancer. Obviously, this only demonstrates the need for more research into electromagnetic radiation. Through this study, I analyzed the strength of the electromagnetic field generated by common home appliances and provided insight into measures to reduce exposure to minimize potential health risks; I have created a map of electromagnetic radiation in the city of Deva in order to identify risk areas or areas that do not comply with the rules imposed by the World Health Organization; I made a map of electromagnetic radiation from a room; I tested different materials to identify a potential insulation material of electromagnetic radiation (aluminium) and tested the veracity of mobile applications that claim to measure the intensity of electromagnetic radiation, comparing the results obtained with a professional apparatus.*

State of development: Research Project

Contact: *ana.iordache.28122007@gmail.com* ***+40763 227 867***

Presentation link: *https://www.facebook.com/share/1AnfJPBiAe/*

6.

Title: ENHANCED INDOOR CONVERSION EFFICIENCY OF DYE-SENSITIZED SOLAR CELLS BY OPTIMIZING BALL- MILLING PROCESS OF TiO2 PASTE

Patent/project number: PN 23 27 01 03

Author/s: Daniel Ursu, Cristian Casut, Melinda Vajda, Marinela Miclau

Institution/Country: National Institute of Research and Development for Electrochemistry and Condensed Matter, Romania

Category: A

Description: *The rapid spread of the Internet of Things (IoT) along with the development of innovative low-power electronic devices has also driven the development of indoor photovoltaics. In this paper, we propose a simple and economically feasible solution that can improve the efficiency of dye-sensitized solar cells (DSSCs) under indoor light conditions by ~112%, without requiring a complex TiO2 photoanode architecture or the design of new dyes. Therefore, the obtained results revealed that the DSSC obtained from the TiO2 paste mortared for 3 h with 12 mm balls highlighted an efficiency increase of ~37.5% (21.15% PCE) compared to the paste obtained with 5 mm balls (15.38% PCE) and 112.3% compared to the untreated paste (9.96% PCE), respectively, at 1000 lux. The ball milling process of the TiO2 paste was optimized for indoor light conditions for the first time, both in terms of efficiency and production costs, by developing a rapid preparation method that can be used industrially for the application of DSSCs. A simple use of 12 mm diameter balls caused beneficial structural modifications, decreasing the size of the crystallites, and leading to a high OH generation on the TiO2 surface responsible for the improvement of energy conversion efficiency.*

State of development: Research project

Contact: Ursu Daniel *danielhoratiu@yahoo.com*

Presentation link: *https://incemc.ro/en/*

7.

Title: SELECTIVE RESOURCE RECOVERY FROM KITCHEN WASTE BY INTEGRATED DARK FERMENTATION-MICROBIAL ELECTROLYSIS CELL AND ION SUBSTITUTION ELECTRODIALYSIS
Patent/project number: CF 39/28.07.2023, PNRR-III-C9-2023 I8
Author/s: Debkumar Chakraborty, Narcis Duteanu, Ionel Balcu, Gorakhanath Jadhav, Corina Macarie, Anil Dhanda, Doru Buzatu, Paula Sfirloaga, Makarand Ghangrekar
Institution/Country: National Institute for Research and Development in Electrochemistry and Condensed Matter, Timisoara, Romania
Category: A
Description: *In current project, technological constraints, such as pre-treatment requirement of kitchen waste, inoculum preparation, and low H2 generation efficiency will be addressed. Further, volatile fatty acid (VFA) recovery from fermentation media during acidogenesis and process optimization for a cost-effective zero discharge technology implementation will be carried out. Finally, the project aims to demonstrate H2 production and VFA recovery from kitchen waste over a pilot scale (100 L) reactor.*
State of development: research project.
Contact: *paulasfirloaga@gmail.com*
Presentation link: *https://incemc.ro/en/*

8.

Title: PILOT-BASED INNOVATION ECOSYSTEMS FOR SMART CITIES (PilotInnCities)
Patent/project number: DRP0200367
Authors: Florin BALTARETU, Ancuta NEAGU
Institution/Country: Technical University of Civil Engineering Bucharest, Romania
Category: A
Description: *The project aims to lay foundations and create guidelines for national ecosystems that will promote the adoption of smart city innovations. The core of such ecosystems is a support mechanism for agile piloting that will motivate municipalities to become testbeds (living labs) for new technologies. The ultimate goal is bridging the gap between smart city solutions innovators and municipalities as their natural market, thus minimising the time span between a minimum viable product and an implemented, scalable solution. Pilot-based Innovation Ecosystems for Smart Cities is an innovative project led by the Ministry of Industry and Trade of the Czech Republic, participated in by an 11-member consortium from six countries of the Danube Region (Czech Republic, Germany, Hungary, Romania, Serbia, Slovak Republic). The PilotInnCities consortium's answer to this problem is the agile piloting method made available by Policy Learning Platform of the Interreg Europe program from Forum Virium Helsinki Finland.*
State of development: Implementation
Contact: Florin Baltaretu, Ancuta Neagu *florin.baltaretu@utcb.ro* *ancuta.neagu@utcb.ro*
Presentation link: *https://interreg-danube.eu/projects/pilotinncities*

9.

Title: PROCESS FOR CORROSION PROTECTION OF STEEL IN WATER
Patent number: MD 1754 Z / 2023.07.25
Author/s: Viorina GORINCHOY, Vladimir PARSHUTIN, Alexander COVALI, Vasile LOZAN
Institution/Country: Moldova State University, Republic of Moldova
Category: A.
Description: *The invention relates to the field of corrosion protection of metals in water and can be used for corrosion inhibition in closed steel pipeline systems.*
State of development: At laboratory level.
Contact: *oviorina@gmail.com*
Presentation link: *https://usm.md/?lang=en*

10.

Title: NITRATE OF 2,6-DIACETYLPYRIDINE-BIS(PICOLINOYLHYDRAZONE)-BIS(AQUA)IRON(III)–HYDRATE (1/2.5) WITH STIMULATING PROPERTIES ON EXOCELLULAR LIPASE SYNTHESIS FOR THE RHIZOPUS ARRHIZUS CNMN FD 03 FUNGAL STRAIN AND NUTRIENT MEDIUM FOR CULTIVATION
Patent number: MD 4827 / 2023.05.31
Author/s: Olga DANILESCU, Ion BULHAC, Maria COCU, Pavlina BOUROSH, Alexandra CILOCI, Steliana CLAPCO, Svetlana LABLIUC, Alexandra MATROI
Institution/Country: Institute of Chemistry and Institute of Applied Physics, Moldova State University; Institute of Microbiology and Biotechnology, Technical University of Moldova, Republic of Moldova
Category: A
Description: *The invention relates to coordination chemistry and biotechnology, in particular to the synthesis of a new coordination compound of iron(III) and 2,6-diacetylpyridine bis(picolinoylhydrazone), with biostimulatory properties on exocellular lipase synthesis in mycelial fungal strain Rhizopus arrhizus CNMN FD 03 that may be used in the development of biotechnologies to obtain lipolytic enzymes. According to the invention, a novel coordination compound of 2,6-diacetylpyridine-bis(picolinoylhydrazone)-bis(aqua)iron(III)–hydrate(1/2.5) with the formula [Fe(H2L)(H2O)2](NO3)3·2.5H2O, where H2L represents 2,6-diacetylpyridine bis(picolinoylhydrazone), is claimed. The claimed compound is highly soluble in water, which ensures a practical use as a component of nutrient mediums. A nutrient medium is claimed, as well, for submerged cultivation of Rhizopus arrhizus CNMN FD 03 fungal strain containing soy flour, (NH4)2SO4, KH2PO4, water and the above-mentioned stimulant in the following quantitative ratio of components (g): soy flour – 35.0, (NH4)2SO4 – 1.0, KH2PO4 – 5.0, [Fe(H2L)(H2O)2](NO3)3·2.5H2O – 0.005…0.015, potable water – up to 1 L. The biostimulator ensures the increasing of lipases biosynthesis in the producer by 17.4...82.7% and reduction of duration of cultivation by 24 h.*
State of development: At the laboratory level.
Contact: *olgadanilescu@gmail.com*
Presentation link: *https://usm.md/?lang=en*

11.

Title: NEW POSSIBILITIES FOR PATHOGEN INACTIVATION USING QUASI PERIODIC OPTICAL STRUCTURES PACKED IN THE FORM OF SCREW-SHAPED ROTATION CHANNELS UPON PROPAGATION OF UV-C RADIATION THROUGH THEM
Project number: # 011206
Author/s: Ion MUNTEANU, Marina TURCAN, Nelu CIOBANU, Elena STARODUB, and Nicolae ENAKI
Institution/Country: Institute of Applied Physics, Quantum Optics and Kinetic Processes Lab, Moldova State University, Republic of Moldova
Category: A
Description: *The main idea of the new decontamination equipment is based on the rotation of the contaminated fluid through screw channels where pathogens moving between the elements of the quartz metamaterial penetrated by ultraviolet C radiation. Our investigation focuses on the application of different geometries of the packing elements that create the screw channels for the acceleration of the pathogen through the elements of this metamaterial. The efficiency of decontamination is based on the rotation of contaminated liquids and gases through screw channels of metamaterials, prepared from UVC optical fibers (or compact spherical elements of metamaterials) in the torsion configuration.*
State of development: decontamination equipment
Contact: *ion.munteanu@usm.md*
Presentation link: *https://usm.md/?lang=en*

12.

Title: UV-C STERILIZING DEVICE
Patent application number: 10562 /2025.01.10; MD s 2024 0049 / 2024.05.07
Author/s: Ion MUNTEANU and Marina TURCAN
Institution/Country: Institute of Applied Physics, Quantum Optics and Kinetic Processes Lab, Moldova State University, Republic of Moldova
Category: A
Description: *The invention refers to the decontamination and annihilation of pathogens, frequently present on objects with irregular surfaces (for example: laboratory instruments, dental, surgical instruments and equipment, measuring devices, various devices), as a result of the action of ultraviolet radiation type C applied, which can be applied in the disinfection of various objects with irregular surfaces within medical, secondary and higher education institutions, the food industry, public health, etc...*
State of development: R. Moldova
Contact: *ion.munteanu@usm.md*
Presentation link: *https://usm.md/?lang=en*

13.

Title: THE MATRIX OF INDICATORS FOR RECOGNIZING THE AGRIBUSINESSES ECOSYSTEM ASSETS: CONVERGENCE OF SYSTEM OF ENVIRONMENTAL-ECONOMIC

ACCOUNTING (SEEA) AND INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS)

Object of copyright and neighboring rights: Seria OŞ No. 8026 / 07.10.2024

Author/s: Irina GOLOCHALOVA, Maria COJOCARU
Institution/Country: Moldova State University, Faculty of Economic Sciences, Republic of Moldova

Category: A

Description: *Agribusiness, as an integral part of the economy, faces a dilemma: increasing income through higher yields or environmental degradation, on which its resources depend. This dilemma poses a challenge for the modern scientific and institutional environment; its resolution will lead to the formation of sustainable agribusiness and, consequently, to overcoming the environmental crisis. A modern trend in the development of sustainable agribusiness is the creation of accounting tools based on the System of Environmental-Economic Accounting (SEEA) platform for assessing and monitoring the condition of ecosystem assets interacting with it. To determine the possibilities of adapting SEEA provisions to the agribusiness accounting system, a critical analysis is required of its degree of convergence with the modern financial reporting framework (IFRS concept) and the National Accounting Standards of the Republic of Moldova (NAS), which use the classical accounting methodology. For this purpose, a three-stage algorithm for constructing the Matrix of Indicators for Recognizing Agribusiness Ecosystem Assets has been developed.*

As part of the first stage of the algorithm, the criteria for comparing the IFRS methodology, the SEEA concept, and the NAS methodology in relation to accounting in agribusiness have been identified.

The second stage aims to identify the drivers for forming the Indicators of the Republic of Moldova and International Practices for Disclosing Information on the State of Ecosystems.

The third stage involves the preparation and compilation of the Matrix of Indicators for Recognizing Agribusiness Ecosystem Assets based on the implementation of the first and second stages.

The result of comparing the indicators characterizing each of the concepts in terms of forming sustainable agribusiness accounting is the justification of a high degree of convergence between IFRS and SEEA, and divergence between NAS and SEEA.

One of the accounting tools is special indicators that characterize changes in the state of ecosystem assets. Based on statistical indicators related to climate change, a set of characteristic indicators of the main ecosystem – land – interacting with agribusiness has been proposed, for which a monetary valuation is possible.

The proposed set of indicators serves as the justification for the effectiveness of the developed Matrix of Indicators for Recognizing Agribusiness Ecosystem Assets.

State of development: This research is supported by the scientific project "The Model of Accounting and Reporting Changes in Agribusiness Ecosystem Assets in the Context of an Environmental Crisis", registered under number 24.80013.0807.1TR in the State Register of Projects in the field of science and innovation of the Republic of Moldova.

Presentation link:
https://docs.google.com/presentation/d/12tCNCvNTqQo0yFBMKJua50K5Uy3NtSOb/edit?usp=sharing&ouid=117616649585722658635&rtpof=true&sd=true

14.

Title: THE SAFE CONSERVATION OF THE GERMPLASM OF RARE PLANTS FROM THE REPUBLIC OF MOLDOVA (CONSERVGERM)
Project number: 24.80012.7007.08TC
Authors: Irina SFECLĂ, Vasilii SLIVCA, Doina ŞABAROV, Maria TABĂRĂ
Institution/Country: "Al. Ciubotaru" National Botanical Garden (Institute) of the Moldova State University, Republic of Moldova
Category: A
Description: *The general objective of the project (2024-2025) refers to the short and medium-term conservation of the germplasm of some rare species from the native flora of the Republic of Moldova. The initiation of the collection "Rare Plants of the Republic of Moldova" within the germplasm collection of the "Al. Ciubotaru" National Botanical Garden (Institute) (NBGI) of the State University of Moldova.*
Rare species have a restricted distribution area and, as a rule, a low fruiting productivity. The collecting, storing and conservating process of the germplasm is an additional chance for the rescue and perpetuation of these species. It is imperative to research the process of fruiting and preservation of the seeds' viability, and to subsequently develop practical recommendations regarding the collection period and the storage time characteristics of the species.
In 2024, 74 seed samples of 53 rare plant species were collected, conditioned, taxonomic affiliation was specified, cataloged and preserved. The collecting methods were sustainable and conscious, aligned with the principles of nature conservation. The full collection of fruits of an individual or population was avoided. This practice is essential for the conservation of biodiversity and for the perpetuation of rare species in natural habitats. Data on the fructification biology of rare species was collected and systematized.
In order to maintain collaboration with the international scientific community, a list of 18 species (seeds collected in 2024) was provided. These are proposed to be included in the International Seed Exchange "Index seminum" of NBGI.
The results obtained within this project have both theoretical impact, through taxonomic research, biological peculiarities and scientific publications, and practical, by collecting germplasm.
State of development: "Young Researchers" research project 2024-2025.
Contact: *irinasfecla@gmail.com*
Presentation link: *https://www.youtube.com/watch?v=AVtSgZqApC0* ***Time: 2:26:25***

15.

Title: RESILIENCE ASSESSMENT OF CRITICAL ENERGY INFRASTRUCTURE USING LiDAR TECHNOLOGY
Project number: MER 011210 and NATO SPS G6140
Author/s: Veaceslav SPRINCEAN, Marianna SAVVA, Liviu DONTU, Mihail CARAMAN, Florentin PALADI
Institution/Country: Moldova State University, Institute of Applied Physics, Scientific Research Laboratory Environmental Physics and Modeling Complex Systems, Republic of Moldova
Category: A

Description: *This research proposes the integration of a UAV-based LiDAR system to enhance the resilience assessment of critical energy infrastructure. The approach involves deploying advanced LiDAR-equipped drones for real-time monitoring and risk analysis of power grids and other vital energy assets. The collected data is used to create high-resolution 3D models for structural analysis, environmental risk assessment, and early hazard detection.*
A key aspect of the solution is the enhancement of the eALERT monitoring system, incorporating LiDAR technology for improved precision in detecting vulnerabilities caused by biotic (e.g., vegetation encroachment) and abiotic (e.g., extreme weather, structural degradation) factors. The methodology includes preflight planning, airspace assessment, UAV operation safety protocols, and real-time data processing to ensure accurate and reliable inspections.
The implementation focuses on developing computational models for predictive maintenance and risk forecasting, allowing operators to proactively mitigate threats to energy infrastructure. By employing geospatial data, flight path optimization, and AI-driven anomaly detection, this research provides a scalable and efficient solution for infrastructure resilience assessment. The results contribute to strengthening energy security and optimizing maintenance strategies.
State of development: Actual system is proven in operational environment.
Contact: *veaceslav.sprincean@usm.md*
Presentation link: *https://usm.md/?lang=en*

16.

Title: METHOD FOR AUTOMATING THE TAKEOFF AND LANDING PHASE OF A COLLAPSIBLE TEXTILE WING
Patent/project number: A/00540/03.10.2023/ Core Program TEX-PEL-CHALLENGE 2026, Project number PN 23 26 02 01, acronym THORR
Author/s: Săliştean Adrian
Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Category: A
Description: *The present invention relates to a method for the automatic control of the takeoff and landing phase of a collapsible/inflatable textile AirFoil-type wing. The control method is applicable in the context of an automatic control system for a high-altitude wind power generator of the ground-gen type, which uses a textile wing to capture wind energy at high altitudes. Thus, the control of the captive wind wing is achieved through a self-propelled WCU (Wing Control Unit) module attached to the cable near the wing. The module integrates active control elements to automate the launch/retraction of the captive wind textile wing when wind conditions are unfavorable, such as when the wind is too weak, too strong, or during high-intensity storms.*
State of development: Application patent; Experimental model
Contact: *adrian.salistean@incdtp.ro*
Presentation link: *https://incdtp.ro/THORR/*

17.

Title: FUTURE OF MYCELIUM-BASED MATERIALS IN CONSTRUCTION INDUSTRY
Project number: PN 23 26 02 01/ Core Program TEX-PEL-CHALLENGE 2026/ Project title: Innovative, resilient digital solutions for the recovery and sustainable growth of terrestrial and aquatic natural resources, as well as for harnessing unconventional aerial energy resources (acronym THORR)
Author/s: Bogdan Cazan, Ovidiu Iordache
Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Category: A
Description: *Myco-materials are a novel class of materials that get attention due to their low production costs, properties, biodegradability and low environmental impact. Depending on the production process they can be used in different industries, including constructions. Although mycelium materials have low structural strength when compared to other traditional materials such as concrete or steel, large architectural projects can be built by achieving stability through geometry or reinforcements. The benefits of mycelium construction materials lays in their production costs (e.g. starting from 4$USD for a mycelium brick), low density, fireproofing and insulating properties. This study presents prototypes of mycelium materials obtained from agro-industrial byproducts and waste such as paper, sawdust, wheat bran and straws combined with different fungal mycelium strains. Three fungal strains were tested to obtain foam-like panels; resulted materials being assessed through microscopic and macroscopic analysis.*
State of development: Prototype
Contact: *bogdan.cazan@incdtp.ro*
Presentation link: *https://incdtp.ro/THORR/*

18.

Title: RENEWABLE MATERIAL FOR LEATHER DELIMING AND APPLICATION PROCESS
Patent/project number: A/200728 from 21.11.2024/ Core Program TEX-PEL-CHALLENGE 2026, Proiect number PN 23 26 03 02, acronym BIO-LEATHER
Author/s: Gaidău C. Carmen, Simion Demetra, Berechet D. Mariana, Alexe A. Cosmin
Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Category: A
Description: *The renewable material is made from hydrolysates of collagen or keratin with medium or low molecular weights, conditioned with organic acids, with complexing properties of calcium ions from leathers processed for hair removal and allows the replacement of ammonium salts. The materials made capitalize on lower quality leather or wool waste and ensure an efficient and ecological process of removing calcium ions from natural leathers, with beneficial ecological effects for the environment.* ***Advantages:*** *Ammonium pollution elimination; cleaner workplaces; reduction of wastewater eutrophication; protein-based waste recovery-reuse-recirculation; organic waste reduction; new added-value products made from waste; creation of potential new jobs; improved carbon footprint of leather*

products; reduction of organic waste in leather industry and zootechnics; products complying with circular economy needs.
State of development: Application patent; Prototype
Contact: *carmen.gaidau@incdtp.ro*
Presentation link: *https://incdtp.ro/icpi/proiecte.html*

19.

Title: COMPOSITION FOR POLYMERIC BIOCOMPOSITES BASED ON BUTADIENE-STYRENE BLOCK COPOLYMER, POLYPROPYLENE AND COFFEE GROUNDS
Patent/project number: A/00726/ 2024/ Core Program TEX-PEL-CHALLENGE 2026, Project number PN 23 26 03 01, Acronym AVANS-COMP-POLYMER
Author/s: Stelescu M.D., Berechet M.D., Sonmez M., Georgescu M.
Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Category: A
Description: *The invention refers to the production of polymeric biocomposites based on butadiene-styrene block copolymer, polypropylene, coffee grounds and other ingredients, which are intended to obtain products with applications in: the footwear industry, the automotive industry, additive technologies, etc. The new elasto-plastic materials have a pleasant smell of coffee, which persists over time, and a natural color, which no longer requires the addition of dyes. In the polymer biocomposites that are the subject of the present invention, a mixture based on butadiene-styrene block copolymer and polypropylene is used as the polymer matrix, and coffee grounds obtained as waste from coffee consumption are used as the filler. They are obtained by the dynamic vulcanization technique and melt mixing, using internal mixers or an extruder-granulator. To improve the compatibility between the phases of the biocomposite, polypropylene grafted with maleic anhydride (PP-g-AM) is used, and for dynamic vulcanization, an alkylphenolic resin and tin chloride dihydrate are introduced into the mixture, which can lead to the formation of a cross-linked structure through methylene/chromium ring bridges between macromolecules.*
State of development: Application patent; Prototype
Contact: *maria.stelescu@icpi.ro*
Presentation link: *https://incdtp.ro/icpi/proiecte.html*

20.

Title: ANTIBACTERIAL EXPANDED THERMOPLASTIC POLYMER COMPOSITE RESISTANT TO HIGH TEMPERATURE, BASED ON STYRENE-BUTADIENE-STYRENE ELASTOMER, FUNCTIONALIZED CALCIUM CARBONATE WASTE AND THERMOMICRO CAPSULES
Patent/project number: A/200176/12.04.2024/ Core Program TEX-PEL-CHALLENGE 2026, Project number PN 23 26 03 01, acronym AVANS-COMP-POLYMER
Author/s: Alexandrescu L., Sonmez M., Stelescu M. D., Georgescu M.

Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Category: A
Description: *The invention relates to an antibacterial expanded thermoplastic polymer composite resistant to temperatures above 2500C, based on styrene-butadiene-styrene elastomer, calcium carbonate waste from shells, marble and dolomite, functionalized with 3-aminopropyltrimethoxysilane, expanded with thermomicro capsules, intended for processing products through extrusion and injection molding techniques, for the food, medical, consumer goods and footwear industries.*
Products obtained according to the invention have the following advantages:

- *Environmental protection by recycling, reusing and converting waste from the footwear industry into new added value products;*
- *Protection of the human factor by reducing toxicity in the work environment;*
- *Less toxic finished products;*
- *Less pollution due to functionalization of waste;*
- *Optimal processability due to compatibilization with polyethylene-graft-maleic anhydride;*
- *Physical-mechanical properties are according to standards in force: resistance to abrasion etc.*
- *Increased turnover for the economic operator.*

State of development: Application patent; Prototype
Contact: *laurentia.alexandrescu@icpi.ro*
Presentation link: *https://incdtp.ro/icpi/proiecte.html*

21.

Title: DEVELOPMENT AND VALIDATION OF A COMBINED TRI-COMPONENT INTEGRATED SYSTEM FOR WASTEWATER TREATMENT (3TREAT)
Project number: 62PED/2025
Author/s: Ovidiu Iordache, Ioana Corina Moga, Bogdan Cazan
Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Category: A
Description: *Textile and leather industrial activities are responsible with the generation of large quantities of process waters that are characterized by high industrial chemicals content, that when discharged into public waters or refluxed into environment components, lead to ecosystemical hazards. The project aims the development of a combined wastewater (specific to textile and leather industry) treatment method, coupled with the execution of a customized EXPERIMENTAL MODEL. The development of a combined wastewater (specific to textile and leather industry) treatment method, coupled with the execution of a customized treatment installation, with high efficiency and versatility, overcoming the disadvantages of currently used physical-chemical treatment. The technology relies on complementarity between three key components for reduction and breaking down of main pollutants in the treated wastewater volume. The three components refer to macromycetes strains, MBBR specific HDPE carriers and sonication treatment.*
State of development: Research project
Contact: *iordacheovidiu.g@gmail.com*
Presentation link: *https://fluensys.ro/research/projects/?lang=en*

22.

Title: BEEFRIEND
Project number: 001/2025
Author/s: Sirinda Chalermthiralert, Parinda Chalermthiralert, Jeerasak Jitrotjanarak, Chutiparn Lertvachirapaiboon
Institution/Country: International School Bangkok, Thailand
Category: A
Description: *This project develops a bee-friendly insecticide using waste from mussel shells and eggshells, addressing both agricultural and environmental challenges. The key ingredient, calcium carbonate ($CaCO_3$), acts as a natural pest deterrent by forming a physical barrier, altering pH, and creating a drying effect that disrupts pests without harming beneficial pollinators like bees. Unlike conventional insecticides, our solution is sustainable, reducing chemical pesticide use while repurposing problematic waste. By promoting pollinator-safe farming, this innovation enhances crop yields, supports biodiversity, and offers an eco-friendly alternative for pest control.*
State of development: Commercialized
Contact: *j_jerasak@hotmail.com*
Presentation link: *https://www.youtube.com/watch?v=PrYWKWlPb5s*

23.

Title: WEARABLE MUSCLE CONTROL SYSTEM FOR OPEN-SOURCE BIONIC ARMS
Patent/project number: 004/2025
Author/s: Thanaporn Pongphaew, Parinton Jangtawee, Kaewkan Yambangyang, Jeerasak Jitrotjanarak
Institution/Country: Harrow International School, Bangkok, Thailand
Category: A
Description: *This project explores the effectiveness of EMG, optical reflective pressure, and pressure sensors in detecting muscle activity for bionic arm control. Sensors were tested at nine positions along the forearm muscles responsible for hand opening and closing. A healthy subject performed repeated gestures while signals were collected at 5ms intervals using an ESP32 microcontroller with 12-bit resolution (4096 levels). Data analysis focused on signal stability, gesture differentiation, and efficiency to identify the best sensor-position combination. The findings aim to enhance sensor selection and placement, improving the accuracy and responsiveness of prosthetic limb control.*
State of development: Prototype
Contact: *j_jerasak@hotmail.com*
Presentation link: *https://www.harrowschool.ac.th/*

24.

Title: WASEN
Patent/project number: 007/2027
Author/s: Piriya Vongpivat, Pirada Vongpivat, Supphanat Koolhiran, Jade Koolhiran,

Jeerasak Jitrotjanarak
Institution/Country: Chulalongkorn University Demonstration Elementary School, Thailand
Category: A
Description: *Food waste is a pressing global challenge, with approximately 1.3 billion tons discarded annually, contributing significantly to environmental harm. During our research at snack factories, we discovered that most food waste could be repurposed for animal feed or fertilizers. However, one particular food production line – popcorn waste – presented a unique challenge, as it could not be sold or reused in this way.*
In response, we developed WASEN Coals, a groundbreaking solution based on the waste-to-energy principle. WASEN Coals are created by grinding leftover popcorn, compacting it, and sun-drying it to preserve its natural qualities. We then enhance its efficiency by adding used vegetable oil, resulting in a sustainable, biodegradable product perfect for outdoor activities like barbecues and camping.
The benefits of WASEN Coals are manifold: they help reduce greenhouse gas emissions, offer lightweight portability, and provide a convenient solution for eco-conscious outdoor enthusiasts. More importantly, they contribute to reducing food waste in communities, turning what would be discarded into a valuable resource. Made from safe, eco-friendly ingredients, WASEN Coals not only serve the environment but also create an opportunity for additional revenue through sales.
By transforming food waste into a practical and sustainable product, WASEN Coals make a positive impact on both the planet and our communities.
State of development: Ready-to-commercialize product
Contact: *scis.cud@gmail.com* *j_jerasak@hotmail.com* ***+66846396363*** ***+66959351062***
Presentation link: *https://youtu.be/KuE73ruC9EY?si=0CZ5ZaqgpUoC_zgS*

25.

Title: THE CYCLONE SKIMMER
Patent/project number: 009/2025
Author/s: Nattarin Ouicharoen, Phichphanita Mathasuriyapong , Thunthita Padetpai, Jeerasak Jitrotjansrak
Institution/Country: Chulalongkorn University Demonstration Secondary School, Thailand
Category: A
Description: *Introducing the Aqua-Jet Aerator – the cutting-edge solution for wastewater treatment excellence. Engineered with a robust, mechanical direct-drive design, this innovative aerator maximizes oxygen transfer while delivering powerful mixing performance. Ideal for municipal and industrial wastewater applications, the Aqua-Jet Aerator not only boosts oxygenation but also ensures that organic matter is uniformly dispersed throughout the microbial population. Experience enhanced treatment efficiency and reliable performance that takes your process to the next level.*
State of development:
Technical Points
- *Direct-Drive Mechanism: Mechanical design ensures robust and efficient operation.*
- *Optimized Oxygen Transfer: Engineered to maximize oxygenation in wastewater treatment.*
- *Superior Mixing Performance: Provides consistent dispersion of oxygen and organic matter.*

- *Enhanced Microbial Efficiency: Promotes uniform microbial activity for improved degradation.*
- *Versatile Applications: Ideal for a wide range of municipal and industrial wastewater systems.*
- *Durable Construction: Built to withstand demanding operating environments with minimal maintenance.*
- *Easy Integration: Designed for seamless installation into existing treatment processes.*

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Presentation link: *https://satitm.chula.ac.th/*

26.

Title: CLIMATE CHANGE CURB
Patent/project number: Environmental project
Author/s: Zainab Arzouni
Institution: Lebanese University, Faculty of Science, Lebanon
Category: A
Description: *I launched my own initiative entitled Climate Change Curb, by creating a whatsapp group where I invited people from all over the world, (Lebanon, Egypt, Romania, Malaysia, Indonesia, India, UAE, Zimbabwe…) to join in this initiative. I sent to them videos of me introducing climate change for them to increase awareness of this problem, also I sent them video of me planting trees and they started planting and sent me videos of their plants. I knew that trees is the only cure for Climate Change as one tree can absorb 22KG of Carbon dioxide a year which is huge, since as we know that carbon dioxide is one of the poisonous gasses causing climate change.*
State of development: educational environmental project
Contact: *zeinabarzouni94@gmail.com*
Presentation link: *https://www.youtube.com/shorts/rfG6RfAWXzw*

27.

Title: WORLDWIDE PERSPECTIVE ON THE LIGHTING MARKET
Patent/project number: Research project
Author/s: Mihaela ŞTEFAN, Ioana FĂRCEAN
Institution/Country: Politehnica University Timisoara, Faculty of Engineering Hunedoara, Romania
Category: A
Description: *Regarding general lighting, based on previous research, certain trends can be anticipated, which have already begun to emerge in recent years. Thus, changes in the regional distribution of the market will occur, influenced by socio-political factors and the advancement of lighting technologies. The share of different technologies used will vary depending on the application areas of lighting fixtures, leading to a reconfiguration of the global market. Throughout the project, these developments will be thoroughly analyzed, considering emerging trends, technological advancements, and their impact on the lighting market. The study will be conducted over a period of many consecutive years, allowing for a progressive assessment of industry developments and the factors influencing the transformation of this sector. Currently, the lighting industry is undergoing a true revolution, marked by profound transformations at*

all analyzed levels. We are witnessing the emergence of new market segments, such as lighting control devices and backlight illumination, which are redefining the landscape of this industry. Phenomena are emerging that could lead to the disappearance of the traditional lighting industry, as it undergoes increasing reconfiguration and transformation towards the electronics sector.
State of development: Research project
Contact: *mihacont73@gmail.com*
Presentation link: *https://www.fih.upt.ro/ccmti/*

28.

Title: THE OVER-WELL
Patent/project number: 001/2025
Author/s: Anne TIU, Cristina CACHO, Janelle ESCASA, Joaquin NICHOLAS PEREJA, John David Reginald Sta Cruz ACEDILLO, Krister SERRANO, Paul TAN, Zack TEJEDOR; Mentors: Sir. Dary DACANAY, Sir. Raymundo Carlo HERNANDEZ
Institution/Country: Saint Patrick School Inc., Philippines
Category: A
Description: *The Over-Well is an energy efficient hoist operated water plastics collection device. It can only go up and down, and uses the vortex created by its base being filled up to pull and capture debris. Its simple design only uses one motor as a hoist. Inspired by the Seabin, this device aims to improve upon existing solutions by minimizing energy consumption and utilizing a simple yet effective construction. The Over-Well operates using a pulley system powered by a motor, allowing it to submerge into the water and passively collect floating waste. Its use of a mosquito net as a catch bag ensures that even microplastics, which are less than 5mm in size, can be effectively gathered for research and waste management efforts. The significance of the Over-Well lies in its contribution to environmental sustainability and research on plastic pollution. Given the increasing concerns about microplastic contamination, consistent and accurate sampling is crucial to understanding the extent of pollution in different water bodies. The device addresses the need for an energy-efficient solution, as current alternatives, such as the Seabin, require a constant power supply, making them less viable in regions with energy limitations. The Over-Well operates more efficiently, with its motor active only 66.1% of the time, reducing overall energy consumption by 33.9% compared to similar devices.*
State of development: Concept
Contact: *jdacedillo@tutanota.com*
Presentation link:
https://drive.google.com/drive/folders/19NWAbcCRdeLJsl3ZKoDuGAsOL4wT5eUp?usp=sharing

29.

Title: DETERMINING GROUNDWATER TRANSMISSIVITY THROUGH THE ANALYSES OF PHYSICAL PROPERTIES AND CHEMICAL COMPOSITION FROM SVALBARD FJORD SEDIMENTS
Patent/project number: Student Project
Author/s: Zaga Trišović

Institution/Country: The Academy of Technical Applied Studies Belgrade, Katarine Ambrozic 3, Serbia 11000, Belgrade, Serbia
Category: A
Description: *Throughout the two-week Short-Term Scientific Mission (STSM), a thorough evaluation of the physical and mechanical properties of soil and sediment cores from Svalbard was diligently carried out. These cores underwent meticulous measurements, analysis, and processing as outlined in the predetermined work plan, considering practical constraints and the available timeframe.*
The culmination of these efforts resulted in meticulously examined and refined datasets and imagery derived from comprehensive analysis of the sediment cores. These valuable resources are set to be openly accessible to the public via esteemed Open Access data repositories. This deliberate transparency not only promotes scientific openness but also lays the groundwork for future research endeavors in the realm of Offshore Freshened Groundwater (OFG). The next step involves further exploration and analysis of the amassed data and imagery, to be presented either at an academic conference or as part of a forthcoming scientific paper. This forthcoming documentation will detail the laboratory procedures, data analyses, and resulting insights, significantly contributing to ongoing discussions within this scientific field. Although time constraints prevented examinations of split cores, collaborative efforts in the future are expected to facilitate additional analyses of these samples.
State of development: Research project - ACKNOWLEDGMENTS: This work is based upon work from COST Action CA21112 - Offshore freshened groundwater: An unconventional water resource in coastal regions? (OFF-SOURCE), supported by COST (European Cooperation in Science and Technology).
Contact: Zaga Trišović, +38162295270, Email: zaga.app@gmail.com
Presentation link: https://atssb.edu.rs/en/

30.

Title: PLASTIC RECYCLER
Patent/project number: Student Project
Author/s: Iulian Plop; Mentor: physics teacher Ciuvaga Victor
Institution/Country: Public Institution "Constantin Stere" Theoretical High School, Soroca, Republic of Moldova
Category: A
Description: *This project focuses on recycling PET plastic bottles into high-quality 3D printing filament, addressing plastic pollution while offering a sustainable and cost-effective alternative to commercial filament. The device cuts bottles into strips, extrudes, and cools the plastic, creating uniform filament using Arduino-based automation. It integrates CO2 CNC laser cutting, 3D printing, and microcontrollers to enhance efficiency. The solution reduces waste, promotes the circular economy, and provides an accessible resource for makers and educators. Key innovations include direct PET-to-filament conversion, automated recycling processes, and modular scalability.*
State of development: product
Contact: +37367641364 iulianplop.a@gmail.com
Presentation link:

https://www.canva.com/design/DAGd0RYgZiI/S_c5oCAJ1t0AKKJ1PE-otw/edit?utm_content=DAGd0RYgZiI&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton

31.

Title: CHEMIRESISTIVE ETHANOL SENSOR BASED ON GRAPHENE AND METAL OXIDE NANOCOMPOSITES AND A PROCESS FOR OBTAINING IT
Patent: RO 134143 B1
Authors: COBIANU Cornel, SERBAN Bogdan-Catalin, BUIU Octavian, DUMBRĂVESCU Niculae, MARINESCU Maria-Roxana, IONESCU Octavian-Narcis, AVRAMESCU Viorel Marian
Institution/Country: National Institute for Research and Development in Microtechnologies – IMT Bucharest, Romania
Category: A
Description: *The invention relates to a chemiresistive ethanol sensor based on graphene and metal oxide nanocomposites and to a manufacturing process. The novelty of the sensor results from the original synthesis process of the sensitive layer and the innovative way of nanostructuring the sensitive material without using surfactants to orient the direction of material growth, but by choosing the synthesis solution's basic pH (8,5...14).*
State of development: Patent
Contact: *octavian.buiu@imt.ro*
Presentation link: *https://www.imt.ro/*

32.

Title: CARBON DIOXIDE SENSOR
Patent application A/00473, 28.01.2022
Authors: ŞERBAN Bogdan - Cătălin, BUIU Octavian, COBIANU Cornel, MARINESCU Maria Roxana
Institution/Country: National Institute for Research and Development in Microtechnologies – IMT Bucharest, Romania
Category: A
Description: *Carbon dioxide detection is essential in various sectors of domestic and industrial activity, such as indoor air quality control, healthcare, agriculture, food technology, and the alcoholic beverage industry. The invention includes the design and manufacturing processes for a surface acoustic wave (SAW) CO2 sensor, employing carbon nanohorns and carbon nanoonions functionalized with groups such as -CO-NHCH2-CH2-NH- CH2-CH2-NH2 (abbreviated as CNHs-R-NHR-NH2 and CNOs-R-NH-R-NH2) as sensing layer, a quartz piezoelectric substrate and interdigital transducers. This type of functionalization ensures appropriate selectivity for nano carbonic materials by grafting aliphatic primary*

and secondary amine groups. According to the HSAB theory, Aliphatic amines are hard bases and can interact reversibly, at room temperature, with CO2 (hard acid) to form carbamates. The sensing structure is of the "delay line" type, with a double delay line to compensate for the thermal drift. One of the delay lines is coated with CNOs-R-NH-R-NH2, and the second is the piezoelectric substrate without a sensitive layer. The CNOs-R-NH-R-NH2--based sensing layer for the SAW CO2 sensor has several significant advantages: improved mechanical properties, detection at room temperature, fast response, and increased selectivity.

State of development: Patent application

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Presentation link: *https://www.imt.ro/*

33.

Title: THE IMPACT OF PESTICIDES ON OXIDATIVE STRESS AND ANTIOXIDANT RESPONSE OF LENTIL PLANTS

Patent/project number: student project

Author/s: Elena-Iuliana Fodor, Todirașcu Ciornea Elena

Institution/Country: "Alexandru Ioan Cuza" University of Iași, Faculty of Biology, Romania

Category: A

Description: ***Introduction -*** *This work aimed to determine and evaluate the effects of applying pesticides to Lens culinaris through the activity of oxido-reductases that are involved in counteracting the effects produced by oxidative stress.*

Materials and method - *Oxidative stress is a subject that is being intensively studied nowadays, especially when it comes to its negative effects on plants. Therefore, oxidative stress represents a real imbalance between the production and storage of reactive oxygen species, visible both at the cellular and histological levels. The enzymes that were determined in this study were superoxide dismutase and peroxidase, which are oxido-reductases involved in the first line of defense against oxidative stress. Lentil seeds were sown in soil specifically intended for vegetable crops, the plants being grown in two conditions, namely: in laboratory conditions and in garden conditions, with three pesticides being applied to the ones in the garden: Pictor® Active, Faster 10 CE and Trika Expert. After 75 days from planting, leaf tissue was harvested, and superoxide dismutase activity was determined using the Nitro Blue Tetrazolium method, while peroxidase activity was determined using the o-dianisidine method.*

Results - *In recent years, the widespread use of chemicals, both organic and inorganic, in agriculture has aimed to increase production and develop high-yielding varieties, as well as to combat pests and diseases. However, this practice has led to considerable environmental pollution, with a major negative impact due to the persistence of these substances in the soil, which subsequently reach plants and animals.*

Following the determination of the activity of the two enzymes, a significant increase in the activity of superoxide dismutase, peroxidase and implicitly the accumulation of reactive oxygen species was observed. Therefore, in Figures 1 and 2 below, significant increases in the two oxido-reductases can be observed,

compared to the reference batch, both in the lentil variants grown in laboratory conditions and in those that were grown in the garden under the influence of the three pesticides and harsh environmental conditions.

Conclusions - The intensive use pesticides, even in the doses recommended by the manufacturer, affects agricultural crops, contributes to soil pollution, and causes major imbalances in ecosystems, impacting flora, fauna, and animal organisms.

References

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2. Bhatty R.S., 1988 – Composition and Quality of Lentil (Lens culinaris Medik): A Review., Canadian Institute of Food Science and Technology Journal, 21(2), pp. 144–160, doi: https://doi.org/10.1016/s0315-5463(88)70770-1;

3. Froger C.C., Budzinski H., Pierdet M., Caria G., Nicolas P.A., Saby D.A., 2023 – Pesticides Residues in French Soils: Occurrence, Risks, and Persistence, Environmental Science & Technology., 57(20), pp. 7818–7827, doi: https://doi.org/10.1021/acs.est.2c09591;

4. Hong E., Xia X., Ji W., Li T., Xu X., Chen J., Chen X., Zhu X., 2023 – Effects of High Temperature Stress on the Physiological and Biochemical Characteristics of Paeonia ostii, International Journal of Molecular Sciences, 24(13), p. 11180, doi: https://doi.org/10.3390/ijms241311180.

State of development: Laboratory experiment

Contact: *elenai.fodor@gmail.com*

Presentation link: *https://www.linkedin.com/in/iuliana-fodor*

34.

Title: TECHNOLOGY FOR PURIFYING INDUSTRIAL ODORS

Patent/project number: BR 202015011823-1

Author/s: Camilo Freddy Mendoza Morejon, Andy Avimael Saavedra Mendoza and Jeferson Alexandre dos Santos Bosa

Institution/Country: Western Paraná State University – Unioeste, Brazil

Category: A

Description: *The patent refers to a modular filter consisting of a set of elements, whose unique shape and arrangement of components have resulted in a functional improvement of equipment that, through the adsorption of gaseous pollutants in a removable filtering medium, enables the treatment of gaseous effluents from various sources, particularly industries. The main distinguishing features of the equipment include:*

- *A continuous feeding system for gaseous effluents from industrial processes;*
- *Elements that make up the gas filtration system;*
- *A device that allows the periodic replacement of the filtering medium after saturation;*
- *A device that ensures uniform porosity of the filtering medium to prevent pressure losses;*
- *A modular shape and arrangement that allow flexible sizing to meet various capacities;*

An operating method that ensures maximum and continuous efficiency in the treatment of industrial gaseous effluents by purifying gaseous pollutants in the filtering medium
State of development: Implemented on a industrial scale
Contact: camilo_freddy@hotmail.com
Presentation link: https://www.unioeste.br

35.

Title: RENEWABLE ENERGY SOURCES AND CIRCULAR ECONOMY APPLIED IN AN ACADEMIC COMMUNITY AS AN EXAMPLE FOR SMART SUSTAINABLE DEVELOPMENT
Patent/project number: Project: 2020/554215
Author/s: Vintilă Teodor, Popescu Cosmin Alin, Radulov Isidora, Horablaga Adina, Marco Di Stanislao
Institution/Country: University of Life Sciences "King Mihai I" from Timisoara, Romania
Category: A
Description: *The energy system consists of a photovoltaic plant of 150 kWe and a biogas plant containing a CHP unit of 100 kWe installed capacity. The total electricity production capacity of the system is predicted at approx. 825 MWh/year, which can cover up to 50% of the total electricity consumption of the USV Regele Mihai I campus in Timişoara. Total savings of CO2 equivalent are evaluated at 2400 tons / year.*
State of development: Project, energy system in function
Contact: Assoc. Prof. dr. Vintilă Teodor +407222924798; Email: tvintila@animalsci-tm.ro
Presentation link: https://biocombustibil-tm.ro/res-circular/en/

36.

Title: PROCEDURE AND INSTALLATION FOR TRIBOELECTROSTATIC SEPARATION OF A MIXTURE FROM NON-CONDUCTIVE GRANULAR MATERIALS
Patent/project number: Patent application OSIM no.: A/00035/06.02.2024
Author/s: Călin Florentin-Laur, Bilici Mihai-Alexandru, Samuilă Adrian-Păun
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: A
Description: *The invention refers to a procedure and installation for triboelectrostatic separation of a mixture composed of non-conductive granular materials. According to the invention the procedure efficiently charges the components (A and B) of a granular mixture with opposite electric charges through repeated controlled collisions between granules and between granules and the walls of a particularly shaped device. The electrostatic separation of the mixture's components is achieved by diverting the granules charged with opposite electric charges on distinct trajectories in an electrostatic field zone. The charged granules are introduced into the electrostatic field zone through a variable-angle device that facilitates their diversion onto distinct trajectories, allowing their collection as separation fractions.*
State of development: patent application, scientific paper, research project

Contact: *Liliana.Pop@staff.utcluj.ro*
Presentation link: *https://www.utcluj.ro/en/*

37.

Title: LOGISTIC SUPPORT CONTAINER–MOBILE POWER PLANT FOR EMERGENCY
Patent/project number:
Author/s: Popescu Emil, Stroe Danut, Guiman Daniela Jurba Mihai
Institution/Country: ELECTRO OPTIC COMPONENTS S.R.L., ROMANIA
Category: A
Description: *MOBILE POWER PLANT FOR EMERGENCY with a power of 500 kVA is designed to be used in emergency situations. The product is designed in a versatile, independent version with a whole range of distinct applications from : industry , telecom, oil&gas , emergency situation and can work as island power plant, back up , peak load for national grid etc. Logistic Support Container allows the installation of a wide range of generator groups chosen and sized according to the energy supply needs of th evarious facilities. It contains the fuel tank for a long time operation, command and control panel and cables and distribution boxes which can be used in various configurations.*
State of development: In production
Contact: www.electro-optic.ro; office@elop.ro +40723242145
Presentation link: *https://www.youtube.com/channel/UCm89q0koRztLbRtE80Rhdqw*

38.

Title: RHIZOPUS STOLONIFER FUNGI STRAIN FOR BIODEGRADATION OF COBALT AND NICKEL COMPOUNDS
Patent/project number: No. 4486
Authors: COREȚCHI Liuba, Dr. Sc., associate professor; PLAVAN Irina, Scientific researcher in med., MD; BAHNAREL Ion, Dr. Sc., professor.
Institution/Country: National Agency for Public Health, Republic of Moldova
Category: A
Description: *The invention relates to Biotechnology and Environmental protection. The novelty consists in developing a new biotechnological process to reduce the risk of environmental pollution, based on the use of non-pathogenic microorganisms. It is proposed fungi Rhizopus stolonifer 67 CNMN-FD-18, which possesses the biodegradation of toxic compounds of cobalt and nickel. The problem of the invention consists in increasing the efficiency of biodegradation of cobalt and nickel compounds in the soil. The invention solves the problem by proposing the fungal strain Rhizopus stolonifer CNMN-FD-18 for the biodegradation of cobalt and nickel compounds, namely cobalt phosphate and nickel nitrate. The strain Rhizopus stolonifer CNMN-FD-18 synthesizes extracellular proteolytic enzymes, organic acids, which contribute to the biodegradation of heavy metal compounds, for example cobalt phosphate and nickel nitrate with their transformation into hydroxides, oxides or other compounds with low solubilization, expressed by the formation of the solubilization zone around the strain colony under laboratory conditions and established*

by changing the color of the medium, in the case of cobalt phosphate from pink to colorless, and in the case of nickel nitrate from white to transparent.
State of development: Patent
Contact: *liuba.koretski@ansp.gov.md*
Presentation link: *https://ansp.md/control_radon/*

39.

Title: DETERMINATION OF RADON CONCENTRATIONS IN THE AIR INSIDE BUILDINGS (HOMES, WORKPLACES), SOIL AND WATER
Patent/project number: Certificate of registration of the object of copyright or related rights Serial OŞ no. 8118 of 11.02.2025 issued by State Agency for Intellectual Property of the Republic of Moldova
Authors: CORETCHI, L., ABABII, A., APOSTOL, I., BAHNAREL, I., BOGDAN, M., ŞARGU, V., CAPAŢÎNA, A., RĂDULESCU, I., CALIN, R., LINCA, B., BORSOS, A.
Institution/Country: National Agency for Public Health, Republic of Moldova
Category: A
Description: *According to the EURATOM Directive No. 2013/59/ each country develops a national plan for the control of radon exposure, which stipulates the reference level of radon and the measures (actions) to be taken in case these values are exceeded. The requirements for measuring the concentration of radon activity in the air in homes, at workplaces, in soil and water are carried out in accordance with the elaborations of national (ANSP) and international bodies (IAEA, WHO, EU (Joint Research Center).*
In this regard, it is necessary to know and implement several activities that are described in the paper:

- *methods for measuring radon concentration in rooms and the main environmental factors;*
- *requirements for measuring radon activity concentration in workplaces;*
- *requirements for placing radon detectors;*
- *principles of radon measuring in homes and factors that influence the radon concentration when exhaled from the soil;*
- *recruitment of participants;*
- *communication with potential study participants;*
- *conducting an investigation into indoor radon levels;*
- *distribution and collection of detectors.*

State of development: The paper is intended for laboratories that monitor radon in indoor air (homes and workplaces), water and soil. Methods and equipment for detecting radon concentrations in indoor air (homes and workplaces), water and soil are presented. The methodology for rapid detection of the named radioactive gas is proposed, as well as modern technologies for reducing the population's exposure to the health risk caused by radon. The work was carried out with the support of the Ministry of Education and Research of the Republic of Moldova within the project „MONITORING OF EXPOSURE TO IONIZING RADIATION OF PROFESSIONALLY EXPOSED PERSONNEL AND THE PUBLIC WITH THE DEVELOPMENT

OF RADIOPROTECTION MEASURES", and the bilateral project RO MD „INCREASING THE DIGITAL CAPACITY OF THE DATA FLOW BETWEEN ROMANIA AND THE REPUBLIC OF MOLDOVA REGARDING MONITORING OF SOIL RADIOACTIVITY AND RADON" 21ROMD/20/05/2024, Project code: PN-IV-P8-8.3-ROMD-2023-0241.
***Contact:** liuba.koretski@ansp.gov.md*
***Presentation link:** https://ansp.md/control_radon/*

40.

***Title:** OCCUPATIONAL HEALTH AND SAFETY STUDY FOR THE WORKING ENVIRONMENT OF AN INDUSTRIAL EQUIPMENT DISTRIBUTION OPERATOR (STUDIU PRIVIND SANATATEA SI SECURITATEA IN MUNCA PENTRU MEDIUL DE LUCRU AL UNUI OPERATOR DISTRIBUTIE ECHIPAMENTE INDUSTRIAL)*
***Patent/project number:** CTR 41-10.09.2024*
***Author/s:** Oana Roxana CHIVU, Claudia BORDA, Marilena GHEORGHE*
***Institution/Country:** National University of Science and Technology POLITEHNICA Bucharest, ROMANIA*
***Category:** A*
***Description**: Occupational health and safety (OHS) are fundamental elements for the efficiency and success of any company, especially for companies that carry out complex industrial and logistical activities. The present study aims to identify, analyze and optimize health and safety measures within SC AC BONT TOOLS SRL, a company specialized in the distribution of technical and industrial equipment, located in Timisoara. The paper aims to detail the legislative framework, analyze the current situation and provide viable recommendations for the permanent improvement of working conditions.*
***Contact:** Professor Oana Roxana CHIVU, National University of Science and Technology POLITEHNICA Bucharest, E-mail oana.chivu@upb.ro*
***Presentation link:** https://upb.ro/en/*

41.

***Title:** ENVIRONMENTALLY FRIENDLY RECOVERY OF USED VEGETABLE OIL*
Patent/project number:
***Author/s:** Students: Ariana SÂRBU, Alexandru RUSU, Raluca PLĂINICEANU; Coordinator: Ioana FĂRCEAN, Laura STRUGARIU*
***Institution/Country:** Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania*
***Category:** A*
***Description:** Used vegetable oil recovery is the process by which this waste is collected, treated and transformed into reusable products, reducing the negative impact on the environment. The stages in the process of used vegetable oil recovery are: collection and storage, filtration and purification, transformation and reuse.*
This project presents the application of the cold process method for the transformation and valorization of used vegetable oil into homemade soap. A method based on the saponification reaction, in which oils or fats

(usually vegetable oils) react with a strong base (sodium hydroxide) to produce soap and glycerin. Essentially, converting waste oil into soap or detergent is both good for the environment and for the circular economy, helping to protect natural resources, reduce pollution and create environmentally friendly and health safe products. In addition to this method, we note that soap can also be made using the hot process, which is accelerated by heat, or through reprocessing, which revitalizes old soap. For the practical, there is the melt and pour method, and in the world of mass production, the industrial method reigns supreme with its repetitive perfection.
Thus, through this student project we want to contribute to raising awareness on the reuse of used vegetable oil by applying a simple method of recovery that can be carried out in the comfort of your home and has beneficial results on the environment.
State of development: *Student project*
Contact: *arusu3871@yahoo.com*
Presentation link: *https://www.fih.upt.ro/v4/*

42.

Title: COMPOSITE MATERIAL FOR ORGANIC POLLUTANTS REMOVAL USING MATERIALS BASED ON FOOD WASTE AND METHOD OF OBTAINING IT
Patent/project number: A00673/2024
Author/s: Roxana Ioana Brazdis (Matei), Irina Fierascu, Toma Fistos, Anda Maria Baroi, Ioana Silvia Hosu, Radu Claudiu Fierascu, Valentin Raditoiu, Monica Florentina Raduly, Maria Grapin
Institution/Country: National Institute for Research and Development in Chemistry and Petrochemistry –ICECHIM Bucharest, Romania
Category: A
Description: *The present invention refers to a material and procedure for the removal of organic pollutants. The procedure is based on the use of a phosphatic material (obtained from the valorization of food wastes-shells of Mya arenaria Linnaeus, 1758 - the most encountered edible clam on the Black Sea shore), decorated with metallic oxides (Cu or Ni) developed using a rapid approach, further formulated as an active coating. The material proved to be effective at low concentrations against the model organic pollutant (dye) Methylene Blue.*
State of development: Laboratory scale
Contact: *fierascu.radu@icechim.ro*
Presentation link: *https://icechim.ro/en/*

43.

Title: BLACK SOLAR - INNOVATIVE GREEN ENERGY SOLUTIONS FOR A HEALTIER FUTURE
Patent/project number: Green Energy Project
Author/s: Razvan MARCUS, Nicoleta MARCUS

Institution: S.C. Bio Green Power Solutions S.R.L.
Category: A
Description: *Black Solar is dedicated to pioneering the future of renewable energy through cutting-edge technology and innovation. Our mission is to harness the power of advanced technologies, including drone thermal imaging and 3D scanning, to provide our clients with the most efficient, reliable, and sustainable energy solutions available. By integrating these innovative tools into our services, we aim to optimize energy consumption, reduce environmental impact, and lead the transition towards a more sustainable and energy-efficient world. Our commitment to excellence and innovation drives us to continuously explore new horizons in renewable energy, ensuring that we offer the best solutions that meet and exceed the evolving needs of our clients and the planet. We strive to lead by example in the transition towards a greener planet, ensuring reliability, efficiency, and excellence in all our projects.*
Our vision is to be the global leader in renewable energy solutions, revolutionizing the industry by leveraging the latest technological advancements to create a sustainable future. We envision a world where every home, business, and community has access to clean, efficient, and sustainable energy, made possible through our innovative approach and dedication to advancing renewable energy technologies. Black Solar aims to set new standards in the energy sector, using drone technology, solar systems and other cutting-edge tools to deliver unparalleled service and performance, making renewable energy more accessible, efficient, and impactful than ever before. Services
Customized Photovoltaic Solar Systems: Tailored solar solutions that fit the unique requirements of each customer, from residential to large-scale commercial installations.
Electric Vehicle Charging Stations: Advanced charging solutions for electric vehicles, enhancing the transition to green mobility with convenient, fast-charging infrastructure.
Heat Pump Systems: Efficient heating and cooling solutions that leverage renewable energy, reducing energy costs and environmental impact.
Smart Lighting Systems: Innovative lighting solutions with remote management capabilities, optimizing energy use and enhancing safety in urban and residential areas.
Surveillance Systems: State-of-the-art security systems that offer peace of mind through high-quality surveillance technology.
Electrical Installations and Automation: Comprehensive electrical services, from installation to automation, ensuring modern, energy-efficient, and smart homes and businesses.
Energy Audits and Optimization: Professional assessments to identify energy-saving opportunities, improving efficiency and reducing expenses.
Solution and Feasibility Studies: In-depth analysis and planning services for renewable energy projects, ensuring viability and sustainability.
Technical Design and Documentation: Expert design and drafting services for photovoltaic systems, electric vehicle charging stations, and more, backed by detailed technical documentation for seamless implementation.
Drone Thermal Scanning for Energy Audits: Utilizing advanced drone technology, we offer thermal imaging scans to identify heat loss and inefficiencies in buildings and infrastructure. This service enhances our energy audits by providing precise data on thermal performance, helping clients to pinpoint areas for improvement and achieve greater energy savings.

Drone 3D Scanning for Technical Design: Our cutting-edge drone 3D scanning technology revolutionizes the way we approach technical design. By creating detailed 3D models of project sites and structures, we can enhance the accuracy of our designs, reduce planning time, and address potential issues before they arise. This technology supports our commitment to delivering efficient, innovative, and sustainable energy solutions tailored to the specific needs of each project.

State of development: Products

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Presentation link: *https://www.blacksolar.ro/*

https://www.facebook.com/black.solar.solutions/about

44.

Title: PRACTICAL SOLUTIONS FOR INCORPORATING LOW-VALUE PLASTICS INTO BUILDING SYSTEMS

Patent/project number: student project

Author/s: Andreea-Ioana CIURAR

Institution/Country: Politehnica University of Timişoara, University of Engineering Hunedoara, Romania

Category: A

Description: *In contrast to traditional recycling, these practical solutions aim to extend the life cycle of plastics without maintaining their original quality, offering sustainable alternatives for the built environment. Bricks made from melted plastic and sand can form a low-cost, eco-resilient building material. PET fibers are used as reinforcement in concrete, enhancing structural performance and durability. Recycled plastic is galvanized to create chrome-like finishes for interior and exterior surfaces. RPET synthetic insulation fibers can become an economical alternative to mineral wool for temporary shelters, contributing to a circular economy.*

State of development: Prototype

Contact: *andreea.ciurar2004@gmail.com*

Presentation link: *https://www.fih.upt.ro/v6/*

B - Nanotechnology, Advanced materials, Metallurgy, Civil engineering

1.

Title: THE USE OF THE PHASED ARRAY METHOD IN NON-DESTRUCTIVE CONTROL
Patent/project number: Doctoral research project
Author/s: Ion Florin MOCIOIU, Gabriel Valeriu GHICA
Institution/Country: National University of Science and Technology Politehnica Bucharest, Doctoral School of the Materials Science, Engineering Faculty, Dep. of Eng. and Management of Metallic Materials Production, Romania
Category: B
Description: *Phased Arrow Ultrasonic Testing (PAUT) or phased array represents an advanced technique of non-destructive control that will replace probes with a single element (non-phased array) known as monolithic probes. The method is based on the principles of probe physics that have found applications in optics and electromagnetic antennas. Monolithic probes emit an ultrasonic beam in a fixed direction, so in order to sweep (scan) the beam through the area of interest and to cover larger surfaces, the probe must be moved sideways. Phased Array Ultrasonic Testing (PAUT) uses a set of ultrasonic test probes made up of numerous small elements, each of which is pulsed individually (synchronization is computerized). The number of active elements and the delay of the emitted pulse determine the profile of the emitted ultrasonic beam. By applying appropriate delays, Phased Array technology allows the generation of an ultrasonic beam, shaping it according to the desired characteristics: aperture, angle and focus (electronic beam forming). In this way, the beam from a phased array probe can be moved and scanned electronically on an inspected part, without moving the probe.*
State of development: PhD Thessis
Contact: *florinmocioiu@icloud.com*
Presentation link: *https://upb.ro/en/*

2.

Title: PRODUCTION METHODS OF REFRACTORY COMPONENTS
Patent/project number: ISO 9001 : 2015 / SR EN ISO 9001 : 2015
Author/s: Radu BUZDUGA
Institution/Country: Refractory Design and Production Research Center, Romania
Category: B
Description: *The sharp development of the economy in our country imposed an increase in the industry of refractory products, a fact that led to the need to establish a research and design unit specific to this field, which had the mission of ensuring the modernization of the refractory industry and the assimilation of*

products necessary for the steel industry taking into account all the changes along the way, through own research efforts without the contribution of a license, know-how, etc. This is how the Design Research Center for Refractory Products Braşov came into existence in 1973, and in 1974 a branch of it was established in Alba Iulia.
In 1999, the Alba Iulia Branch became, through division, an independent company, under the name Refractory Research, Design and Production Center (CCPPR SA), having diversified micro-production activities in two workshops (a refractory production workshop and a mechanic workshop). With a rich experience in applied research, the research team of CCPPR SA Alba Iulia is the author or co-author of numerous scientific works, a number of 130 inventions, 300 research works realized through the assimilation of over 140 refractory products. CCPPR offers services for the following works:

- *assimilation of new products*
- *utilization of raw materials*
- *utilization of technological waste of various industrial processes*
- *improving the quality of current production*
- *technical assistance to users of refractory products*
- *technical assistance to manufacturers of refractory products*
- *provision of services to third parties by performing laboratory determinations:*
  - *classical chemical and roentgenographic analyses*
  - *special thermal analyses*
  - *mineralogical analyses*
  - *physical-mechanical determinations*

State of development: refractory products
Contact: *ccppr@rdslink.ro radu_buzduga@yahoo.com*
Presentation link: *https://www.ccppr.ro/*

3.

Title: AUTONOMOUS HEATING SYSTEM FOR RESIDENTIAL SPACES
Patent number: A/000356/06.07.2023
Author/s: Pavel Ştefan, Ungureanu Daniel-Viorel, Stan Daniel-Voicu
Institution/Country: Politehnica University of Timisoara, CITT Politehnica 2020, Romania
Category: B
Description: *The invention relates to an autonomous heating system for residential spaces consisting of a water heating system as a heat transfer agent and at least one induction heating recipient, an electric power generation system, and a management and distribution system for electric energy composed of a current generator for powering the induction coil of the heating system's recipient, an inverter with an accumulator, a group of photovoltaic panels, and an electric panel with a microprocessor.*
ADVANTAGES
- The installation does not use substances or chemicals that can affect the environment or human health.
- The operation of the installation is not dependent on the availability, storage, and consumption of fuel materials (gas, liquid, or solid), and therefore does not release pollutants into the environment.

- For heating the thermal agent, it uses an electromagnetic induction container (boiler/tank) with higher energy efficiency compared to fuel combustion heating methods.
- The main source of electrical energy required to power the induction coil of the boiler used for heating the thermal agent is a motor-generator group.
- The incorporated photovoltaic system is dimensioned in such a way that, depending on the location of use and the availability of seasonal solar energy, it can cover the energy needs for operating the electrical automation components and the inherent energy losses due to subunitary conversion efficiencies in the motorgenerator group.
- It uses a programmable microprocessor-based command and control system to manage installation operation and the available energy from the electric generator and photovoltaic panels.
State of development: Prototype
Contact: *pavelstefanel@gmail.com*
Presentation link: *https://www.icer.ro/*

4.

Title: RECIPIENT FOR INDUCTION HEATING ELECTRIC CENTRAL HEATING SYSTEM AND CONTROL SYSTEM FOR OPTIMIZING ITS OPERATION
Patent/project number: A/000234/10.07.2023
Author/s: Pavel Ştefan, Ungureanu Daniel-Viorel, Stan Daniel-Voicu
Institution/Country: Politehnica University of Timisoara, CITT Politehnica 2020, Romania
Category: B
Description: *The recipient for induction heating central heating systems, as per the invention, consists of a metallic body open at both ends, electrically connected to the grounding system, with mounting flanges and four to six baffles, in the form of steel bands, welded inside the body along its internal surface. Ceramic material with reinforced glass fiber fabric is poured on the exterior of the metallic body, and a coil of induction is placed inside the space formed by it through winding.*
ADVANTAGES
- *The installation does not utilise substances or chemicals that can have adverse effects on the environment or human health.*
- *Higher energy efficiency through local production of the electrical energy required to heat the thermal agent in the heating system.*
- *Real-time monitoring of the operating parameters of the installation through connection to a local Ethernet network.*
- *Greater ecological efficiency, as the installation does not store or consume conventional fuels, thereby avoiding the release of pollutants into the atmosphere or the environment.*
- *Enhanced operational safety through included electromagnetic protection measures.*

State of development: Prototype
Contact: *pavelstefanel@gmail.com*
Presentation link: *https://www.icer.ro/*

5.

Title: EXPANDING THE RAW MATERIAL BASE IN STEEL INDUSTRY
Patent/project number: Student Project
Author/s: Vasile BULEA, Mentor Ana SOCALICI
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: B
Description: *In order to apply the concepts of sustainable development, a balance must be established between the volume of raw materials used and the volume of waste that can be recovered, with positive effects on reducing the degree of pollution. It is necessary to pay particular attention to the technologies for processing recoverable waste, resulting from the current manufacturing flows and those deposited. The issue of waste management through recovery is an environmental and economic priority. The circular economy stimulates the growth of economic value while decreasing the consumption of natural resources. A particular interest is represented by the unconventional processes of recycling of powdered ferrous waste in order to obtain a product with a high content of metallic iron. The work presents the results obtained from the processing of powdered ferrous waste by briquetting / agglomeration / pelletization as well as the possibility of valorization of the by-products obtained in the steel industry.*
The by-products obtained are intended for use as a raw material in the elaboration of steel in electric arc furnaces and have an iron content of 52-78%. It is necessary to intensify the process of recovering this waste for economic, technological and environmental reasons.
State of development: Student researches project
Contact: *virginia.socalici@fih.upt.ro*
Presentation link: *https://www.fih.upt.ro/ccmti/*

6.

Title: COMPLEX SYSTEM FOR DETERMINING THE IGNITION AND BURNING BEHAVIOR OF SOLID MATERIALS IN ATMOSPHERES WITH HIGH OXYGEN CONCENTRATIONS
Patent/project number: CBI A 2022 00607
Author/s: Ghicioi Emilian, Găman George Artur, Suvar Marius Cornel, Daniel Pupăzan, Florea Daniel, Simon- Bogdan Marinica, Prodan Maria, Vass Zoltan, Burian Sorin, Nicolescu Cristian, Şuvar Niculina Sonia Gabor Dan, Nalboc Irina, Jurca Adrian, Colda Cosmin, Vlasin Nicolae, Pasculescu Vlad, Manea Florin, Pupăzan Gabriela, Păun Florin, Tuhut Ligia, Munteanu Laurentiu
Institution/Country: NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN MINE SAFETY AND PROTECTION TO EXPLOSION – INSEMEX, Romania
Category: B
Description: *The complex system for determining the ignition and burning behavior of solid materials in atmospheres with high oxygen concentrations is provided with a closed enclosure, gas sensors, temperature transducers, analytical balance, video recording cameras, for studying samples similar to those involved in fires, in order to study the combustion characteristics, ignition capacity, burning speed, mass loss, developed temperatures, self-extinguishment, depending on the value of the oxygen concentration. Through*

this complex system it is possible to obtain valid data on the ignition and burning behavior of solid materials in atmospheres with initial oxygen concentrations between 21%vol. and 100% vol., these being useful both for establishing the causes of fires in the intensive care rooms of hospitals where oxygen treatment is carried out for patients with respiratory deficiencies, as well as for selecting the types of materials used to equip the production, storage, transport facilities and use of oxygen, either industrially or medically, the results highlighting the possibility that some materials that do not ignite or burn in normal atmosphere, with 21%vol. oxygen, become flammable and burn violently at higher oxygen concentrations.
***State of development**: Research Project*
***Contact:** emilian.ghicioi@insemex.ro*
***Presentation link:** https://insemex.ro/home-en/*

7.

***Title:** NEUTRALIZATION DEVICE WITH LIQUID JET OF IMPROVISED EXPLOSIVE DEVICE (DNJLDEI)*
***Patent/project number:** CBI A 2023 00178*
***Author/s:** Ghicioi Emilian, Artur George Găman, Daniel Pupăzan, Robert Laszlo, Sorin Burian, Adrian Jurca, Dan Gabor, Angelica Nicoleta Găman, Alexandru Simion, Alin Irimia, Doru Cioclea, Maria Prodan Emeric Chiuzan, Irina Vasilica Nalboc, Andrei Szollosi, Sonia Şuvar, Edward Jan Gheorghiosu, Gabriel Dragoş Vasilescu, Attila Kovacs, Daniela Carmen Rus, Cristian Rădeanu, Ilie- Ciprian Jitea, Vlad Păsculescu, Marius Şuvar, Nicolae Vlasin, Bușoi Bogdan Garaliu, Daniel Florea, Adrian Șimon Bogdan, Ligia Tuhuț*
***Institution/Country:** NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN MINE SAFETY AND PROTECTION TO EXPLOSION – INSEMEX, Romania*
***Category**: B*
***Description:** The invention relates to a neutralization device with liquid jet of improvised explosive device (DNJLDEI), by propelling a quantity of liquid at high speeds, over 500 m/s, in the direction of the target, DEI explosive device with the help of low-explosive charges, detonated remotely. The device, consists of an assembly consisting of a reinforced metal base (mortar), provided with a carrying handle, a base that has an adjustable frame, with perforated arms and fixing screws to various degrees of inclination (from horizontal to vertical working position), having a centrally positioned cylindrical plug (reinforced around the perimeter and at the bottom) for mounting the specially shaped plastic container (cylinder equipped with legs and fixing disc with both flat closing surfaces or with one flat end and one hemispherical end), removable container, with a threaded cap, in which there is a volume of liquid, as well as a reduced charge of plastic explosive, moulded on the lower surface of the dry compartment intended for it, into which an electric detonating staple is inserted for initiation, connected to a detonator operated by an operator from a safe distance.*
***State of development:** Research Project*
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***Presentation link:** https://insemex.ro/home-en/*

8.

Title: AUTOMATED TEST STAND FOR EVALUATING OXIDATION RESISTANCE AND THERMAL SHOCK OF THERMAL BARRIER COATINGS
Patent/project number: A/00129
Author/s: Teodor-Adrian BADEA, Dan Nicolae BATALU
Institution/Country: National Research and Development Institute for Gas Turbines COMOTI, Department of Metallic Materials Science, Physical Metallurgy, National University of Science and Technology POLITEHNICA Bucharest, Romania
Category: B
Description: *An automated stand for oxidation and thermal shock testing of thermal barrier coatings is constructed using six graphite blocks comprising a heating channel with an electric heating element, cooling channels for both the sample and substrate, hot/cold exhaust channels, contact thermocouple holes for monitoring sample and substrate temperatures, a sample positioning slot, energy recovery channels, and three ventilation systems ensuring adequate hot and cold air flow.*
Advantages:

- ✓ *The automated stand allows thermal barrier coatings to undergo thermal shock and oxidation testing across a wide temperature range, from 23°C to 1600°C. It simulates realistic operating conditions while providing substrate cooling.*
- ✓ *The stand's long lifespan is ensured by the absence of mechanical or heat-sensitive components.*
- ✓ *The stand offers high energy efficiency thanks to the vertical and horizontal heat recovery channels located around the electric heating element.*
- ✓ *Allows for determining coating efficiency by tracking temperature changes on the substrate throughout the process, in correlation with the initial temperature.*
- ✓ *The automated stand provides precise and controlled cooling of the layer and substrate by adjusting airflow based on the temperature readings from the thermocouple.*
- ✓ *The permanent contact thermocouples allow for precise temperature measurements of both the sample layer and the substrate.*
- ✓ *The system provides automated precision testing along with remote control features. In a safe remote testing mode, the test can be halted by simply disconnecting the power source.*

State of development: In development
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Presentation link: *https://comoti.ro/en/home-2/*

9.

Title: PROCEDURE FOR MAKING GEOPOLIMERS BASED ON RED MUD, FLY ASH AND POWER PLANT DESULPHURATION PRODUCT FOR APPLICATIONS IN THE FIELD OF CONSTRUCTION
Patent/project number: Patent application A00156/04.04.2024
Author/s: BURDUHOS-NERGIS Dumitru-Doru, SANDU Andrei Victor, BĂLȚATU Mădălina Simona, ACHITEI Dragos-Cristian, PERJU Manuela-Cristina, BURDUHOS-NERGIS Diana Petronela, SURLEVA Andriana, VIZUREANU Petrica

Institution/Country: Gheorghe Asachi Technical University of Iasi, Romania
Category: B
Description: *The invention refers to a Process for making geopolymers based on red mud, fly ash and power plant desulfurization product by alkaline activation that have the ability to harden quickly at room temperature. The process according to the invention for making the ecological geopolymer consists of mixing two components, one solid and one liquid, whose composition is as follows: the solid component consists of 30-35% class F fly ash, 10-15% thermal power plant desulfurization product, 45-50% red mud, and the liquid component consists of Na2SiO3 solution and NaOH solution in a mass ratio between 1.25 and 1.5; the mass ratio between the liquid and solid components is between 0.65 and 0.75, and the concentration of the NaOH solution is 10M or 3M.*
State of development: laboratory
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Presentation link: *https://www.tuiasi.ro/?lang=en*

10.

Title: EXPERIMENTAL CAMPAIGN ON BIO-BASED BUILDING MATERIALS
Patent/project number: Research project
Author/s: R. Erbaşu, I. Teodorescu, D. Ţăpuşi, A.D. Sabău
Institution/Country: Technical University of Civil Engineering Bucharest, Department of Civil Engineering, Romania
Category: B
Description: *In the context of climate change, reducing gas emissions while developing new bio-based materials is crucial for establishing a sustainable economy. Following these directions, wood, in the form of glued laminated timber, together with the adhesives used, have lower global warming potential due to their ability to absorb carbon from the atmosphere making them a viable alternative for more environmentally friendly solutions.*
The experimental campaign has been made on samples of glued laminated timber elements formed by wood elements and commonly used adhesives for this composite material such as Melamine Urea Formaldehyde (MUF). The scope of the research is to find the best glue for a structure that responds to the conditions mentioned above.
The dimensions of the elements (b x h – l) considered for the experimental campaign are parallelepiped in shape, with dimensions of 600x600x20 mm.
Preliminary tests The experimental campaign has been carried out in the Geotechnics Laboratory of UTCB - Technical University of Civil Engineering Bucharest where the bio-based materials have been subjected to shear testing in an equipment created for the current research. In order to have a good system of applying the force, multiple shear boxes have been designed.
For the first box, an aluminum frame was considered adequate. In contrast, the second box was designed and constructed using steel profiles to endure the required stresses for shearing the wood sample (shear force = 5000 kPa and axial pressure = 2500 kPa).
Both systems failed because the oversizing factor was inadequate to account for the nonlinearities of the wood material. This led to the shear system's failure when encountering knots in the wood samples. Second phase of the research – final shear box. For the current experimental campaign, the final shear box

configuration which successfully withstood the applied force, was created. The tests were conducted using direct shearing equipment, with the glued laminated timber with MUF adhesive section positioned in the center of the shear box. The wooden element placed in the shear box was subjected to thermal energy from a heating device, reaching temperatures between 40°C and 120°C, facilitated by the embedded NiCr device that was analyzed in a future article. Ultimately, force was applied to the element until it reached its breaking point to determine which component – either the wooden piece or the adhesive – failed under this combination of force and high temperature.

We can conclude that this experiment has shown great qualities for some new configurations of bio-based composite materials (more specific glued laminated timber and adhesives) and the success of the system developed for testing their mechanical behavior. The application of this composite wooden element in sustainable structures can replace materials whose production is energy-intensive such as cement or steel.

State of development: This study was financially supported by GNaC_2023_ARUT "UTCB – 25"
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Presentation link: *https://utcb.ro/*

11.

Title: TIMBER ELEMENTS REINFORCED WITH POLYMER MATERIALS
Patent/project number: Research project
Author/s: I. Teodorescu, D. Țăpuși, R. Erbașu, R.O. Butucescu
Institution/Country: Technical University of Civil Engineering Bucharest, Department of Civil Engineering, Romania
Category: B
Description: *Timber elements have seen an increase in their use as building material due to their high strength properties that make them perfect for the use in buildings with great heights. For this reason, new solutions have been developed that have been analyzed in this research where glued laminated timber elements (glulam) reinforced with FRP polymer fibers have been tested in order to see the increase in strength and duration in time until final failure of the element.*
The aim of the experiment was to analyze the contribution of the polymer strengthening materials in the best solution for the combination of wood (glued laminated timber) + FRP polymer materials (Sika CarboDur S1012, Sika Wrap 230C), using various types of adhesive (SikaDur 330, SikaDur 30 and MUF). The dimensions of the elements (b x h – l) were the same for all the elements considered in the experiments (120 x 200 – 300 mm) for the first phase of the experimental campaign (Fig. 1)
Preliminary tests The experiments were carried out at the Technical University of Civil Engineering Bucharest where a combination of timber elements reinforced with polymer materials have been subjected to HECKERT 262/6 press with a force applied on the middle element until the moment of failure of the element (Fig. 2 and Fig. 3). The polymer materials have been situated between the three wooden elements. From the preliminary tests, the best combination of the materials (glulam, adhesive and polymer fibers) has been used for further experiments.
Second phase of the research – bending tests The research campaign continued with the second phase of the experiments where the best solution found in the first stage was used for beams with a opening of 4,00 m and reinforced with polymer fibers in order to analyze the behavior under tension up to the moment of

failure (Fig. 4). The tests were carried out in a large press in the form of a steel reaction frame with a numerically controlled hydraulic loading system and a digital data acquisition system.
The results obtained on reinforced glued laminated timber beams with polymer fibers were compared with a standard glued laminated timber beam, without reinforcement in order to see how the polymeric materials increase the resistance time and maximum breaking force applied on the element.

We can conclude that the creation of the new materials formed by the glued laminated timber (glulam), the adhesives and the polymer fibers with all their combinations have positive results in terms of resistance.

Together with the team of professors and doctoral students of the Technical University of Civil Engineering Bucharest and with the 2 companies that helped in the realization of the composite materials (Glulam Romania and Sika Romania) we found qualitative results.

The main result of the experimental campaign was that the strength capacity of the beams increased together with the failure time of the element when compared with the beam without FRP reinforcement.
State of development: The authors gratefully thank the research support fund of the UTCB CDI 2022 internal competition.
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Presentation link: *https://utcb.ro/*

12.

Title: *ENHANCING CLIMATE RESILIENCE AND SUSTAINABILITY THROUGH MODULARITY AND FLEXIBILITY IN ARCHITECTURAL DESIGN*
Patent/project number: Doctoral research project
Author/s: Kenza Belkhiri; Mentor: Daniel-Viorel Ungureanu
Institution/Country: Politehnica University of Timisoara, CITT Politehnica 2020, Romania
Category: B
Description: *The climate crisis has been ranked with some of the most pressing challenges of the 21st century and calls for very creative architectural responses, if a significantly different built environment is to be achieved. Extreme weather changes, depletion of resources and high temperatures would increasingly result in changes that architecture would need to make in order to better address sustainability and resilience. Modularity is based on prefabrication and standardization, which has very great benefits concerning material waste reduction, simplification of construction processes, and Circular Economy principles by means of scalability and reuse. Flexibility refers to how much a building can adapt to changing functional, environmental, and spatial requirements and lengthens the life of structures as well as reduces their chances of obsolescence. Together, these strategies direct architecture to the dual commands of climate adaptation and mitigation. Inquiry into such concepts advances transformative strategies supportive of environmental stewardship and the goals related to global resilience, thus adding to the broader discourse on sustainable architecture. This paper discusses the merits of combining flexibility and modularity by architectural practices into a strong argument for sustainable design.*
State of development: PhD Thessis
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Presentation link: *https://www.upt.ro/*

13.

Title: RECOVERY OF USEFUL METALS FROM USED LI-ION TYPE BATTERIES
Patent/project number: Doctoral research project
Author/s: Anca Vasile, Gabriel Valeriu Ghica
Institution: National University of Science and Technology Politehnica Bucharest, Doctoral School of the Materials Science and Engineering Faculty, Dep. of Eng. and Management of Metallic Materials Production
Category: B
Description: *Li-ion batteries are familiar to us, because we find them in computers, mobile phones, electric or electrified cars, etc. The abbreviation Li-ion signifies the presence of lithium (Li) in the battery along with other chemical compounds. So far, six types of Li-ion batteries have been developed: LCO/LiCoO2, NMC/LiNIMnCoO2, LMO/LiMn2O4, LFP/LiFePO4, NCA/LiNiCoAlO2, LTO/Li4Ti5O12. The first batteries launched on the market were of the LCO/LiCoO2 type, and obviously they were the first to reach the collection and recycling centers. Until 2020, the recycling and recovery of useful metals from used Li-ion batteries is carried out in an overwhelming proportion in Asia. The European Union mobilized (2020) to catch up with the Asian markets (China, Japan and South Korea) in the field of Li-ion battery recycling, establishing the European Battery Alliance (EBA). The research confirmed that the paste of LCO batteries contains Co (78.114%), while in the case of the other types of batteries, the cobalt content decreases (in NMC type batteries the cobalt content decreases to 54.174%, but Ni (12.9%) appears and Mn (7.56%). The spent Lithium-ion batteries used in this study come from mobile phones and were dismantled manually in order to extract the cathode material. The spent LIBs were discharged completely in a salt solution for 1h and dismantled manually to separate the cathode materials coated on the Aluminum foil. The ultrasonic cleaning machine (Emmi12-HC) used has the following technical specifications: housing – stainless steel, cleaning frequency = 45 kHz; cleaning time = 1–60 min; volume = 1.2 l; heating temperature = 20–80 °C; ultrasonic power = 50/75/100 W. The ultrasonic cleaning process is based on the phenomenon of ultrasonic cavitations. The paper proposes a method for separating the active paste with cobalt content from the cathode aluminum foil, by ultrasonication in a lactic acid environment and transforming it into a salable product – the cobalt blue pigment. LCO battery paste was found to contain Co (78.114%), while in NMC battery paste, the cobalt content decreases to 54.174%, but Ni (12.936%) and Mn (7.569%) appear. Spent Li-ion/LCO battery paste, containing cobalt, can be efficiently recovered and recovered through a salable product – cobalt blue (CoAl2O4); Considering the high price of the pigment (~27 USD/100g), the material costs of the cathode paste from used Li-ion batteries, plus alumina, lactic acid and the reduced consumption of the ultrasonic process open favorable prospects for the recovery of cobalt from used LCO batteries*
State of development: PhD Thessis
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Presentation link: *https://upb.ro/en/*

14.

Title: PROCESS FOR OBTAINING ORGANIC-INORGANIC HYBRID PEROVSKITE MATERIALS
Patent/project number: A/00545/03.10.2023

Author/s: P. Sfirloaga, I. Balcu, D. Buzatu, C. Macarie, L. Cernescu
Institution/Country: National Institute for Research and Development in Electrochemistry and Condensed Matter, Timisoara, Romania
Category: B
Description: *The invention refers to a process for obtaining organic-inorganic hybrid materials based on sodium polyacrylate (C3H3NaO2)n functionalized with perovskite materials of the LaMnO3 type, doped with 1% Ag, by the wet trituration method at room temperature.*
The process according to the invention consists of mixing the precursors in a mass ratio of 80:1, 40:1, respectively 20:1 (Sodium polyacrylate:Perovskite) in distilled water. The resulting hydrogels were dried in a forced convection oven, at a temperature of 60 °C, for 12 hours. After the first drying stage, the polymer-perovskite hybrid materials were mortared until a homogeneous mixture with small grain size (up to 1 mm) was obtained and subsequently they were subjected to another drying stage at a temperature of 60 °C, for 4 hours.
State of development: patent application.
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Presentation link: *https://incemc.ro/en/*

15.

Title: PROCESS FOR OBTAINING HYBRID MATERIALS BASED ON POLYVINYLPYRROLIDONE FUNCTIONALIZED WITH PEROVSKITE STRUCTURES
Patent/project number: A/00577/19.10.2023
Author/s: P. Sfirloaga, A. E. Cata, I. M. C. Ienascu, A.-E. Lazar, N.-S. Tolea
Institution/Country: National Institute for Research and Development in Electrochemistry and Condensed Matter, Timisoara, Romania
Category: B
Description: *The invention refers to a process for obtaining hybrid materials based on polymer (polyvinylpyrrolidone) functionalized with perovskite structures of the LaMnO3 type doped with Pd, in an aqueous medium at a temperature of 80 °C by magnetic stirring. The process according to the invention consists of mixing the precursors in a mass ratio of 80:1, 40:1, respectively 20:1 (Polyvinylpyrrolidone:Perovskite) and dispersing them in distilled water. The resulting suspensions were magnetically stirred for 2 hours while maintaining the temperature of 80 °C, at 400 rpm. The viscous mixtures obtained were deposited in thin films with thicknesses of 2-5 mm on a flat surface (polypropylene foil) and dried at room temperature for 12 hours.*
State of development: patent application.
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Presentation link: *https://incemc.ro/en/*

16.

Title: ROOT CAUSE ANALYSIS OF A HEAT EXCHANGER FAILURE
Patent/project number: Research Project

Author/s: Lucas Jacoby, Jona Weiblen, Maximilian Hülsewede; Mentors: Dr. rer. nat. Gabriela Marginean, Prof. Dr.-Ing. Klaus Mecking, M. Eng. Dino Woelk
Institution/Country: Westphalian University of Applied Sciences, Institute of Mechanical Engineering, Germany
Category: B
Description: *This project investigates a failure due to a crack present in a heat exchanger using Root Cause Analysis (RCA). Using metallurgical and mechanical investigations, stress concentrations at a defective weld were identified as primary cause of those cracks. Based on the results the design and manufacturing process were improved to prevent future failures. A heat exchanger showed leakage at the fixed bearing shortly after commissioning. A transverse crack, propagating from the outside inward, was identified. To determine the root cause, we conducted dye penetrant inspection, laser scanning microscopy, microstructural analysis (SEM), hardness testing, and mechanical design evaluation on the sample.*
State of development: research project
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Presentation link: *https://www.en.w-hs.de/*

17.

Title: GREEN METHOD FOR OBTAINING SILVER NANOPARTICLES-BASED DISPERSION USING NARINGENIN AS REDUCING AGENT
Patent/project number: A/00635/31.10.2023 Core Program TEX-PEL-CHALLENGE 2026, Project number PN 23 26 01 04, acronym Tex4Age
Author/s: Lite Mihaela-Cristina, Chirilă Laura, Popescu Alina
Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Category: B
Description: *The method refers to an ecological process for producing silver nanoparticles in a stable dispersion, using the flavonoid compound called naringenin. The obtained dispersion exhibits antibacterial properties, demonstrated when deposited on textile fabrics (cotton and wool). The advantages of the invention include reduction of toxicity, environmental-friendly reducing agent, constant chemical composition, reproducibility of the synthesis, accessibility, ecological raw materials, without toxic potential for human or animal health, simple technological process, without additional stages of purification, extraction or filtration of the raw material.*
State of development: Application patent; Experimental model
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Presentation link: *https://incdtp.ro/proiecte.html*

18.

Title: COMPARISON OF WEAR RESISTANCE OF THERMALLY SPRAYED WC-Co-Cr COATINGS FROM RECYCLED POWDERS AND CONVENTIONAL WC-Co-Cr COATINGS
Patent/project number: Master's thesis

Author/s: Dino Woelk and Dr. Gabriela Marginean
Institution/Country: Westfälische Hochschule (Westphalian University of Applied Sciences), Department of Mechanical Engineering, Environmental Engineering and Building Services Engineering, Germany
Category: B
Description: *In the past, various coatings were used to protect components from wear and extend their service life. Coating materials based on composite carbides, such as WC-CoCr (high-velocity flame sprayed), are frequently used for this purpose. However, metals like Co or Ni pose significant health risks in addition to their energy-intensive manufacturing process, making it necessary to reduce their consumption and use. One way to conserve resources is by utilizing filter dust materials.*
In this study, for example, filter dusts were reused for coating deposition. The recycled material consisted of 80% WC-Co/WC-Co-Cr, with the remaining particles being a mixture of various carbides and oxides. To characterize the applicability of such coatings, hardness measurements, determination of the elastic modulus by nanoindentation, and friction wear tests (pin-on-disc) were conducted. A conventional HVOF-coated WC-Co-Cr coating served as a reference.
State of development: Master's thesis
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19.

Title: BERD: The Bio-Eco Rock Development
Patent/project number: 008/2025
Author/s: Thipok Tungsiripat, Alisa Triwitayakorn, Pataraphol Vanichvatana, and Napapim Yugala (Mentors: Komed Nachaeng, Asst. Prof. Anyaporn Boonmahitthisud, Jerasak Jitrotjanarak)
Institution/Country: Chulalongkorn University Demonstration Secondary School, Shrewsbury International School Bangkok, Thailand
Category: B
Description: *Bio-Eco Rock Development (BERD) is an innovative upcycled green composite material developed using agro-wastes, including coffee chaff, tea leaves, rice husks, macadamia nutshells, and scrap wood as fillers. BERD offers distinctive aesthetics and patterns while maintaining a lightweight and durable composition, making it suitable for a wide range of material applications. The processing of agro-waste for BERD requires specific adjustments of moisture condition and particle size to ensure uniformity during mixing. BERD's formulation consists of 40 wt% agro-waste combined with 50 wt% polyester resin, 10 wt% calcium carbonate, and a reaction catalyst. Extensive material properties testing, including tensile strength, impact strength, flexural strength and flammability, revealed that scrap wood provides superior toughness and strength compared to macadamia nutshells, coffee chaff, rice husks, and tea leaves. Furthermore, macadamia nutshells and tea leaves exhibited resistance to flame spread, whereas scrap wood, coffee chaff and rice husks did not. This innovative upcycled green composite material has the potential to advance sustainable production and consumption while driving the growth of a sustainable materials industry.*
State of development: Finished Product

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Presentation link: *https://youtu.be/0VKj6CwxmIA?si=hWF7uyIVPewWCLsz*

20.

Title: PRELIMINARY RESEARCH ON THE REDUCTION OF ZN CONTENT IN ELECTRIC STEEL DUST
Patent/project number: Research project
Author/s: Ioana FĂRCEAN, Erika ARDELEAN, Laura STRUGARIU
Institution/Country: Politehnica University Timisoara, Faculty of Engineering Hunedoara, Romania
Category: B
Description: *Steel dust is among the main steel waste frequently generated by the steel processing stream in electric arc furnaces. This waste results from the process of dedusting the gas emissions generated during the elaboration, so that at the level of the steel industry, the quantities in which it is generated are significant (10-25kg per ton of processed steel). Therefore, it is essential to find solutions to harness its intrinsic value, given its useful element content, while also reducing industrial pollution.*
The importance of this type of waste lies in its high Zn content, which is of interest to the non-ferrous industry, and its Fe content, which makes it suitable for use in the steelmaking process.
The difficulties encountered in the process of recovering steel dust in the steel industry are represented by the high degree of fineness and the high Zn content (exceeding 15%), a characteristic that makes it unsuitable for recovery within the respective industry. Given its high Zn content, a method for reducing or removing Zn from steel dust is proposed. Preliminary results are promising, making this waste suitable for recovery in the metallurgical industry.
State of development: Research project
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21.

Title: INVESTIGATIONS ON CELLULOSIC FIBERS FOAMS CAPABILITY TO BE USED IN SOUNDPROOFING LARGE-SCALE APPLICATIONS
Patent/project number: UDJG Research Grants GI_RF_2475/2024, GI_RF_9418/2023 and GI_RF_3646/2021
Author/s: Silviu Marian NASTAC, Petronela NECHITA, Maria Violeta GUIMAN, Mirela IANA ROMAN
Institution/Country: Dunarea de Jos University of Galati, Research Centre for Mechanics of Machines and Technological Equipment and Transilvania University of Brasov / Romania
Category: B
Description: *This study presents an innovative highly porous materials based on cellulose fibers, using foam forming technique, and intended to soundproofing applications. Being from renewable resources, biodegradable and recyclable in the paper waste value chain, this type of materials provides a competitive alternative to actual petroleum-based foam materials/composites, currently and widely used in sound*

insulation. The results indicate that bio-composite materials based on foam and cellulose fibres provide acoustics insulation performances at comparative or higher level to the commercial products large scale used nowadays.
State of development: product, TLR 4
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Presentation link: *https://www.ugal.ro/*

22.

Title: CUTTING-EDGE ENGINEERING SOLUTIONS FOR SUSTAINABLE CONSTRUCTION THROUGH EFFICIENT USE OF LOCAL INDUSTRIAL BY PRODUCTS
Patent/project number: PN 23 35 04 01
Author/s: *Baeră Cornelia, Gruin Aurelian, Vasile Ana-Cristina, Bolborea Bogdan, Ion Alexandru, Varga Luiza, Barbu Alexandra Marina*
Institution/Country: NIRD URBAN-INCERC Timisoara Branch, Romania
Category: B
Description: *This study aims to provide a comprehensive perspective on developing innovative engineering solutions for eco-intelligent construction products with advanced functionality – encompassing materials, structural elements, models, and technologies.*
The focus is on efficiently and strategically utilizing by-products and waste generated by local industries, aligning with the National Strategy for Research, Innovation, and Smart Specialization 2022-2027, which supports the transition to a Circular Economy (EC).
The entrepreneurial sector within the construction industry and related fields plays a key role in this research, demonstrating direct interest in two main areas: 1. Integrating developed construction products into future production processes through the technological transfer of research outcomes. 2. Implementing efficient recycling solutions for industrial waste and by-products (such as mineral powders, sludge, and artificial aggregates) to promote ecological production cycles and close the sustainability loop.
Additionally, policymakers, administrative bodies, and academic institutions are actively engaged in the research process, supported by national and European strategies advocating for environmental protection and sustainability.
State of development: Acknowledgement - This work was carried out within Nucleu Programme of the National Research Development and Innovation Plan 2022-2027, supported by MCID, "ECODIGICONS" project no. PN 23 35 04 01: "Fundamental-applied research into the sustainable development of construction products (materials, elements, and structures, as well as methods and technologies) that utilizes current national resources to enhance the eco-innovative and durable aspects of Romania's civil and transport infrastructure", financed by the Romanian Government.
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23.

Title: ***ADVANCING SUSTAINABLE CONSTRUCTION: OPTIMIZING POURED EARTH MATERIALS FOR STRUCTURAL PERFORMANCE AND DURABILITY***

Patent/project number: PN 23 35 04 01

Author/s: Gruin Aurelian, Baeră Cornelia, Bolborea Bogdan, Vasile Ana-Cristina, Ion Alexandru, Barbu Alexandra Marina

Institution/Country: NIRD URBAN-INCERC Timisoara Branch / Romania

Category: B

Description: *This research project investigates poured earth construction as a sustainable and eco-friendly alternative to conventional cement-based materials. The technique utilizes earth materials bonded by clay particles, mimicking the natural formation of concrete while providing significant environmental benefits, including recyclability, reduced carbon footprint, and improved hygrothermal regulation. By leveraging locally available materials, this method aligns with sustainable building practices and promotes resource efficiency.*

The construction process involves pouring a controlled mix of local earth, sand, gravel, and potential stabilizers such as Portland cement or alternative additives into formworks to create both load-bearing and non-load-bearing structures. This approach simplifies construction techniques and reduces reliance on high-energy industrial materials. However, despite its advantages, technical challenges such as shrinkage control, durability, and mechanical performance remain key areas of concern that require further study.

One promising avenue of research is the incorporation of dispersants in earth-based compositions. Experimental results indicate that dispersants can improve settlement control and enhance mechanical strength, potentially mitigating some of the shrinkage-related issues. Further investigation is needed to determine the optimal water-to-dispersant ratio to maximize these benefits. Additionally, preliminary findings suggest that lignin, a naturally occurring polymer, acts as a stabilizing agent, improving the overall strength of the material. Future studies should explore various lignin concentrations and potential combinations with other additives to enhance durability and performance.

Given these findings, continued research efforts are essential to better understand and optimize earth-based materials for construction applications. Future work should focus on refining material compositions, testing long-term durability, and evaluating large-scale applications in diverse environmental conditions. The results of this ongoing research will provide critical insights into the feasibility and practical implementation of poured earth construction, paving the way for its integration into modern, sustainable building practices

State of development: Acknowledgement - This work was carried out within Nucleu Programme of the National Research Development and Innovation Plan 2022-2027, supported by MCID, "ECODIGICONS" project no. PN 23 35 04 01: "Fundamental-applied research into the sustainable development of construction products (materials, elements, and structures, as well as methods and technologies) that utilizes current national resources to enhance the eco-innovative and durable aspects of Romania's civil and transport infrastructure", financed by the Romanian Government.

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Presentation link: *https://incd.ro/sucursala-timisoara/*

24.

Title: THE INFLUENCE OF CERTAIN ADDITIVES ON THE STRENGTH OF CONCRETE IN SALINE ENVIRONMENTS
Patent/project number: Laboratory research
Author/s: Mihail Chira, Carmen Teodora Florean, Brăduț-Alexandru Ionescu, Tudor Panfil Toader
Institution/Country: NIRD URBAN-INCERC Cluj-Napoca Branch / Romania
Category: B
Description: *The sea is the main source of saline water with a salt concentration of about 3.5%. Sodium chloride causes corrosion of concrete steel reinforcement and surface efflorescence. At low concentrations the chloride ion has little effect on the stability of the concrete structure, but causes corrosion of the reinforcing steel. At high concentrations and low temperature, chlorine ion ingress causes expansion and cracking of the concrete. Degradation is usually accompanied by the formation of calcium oxychloride salts. The mechanism of this destruction is due to the thermal transformation of calcium oxychloride salts: 3CaOCaCl·15H2O to CaOCaCl·2H2O.*
The addition of ascorbic acid in small quantities and of silicon dioxide to the concrete mass leads to an increase in the compressive strengths of specimens maintained in 3.5% salt water. The use of additions of silicon dioxide and ascorbic acid in reduced quantities influences the compressive strength.
State of development: Laboratory
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Presentation link: *https://incd.ro/sucursala-cluj-napoca/*

25.

Title: SMART AND ECO-INNOVATIVE COMPOSITE MATERIALS: INTEGRATING SELF-CLEANING CAPABILITIES AND ADVANCED RESISTANCE TO MICROORGANISMS FOR SUSTAINABLE APPLICATIONS
Patent/project number: PN 23 35 05 01
Author/s: Alexandra Csapai, Adrian-Victor Lăzărescu, Andreea Hegyi
Institution/Country: NIRD URBAN-INCERC Cluj-Napoca Branch, Romania
Category: B
Description: *Production of paving block elements produced using the concept of alkaline activation of fly ash and to present results on specific physical and mechanical characteristics. At the same time, to maximize the potential of generating smart-eco-innovative character, different types of aggregates were used to produce these elements, as well as the use of TiO2 nano-particles into the geopolymer matrix. Finally, the present work aims to highlight an LCA calculation of the resulting CO2 equivalent emissions by comparison with similar elements produced using traditional materials (cement) and a cost-benefit analysis of the results obtained.*
Life Cycle Assessment of geopolymer paving blocks underscores their potential as a sustainable alternative in the construction industry. While they show positive environmental attributes, ongoing research, standardization, and collaboration within the industry are necessary to optimize their production processes and further enhance their overall sustainability. Additionally, collaboration between researchers, industry

professionals, and policymakers is vital to promoting the widespread adoption of geopolymer paving blocks as a sustainable construction solution.

State of development: Acknowledgement - This work was carried out within Nucleu Programme of the National Research Development and Innovation Plan 2022-2027, supported by the Romanian Ministry of Research, Innovation and Digitalization - MCID, "ECODIGICONS" project no. PN 23 35 05 01: "Innovative sustainable solutions to implement emerging technologies with cross-cutting impact on local industries and the environment, and to facilitate technology transfer through the development of advanced, eco-smart composite materials in the context of sustainable development of the built environment"

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26.

Title: RE-USE OF BLAST FURNACE SLAG WASTE AND THE INFLUENCE ON MECHANICAL STRENGTH

Patent/project number: PhD Thesis

Author/s: Carmen Teodora FLOREAN, Mihail CHIRA, Brăduț Alexandru IONESCU, Adrian-Victor LĂZĂRESCU

Institution/Country: NIRD URBAN-INCERC Cluj-Napoca Branch, Romania

Category: B

Description: *Blast furnace slag waste is composed of silicates, aluminosilicates and calcium-aluminate silicates resulting from smelting, welding or other metallurgical processes resulting from the burning of impurities from treated metals or minerals. The resulting slag originates from iron production in blast furnaces involving coke and limestone. The slag floats on the surface of the molten metal, keeping it clean, then cools to a solid form.*

Research results showed that: in case of using aggregates from recycled slag waste it is observed that the highest amount of slag leads to the lowest bulk density, as this slag was introduced both as a substitute for natural 0/4 mm and 4/8 mm sort aggregates; tailings ponds near steel mills can be reduced through intensive exploitation and the environmental impact reduced; recycled slag waste, used in the design and realization of cementitious composites for the construction industry, can contribute significantly to reducing pollution and stimulating eco-innovation.

State of development: Doctoral research project

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Presentation link: *https://incd.ro/sucursala-cluj-napoca/*

27.

Title: COMPRESSIVE STRENGTH OF GEOPOLYMER PASTE WITH ADDITIONS AT DIFFERENT TEST AGES

Patent/project number: PN 23 35 05 01

Author/s: Brăduț-Alexandru Ionescu, Carmen Teodora Florean, Mihail Chira, Tudor Panfil Toader, Adrian-Victor Lăzărescu

Institution/Country: NIRD URBAN-INCERC Cluj-Napoca Branch, Romania
Category: B
Description: *Geopolymers have gained significant attention as sustainable alternatives to traditional cement-based materials due to their lower carbon footprint and excellent mechanical properties. The compressive strength of geopolymer paste plays a crucial role in determining its applicability in construction. This study investigates the influence of various material additions on the compressive strength of geopolymer paste at different test ages, providing insights into the long-term performance and optimization of these eco-friendly binders.*
This study demonstrates that the type and proportion of additions significantly influence the compressive strength of geopolymer paste over time. Understanding these effects is essential for optimizing geopolymer formulations for specific applications, ensuring durability and structural performance. Further research will explore long-term properties and durability aspects to enhance the practical use of geopolymers in sustainable construction.
State of development: Acknowledgement - This work was carried out within Nucleu Programme of the National Research Development and Innovation Plan 2022-2027, supported by the Romanian Ministry of Research, Innovation and Digitalization - MCID, "ECODIGICONS" project no. PN 23 35 05 01: "Innovative sustainable solutions to implement emerging technologies with cross-cutting impact on local industries and the environment, and to facilitate technology transfer through the development of advanced, eco-smart composite materials in the context of sustainable development of the built environment"
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28.

Title: IMPACT OF CARBON DIOXIDE ON THE PROCESS OF MAKING DURABLE CONCRETE ELEMENTS
Patent/project number: Laboratory research
Author/s: Tudor Panfil Toader, Ioan Nicolae Scurtu, Călin Grigore Radu Mircea, Marta-Ioana Moldoveanu, Aurelia Bradu
Institution/Country: NIRD URBAN-INCERC Cluj-Napoca Branch, Romania
Category: B
Description: *The construction industry is a significant contributor to carbon dioxide (CO2) emissions, and through the carbonation reaction, achieved by the reaction of CO2 with alkaline reactants (calcium hydroxide (Ca(OH)2) leading to the formation of stable carbonates, namely calcium carbonates (CaCO3), which are used in the CO2 exposure conditioning stage of precast plain concrete elements. This promising method to capture carbon from the atmosphere has a global economic market potential of more than $350 billion and has the potential to reduce annual CO2 emissions by up to 3x109 tons by 2030.*
The realization of accelerated carbonation of precast elements highlights the mechanisms, the factors influencing this process, the industrial benefits, the applicability of accelerated carbonation and solutions for large-scale implementation. The need for further research is indicated in order to achieve theoretical maximum carbonation maxima and to improve the reaction kinetics in the production of sustainable and cost-effective building materials.

State of development: Laboratory
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29.

Title: THE INFLUENCE OF EXTERNAL RISKS IN THE SENSITIVITY ANALYSIS OF CONSTRUCTION WORKS
Patent/project number: PN 23 35 05 01
Author/s: Mircea-Iosif Rus
Institution/Country: NIRD URBAN-INCERC Cluj-Napoca Branch, Romania
Category: B
Description: *Sensitivity analysis in construction activity is an essential process for assessing the impact of different variables or factors on a construction project. This analysis is important in order to understand how changes in key parameters can influence the final results of the works such as costs, delivery times or construction quality. The assessment of external risks in construction sensitivity analysis is a crucial aspect of the construction planning and management process. External risks are factors which cannot be directly controlled by the project team but which can significantly influence the success of a construction works. These risks need to be identified and assessed in order to understand how they may affect the cost, schedule and quality of the works.*
The assessment of external risks in the sensitivity analysis is essential to ensure the success of a construction project because by correctly identifying, assessing and managing these risks, project teams can reduce their impact and ensure that the project is delivered on time, on budget and to quality requirements. This approach contributes to a minimization of uncertainty and improved decision-making in construction project management
State of development: Acknowledgement - This work was carried out within Nucleu Programme of the National Research Development and Innovation Plan 2022-2027, supported by the Romanian Ministry of Research, Innovation and Digitalization - MCID, "ECODIGICONS" project no. PN 23 35 05 01: "Innovative sustainable solutions to implement emerging technologies with cross-cutting impact on local industries and the environment, and to facilitate technology transfer through the development of advanced, eco-smart composite materials in the context of sustainable development of the built environment"
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30.

Title: WALL CONSTRUCTION SYSTEM BASED ON UNFIRED CLAY
Patent/project number: RO 134241 B1
Author/s: Gabriela CĂLĂTAN, Andreea HEGYI, Henriette SZILAGYI, Vasile MEIȚĂ
Institution/Country: NIRD URBAN-INCERC Cluj-Napoca Branch, Romania
Category: B

Description: *The building system for the walls based on unfired clay is composed of the following elements: bricks, masonry mortar and plaster, respectively finishing tiles, being realized of a mixture of clayey soil, sand and hydrated lime. The purpose of this invention is to provide a complete and environmentally friendly solution for making unfired clay-based walls. The novelty of this invention consists in reducing, until eliminated, the risk of poor jointing between bricks, masonry mortars, plastering or finishing, while also providing the advantage of reducing the environmental impact of pollutants.*
The unfired clay wall system is used in order to obtain new types of structures, that have a low impact on the environment.
Claim no. 1. Bricks based on unfired clay 200x100x50 mm.
Claim no. 2. Mortar for masonry and plaster for unfired clay surfaces.
Claim no. 3. Finishing plaster based on unfired clay.
Claim no. 4. Wall construction system based on unfired clay
State of development: Prototype
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Presentation link: *https://incd.ro/sucursala-cluj-napoca/*

31.

Title: COMPOSITE THERMAL INSULATION PANELS WITH SHEEP WOOL CORE, PRODUCTION METHODS AND EXECUTION
Patent/project number: RO 133842 B1
Author/s: Andreea HEGYI, Henriette SZILAGYI, Carmen DICO, Vasile MEIȚĂ
Institution/Country: NIRD URBAN-INCERC Cluj-Napoca Branch, Romania
Category: B
Description: *The invention refers to composite thermo-insulating panels with sheep wool core, including production methods and execution.*
The innovative nature of this patent application derives from the removal of mattress products' disadvantages, by embodying the mattress sheep wool core in a composite shell based on inorganic binders principle. In addition, following the execution process, which provides the arrangement of mineral wool strips between two adjacent panels, the re-use of mineral wool waste - a product that is not biodegradable, with a positive impact on the environment - is achieved.
The purpose of the wool composite thermo-insulating panels is to increase the thermal insulation and thermal comfort properties in buildings, enclosed spaces for industrial or agro-zootechnical activities.
Claim no. 1. Composite thermal insulation panels with sheep wool core.
Claim no. 2. Production methods of the composite thermal insulation composite panels.
Claim no. 3 Execution of composite insulating panels with sheep wool core, with insulating material (mineral wool) waste strips insertions, in order to reduce the risk of thermal bridges.
State of development: Prototype
Contact: *andreea.hegyi@incerc-cluj.ro*
Presentation link: *https://incd.ro/sucursala-cluj-napoca/*

32.

Title: SUSTAINABLE SOLUTIONS FOR GARDEN FURNITURE
Patent/project number: Student Project
Author/s: Cerasela Litica, Mentor Ana Socalici
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara
Category: B
Description: *Using recycled materials in landscape design contributes to waste reduction by repurposing resources that would otherwise be discarded. This approach aligns with the principles of a circular economy, in which materials are continuously reused and recycled, thereby minimizing reliance on new raw materials and reducing overall waste generation.*

The integration of recycled rubber into landscaping projects represents a strategic effort towards reducing rubber waste and promoting a circular economy. This approach repurposes materials that would otherwise contribute to landfill overcrowding, assigning them a new function in urban spaces. Recycling used rubber for household items and outdoor applications presents a sustainable solution that reduces waste. For instance, discarded tires can be processed into durable furniture, such as chairs and tables, offering an environmentally friendly alternative to conventional materials. By incorporating recycled rubber into functional everyday objects, environmental impact is reduced, and the use of reusable materials is promoted. This approach provides both aesthetic and practical solutions for homes and outdoor spaces. Furthermore, it underscores the significance of innovation in recycling and sustainability by transforming a problematic material into a valuable resource. Using recycled materials decreases the demand for extracting and processing new resources, activities that often contribute to environmental degradation. Recycling and repurposing rubber in landscaping projects help lower the ecological footprint associated with the production of new construction materials. Integrating recycled materials into landscape design exemplifies the principles of a circular economy, in which products and materials remain in use for as long as possible. This strategy not only reduces waste by extending resource lifespans but also encourages sustainable production and consumption systems.
State of development: Student researches project
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Presentation link: *https://www.fih.upt.ro/ccmti/*

33.

Title: ADDITIVE TECHNOLOGIES USING HIGH POWER LASERS SOURCES
Patent/project number: Doctoral research project
Author/s: RUSU Andrei-Cosmin; Mentor: GHICULESCU Liviu Daniel
Institution/Country: National University of Science and Technology Politehnica Bucharest
Category: B
Description: *Additive manufacturing includes a list of laser processing techniques according to standard (BS ISO 17296-2:2015). Direct Energy Deposition (DED) is a laser processing technique that allows manufacture complex geometries using a series of steps. These steps start with modeling the part in Computer Aided Design (CAD) softwares followed by introducing the created part in a specialized software for creating the G-code then export the code to the machine and set specific parameters. Lastly, we need to*

check if all the components of the machine we are using is all right and then we can start printing the 3D part. Recently, there is a trending using numerical simulation softwares for finding starting parameters for physical experiments. In that way we can short the research time for finding the right parameters for the experiment. Using build in modules for Heat Transfer and Deformed Geometry combined with Time Dependent study we created a model which simulates cladding height and thermal distribution. Physico-thermal properties for the solid material powder was studied before creating the simulation. Also, the numerical program takes into account parameters like laser power, cladding speed, powder feed rate and powder utilization rate.

State of development: Doctoral research project

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Presentation link: *https://upb.ro/istoric-upb/*

34.

Title: PHASE CHANGE MATERIALS COMPOSITE PANEL WITH HIGH THERMAL EFFICIENCY

Patent number: RO 126853 B1/30.07.2013

Author/s: Diaconu Bogdan Marian, Cruceru Mihai, Gorun Adrian, Popescu Georgeta Luminița

Institution/Country: University „Constantin Brâncuși" from Târgu-Jiu, Romania

Category: B

Description: *The invention relates to an exterior wall construction element that ensures more efficient energy management for heating and air conditioning, compared to conventional (Sandwich-type) walls for modular constructions. The novel feature of the invention lies in the integration of two layers impregnated with phase change materials (PCM) with different phase transition temperatures (PTT) into its structure. The exterior layer – exposed to the ambient environment – is impregnated with a phase change material with a PTT around 20 °C, while the interior layer – exposed to the living space – is impregnated with a different type of PCM, with a PTT of approximately 25 °C. The exterior layer is active during the heating season, while the interior layer is active during the season requiring energy for air conditioning.*

State of development: Prototype

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Presentation link: *https://icdi.utgjiu.ro/centrul-de-transfer-tehnologic/*

35.

Title: MULTI-PURPOSE HEAT GENERATING EQUIPMENT WITH HEAT STORAGE

Patent/project number: PhD thesis

Author/s: Lajos Vásárhelyi (Szigliget)

Institution: Idea Club 13 Association, Hódmezővásárhely - HUNGARY

Category: B

Description: *A tube spiral built into a closed system boiler, in which liquid flows and heats it up, delivering the heat to the heating elements. Although this solution can also be used for hot air production and heating*

State of development: product

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Presentation link: ***https://otletclub.5mp.eu/web.php?a=otletclub***

36.

Title: RESISTIVE SENSOR FOR RELATIVE HUMIDITY
Patent application: A/00476, 28.01.2022
Authors: ŞERBAN Bogdan - Cătălin, BUIU Octavian, COBIANU Cornel
Institution/Country: National Institute for Research and Development in Microtechnologies – IMT Bucharest, Romania
Category: B
Description: *This patent application refers to the development of a resistive relative humidity (RH) sensor, employing a sensing layer based on a binary nanocomposite comprising oxidized carbon nanohorns (CNHox)–tannic acid, oxidized carbon nanoonions (CNOox)) - tannic acid or ternary nanocomposite comprising oxidized carbon nanohorns (CNHox), oxidized carbon nanoonions (CNOox), and tannic acid. The RH sensor includes a Si/SiO2 substrate, interdigitated electrodes, and a sensing layer obtained via spin coating. The RH monitoring capability of the sensing layers was investigated by applying a current between the two electrodes and measuring the voltage at different values of the oxygen concentration to which the sensing layer was exposed. The resistance of the sensitive layer varies with the RH level.*
State of development: Patent application
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Presentation link: ***https://www.imt.ro/***

37.

Title: INNOVATIVE USE OF SHEEP WOOL AND POLYURETHANE FOAM FOR OBTAINING MATERIALS WITH SOUND-ABSORBING PROPERTIES
Patent/project number: Patent OSIM no.: RO136050- B1/30.05.2024
Author/s: Nemeş Ovidiu, Borlea (Mureşan) Simona Ioana, Tiuc Ancuța-Elena, Deak Gyorgy
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: B
Description: *The aim of this work was to obtain materials with sound-absorbing properties using sheep wool and rigid bicomponent polyurethane foam. Were obtained four materials composed of three layers, a layer of sheep wool previously processed by hot pressing at 80°C and 5 MPa, with final thicknesses of 2, 4, 6 and 12 mm; a layer of rigid bi-component polyurethane foam, with a thickness of 8....37 mm and a transition layer, 1...20 mm thick, resulting from the migration of polyurethane foam during the multilayer panel manufacturing process into the wool layer and/or the migration of wool into the polyurethane foam layer. Wool and polyurethane foam are the combination of sound insulation and sound absorption - wool absorbs sound and reduces it, and due to the rigid structure of polyurethane foam (closed pore structure), it does not allow sound to travel further, resulting in sound insulation. The obtained materials have very good sound absorption properties with acoustic absorption coefficient values over 0.7 for the frequency range 800 ÷ 3150 Hz; the results prove that the sheep wool has a comparable sound absorption performance to that of mineral wool.*

State of development: patent, scientific paper, research project
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Presentation link: https://www.utcluj.ro/en/

38.

Title: PROCESS OF MANUFACTURING CUSTOMIZED MULTI-STRUCTURE MEDICAL IMPLANTS BY ADDITIVE MANUFACTURING TECHNOLOGIES
Patent/project number: Patent OSIM no.: RO132908- B1/28.02.2024
Author/s: Leordean Vasile Dănuț, Radu Sever-Adrian, Cosma Sorin-Cosmin, Cuc Stanca, Vilău Cristian, Rusu Mircea-Aurelian-Antoniu
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: B
Description: *The invention is related to the development of a process (technology) for manufacturing customized implants, made of biocomposite material, reinforced with metallic structures made by SLM. The obtained implants of the multi-structure type (metal / biocomposite) are individualized for a patient and can prosthesis any area of the human bone system. It is based on CT data from which to extract the 3D model of the affected area. The final shape and the resistance structure (metal reinforcement) of the future implant it will result by using the CAD + FEA programs. The manufacture consists of two stages. The first uses two AM technologies - using SLM the metal reinforcement is made and, by SLS and Vacuum Casting is manufactured the silicone rubber mould that will form the final implant. In the second stage - the reinforcement is inserted into the silicone mould and by means of casting/injection (depending on the material recipe) the final customised implant is made.*
State of development: patent, scientific paper, research project
Contact: Liliana.Pop@staff.utcluj.ro
Presentation link: https://www.utcluj.ro/en/

39.

Title: SHEEP WOOL BASED MODULAR PANEL AND THE METHOD USED FOR OBTAINING IT
Patent/project number: Patent OSIM no.: RO135991- B1/30.05.2024
Author/s: Dénes Tünde-Orsolya, Tămaș-Gavrea Daniela-Roxana, Iştoan Raluca, Tiuc Ancuța Elena, Manea Daniela Lucia, Vasile Ovidiu
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: B
Description: *The invention relates to a modular panel based on sheep wool fibers, and the method of obtaining it, in order to meet the requirements of quality in construction regarding noise protection and the sustainable use of natural resources. Each module consists of a triple layered panel, having a composition similar to that of sandwich panels. The structure of the layered panel is made of two outer layers of hydrated lime-based plates, which delimit a mattress made of sheep wool fibers placed between them.*
The weighted sound reduction index of the modular panel is Rw (C;Ctr) = 38 (-2, -8) dB.

The layered panels have high sound absorption coefficient values at low frequencies. The maximum value is 0.90 at the frequency of 524 Hz.
The coefficient of thermal conductivity of the layered panels is 0.077 W/mK.
State of development: patent, scientific paper, research project
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Presentation link: *https://www.utcluj.ro/en/*

40.

Title: SOFA SIDE MADE BY THERMOFORMING PROCESS AND ITS ACCOMPLISHING PROCESS
Patent/project number: Patent OSIM no.: RO133392 -B1/29.03.2024
Author/s: Ciupan Cornel, Filip Ioan, Cionca Ioan, Ciupan Emilia
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: B
Description: *The invention relates to the structure of a sofa side made of composite material based on natural fibers (hemp 50-60%) mixed with polypropylene (40-50%).*
The material is obtained by interweaving. The sofa side has the shape of a box and is made up of an inner shell, an outer shell and a rib that is mounted between the two shells. It replaces a classic side made mainly of wood which was made up of 21 pieces. The process presents the phases and parameters of thermoforming of the three components and the way of assembling them. The thermoforming process consists of the following phases: tailoring, heating to 210-220°C, transfer to the core mold and calibration by pressing with the cavity mold. After cooling, the piece is extracted from the mold and it is finished on the contour.
State of development: patent, scientific paper, research project
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Presentation link: *https://www.utcluj.ro/en/*

41.

Title: ECOLOGICAL ROAD CONCRETE BASED ON CEMENT, GLASS POWDER AND AGGREGATES FROM RECYCLED CONCRETE WASTE FOR APPLICATIONS IN THE FIELD OF CONSTRUCTIONS "BcR_G"
Patent/project number: Patent OSIM no.: RO137345- B1/30.07.2024
Author/s: Corbu Ofelia-Cornelia; Puskas Attila
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: B
Description: *The road concrete of the invention is an environmentally friendly concrete composed of natural aggregates (NA), recycled concrete aggregates (RCA) and waste glass powder form (WGP) that replaces part of Portland cement, RCA and WGP as an alternative to conventional materials. The concrete design was carried out so that, in addition to other durability characteristics, a remarkable resistance to abrasion was obtained. It falls into the resistance class BcR5. The microstructure and compositional characteristics of the concrete were also investigated, to confirm the efficiency of WGP. This new composite offers several advantages in terms of reducing existing and potential volumes of mineral waste both*

economically and visually, reducing pollution and minimizing the consumption of natural resources and energy. By applying it in the construction industry, it makes it possible to move from a linear economy to a circular economy.
State of development: patent, scientific paper, research project
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Presentation link: *https://www.utcluj.ro/en/*

42.

Title: ULTRASONIC WELDABILITY OF COMPOSITES CREATED THROUGH ADDITIVE MANUFACTURING
Patent/project number: research project
Author/s: Emilia DOBRIN, Gabriela-Victoria MNERIE, Ileana Lavinia SÎRBU
Institution/Country: Faculty or Electrical and Power Engineering, Politehnica University of Timisoara, Romnia
Category: B
Description: *Ultrasonic welding is a sustainable and non-toxic joining process widely utilized by leading industrial manufacturers and aligned with European circular economy regulations. This study investigates the ultrasonic welding behavior of additively manufactured composites reinforced with materials such as glass fiber, Kevlar (K), and copper wire. These composites are structured in a sandwich configuration with varying reinforcement types and welded using ultrasonic technology. The welded samples were analyzed and compared to the base material through non-destructive (NDT) and destructive testing, including visual inspection, microscopic and macroscopic analysis, tensile testing, hardness testing, and bending tests. The results provide insights into the mechanical performance and structural integrity of ultrasonic-welded, additively manufactured composites.*
State of development: Prototype
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Presentation link: *https://www.upt.ro/Universitatea-Politehnica-Timisoara_en.html*

43.

Title: RESEARCH ON SUBMERGED FRICTION STIR PROCESSING OF ROLLED AND CAST ALUMINIUM ALLOYS (PART 1 OF THE PROJECT "RESEARCH ON THE PROPERTIES MODIFICATION OF METALLIC MATERIALS BY USING THE ECOLOGICAL AND INNOVATIVE METHOD OF SUBMERGED FRICTION STIR PROCESSING")
Patent/project number: project PN 23 37 01 02 / 2023-2026 (part 1/2023-2024), Program Nucleu ISIM Timişoara PN ISIM 2023-2026, cod PN 23. 37, Advanced research on the industry of the future - InnoSIM
Author/s: Lia-Nicoleta Boţilă, Ion-Aurel Perianu, Iuliana Duma
Institution/Country: National Research and Development Institute for Welding and Material Testing – ISIM Timisoara, Romania
Category: B

Description: *Research on underwater friction processing (SFSP) of rolled and cast aluminium alloys represent the first part of the project PN 23 37 01 02, carried out in the period 2023-2024. Research on SFSP processing addressed rolled aluminium alloys EN AW 1200, EN AW 5754, EN AW 6082 and EN AW 7075 with a thickness of 3-5mm, as well as cast alloys EN AC 5083 with a thickness of 5-6mm. SFSP processing of aluminium alloys was carried out in a single pass or in multiple passes and aimed at changes in their microstructure (grain refinement), hardness and mechanical properties, as well as changing the degree of deformability of the material in the processed area. The research results show the possibility of obtaining favourable results in SFSP processing of aluminium alloys.*
State of development: research project
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Presentation link: *https://owa.isim.ro/ro/cercetare-dezvoltare/programul-nucleu/programul-nucleu-pn-23-37-2023-2026/pn23-37-01-02*

44.

Title: PROCESS FOR SINTERING POWDERS USED IN THE MANUFACTURE OF ELECTRICAL CONTACTS
Patent/project number: A/00448/30.07.2024
Author/s: Sorin Vasile Savu, Ionel Dănuț Savu, Nicușor-Alin Sîrbu
Institution/Country: National Research and Development Institute for Welding and Material Testing – ISIM Timisoara
Category: B
Description: *The invention relates to a sintering process dedicated to the construction of electrical contacts used in electrotechnics and in particular in the energy industry. The process envisages the mechanical alloying of commercial starting powders of W, Cu and Cr using a microwave field assisted microwave plasma conditioning applicable to a composite material.*
The process for sintering the powders used for making electrical contacts according to the invention comprises: unidirectional microwave calcination of the raw composite material by applying a high-frequency electromagnetic field in a continuous mode after the material has been previously preheated by argon plasma in the microwave field, the plasma being obtained by ionizing the space between the raw material and a 3 mm diameter tungsten electrode, the process being carried out in a protective argon environment.
State of development: concept
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Presentation link: *www.isim.ro*

45.

Title: COMPOSITE MATERIAL FOR DENTAL RESTORATION BASED ON METAL OXIDE NANOPARTICLES AND PHOSPHATE MATERIAL WITH IMPROVED ANTIMICROBIAL PROPERTIES AND METHOD OF OBTAINING IT
Patent/project number: A00727/2024

Author/s: Radu Claudiu Fierascu, Roxana Ioana Brazdis (Matei), Irina Fierascu, Toma Fistos, Anda Maria Baroi, Lia Mara Ditu
Institution/Country: National Institute for Research and Development in Chemistry and Petrochemistry –ICECHIM Bucharest, Romania
Category: B
Description: *The present invention relates to a composite material with improved antimicrobial properties, compared to the base material (glass ionomer cement) without negatively affecting the physical and mechanical properties, intended for use in dental applications, consisting of the solid phase - aluminofluorosilicate glass with particle size below 25 µm and a material with strong antimicrobial character, namely phosphate material as the hydroxyapatite type in which calcium is substituted with copper or zinc (in ratios Ca: substituted metal 1..5:0..4) previously decorated with phytosynthesized metal oxide nanoparticles using plant extracts from the Lamiaceae family.*
State of development: Laboratory scale
Contact: *fierascu.radu@icechim.ro*
Presentation link: *https://icechim.ro/en/*

46.

Title: SUSTAINABLE SOLUTIONS FOR GARDEN FURNITURE
Patent/project number: Student Project
Author/s: Cerasela Litica, Mentor Ana Socalici
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: B
Description: *Using recycled materials in landscape design contributes to waste reduction by repurposing resources that would otherwise be discarded. This approach aligns with the principles of a circular economy, in which materials are continuously reused and recycled, thereby minimizing reliance on new raw materials and reducing overall waste generation. The integration of recycled rubber into landscaping projects represents a strategic effort towards reducing rubber waste and promoting a circular economy. This approach repurposes materials that would otherwise contribute to landfill overcrowding, assigning them a new function in urban spaces. Recycling used rubber for household items and outdoor applications presents a sustainable solution that reduces waste. For instance, discarded tires can be processed into durable furniture, such as chairs and tables, offering an environmentally friendly alternative to conventional materials. By incorporating recycled rubber into functional everyday objects, environmental impact is reduced, and the use of reusable materials is promoted. This approach provides both aesthetic and practical solutions for homes and outdoor spaces. Furthermore, it underscores the significance of innovation in recycling and sustainability by transforming a problematic material into a valuable resource. Using recycled materials decreases the demand for extracting and processing new resources, activities that often contribute to environmental degradation. Recycling and repurposing rubber in landscaping projects help lower the ecological footprint associated with the production of new construction materials. Integrating recycled materials into landscape design exemplifies the principles of a circular economy, in which products and materials remain in use for as long as possible. This strategy not only reduces waste by extending resource lifespans but also encourages sustainable production and consumption systems.*

State of development: Student researches project
Contact: *cerasela.litica@student.upt.ro*
Presentation link: *https://www.fih.upt.ro/ccmti/*

47.

Title: POSSIBILITIES FOR VALORIZATION OF IRON ORE WASTE IN INDUSTRY
Patent/project number: PhD Thesis
Author/s: Adriana Bobora, Ana Socalici
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: B
Description: *The Carbofer process represents a viable solution for utilizing powdery wastes (tailings from the mining industry, sludges and dust from the steel industry, slags resulting from secondary steel treatment, etc.) generated by the steel and mining industries. The steel industry produces significant quantities of powdery wastes rich in iron and carbon, a substantial portion of which is still being landfilled. Some of these wastes can be successfully used to produce the Carbofer by-product. This product is used as a foaming agent for slag in steel production, thereby recycling the waste in a manner that is environmentally, technically, and economically sustainable. The Carbofer product is also effectively used in blast furnaces for pig iron production. The experiments and tests were conducted in the laboratories of the Faculty of Engineering in Hunedoara. The resulting Carbofer by-product is a material used for slag foaming in the steelmaking process within electric arc furnaces. Working with foaming slag is a common practice in electric furnaces. To produce the Carbofer by-product, a series of wastes are used. By reusing these wastes in the steel production flow, economic, technological, and ecological advantages are obtained (reducing the quantities of waste landfilled). In industrial practice, in steelmaking aggregates, the use of the Carbofer by-product, which has a high content of C and Fe, ensures a good dissolution of FeO in the slag. This results in a good oxidation of carbon in the molten bath and an intense foaming of the slag, thus ensuring the operation with a covered arc. The laboratory results regarding the production of the Carbofer mechanical mixture support its viability as an optimal recycling solution for the analyzed powdery wastes in the steel industry.*
State of development: Doctoral researches project
Contact: *gulasadriana@yahoo.com*
Presentation link: *https://www.fih.upt.ro/ccmti/*

C - Computer sciences, Electronics and Electrical engineering

1.

Title: INFRARED RULER
Patent/project number: A/00388/2024
Author/s: Şaptebani Neta Ionelia, Mocan Liviu Marian, Dragan Florin, Ivascu Larisa, Pislaru Marius
Institution/Country: Politehnica University of Timisoara, Romania, "Gheorghe Asachi" Technical University of Iasi, Romania
Category: C
Description: *The invention relates to an infrared ruler used for measuring linear dimensions. This is achieved by wrapping an electrically heated conductor wire around an assembly of insulating plates, with a centrally located metal plate cooled by forced ventilation or cooling elements. Alternatively, the wire can be arranged on an insulating structure with compartments through which a cooling fluid circulates, either in a single compartment or in systems with opposing or multiple flows, ensuring the uniformization of the thermal field.*
The ruler is useful in research and design, allowing measurements of thermal zones in heating-cooling systems, optimizing air flows, designing and thermally optimizing electrical and electronic circuits, as well as other equipment that requires temperature management.
State of development: Developed
Contact: Şaptebani Neta Ionelia *neta-ionelia.saptebani@student.upt.ro*
Presentation link: *https://www.upt.ro/Universitatea-Politehnica-Timisoara_en.html*

2.

Title: STAND FOR STUDYING THE IGNITION OF EXPLOSIVE GAS MIXTURES BY CORONA EFFECT
Patent/project number: CBI A 2022 00706
Author/s: Emilian Ghicioi, Irina Nalboc, Artur George Gaman, Daniel Pupazan, Maria Prodan, Nicolae Vlasin, Doru Cioclea, Sorin Burian, Robert Laszlo , Cristian Nicolescu, Daniel Florea, Adrian Jurca, Adrian Simon, Dan Gabor, Vlad Pasculescu, Sonia Suvar, Andrei Szollosi, Florin Manea, Ligia Tuhut, Cosmin Colda, Marius Suvar, Emeric Chiuzan, Zoltan Vass

Institution/Country: NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN MINE SAFETY AND PROTECTION TO EXPLOSION - INSEMEX
Category: *C - Computer sciences, Electronics and Electrical engineering;*
Description: *Currently, both nationally and internationally, there are several activities and processes in the industry that use flammable gases under pressure, the most well-known being natural gas and hydrogen.*
There have been technological incidents involving such flammable gases, which were released from pressurized containers or pipelines, escaped into the atmosphere (air), and self-ignited, apparently without any external ignition source.
The invention allows for obtaining the following specific information regarding the mixture of flammable gas with air: the formation of the ion channel (corona effect), the induction time for ignition, and the propagation of the flame front in the unburned mixture.
The data obtained with the help of the stand designed for studying the ignition of explosive gas mixtures through the corona effect are useful for evaluating the explosion hazards and risks associated with industrial facilities where flammable gases under pressure are processed, stored, or used.
These findings can help develop preventive measures against corona effect ignitions in the event of accidental gas leaks.
State of development: Research Project
Contact: *emilian.ghicioi@insemex.ro*
Presentation link: *https://insemex.ro/home-en/*

3.

Title: KOATEEN: A GAMIFIED MOBILE HEALTH APP TO PROMOTE BALANCED NUTRITION AND HEALTHY HABITS IN TEENAGER
Patent/project number: 000825052
Author/s: Arefa Latisya Putri Fiskiawan, Audrey Syafa Azzahra, Alyssa Aulia Putri Wahyudi, Naura Sayyidatina Ramaditya, and Neysa Zahra Maulida
Institution/Country: SMA Thursina IIBS Malang, Indonesia
Category: C
Description: *Koateen is a gamified mobile health app that helps teenagers build healthy habits in a fun way. It tackles issues like unrealistic beauty standards, poor nutrition, and inactivity with interactive features like KoaJournal for tracking, KoaFacts for health tips, KoaChef for recipes, and KoaFit for workouts. More than a tracker, Koateen is a personal coach – offering reminders, goals, and rewards to keep teens motivated.*
With an engaging design and science-backed approach, Koateen makes healthy living simple and fun. Stay active, eat well, and thrive with Koateen!
State of development: Product
Contact: *youngscientist.iysa@gmail.com* ***+62 882 1324 8890***
Presentation link: *https://bit.ly/hi.koateen.vid*

4.

Title: "SEA BEDDER" INNOVATIVE MAPPING TOOL TO MITIGATE CORAL REEF DAMAGE FROM SHIP ANCHORING PRACTICES USING AIS DATA FOR EFFECTIVE CONSERVATION STRATEGIES
Patent/project number: Patent no. EC002024250700
Author/s: Risala Sujat Swara, Novi Istiyani, Nikken Permata Rahmasari
Institution/Country: Diponegoro University, Faculty of Engineering, Naval Architecture Engineering, Indonesia
Category: C
Description: *Sea Bedder is an innovative AIS (Automatic Identification System)-based mapping solution designed to prevent coral reef damage caused by unregulated ship anchoring. By leveraging real-time data and geospatial analysis, Sea Bedder guides vessels to safe anchoring zones, protecting fragile marine ecosystems while promoting sustainable tourism and responsible maritime practices.*
The project aims to enhance marine conservation efforts, support coastal communities that rely on eco-tourism, and contribute to global sustainability goals such as SDG 14: Life Below Water. Scalable and adaptable, Sea Bedder integrates technology, environmental protection, and economic sustainability, offering a practical solution to safeguard coral reefs in high-traffic marine areas.
State of development: Prototype
Contact: *youngscientist.iysa@gmail.com* ***+6288213248890***
Presentation link:
our video presentation: *https://youtu.be/XYBRbfSeWUo?si=2eP7iYUHYBtDQ80l*
our slide deck: *https://drive.google.com/file/d/1YAguvx-woDVdIm514I7X_XlZw1BTvWHg/view*
our product video:
https://drive.google.com/file/d/1jBbXoykK0ZhEfnsPoEiy4M7CjkhTPqDh/view?t=3
Mapping system:
https://drive.google.com/file/d/1KzFSWt5uqEKBOJC87LLQXLSTS1dbtqz0/view
our certificate of intellectual property (IP):
https://drive.google.com/file/d/1z02IvksFoI7xIzltHScoW2n8_aq-jVFH/view

5.

Title: ECONOMICAL SYSTEM FOR AUTOMATIC ADJUSTMENT OF THE POWER FACTOR, WITH CAPACITOR BANKS, IN THREE-PHASE LOW-VOLTAGE INSTALLATIONS
Patent number: A/00491/04.08 2020
Authors: Gabriel Nicolae Popa, Corina Maria Dinișa, Iosif Popa
Institution/Country: Politehnica University Timișoara, Faculty of Engineering Hunedoara
Category: C
Description: *The invention relates to an economical system for automatic regulation of the power factor with capacitor banks in three-phase low-voltage installations. The technical problem is the design of an economical system of automatic regulation of the power factor, with capacitor banks, for three-phase low*

voltage installations, which uses a three-phase static electronic power relay common to all stages of capacitor banks, to improve the power factor in three-phase low-voltage installations. It consists of a current transformer (which measures current in a phase), a VAR-metric controller with microprocessor, two small capacity PLCs, a three-phase static electronic power relay, twelve electromagnetic contactors and six capacitor banks.
State of development: laboratory prototype
Contact: Gabriel Nicolae Popa; Telephone: 0040254207541 Email: gabriel.popa@fih.upt.ro
Presentation link: https://www.fih.upt.ro/v6/

6.

Title: METAL GLAND FOR LARGE DIAMETER ELECTRICAL CABLES
Patent number: 133730/30.04.2024
Authors: Dan Ciortea, Gabriel Nicolae Popa
Institution/Country: Politehnica University Timişoara, Faculty of Engineering Hunedoara, Romania
Category: C
Description: *The invention relates to a single-body metal gland intended for sealing large diameter cables or metal pipes, when passing them through the wall of an enclosure. The gland consists of the metal body, the toroidal chamber with filling - emptying valve, the rubber gasket and the locking nut. In the body of the gland is a rubber chamber with valve. The rubber chamber with the valve is the sealing element between the outer surface of the electric cable and the inner surface of the gland body. An inert gel is inserted under pressure into the rubber chamber which inflates the toroidal chamber to its maximum contact with the outer surface of the cable or pipe. The deformation of the toroidal chamber allows the perfect sealing regardless of the geometry of the large section electric cable.*
State of development: concept
Contact: Gabriel Nicolae Popa; Telephone: 0040254207541 Email: gabriel.popa@fih.upt.ro
Presentation link: https://www.fih.upt.ro/v6/

7.

Title: AUTOMATIC SIPHON INSTALLATION
Patent number: A/00492/04.08.2020
Authors: Popa Gabriel Nicolae, Popa Iosif
Institution/Country: Politehnica University Timişoara, Faculty of Engineering Hunedoara, Romania
Category: A
Description: *The invention relates to a hydraulic installation which can be used to transfer a liquid between two basins, the first for storage and the second for feeding consumers, located at different levels at which the route of the supply pipe must pass, due to natural causes, over the water level in the accumulation basin. The hydraulic flow pump is used for a short time, and the principle of the siphon is*

used to transfer the liquid. The proposed installation has the role of transferring the liquid between two basins by achieving a significant saving of electricity. The hydraulic installation is connected between three basins: two main basins and one for filling and aeration of small capacity. The control of the siphon system can be done with microcontroller or PLC.
State of development: laboratory prototype
Contact: Gabriel Nicolae Popa; Telephone: 0040254207541 Email: gabriel.popa@fih.upt.ro
Presentation link: https://www.fih.upt.ro/v6/

8.

Title: DRY CYLINDRICAL-TYPE ELECTROSTATIC PRECIPITATOR WITH PARALLELEPIPED HOUSING
Patent number: 132976/30.04.2024
Author: Gabriel Nicolae Popa
Institution/Country: Politehnica University Timişoara, Faculty of Engineering Hunedoara, Romania
Category: A
Description: *The invention relates to a dry cylindrical-type electrostatic precipitator with a parallelepiped housing, according to the invention, for low power plants that used fossil fuels or dry wood. The first two sections work on the electrostatic principle. The precipitator consists at the bottom, a gas distributor, two electric sections connected in series (without changing the gas flow), used to collect dust particles with larger diameters, which can be supplied from two high-voltage sources, which can operate at different voltage levels, and even with different forms of voltage. The collecting electrodes are cylindrical-type and the discharge electrodes can be uninsulated or insulated. The third collection section consists of an electrostatically charged fiber filter for collecting small particles.*
State of development: concept
Contact: Gabriel Nicolae Popa; Telephone: 0040254207541 Email: gabriel.popa@fih.upt.ro
Presentation link: https://www.fih.upt.ro/v6/

9.

Title: HEARTBEAT SMARTPHONE AUDIO CLASSIFICATION USING DEEP LEARNING, SAUDI ARABIA 2024
Patent/project number: Student Project
Author/s: Mohamed Omer, Musab Alosaimi
Institution/Country: College of Applied Sciences, Al Maarefa University, Saudi Arabia
Category: C
Description: *Kingdom of Saudi Arabia faces serious health challenges due to the high death rates from heart diseases, where it ranks 24th globally in this context. This necessitates enhancing health care and community awareness. In addition, the country is witnessing a spread of respiratory and obstructive pulmonary diseases, which requires enhancing awareness and taking preventive measures to address these*

ongoing health challenges. The core Concept of Utilizing Deep Learning for Smartphone Audio Classification of Heartbeat Signals is a mobile App designed to listen to and analyze heart and lung sounds aims to detect health changes early, offering immediate reassurance to users. By facilitating communication with medical professionals, it fosters early detection, thereby streamlining healthcare and enhancing overall well-being effortlessly.

State of development: concept

Contact: *nradwan@um.edu.sa*

Presentation link: *https://www.um.edu.sa/en*

10.

Title: DIGITAL TRANSFORMATION - AN APPROACH IN THE OIL AND GAS INDUSTRY IN A LOCAL, REGIONAL AND GLOBAL CONTEXT

Patent/Project number: Scientific paper

Author/s: Valentin-Paul TUDORACHE, Niculae-Napoleon ANTONESCU

Institution/Country: University PETROLEUM-GAS of Ploiesti, Romania

Description: *In a new era where organizations in the oil and natural gas industry are increasingly focusing - in their business - on reducing expenses and increasing productivity, digital transformation is one of the key solutions in terms of streamlining technological processes in this sector very important for humanity. Digitization not only improves efficiency, but plays a key role in the safety and security of exploration, exploitation and development in this field and beyond - it helps both to address other fundamental operational areas and to achieve the goal of reducing carbon dioxide emissions.*

The authors, under the auspices of the Romanian Academy of Scientists (AOŞR,) the General Association of Romanian Engineers (AGIR) and the Romanian Academy of Technical Sciences (ASTR), through this scientific paper highlight the fact that oil and gas organizations must understands that digital transformation is an important part of where this industry is headed. Organizations also have to deal with this big change, first of all they have to effectively manage the organizational change that digital transformation inevitably brings.

State of development: Scientific paper

Contact: *valentin.tudorache@yahoo.com* **+40724259520**

Presentation link: *https://aos.ro/wp-content/anale/TVol15Nr2Art.8.pdf*

11.

Title: ASPECTS REGARDING OF OIL SLUDGE CLEANING FROM CRUDE STORAGE TANKS USING ROBOTS

Patent/Project number: Scientific paper

Author/s: Valentin-Paul TUDORACHE, Niculae-Napoleon ANTONESCU

Institution/Country: University PETROLEUM-GAS of Ploiesti, Romania

Description: *One of the problems of the oil industry is the accumulation of sludge at the bottom of crude oil storage tanks. Oil sludge obtained from crude oil storage tanks is a semi-solid waste. It is actually a complex emulsion made up of numerous petroleum hydrocarbons, water and solid particles or mineral impurities from the rock. Oil sludge is generated during the storage of crude oil production, but also during the transportation, storage, and refining of*

crude oil. Through its nature - organic and inorganic, dark brown / black in color and semi-fluid physical state - it is a very dangerous waste, as it includes many poisonous substances, such as: polycyclic aromatic hydrocarbons, xylene, benzene, ethyl benzene, toluene, but also metals heavy. Therefore, oil sludge deposition is a dynamic, long-term, and ever-changing process. The authors, under the auspices of AOȘR and AGIR, present - through this scientific paper - a modern technology used for the successful cleaning of oil sludge from crude oil storage tanks and, obviously, it can be a recommendation for organizations in the oil industry.

State of development: Scientific paper

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Presentation link: *https://aos.ro/wp-content/anale/TVol16Nr1Art.7.pdf*

12.

Title: UPCYCLING PLASTIC FOR 3D PRINTING TO CREATE BRAILLE LANGUAGE RESOURCES

Patent/project number: 3D printer project

Author/s: Vartolomei Nicoleta, Tănasă Simina*, Pîrvu Andrei

Institution/Country: Technological High School of Targu Ocna, Romania

Category: C

Description: *Braille is an incredibly important accessibility aid, and yet it is left out of our home projects simply because of a lack of knowledge. With the help of 3D printers, we can create different shapes, puzzles, objects and much more. But we can also use them for much better purposes. This project supports and gives blind children the chance to learn to read the "Braille" alphabet much easier, and not only, geometric shapes and much more. They are made with a tactile Braille system on the front surface, allowing blind people to read and interpret information by touch.*

3D printers – initially only available to science labs and a small number of privileged designers – are becoming more affordable and useful for the general public, with one problem: the printing material is far too expensive.

The overall objective of the project is the creative use of collected unwanted plastic materials and reintroducing them into a new cycle, beneficial in protecting the environment by making filament for 3D printers and creating accessible resources for those who use Braille language.

State of development: Product

Contact: *tanasa.simina@yahoo.com* ***+0744508653***

Presentation link: *https://liceultehnologictgocna.ro/*

13.

Title: WASTE MATERIALS SUSTAINABLE IN A NEW TEXTILE CONCEPT AND 3D TEHNOLOGY

Patent/project number: 3D printer project

Author/s: Andrei PÎRVU

Institution/Country: Technological High School of Targu Ocna, Romania

Category: C

Description: *The main problem comes when the products reach the end of their life, that is, when they leave the wardrobe and end up, most of the time, in the landfills.*
Sustainability in the fashion industry is the commitment to practices that minimize the negative impact on the environment and society. It means using recycled or sustainable materials, reducing production and waste, ethical working conditions and social responsibility, all for the benefit of future generations." Sustainable consumption does not, implicitly, imply giving up consumption, but rather implies a change in consumer behavior, it emphasizes the concerns regarding qualitative aspects at the expense of quantitative ones.
The aim of the research is the recycling of textile materials giving them a new life and their customization with the help of a 3D printer using a recycled pet filament with the motivation to adopt more circular practices all with the aim of reducing the impact on the environment.
This type of materials are in an overwhelming proportion, over 90%, reusable in the same form, or as raw material for other clothing elements. Through the 3D printing technique, they can be easily transformed into ideal elements for future clothing elements, depending on the nature of the material and its degree of use.
State of development: Product
Contact: *tanasa.simina@yahoo.com* ***+0744508653***
Presentation link: *https://liceultehnologictgocna.ro/*

14.

Title: ELECTRICAL DISCHARGE DEPOSITION TECHNOLOGY AND EQUIPMENT
Patent/project number: PhD thesis
Author/s: IUGA Ana-Cristina, Ghiculescu Liviu-Daniel
Institution/Country: National University of Science and Technology POLITEHNICA Bucharest, Faculty of Industrial Engineering and Robotics, Romania
Category: C
Description: *Electrical Discharge Deposition (EDD) is a cost-effective hybrid coating technology that enhances surface properties through electric spark-assisted material transfer. Using a setup similar to Electrical Discharge Machining (EDM), EDD employs a high-wear electrode and a dielectric medium (air or liquid) to deposit durable coatings on conductive substrates.*
Experimental findings highlight applications in aerospace, biomedical implants, and tooling, where wear-resistant and corrosion-proof coatings are essential. While EDD offers high adhesion and material efficiency, challenges remain in process stability and uniformity, requiring further research.
The research discusses equipment enhancements, such as improved electrode design and automated control systems, to enhance deposition precision and scalability.
State of development: Doctoral research project
Contact: *iugaanacristina@gmail.com*
Presentation link: *https://upb.ro/istoric-upb/*

15.

Title: RESEARCH AND CONSTRUCTION OF INNOVATION TO REDUCE AIR HUMIDITY BY APPLING ELECTRIC FIELD INTENSITY ENERGY
Patent/project number: Research project
Author/s: Siseerot Ketkaew
Institution: Faculty of Engineering, Ramkhamhaeng University, Thailand
Category: C
Description: *This research project presents research and construction of innovation to reduce air humidity by appling electric field intensity energy consists of 2 parts: Part 1, a set of high-intensity non-uniform electric field cells with the corona discharge process to cause ionization to break the bonds of water molecules for use in reducing the relative humidity in the air using the technique of adjusting the high voltage voltage in the high voltage circuit to control the intensity of the electric field, and Part 2 is a set to reduce the amount of ozone gas using an ultraviolet light with a wavelength of 253.7 nm. Part 1 has designed and construction a set of electric field cells consisting of a corona wire placed between two aluminum plates and High voltage flyback converter circuit consists of a high frequency pulse generator using IC number 555 for adjusting the electric field intensity from 5 kV/cm to 25 kV/cm under the adjustment of a high voltage of 1 kilovolt to 5 kilovolts, respectively, by using a pulse signal to stimulate the work of the IGBT to control the operation of high-frequency high-voltage transformers to produce high voltage electricity for supplying electrical energy to a set of electric field cells. The test results were that when measuring the relative humidity in the air, it was found that the electric field intensity was 25 kV/cm at a wind speed of 1 m/s able to reduce the amount of relative humidity in the air by 50%RH and produce 1 ppm of ozone gas in the electrical laboratory, area size 20 square meters, in 60 minutes, and in the set to reduce the amount of ozone gas, it will be found the amount of ozone gas produced by the electric field set will be reduced to 0.01 ppm. This research has passed the overall power consumption analysis test and analyze safety standards regarding electrical leakage for the safety of users, It is already completed and in the future it can be further developed into a commercial innovation.*
State of development: Developing innovations towards commercialization
Contact: Siseerot Ketkaew *siseerot@hotmail.com*
Presentation link: *http://www.eng.ru.ac.th/*

16.

Title: THE IMPACT OF INTERNATIONAL REGULATIONS ON THE LIGHTING AND ENERGY EFFICIENCY MARKET
Patent/project number: Student Project
Authors: Students: Gabor Antonio, Petruț Adriana Coordinators: Mihaela Ştefan, Ioana Fărcean
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: C

Description: *In addition to macro-economic developments, regulations affecting lighting products are a key determinant of the future of the lighting market. One regulation is to ban inefficient technologies, the other is to adopt stricter laws on high energy efficiency requirements and provide incentives for the development of a comprehensive infrastructure. Bans on certain technologies are increasingly being adopted by various countries, including residential lighting and commercial lighting products. For example, China has updated the Proclamation on Banning Incandescent Light Bulbs, backed by the Energy Conservation Law. Europe is also further accelerating the shift to more green lighting sources by extending its regulations to ban the use of low-voltage halogen lamps. International regulations on lighting products aim to set clear standards for their energy efficiency, safety and environmental impact, thereby helping to reduce energy consumption and protect the global environment. This study aims to analyze the impact of international regulations on the lighting market, in particular in terms of banning inefficient technologies and adopting stricter energy efficiency laws. It also explores how switching to green technologies such as LEDs can make a significant contribution to reducing energy consumption and protecting the environment.*
State of development: Student project
Contact: *antonio.gabor@student.upt.ro*
Presentation link: *https://www.fih.upt.ro/ccmti/*

17.

Title: SIGN TRANSLATOR
Patent/project number: Student Project
Author/s: Deșan Dumitru; Mentor: physics teacher Ciuvaga Victor
Institution/Country: Public Institution "Constantin Stere" Theoretical High School, Soroca, Republic of Moldova
Category: C
Description*: Sign Language Translator is an innovative wearable device designed to facilitate communication for individuals with hearing impairments.*
In addition to its primary function of translating sign language gestures into text, the translator offers multiple advanced features:

- *Real-time gesture recognition – detects and interprets hand movements instantly.*
- *Wireless communication – transmits the translated text to a smartphone via Bluetooth.*
- *OLED display integration – provides immediate on-screen feedback for the user.*
- *Portable and user-friendly design – ensures accessibility and ease of use.*

By combining flex sensors, Arduino processing, and Bluetooth connectivity, this device enables seamless interaction between the deaf community and those unfamiliar with sign language. Future enhancements, such as machine learning integration and speech output, aim to make the system even more accurate and efficient, further breaking communication barriers.
State of development: prototype
Contact: +37369584872 *dumitrudesan@gmail.com*
Presentation link:
https://docs.google.com/presentation/d/1LQcjua6Ro6ZY12vFc8z4H_xDNHuro1uA43z-uPBjZMk/edit?usp=sharing

18.

Title: THE INTELLIGENT INTERSECTION
Patent/project number: Student Project
Author/s: Tofan Cezar; Mentor: physics teacher Ciuvaga Victor
Institution/Country: Public Institution "Constantin Stere" Theoretical High School, Soroca, Republic of Moldova
Category: C
Description: *This project focuses on developing an AI-driven Smart Intersection system to optimize urban traffic flow, enhance road safety, and improve energy efficiency. By replacing traditional fixed-timer traffic signals with real-time adaptive controls, the system dynamically adjusts traffic lights based on live conditions, reducing congestion by over 30% and improving pedestrian safety through automatic detection of incoming vehicles. The solution integrates advanced sensors, vehicle-to-infrastructure (V2I) communication, and a mobile app for real-time traffic updates and user feedback. Additionally, it is designed to be scalable and compatible with smart city infrastructure, making it a sustainable and future-proof innovation. Key innovations include AI-powered traffic signal management, automated pedestrian and vehicle detection, resource optimization through real-time adjustments, and seamless integration with urban mobility networks. The project follows a structured development process, from research and system design to technical implementation, testing, and optimization. By improving traffic coordination, minimizing accidents, and optimizing energy use, the Smart Intersection system contributes to a more efficient, safer, and sustainable urban environment.*
State of development: prototype
Contact: +37369363864 *cezar.6tofan@gmail.com*
Presentation link: *https://www.ltcstere.md/index.php/ro/*

19.

Title: QSI – QUICK SOUND INTERFACE.
Authors: Larisa-Maria Gîdei, Alexandru David Buşoi, Eduard Raul Grădinaru; Mentor: Prof. Mihaela SOPINCEAN
Institution/Country: „Iancu de Hunedoara" National College, Romania
Category: C
Description: *qSI is an appliance for rapid recording of sound intensity, used to measure sound power in a classroom. To build the device, we used an ESP 32 microcontroller from Groundstudio, a KY audio sensor, and a 128×64 OLED display that operates via SPI. For programming, we used Arduino for data storage and a Python script that monitors Serial outputs and then writes them to a CSV file. qSI represents a device for rapid recording of sound intensity in a typical classroom. At the moment, only one set of data has been recorded, with its effects and outcomes presented in the display poster. In the future, we will study sound intensity using two devices simultaneously, so that the measured data will be as close as possible to real-life conditions. We will also analyze the psychological reactions of students in a classroom following high-*

intensity sounds above average levels. The group being analyzed consists of 18 girls and 9 boys, aged between 16 and 17 years old.
Contact: *gideilarisa2@gmail.com*
State of development: prototype
Presentation link: *https://iancuhd.wordpress.com/*

20.

Title: MOBILE INTEGRATED SURVEILLANCE SYSTEM
Patent/project number: RO 2023 00039
Author/s: Cojocaru Sorin, Jurba Mihai, Popescu Emil, Stroe Danut, Guiman Daniela, Jurba Andrei
Institution/Country: ELECTRO OPTIC COMPONENTS S.R.L., ROMANIA
Category: C
Description: *The product is a multispectral surveillance system which allows to detect recognize and identify different type of threats in various atmospheric conditions using visible, short wave infrared and medium wave infrared cameras.*
The product performs the following tasks:

- *Gathering information from different type of sensors: optical, distance measurement, positioning, recognition;*
- *Processing and integrating obtained information into the GIS application running on a ruggedized PC;*
- *Transmitting and receiving information to / from other structures;*
- *Monitoring the response activities and their results.*
- *Storing the data and images needed to prove the identified activities*

State of development: In production
Contact: *www.electro-optic.ro*; *office@elop.ro*, **+40723242145**
Presentation link: *https://www.youtube.com/channel/UCm89q0koRztLbRtE80Rhdqw*

21.

Title: APPLICATION FOR SUPPORTING THE DESIGN OF VERTICAL AXIS WIND TURBINES
Patent/project number: Research Project
Author/s: PhD. Stud. Emilia DOBRIN, prof. Nuno Calcada Loureiro, prof. José Carlos Martins
Institution/Country: Politehnica University of Timisoara, Romania; Instituto Superior de Entre Douro e Vouga, Portugal
Category: C
Description: *This study presents a software application designed to assist in the design and optimization of vertical axis wind turbines (VAWTs), offering advantages such as lower complexity, reduced maintenance, and suitability for small-scale applications. The tool allows users to dimension VAWTs based*

on power output, rotor size, and wind speed, featuring 2D and 3D visualization tools for performance simulation. To validate its effectiveness, physical prototypes were tested under various wind conditions using non-destructive and destructive evaluations. Results confirmed the application's accuracy in predicting turbine performance and optimizing design parameters. This software provides a valuable tool for engineers and researchers, supporting the broader adoption of renewable energy solutions. Future enhancements will integrate advanced computational models and real-time wind data analysis for improved accuracy. ***State of development: Prototype***
Contact: *emilia.dobrin@student.upt.ro*
Presentation link: *https://www.upt.ro/Universitatea-Politehnica-Timisoara_en.html*

22.

Title: METHOD AND SYSTEM FOR ANONYMOUSLY COLLECTING POSITION AND MOBILITY INFORMATION IN PUBLIC PASSENGER TRANSPORT, BASED ON BLUETOOTH AND ARTIFICIAL INTELLIGENCE
Patent/number: RO 134415 – B1
Author/s: Minea Marius, Dumitrescu Cătălin, Chiva Ionuț-Cosmin, Minea Viviana - Laetitia, Semenescu Augustin
Institution/Country: National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
Category: C
Description: *The invention relates to a method and system for the anonymous collection of position and mobility information in public passenger transport, based on Bluetooth and Artificial Intelligence, for improving public transport management systems by supplementing the information required by them, providing a simple method of collecting. anonymously (without the possibility of associating the persons with the detected devices) the data on the flows of passengers transported or waiting in the passenger stations, information regarding the position of the public transport vehicles on the route, as well as the density of the private traffic of vehicles on the the route of the means of public transport.*
State of development: Applied
Contact: Augustin SEMENESCU *augustin.semenescu@upb.ro*
Presentation link: *https://upb.ro/en/*

23.

Title: MULTIFUNCTIONAL SURGE PROTECTOR
Patent/project number: 1201800385(18953)
Author/s: WAM ELVIS MBVIUGEH
Institution/Country: HOLY CENTER FOR RESEARCH AND PRACTICAL SCIENCES, HCRPS, COOP-BOD, CAMEROON
Category: C

Description: *This invention relates to multifunctional surge protector, innovated and designed to play multifunction; to supply a stable current and even voltage on general electronics and machines. To protect electronics from unforeseen conditions like excessive heat, overload, lightning and thunder, excessive current and voltage. This apparatus is also used as a maintenance tool in the electronic and electrical industries.*
State of development: PROTOTYPE
Contact: +237 677 45 82 90 *wamelvis@gmail.com*
Presentation link:
https://www.facebook.com/profile.php?id=61550083540535&mibextid=ZbWKwL

24.

Title: COMPETITION ROBOT FOR FIRST TECH CHALLENGE
Patent/project number: Student project
Author/s: Adrian Carol Budiul (coordinator), Stratulat Bogdan Ioan, Zală Andreea Maria, Miklos David Krisztian, Varvaroi Andrei, Mitican Andrei, Cerişeri Robert Octavian, Şunda Tudor Marian, Truţă Andrei Rareş, Manole Iulia Nicoleta, Titianu Ştefan, Zanef Alexandra
Institution/Country: Theoretical High School Traian Lalescu Hunedoara, Romania
Category: C
Description: *The robot fulfill the task of the current season Into the Deep of the FIRST Tech Challenge competition: collects, sorts and relocates specific samples of various colors, in autonomous or teleoperated modes.*
State of development: Functional prototype
Contact: Adrian Carol Budiul, tel: +40728913967, email: *adrianb1313@yahoo.com*
Presentation link:

25.

Title: AUTONOMOUS ROBOT FOR COLLECTING, SORTING AND RELOCATING OBJECTS
Patent/project number: Student project
Author/s: Nistor Mircea (coordinator), Achim Luca Petru, Paşolea Lucian, Borbely Richard, Galfi Rareş Cristian, Vladu Bianca Teodora, Budiul Alexandru Vasile, Alexa Maria Gabriela, Socoteanu Paul Daniel, Nitzu Gloria Eleni
Institution/Country: Theoretical High School Traian Lalescu Hunedoara, Romania
Category: C
Description: *The robot collects, sorts and relocates objects of various colors, in autonomous or teleoperated modes.*
State of development: Functional prototype
Contact: Mircea Nistor, tel: +40727335129, email: *mircea.fizitec@gmail.com*
Presentation link:

26.

Title: THE WAKE-UP BED (PATUL DESTEPTĂTOR)
Patent/project number: Student Research Inovative Project
Author/s: Cristian-Andrei LOTREANU, Ionut-Madalin MOCOFANU, Andrei-Dumitru NANULESCU; Coordonator: Profesor Aurel Mihail ȚÎȚU
Institution/Country: Lucian Blaga University of Sibiu / ROMANIA
Category: C
Description: *The wake-up bed is an innovative project for people who have trouble waking up and sleep without hearing repeated alarms. We thought of such a project because we are part of that group of people who have trouble waking up in the morning and honestly it really gets annoying not being able to wake up when you need to. This can have negative effects both from a health point of view but it also has a great influence from other points of view: you are late for college, at work, you don't get to drop your children off at school on time and so on. This bed is made to save you from such unpleasant situations.*
Contact: Professor Aurel Mihail ȚÎȚU, Lucian Blaga University of Sibiu, Director of PATLIB Centre of Sibiu, President of the Romanian Association of Alternative Technologies Sibiu, 4 Emil Cioran Street, Room IM 101, Phone 0040 744 390 290, E-mail *mihail.titu@ulbsibiu.ro*
Presentation link: *https://www.ulbsibiu.ro/en/*

27.

Title: DARK ENERGY ROBOT
Patent/project number: Student Project
Author/s: Dark Energy Team: Visirin Alexandru, Irimie Breban, Crețu Matei, Cosma Iulia, Șindea Adrian, Stancovici Sara, Bălășoiu Alexandru, Balea Ioan, Hurdubeu Ioana, Covaci Elena, Glava Alexandra, Băluș Dari, Rotari Mădălina, Gașpar Dragoș, Gorneanu David, Crăciun Sofia, Coza Dragoș, Șchiopu Alexandra, Bozdog Alexandra, Iosif Roxana, Someșan Rareș; Mentor: Sorin Stănculescu
Institution/Country: "Decebal" National College Deva, Romania
Category: C
Description: *Our robot consists of:*
- *Chassis*
- *Intake system*
- *Outtake system*
- *Transfer*

The chassis consists of 4 435 RPM motors, the front ones driving the wheels with pyramidal reductions, and the rear ones using normal gears. The wheels used are mecanum wheels that allow movement in any direction.
The intake system consists of two misumi-type sliders that extend forward using a thread that is driven by a 1150 RPM motor. Between these sliders is the intake, which is attached using two 3D printed parts. The intake consists of two rubber wheels that rotate using two mini axles, in order to be able to take the sample,

the axles are attached to each other with a spring, in order to take the right samples, a color sensor is used behind the wheels, which stops the axles when it detects the correct color. The outtake system consists of two sets of misumi type slides driven by two 435 RPM motors connected by gears for consistent lift. Between these slides is the outtake which is a 3D printed tongs driven by a mini axon. Sample transfer is achieved by moving the intake arms to the back, and the wheels pull the sample out until the distance sensor on the tongs sees it, at which point the tongs close and prepare to score.

State of development: Prototype

Contact: *fam_stanculescu@yahoo.com roboticacnd@gmail.com*

Presentation link: *https://www.youtube.com/@cndrobotics1794*

28.

Title: COMPETITION ROBOT – INTO THE DEEP

Patent/project number: Student Project

Author/s: Decebal Tech Team: Armie Andrei, Tomuş Vlad, Chirilă Tudor, Popovici Bogdan, Runcan Cristian, Hariton Vlad, El Haj Sleiman, Călinescu Adrian, Nagy Luca, Petruse Rareş, Popa Sebastian, Adascălului Sebastian, Cătană Irina, Colcea Carina, Ilca Ana, Sicoe Georgiana, Belea Alexandra, Morar Irina; Mentor: Sorin Stănculescu

Institution/Country: "Decebal" National College Deva, Romania

Category: C

Description: *The competition in which our team participates, entitled "First Tech Challenge" - FTC, has reached its ninth season. The theme of this competitive season, "Into the Deep", involves collecting game elements in the shape of rectangular plastic parallelepipeds, either from the playing field or from inside a submersible – a structure made of metal bars. Scoring is done by entering the elements in a basket or by hanging them on one of the bars of the submersible. The competition robot was designed and built by our team to perform the missions of the theme of the 9th season of the FTC Romania competition. The robot includes a chassis with four 435 RPM motors that control mecanum wheels for multidirectional movement. An intake system with a gripping claw and extension with horizontal slides for collecting "sample" or "specimens" game elements controlled by servomotors. The gripping claw has several degrees of freedom and with a recognition system can identify the position of the game pieces. Scoring is done by a tong mounted on an arm, also having the possibility of extending, the entire scoring assembly (outtake) being raised to the level of the baskets or the bar with the help of slides driven by 1150 RPM motors located on a common axis. In addition, the robot has the ability to cling to the submersible's bar and remain suspended, using linear guides mounted on the rear of the chassis. The robot's control during teleoperation is carried out by two drivers, who use PlayStation 5 controllers connected to the Driver Station - a mini tablet that communicates via the network with the robot's control unit, the Control Hub. However, the robot is capable of performing some missions autonomously, using sensors such as odometers, color sensors or the camera, located on it.*

State of development: Prototype

Contact: *fam_stanculescu@yahoo.com roboticacnd@gmail.com decebaltech19105@gmail.com*

Presentation link: *https://www.youtube.com/@cndrobotics1794*

29.

Title: ARDUINO FOR AUTONOMOUS CAR
Patent/project number: Student Project
Author/s: Eugen BIRTOK, Raluca ROB
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara; CITT Politehnica 2020, Romania
Category: C
Description: *This project presents the construction of an autonomous car and its programming in order to accomplish various abilities. The car is constructed on a chassis with four dc motors. The car controller is an Arduino Uno development board which is programmed in order the car is able to manage itself, avoiding the encountered obstacles. The distance to the obstacles can be modified by the user. An ultrasonic distance sensor is used for acquire the distance measurement. Like any autonomous car, the manual command options when required are mandatory. Therefore, an application on mobile phone is programmed. This application permits the motors controls on forward, backward, left and right turn, parking, using bluetooth transmission.*
In the construction of this car were necesary the following parts:
Arduino Uno development board
Driver for L298N integrated circuit motors connects to Arduino digital pins.
HC-05 bluetooth module
Ultrasonic sensor HC-SR04 (to avoid obstacles and parking)
SG90 servomotor (for sensor movement at a certain angle)
DC 12V Battery Pack 3000mAh Rechargeable Lithium Battery Pack
65 mm Rubber Wheel RC Model Tires
HC-05 module is an easy to use Bluetooth SPP (Serial Port Protocol) module, designed for transparent wireless serial connection setup. Serial port Bluetooth module is fully qualified Bluetooth V2.0+EDR (Enhanced Data Rate) 3Mbps. Modulation with complete 2.4GHz radio transceiver and baseband. It uses CSR Bluecore 04-External single chip Bluetooth system with CMOS technology and with AFH(Adaptive Frequency Hopping Feature). It has the footprint as small as 12.7mmx27mm. Hope it will simplifyyour overall design/development cycle.
State of development: Prototype
Contact: *eugene_birtok@yahoo.com*
Presentation link: *https://www.fih.upt.ro/v6/*

30.

Title: BLACKBOX
Patent/project number: Research project
Author/s: Madaras Levente, Modovan Maia Emilia, Paul Ţoţa (coordinator teacher)
Institution/Country: Hunedoara County Center of Excellence, Romania
Category: C

Description: *The project brings together science and passion, creating a device that can be used both in general aviation and in Formula 1 racing. Essentially, it is a kind of "flight recorder" built from scratch with simple electronic components capable of collecting and storing essential data regarding the performance of the vehicle or aircraft. This probe can provide a time evolution of the elements surrounding the aircraft/vehicle, such as temperature, atmospheric pressure, UV radiation and even spatial displacement along with the recorded accelerations and speeds.*
State of development: Experimental model
Contact: *contact@cexhd.ro*
Presentation link: *https://cexhd.ro/*

31.

Title: MOBILE TRAINING GROUND FOR THE PRACTICAL TRAINING OF INTERVENTION AND RESCUE PERSONNEL IN TOXIC / EXPLOSIVE / FLAMMABLE ENVIRONMENTS
Patent/project number: CBI A 2022 00640
Author/s: Nicolescu Cristian, Găman George Artur, Ghicioi Emilian, Pupăzan Daniel, Găman Angelica Nicoleta, Ilie Cosmin, Irimia Alin, Gireadă Andrei, Toth Lorand, Kovacs Marius
Institution/Country: NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN MINE SAFETY AND PROTECTION TO EXPLOSION – INSEMEX, Romania
Category: C
Description: *In order to carry out the activity of intervention and rescue personnel in toxic / explosive / flammable environments in conditions of safety and health at work, and for the efficiency of the actions taken, a good physical training of the rescuers is necessary, which can be achieved by using a modern training infrastructure (mobile polygon) that can be made available to any economic agent regardless of the place and nature of the activity they carry out. The mobile training polygon of rescuers allows the realization of a training route of rescuers in closed spaces with different degrees of difficulty, high temperature, low visibility, high humidity, as well as the training of rescuers in the fitness equipment area with the monitoring of the physiological parameters of the rescuers. All these factors lead to the selection of rescuers in order to form rescue teams that can intervene in the event of fires / explosions / releases etc.*
State of development: Research Project
Contact: *cristian.nicolescu@insemex.ro*
Presentation link: *https://insemex.ro/home-en/*

32.

Title: DEVELOPING AN INTELLIGENT DIGITAL PLATFORM FOR ACADEMIC & ADMINISTRATIVE QUALITY ENHANCEMENT AT ONAIZAH COLLEGES, SAUDI ARABIA
Patent/project number: : Academic management
Author/s: Dr. Bandar Al-Humaidi Al-Mutairi & Dr. Maged Farouk
Institution/Country: College of Humanities and Administrative, Onaizah Colleges, Saudi Arabia
Category: C

Description: *Developing an intelligent digital platform that leverages artificial intelligence (AI) to support academic and administrative quality programs at Unaizah Private Colleges in alignment with international accreditation standards. This platform aims to cultivate an innovative and advanced educational ecosystem by enhancing curriculum quality, fostering faculty development, optimizing administrative processes, and creating an enriched learning environment for students.*
State of development: Concept Stage
Contact: 00966-5606-85792 ***magedfarouk5@gmail.com***
Presentation link: ***https://www.oc.edu.sa/en/has_college***

33.

Title: SMART ACADEMIC MANAGEMENT: LEVERAGING AI FOR A DATA-DRIVEN FUTURE IN EDUCATION: IMPLEMENTATION AT ONAIZAH COLLEGES, SAUDI ARABIA
Patent/project number: Academic management
Author/s: Dr. Saer Abdullah Al-Haisuni & Dr. Maged Farouk
Institution/Country: College of Humanities and Administrative, Onaizah Colleges, Saudi Arabia
Category: C
Description: *The project aims to enhance and streamline the management of academic processes within the college by leveraging artificial intelligence and advanced technological tools. It is designed to facilitate student tracking, data collection, and the generation of highly accurate and efficient reports.*
State of development: Concept Stage
Contact: 00966-5606-85792 ***magedfarouk5@gmail.com***
Presentation link: ***https://www.oc.edu.sa/en/has_college***

34.

Title: AI-DRIVEN SUPPLY CHAIN OPTIMIZATION: REVOLUTIONIZING SUSTAINABLE LOGISTICS AND OPERATIONS IN THE UAE
Patent/project number: Optimization method
Author/s: Sara Al Saadi, Supervisor: Dr. Eng. Neyara Radwan
Institution/Country: Liwa College, Abu Dhabi, United Arab Emirates
Category: K
Description: *The poster highlights the transformative role of artificial intelligence (AI) in supply chain management, emphasizing its ability to enhance efficiency, reduce costs, and improve decision-making across industries. It showcases real-world applications of AI in logistics by UAE-based companies such as DP World, Emirates SkyCargo, and Noon, demonstrating how AI optimizes operations, predicts demand, and supports sustainability goals. The integration of AI-driven solutions is presented as a key driver for achieving sustainable and competitive supply chains, aligning with global trends in logistics innovation.*
State of development: Student project
Contact: ***neyara.hassan@lc.ac.ae*** ***nanymohammed@gmail.com***
Presentation link: ***https://lc.ac.ae/***

35.

Title: UAE IN-COUNTRY VALUE (ICV) CERTIFICATE: A FRAMEWORK FOR SUSTAINABLE ECONOMIC GROWTH

Patent/project number: sustainable model
Author/s: Rawan Alfandi, Supervisor: Dr. Eng. Neyara Radwan
Institution/Country: Liwa College, Abu Dhabi, UAE

Category: C

Description: *The poster highlights the UAE's In-Country Value (ICV) Certificate program as a strategic initiative to enhance economic resilience, foster industrial diversification, and promote workforce development within the country. It emphasizes the program's role in strengthening local industries by prioritizing local procurement, increasing employment opportunities for Emiratis, and encouraging investments in research and development. Additionally, the ICV program is presented as a sustainable model that supports economic, social, and environmental growth, serving as a blueprint for other nations seeking to boost local economies while maintaining global competitiveness.*

State of development: Student project,

Contact: *neyara.hassan@lc.ac.ae* *nanymohammed@gmail.com*

Presentation link: *https://lc.ac.ae/*

D - Automotive, Space science, Aviation, Ships, Mechanics

1.

Title: TERRITORIAL AEROCLUB "Constantin Manolache" DEVA
Patent/project number: Aeroclub
Author/s: Gheorghe ȚINEGHE & Team
Institution/Country: Aeroclub of Romania
Category: D
Description: *Founded in 1975, the Deva Aeroclub is located east-southeast of the municipality of Deva, at a distance of 7 km. Its entire length is between the Simeria - Deva railway and the shore of Mureş. At the beginning of its operation, it was called the "Dacia" Deva Aeroclub, then the name changed, becoming the "Constantin Manolache" Deva Aeroclub, and then the Deva Territorial Aeroclub. The Săuleşti field, which later became an airfield, not too far from the one in Bintiţi where Aurel Vlaicu had flown with his "beetle" in 1909, is a place that has become an important airfield among the "airfields" in our country . On October 1, 1935, the decision was made to establish a flying school without a motor in the field of Săuleşti, and within the school of arts and crafts in Deva, a section to build gliders. In 1975, the decision was made to reorganize the Deva aeroclub, using the former airport base and the AVIASAN station. in the latter part of 1975, preparations began and the Central Aeroclub established the personnel that will serve this aeroclub. As infrastructure, the known and remaining from the last flight period is maintained, to which is added the construction of a building for the security of the airfield. The air club was equipped with a Zlin 226 (YR-ZLA) aircraft, which arrived here at the beginning of May 1976. The flying material was brought from Tg. Mureş, Braşov and Cluj in a short period of time thanks to the care of the staff. On the date when the school was supposed to start, there were: a Zlin 226 plane, two Blanick gliders for dual command instruction and an ISd3 glider for training and performance. At the stage shown above, after a number of 25 trainees out of the 60 who had participated in the theoretical courses, the long-awaited training begins. Parachuting section established as a section within the aeroclub, in addition to the motorized and non-motorized flight section, parachuting within this aeroclub is urgently gaining priority among the young people of the county and the country, some of the young people rising in the field and on other higher levels. It is obvious that during 15 years of existence, through the care and tactics of the instructors, 2376 16-18 year old students were prepared, trained and then certified within this aero club.*

The Aeroclub organizes theoretical and practical courses for obtaining the licenses of parachutist, glider pilot, ultralight pilot and PPL(A) pilot.
State of development: Aeroclub
Contact: *deva@aeroclubulromaniei.ro* *http://www.aeroclubulromaniei.ro/*
Presentation link: *https://www.facebook.com/AeroclubulDeva/*

2.

Title: **MONITORING SYSTEM FOR CONTROL OF VEHICLE SPEED LIMITS ON PUBLIC ROADS**
Patent/project number: A/00001/03.01.2024
Author/s: Pavel Ştefan, Ungureanu Daniel-Viorel Corneliu
Institution/Country: Politehnica University of Timisoara; CITT Politehnica 2020, Romania
Category: D
Description: *The invention refers to a fixed electrical system for preventing accidents caused by excessive speed on public road segments with vehicle speed restrictions.*
ADVANTAGES:
Detects when a vehicle exceeds the allowed speed limit on a designated road segment and determines its actual speed. It prevents the driver from exceeding the legal speed limit. Verifies compliance with speed adjustment requests. In case of noncompliance, it neutralises the vehicle's control system through an electromagnetic pulse, causing it to come to a stop. It records, archives and transmits data via an internet connection to authorised authorities responsible for managing such situations. The installation is energy self-sufficient. The installation does not pollute the environment. The generation of the electromagnetic pulse is automatically disabled when emergency vehicles (police, rescue, firefighters, military, government officials, etc.) pass through the designated area and are reactivated after their passage.
State of development: Prototype
Contact: *pavelstefanel@gmail.com*
Presentation link: *https://www.icer.ro/*

3.

Title: CNC TRAINING CENTER IMPLEMENTATION IN POLITEHNICA UNIVERSITY OF TIMISOARA
Patent/project number: 7662
Author/s: Assoc. Prof. Ph.D. Adrian BUT; student Marius CIOBANU
Institution/Country: Politehnica University of Timisoara, CITT Politehnica 2020, Romania
Category: D
Description: *This Young people need to be motivated by demonstrating the relevance of manufacturing technology and in direct connection to the "Hi-Tech" systems, products and services which are essential to their way of life. In the paper is present the CNC(Computer Numerical Control) TRAINIG CENTER concepts concept and the results of the implementation in "POLITEHNICA" University of Timisoara, Romania. CNC Technology is the key technology which makes today's manufacturing possible. Raise awareness of opportunities in manufacturing and motivate young people to become hi-technologists are the CNC training center concept who was develop in our technical education center, to operate and program the CNC machine tools.*
State of development: CNC Training Center
Contact: *adrian.but@upt.ro*
Presentation link: *http://www.research.upt.ro/*

4.

Title: CONCEPT OF A CNC PLASMA CUTTING MACHINE
Patent/project number: Student Project
Author/s: Assoc. Prof. Ph.D. Adrian BUT; student: Darius BUZATU
Institution/Country: Politehnica University of Timisoara, CITT Politehnica 2020, Romania
Category: D
Description: *This project aimed to develop and implement a low-cost CNC system for precise plasma cutting, utilizing accessible components and DIY methods to create a practical solution for various machining tasks. The CNC machine was built using sturdy rectangular tubing, designed and welded for optimal durability. Precision and stability were achieved with SBR 20 linear guides and SFU 2005 ball screws. Electronic components, including a BSMCE04U control board and Nema 42 stepper motors, were carefully integrated and calibrated to ensure smooth operation, with additional relays and limit switches for safety and functionality.*
State of development: Prototype
Contact: *adrian.but@upt.ro darius.buzatu@student.upt.ro*
Presentation link: *http://www.research.upt.ro/*

5.

Title: EVALUATION OF THE FLANK WEAR OF CUTTING TOOLS WITH A CUTTING EDGE
Patent/project number: Student project
Author/s: Pinca-Bretotean Alexandru Mihai
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, CITT Politehnica 2020, Romania
Category: D
Description: *In the course of machining processes, a significant segment of time is dedicated to interrupting the activity for changing or reconditioning the cutting tool. The main reason for these interruptions is their wear. The criterion used to determine the right time to stop the machining process is the cutting tool life, which represents the actual cutting time until allowable wear occurs. The main objective of the project is to determine flank wear for a single-edged cutting tool performing longitudinal roughing turns on the surface of a work-piece using different cutting parameters. The experimental strategy consists of performing four roughing turns performed on the same machine tool, with the same type of cutting tool and under the same cutting conditions (without cooling), maintaining the same feed rate and the same depth of cut for four different cutting speeds. The experiments were carried out on a SNB 400 x 2000 mm universal lathe, with a power of 7.5 KW, and the semi-finished product subjected to processing is made of steel, 40 Cr10, with a diameter of Ø50 and a length of 300 mm. Each machining was performed with a new lathe knife, made of high-speed steel, with dimensions of 20x20 mm and a P30 insert, with each machining, the turned length being 150 mm. The four turnings were performed successively on the same blank using different speeds. In order to determine the flank wear, the methodology presented in the specialized literature was adopted, which proposes an incremental measurement on the cutting edge. The wear profile was drawn based on the measurement results.*
State of development: Cutting tools evaluation project

Contact: *alexandru.pinca@student.upt.ro*
Presentation link: *https://www.fih.upt.ro/v6/*

6.

Title: AUTOMOTIVE DIAGNOSTICS by Will's GARAGE
Patent/project number: Automotive Project
Author/s: Daniel Gabriel IORDACHI & Team
Institution/Country: Will's Total Garage SRL, Romania
Category: D
Description: *Will's Total Garage, your trusted partner for leading diagnostic services in the automotive industry. With a team of experts passionate about technology and innovation, we are committed to providing accurate and efficient diagnostic solutions for your vehicle. Whether it's diagnosing mechanical, electronic or software issues, our experienced team uses the latest OBD diagnostic technology and equipment to quickly and accurately identify your vehicle's problems. From passenger cars to commercial vehicles and entire fleets, we offer a full range of diagnostic services tailored to your specific needs. With access to the latest software updates and diagnostic databases, we are able to provide customized solutions and efficient repair solutions. Transparency and open communication are fundamental to us. That's why our team will always thoroughly explain the diagnostic results and available repair options so you can make informed decisions about your vehicle. At Will's Total Garage, we strive to provide not only reliable diagnostic services, but also an excellent customer experience. With a focus on professionalism, quality and customer satisfaction, we're here to keep your vehicle moving and give you peace of mind on your travels.*
State of development: Method
Contact: *iordachidaniel01@gmail.com*
Presentation link: *https://www.facebook.com/loran.buss*

7.

Title: ADAM'S SERVICE
Patent/project number: Automotive Project
Author/s: Florin ADAM & Team
Institution/Country: SC Adam's Services SRL, Romania
Category: D
Description: *With an undeniable passion for the world of automobiles, Florin, the CEO of Adam's Service, wanted to create a company that would offer high quality solutions and services, exceeding the expectations of customers in Alba Iulia and always being up to date with the latest technologies and industry trends. Thus, in an attempt to satisfy the increasingly complex needs and requirements of car owners, ADAM'S SERVICE was born. Over the years, we have constantly invested in the development and improvement of our workshop, bringing advanced technologies and state-of-the-art equipment to ensure we can offer the best automotive solutions and services. We have formed and trained a team of talented specialists who share the same passion and dedication for the automotive field, ensuring that we always live up to the expectations and needs of our customers. As we've expanded and developed our reputation in the automotive*

community, we've earned the loyalty and appreciation of our customers, who have referred us and helped us grow. We are proud to say that ADAM'S SERVICE has become a trusted name in the automotive industry, being recognized for our services in: auto mechanics, auto vulcanization, auto air conditioning, ITP and car wash.
State of development: Automotive Services
Contact: *office@adamservice.ro*
Presentation link: *https://adamservice.ro/servicii-auto/*

8.

Title: AUTO SCHUNN
Patent/project number: Mercedes-Benz dealer
Author/s: Jürgen Schunn & Team
Institution/Country: SC Auto Schunn SRL, Romania
Category: D
Description: *Auto Schunn has been an authorized Mercedes-Benz partner car dealer in Romania for over 29 years. We are waiting for you at the Auto Schunn representatives in Arad, Deva and Suceava with a diverse portfolio of new and used Mercedes-Benz vehicles of the highest quality, available with immediate delivery directly from the showroom, and at the Auto Schunn centers in Sibiu and Timisoara to benefit used car sales and after-sales services to the highest German standards. In order for you to be one step closer to the Mercedes-Benz car you want, at Auto Schunn you will always find special offers and promotions on new and used Mercedes-Benz cars, available with immediate delivery. We invite you to take a look at our stock of Mercedes-Benz cars available at special prices.*
State of development: Products
Contact: *https://www.auto-schunn.ro/contact/*
Presentation link: *https://www.auto-schunn.ro/*

9.

Title: ALUMINUM ALLOYS FOR CAR RIMS
Patent/project number: PhD Thesis
Author/s: Doru SAPTA, Ana SOCALICI, Vasile PUTAN, Corneliu BIRTOK BANEASA
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: D
Description: *Aluminum alloy 6082 is used in various applications in the automotive industry, construction, and the transportation sector. It is widely used and has replaced alloy 6061 in many applications. It has high corrosion resistance and high hardness. It is very difficult to achieve fine-grained structures in aluminum alloys through various processes. In the case of aluminum alloy 6082, the hardening phase is Mg_2Si. Its size is determined by the presence of iron and silicon. These alloys use magnesium and silicon in their composition, can be heat-treated, have good forgeability, and high corrosion resistance. Globally, the manufacturing of automotive wheels is carried out using aluminum alloys through casting and/or plastic deformation.*

The experimental data were collected and processed statistically. The goal was to establish correlations between grain size (considered a dependent parameter) and the chemical composition elements that influence grain refinement. It is observed that the alloying elements Si, Mg, Mn, as well as Ti, used for grain refinement, positively influence the mechanical properties within the limits of these elements. Specifically, an increase in Ti leads to finer grain size, which also results in higher values for mechanical characteristics. Using high-quality charge materials leads to minimal variations in the chemical composition elements, and following alloying, only small differences in chemical composition are observed from one batch to another. The narrow variation limits for chemical elements resulted in acceptable variations in the alloy's qualitative characteristics.

State of development: Doctoral researches project

Contact: *doru.sapta@student.upt.ro*

Presentation link: *https://www.fih.upt.ro/ccmti/*

10.

Title: AUTOMOTIVE TUNING EVOLUTION

Patent/project number: Student Research Project

Author/s: Denisa Valentina GROSU; Mentor: Prof. Corneliu BIRTOK BANEASA

Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, CITT Politehnica 2020, Romania

Category: D

Description: *Tuning is basically as old as the automotive industry, if you consider the various decorations on horse saddles and the improvement of carriages, you can risk the statement that he is even older than the automotive industry. However, it was only the popularization of the car as a means of transport that influenced the development of this industry. Hot rods are one example of these types of light vehicles derived from cars modified by American liquor dealers during the prohibition era. They needed vehicles to transport contraband that would allow them to evade law enforcement. The next stage of tuning was the lowriders category, which appeared in the United States since the 1940s. A car that leaves the factory will usually be a relatively convenient tool for getting from point A to point B. However, this can be done faster and more efficiently. Engineers are developing ever more efficient ways to extract power from internal combustion engines. Several revolutionary solutions have emerged over the years. An example would be turbochargers or commonly used injection systems. Today, the use of the chip is a new stage of tuning.*

State of development: Scientific Student Project

Contact: *denisag066@gmail.com*

Presentation link: *https://www.fih.upt.ro/ccmti/index.php*

11.

Title: BSM Motors

Patent/project number: Automotive Sercice

Author/s: Sorin Mihai BOBARU; Mentor: Prof. Corneliu BIRTOK BANEASA

Institution/Country: BSM Motors, Politehnica University of Timisoara, Faculty of Engineering Hunedoara, CITT Politehnica 2020, Romania

Category: D
Description: The BSM Service division is "Out of passion for mechanics!". *Specialized service for maintenance and repair of various types of vehicles as follows: Trucks: oil change; change filters; change brake pads; greasing. Utility Cars: oil change; change filters; change brake pads. Cars: change oil / filters; repairing of the direction and braking systems. In addition, we also offer OBD Diagnostic services, vcds function activations, headlight polymerization and more.*
State of development: Provide maintenance and repair services
Contact: *bsm_motors@yahoo.com*
Presentation link: *https://www.instagram.com/bsmmotors2025?igsh=b2JkYzQ1ZHJ3eTRy*

12

Title: AUTOVEST SERVICE
Patent/project number: Ro 18945279
Author/s: Leonard Nicolas MARARU
Institution/Country: SC Autovest Service SRL, Romania
Category : D
Description: *Whatever the size of your car, Auto Vest Service can offer you premium services with no hidden costs for all pockets. We can offer you all the benefits of a service representative of trained mechanics, the latest diagnostic devices and original parts. We are committed to providing you with the best services that can save you money. We are confident that once you try our services you will not be disappointed. Our main activity is the maintenance and repair of motor vehicles, offering a wide range of services (diagnostics, testing, checks, adjustments, maintenance and mechanical and electrical repairs, etc.).*
State of development: automotive service
Contact: +40233 280 737 *office@autovest-service.ro*
Presentation link: *https://www.facebook.com/autovestservice/?locale=ro_RO*

13.

Title: TRACTION CALCULATION FOR VOLSWAGEN SCIROCCO
Patent/project number: Scientific Student Project
Author/s: Alin-Andrei POPESCU; Mentor: Prof. Corneliu BIRTOK BANEASA
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, CITT Politehnica 2020, Romania
Category: D
Description: *The traction calculation of a vehicle such as Volkswagen Scirocco refers to the determination of the force required to set the vehicle in motion and maintain optimal grip on the road. This depends on several factors, including the vehicle's weight, engine power, type of drive (eg front or all-wheel drive) and road conditions. For the Scirocco, traction is provided by a front-wheel drive system, which means that the front wheels are the ones that transmit the engine's power to the road. The calculation includes the evaluation of the friction force between the tires and the road surface, as well as the analysis of the weight distribution on each wheel. The result determines the performance of the vehicle in terms of acceleration and stability, depending on the technical parameters specific to the model.*

State of development: Scientific Student Project
Contact: a_popescu71@yahoo.com
Presentation link: https://www.fih.upt.ro/ccmti/index.php

14.

Title: THE INFLUENCE OF THE EXHAUST GAS RECIRCULATION (EGR) SYSTEM ON THE QUALITY OF FUEL COMBUSTION IN DIESEL ENGINES
Patent/project number: Research Project
Authors: Sorin Aurel Raţiu, Adrian Gidali, Diana Miruna Armioni
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, CITT Politehnica 2020, Romania
Category: D
Description: *The study aims to establish the real influence and the complementary role of the exhaust gas recirculation system on the quality of hydrocarbon combustion in diesel engines. For this purpose, the practical determination of the influence of the EGR system on the combustion quality of the injected fuel was proposed, by directly measuring the emissions of particles (PM) resulting from the combustion, in different speed regimes of the diesel engine. The successive use of the opacimeter and the indication from the oxygen sensor, read digitally from the Electronic Control Unit of the injection system, will significantly reduce the margin of error for the measured values. In order to establish the direct relationship between the quality of fuel combustion and the operation of the EGR system, the air swirl system in the intake manifold was canceled (without the activation of the breakdown mode triggered by the electronic engine control unit (engine-ECU). The combustion gas samples for analysis were taken upstream of the specialized combustion gas treatment systems: the catalytic ceramic element (DOC – diesel oxidation catalyst), the diesel particle filter (DPF – diesel particle filter) and the selective catalytic reduction system (SCR – selective catalytic reduction).*
State of development: scientific paper
Contact: armionimiruna@yahoo.com
Presentation link: https://www.fih.upt.ro/personal/sorin.ratiu/

15.

Title: SYSTEM OF NON-METALLIC FERRULE WITH A METAL WASHER, FOR SEALING HYDRAULIC, PNEUMATIC OR ELECTRICAL CABLES, WHICH MAY ALSO BE UNINSULATED CONDUCTORS, INTENDED FOR ENTERING IN MEDIUM VACUUM CHAMBERS
Patent/project number: A2024 00451
Author/s: Jeni-Alina VILAG, Valeriu Alexandru VILAG, Nicolae MĂCRIŞOIU, Cosmin Petru SUCIU, Răzvan Edmond NICOARĂ, Iulian VLĂDUCĂ
Institution/Country: COMOTI - Romanian Research & Development Institute for Gas Turbines, Romania
Category: D

Description: *The invention relates to a sealing system using a non-metallic ferrule, with good resistance to temperature and chemical agents and with electrical insulation properties, cylindrical, in two stages, with a beveled upper cylindrical end, called the working diameter, and a lower cylindrical part, with a diameter smaller than the working diameter of the upper cylindrical end, of the non-metallic ferrule, on which a metal washer made of stainless steel or other metallic materials is placed, which is guided on the smaller diameter of the non-metallic ferrule, so that the outer diameter of the metal washer is equal to the upper working diameter of the non-metallic ferrule, for sealing hydraulic, pneumatic and electrical pipes intended for access to medium vacuum chambers, for testing phenomena associated with space propulsion through exothermic chemical reactions, or cold and/or electrical space propulsion. The technical problem solved by the invention consists in using a sealing assembly that includes elements made of different materials, with different degrees of deformation, which allows the sealing between two environments with different chemical composition and gas-dynamic parameters (pressure, temperature) and which allows access of pneumatic, hydraulic pipes and electrical cables, which can also be uninsulated conductors, from one environment to another, by the fact that the non-metallic ferrule and metallic washer system allows a very good seal in the medium vacuum range, and can also be used in the medium pressure range above atmospheric, up to 2Mpa (20 bar), by using a cylindrical ferrule with a non-metallic, frustoconical end, which partially deforms in a non-destructive manner, so as to allow disassembly and reuse for the same purpose, allowing adhesion to the pipe surface in the angular contact area with the nipple on the frustoconical sealing surface, an area elastically deformed by the pressure exerted by the washer behind it, pushed by a flare nut, by screwing onto the nipple, with a certain screwing moment, determined by the design. The nipple in turn is screwed onto the body of the vacuum vessel, the sealing being achieved with respect to the external environment by a deformable gasket made of a soft metal such as annealed copper, aluminum or flexible thermoplastic material, with good resistance to temperature and chemical agents.*
State of development: Experimental model
Contact: *jeni.vilag@comoti.ro* ***+40721851860***
Presentation link: *https://comoti.ro/en/home-2/*

16.

Title: COLOR FILTER CALIBRATION SYSTEM FOR SCHLIEREN VISUALIZATION SYSTEMS INTENDED FOR FLUID FLOWS, WITH RECTANGULAR LIGHT SOURCE
Patent/project number: A2024 00596
Author/s: Emilia Georgiana PRISĂCARIU, Iulian VLĂDUCĂ
Institution/Country: COMOTI - Romanian Research & Development Institute for Gas Turbines, Romania
Category: D
Description: *The invention relates to a calibration system for schlieren visualization systems, which use rectangular light sources intended for color filters with the help of which it is possible to determine, from the color gradient introduced into the schlieren images by them, the density gradients of the studied flows, which can be flows given by chemical reactions, supersonic / hypersonic flows, flows with convective and turbulent effects with temperature gradients. To investigate flows with density gradients different from those existing in the environment in which the flow propagates, several quantitative schlieren visualization methods can be implemented, which generally provide details about the existing density gradient fields of*

them. Such a color filter is designed so that its properties highlight the studied character of the flow. A color filter is characterized by the level of sensitivity it offers to the implemented schlieren system (the most accurate representation of the smallest and largest density gradients) and the ease with which it can be implemented, directly influenced by the type of color distribution on the filter image (colors with gradual distribution in the RGB spectrum, filter with segmented color distribution, etc.). The system is made up of six subassemblies, A, B, C, D, E and F and individual elements different from those contained in the subassemblies, connected to each other and individual elements different from those contained in the subassemblies, arranged at the heights H1 mobile and H2 fixed with the distances between them defined by L1,...,L6, which is presented in the form of a schlieren system in Z configuration, and which presents a white light source, a biconvex converging lens with a diameter of 2 inches ~50mm for focusing the white light beam, fixed by an optical mass, a square diaphragm that ensures rectangular collimation in dimensions 0.5x0.5...1.0x1.0mm of the white light beam, fixed by the optical mass, large diameter parabolic mirrors, 10 inches ~254mm, the phenomenon analyzed, the X-Y robotic system fixed to a fixed support, to which the film holder plate is fixed on which the by gluing with Loctite the 35mm films cut to a maximum length of 38mm, by means of a pressing plate and a high-speed CMOS camera operated by means of a trigger cable in connection with the control module dedicated to the X-Y robotic arm system.

State of development: Experimental model

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Presentation link: *https://comoti.ro/en/home-2/*

17.

Title: CENTRIFUGAL EXPERIMENTAL TESTING FACILITY FOR SUPERSONIC AND HYPERSONIC PROPULSION SYSTEMS

Patent/project number: A2024 00730

Author/s: Răzvan Edmond NICOARĂ, Iulian VLĂDUCĂ, Jeni-Alina VILAG, Cosmin Petru SUCIU, Alexandru HANK, Bogdan NĂVLIGU

Institution/Country: COMOTI - Romanian Research & Development Institute for Gas Turbines, Romania

Category: D

Description: *The invention relates to a test facility for high and very high-speed propulsion systems, operating at supersonic and hypersonic (Mach 5) regimes (5 times the speed of sound), capable of reproducing the operating conditions specific to high altitudes (low temperatures and pressures). The facility has the role of testing supersonic and hypersonic propulsion systems in real conditions, using a controlled environment that allows the characterization and optimization of the respective systems. The facility consists of an electro-mechanical system that allows the driving of an arm at high speeds, the arm at the end of which the experimental assembly is mounted. Thus, the experimental model moves at very high speeds through a controlled environment, allowing specific measurements to be performed and relevant data to be collected regarding the operation of the respective system, consisting of three main subassemblies and individual components, namely a centrifugal system (A) consisting of a variable speed electric motor (1), engaged by means of a mechanical transmission (2) which in turn drives a rigid system (A') consisting of an arm (3) on which the experimental model (4) is fixed and an arm (5) to which the pusher (6) is fixed, for the evacuation of the gas resulting from the supersonic/hypersonic movement of the*

experimental model (4) through the working channel (7), the system (A') being placed in a vacuum chamber (21), to reduce friction losses of the rotational movement, a compressed air intake system (B) consisting of: the aerodynamic compressor (13) driven by the electric motor (14) which provides a flow rate of air with high pressures and temperatures, the air thus supplied being cooled using the cooler (12) and stored in the buffer tank (11), for supplying air at the simulated altitude parameters, via the connection ports (9) and (10) and the fresh air distribution ring (8), an exhaust system (C) consisting of: the exhaust buffer tank (18), connected to the blower (19), driven by the electric motor (20) and which allows the collection of the gas resulting from the supersonic/hypersonic movement of the experimental model (4) through the working channel (7), via the connection ports (15) and (17) and the collection ring (16) and viewing windows (22) through which, using a high-speed CCD camera not shown, the flow and parameters around the experimental model (4) can be determined as it passes through the viewing windows (22).
State of development: Experimental model
Contact: *razvan.nicoara@comoti.ro* ***+40746680578***
Presentation link: *https://comoti.ro/en/home-2/*

18.

Title: *CALCULATION OF THE BRAKING SYSTEM FOR THE TOYOTA COROLLA VERSO II*
Patent/project number: Student project
Author/s: Vlad-Nicolae-Cosmin CERTEJAN
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, CITT Politehnica 2020, Romania
Category: D
Description: *This project includes a part of the project for the subject "Calculation and construction of road vehicles 2" carried out in the 1st semester of the 4th year at the "Faculty of engineering Hunedoara". The vehicle subject to these calculations was Toyota Corolla Verso II. Toyota Corolla Verso II the forces that push the friction seals (N - normal force, μ - coefficient of friction between the disc and the pad = 0.4, μ' - coefficient of friction between the jaw and the body of the actuating cylinder = 0.1, S - actuating force of the piston)*
Below are the informations that we need to know about the vehicle.
G_1 *– Load on the front axle at maximum load;* G_1 **= 1032 daN**; G_2 *– Load on the rear axle at maximum load;* G_2 **= 989.8 daN**; ***a*** *– Distance from the front wheel center to the center of mass at maximum load;* ***a*** **= 1347.5 mm**; G_2 **= 989.8 daN** ;
a *– Distance from the front wheel center to the center of mass at maximum load;* ***a*** **= 1347.5 mm**; ***b*** *– Distance from the rear wheel center to the center of mass at maximum load;* ***b*** **= 1402.5 mm**;G_a *– Vehicle weight;* G_a **= 2020 daN**; r_r *– Rolling radius;* r_r **= 0.304 m**; **μ** *– Coefficient of friction between the disc and the pad;* **μ = 0.4**; **μ'** *– Coefficient of friction between the shoe and the actuator body;* **μ' = 0.1**; ***nf*** *– Number of friction surface pairs in the rear brake;* ***nf*** **= 4**; ***rm*** *– Mean radius of the friction surface for the rear brake disc;* ***rm*** **= 100 mm**; η_h *– Efficiency of the hydraulic transmission;* η_h **= 0.93**;
i_p *– Pedal transmission ratio;* i_p **= 5.0**
State of development: Calculation and construction of road vehicles 2 Project
Contact: *vlad.certejan@gmail.com*
Presentation link: *https://www.fih.upt.ro/ccmti/*

19.

Title: ***WORKING STEAM ENGINE***
Patent/project number: Model ship
Author/s: Gyula Török (Hódmezővásárhely)
Institution/Country: Idea Club 13 Association, Hódmezővásárhely, Hungary
Category: J
Description: *Model ship powered by a steam engine. A steamship, often referred to as a steamer, is a type of steam-powered vessel, typically ocean-faring and seaworthy, that is propelled by one or more steam engines that typically move (turn) propellers or paddlewheels. The first steamships came into practical usage during the early 19th century; however, there were exceptions that came before. Steamships usually use the prefix designations of "PS" for paddle steamer or "SS" for screw steamer (using a propeller or screw). As paddle steamers became less common, "SS" is incorrectly assumed by many to stand for "steamship". Ships powered by internal combustion engines use a prefix such as "MV" for motor vessel, so it is not correct to use "SS" for most modern vessels.*
State of development: product
Contact: *otletclub.idea@freemail.hu*
Presentation link: *https://otletclub.5mp.eu/web.php?a=otletclub*

20.

Title: STAND FOR THE DETERMINATION OF THE MECHANICAL AND TRIBOLOGICAL CHARACTERISTICS IN STATIC AND DYNAMIC REGIME THROUGH THE METHOD OF RESISTIVE TENSOMETRY OF SLIDING BEARINGS MADE OF PLASTIC MATERIALS INTENDED TO WORK WITH SHAFTS IN THE CONSOLE WITH ITS OWN SYISTEM OF LOADING AND DIGITAL READING OF THE FORCE AND ARROW
Patent/project number: A/00189/2024
Author/s: Bogdan – Roth Mihail, Romanet Mirela, Zisopol Dragos – Gabriel, Dinita Alin, Minescu Mihail, Ripeanu George - Razvan
Institution/Country: Petroleum – Gas University of Ploiesti, Romania
Category: D
Description: *The invention relates to a stand for the determination of mechanical and tribological characteristics in static and dynamic mode by the method of resistive tensometry of plastic sliding bearings intended for operation with cantilever shafts with their own system of loading and digital reading of force and arrow. The sectioned experimental bearing with tensometric marks glued on these sections fig. 8 is located in the stand housing together with the conjugated experimental shaft. At the free end of the shaft, the force is applied, F_2 and by means of a digital dynamometer that generates the force that acts on a system of levers that amplifies the force, and the arrow is read on the screen of the digital comparator. The stand designed and executed in this way was made with a minimum consumption of materials, does not require large spaces for storage, has its own system for generating and measuring force and arrow.F_1 F_1*
Development stage: Doctoral research project
Contact: ***+4 0744751905*** *rothinimagic@yahoo.com*
Presentation link: *https://www.upg-ploiesti.ro/en*

21.

Title: DEVICE FOR DETERMINING THE COEFFICIENT OF FRICTION WHEN SLIDING IN STATIC MODE WITH DIGITAL DYNAMOMETER
Patent/project number: RO-BOPI 135282 A0
Author/s: Bogdan – Roth Mihail, Romanet Mirela
Institution/Country: Petroleum – Gas University of Ploiesti Ploiesti, Romania
Category: D
Description: *The invention relates to a device for determining the coefficient of friction on sliding in static mode equipped with a digital dynamometer (5) intended for the investigation of pairs of plastics with metallic materials. More specifically, the device determines static friction coefficients for the materials used in the construction of non-circular gears.*
Development stage: patent
Contact: +0744751905 rothinimagic@yahoo.com
Presentation link: *https://www.upg-ploiesti.ro/en*

22.

Title: NON-CIRCULAR GEAR WITH CONTINUOUS VARIATION OF THE DISTANCE BETWEEN AXLES (WITH A SLIDE AND SLIDING STONE) WITH AUTOMATIC ADJUSTMENT
Patent/project number: RO-BOPI6/2022 A0135847
Author/s: Bogdan – Roth Mihail, Romanet Mirela, Ripeanu George – Razvan
Institution/Country: Petroleum – Gas University of Ploiesti Ploiesti, Romania
Category: D
Description: *The invention relates to a variable offset gear produced by a remote-controlled electric motor. The use of this device allows a wide range of variable gear ratios to be obtained. This device has a wide range of use and can replace a connecting rod-crank mechanism.*
The device contains a circular gear that can be offset by means of a worm gear and a motor for the variation of the misalignment. The auger-auger mechanism ensures that this system is self-locking during operation without the need for any other safety elements.
The device can be used for actuators in the field of agricultural machinery and textiles or packaging in the automated process. Practice shows that there are many situations in which the need for a variable gear ratio is required for the control of assembly or mechanical processing processes.
Variable gear ratios can convert rotational motion into linear or oscillating displacements with variable speeds. He realization of these variable gear ratios or the variable displacement between axles can also be achieved with the help of these eccentrically offset non-circular wheels operated by remote control and during operation.
Development stage: patent
Contact: +00744751905 *rothinimagic@yahoo.com*
Presentation link: *https://www.upg-ploiesti.ro/en*

23.

Title: SCRATCHBUILD MODELSHIPS - TUGBOAT "NEREO", FAST ATTACK BOAT S-100
Patent/project number: Modelships Project
Author/s: George POPA
Institution/Country: Gemar Modelships, Romania
Category: D
Description: *Scratchbuild modelships according to original shipyard plans and documentation. The modeltugboat "Nereo" is a true to scale replica of a WW 2 italian armed tugboat used by the italian navy to defend against aircrafts during the war. The model is fully functionaland can complete the following functions: forward / backward, left / right, anchor maneouvering, smoke and sound generator, navigation lights. All these functions can be activated using a 10CH proportional remote control. The model has won the Gold medal in following international competions: World Chamionship NS class, Ornetta, Poland, 2017; european championship Burgas, Bulgaria, 2019; World championship C class, Rijeka, Croatia,2021, World champion ship C class, Jablonec, Czech Republic, 2023. Fast attack S100 built by Kriegsmarine in WW2 and widely used on all naval operations aroun Europe. The model represents one of the ships used in Black Sea. RC model capable of launching electric torpedoes and also all basic running functions. Model has been awarded with the gold medal in C6 class at World championship in Jablonec, Czech Rep.*
State of development: Modelships
Contact: *marinaru_ro@yahoo.com* ***+40722284042***
Presentation link: *https://www.facebook.com/gemarmodelships*

24.

Title: ECCENTRIC CIRCULAR GEARED WHEEL WITH GEARMOTOR ATTACHED FOR CONTINUOUS VARIATION BETWEEN THE AXES OF A GEAR WITH REMOTE CONTROL OPERATION OF THE MOTOR DURING OPERATION
Patent/project number: RO-BOPI 6/ 2022 135849 A0
Author/s: Bogdan – Roth Mihail, Romanet Mirela, Ripeanu George – Razvan
Institution/Country: Petroleum – Gas University of Ploiesti Ploiesti, Romania
Category: D
Description: *The invention relates to a variable offset gear produced by a remote-controlled electric motor. The use of this device allows a wide range of variable gear ratios to be obtained. This device has a wide range of use and can replace a connecting rod-crank mechanism. The device contains a circular gear that can be offset by means of a worm gear and a motor for the variation of the misalignment. The auger-auger mechanism ensures that this system is self-locking during operation without the need for any other safety elements. The device can be used for actuators in the field of agricultural machinery and textiles or packaging in the automated process. Practice shows that there are many situations in which the need for a variable gear ratio is required for the control of assembly or mechanical processing processes. Variable gear ratios can convert rotational motion into linear or oscillating displacements with variable speeds. The realization of these variable gear ratios or the variable displacement between axles can also be achieved with the help of these eccentrically offset non-circular wheels operated by remote control and during operation.*
Development stage: patent

Contact: ***+40744751905*** ***rothinimagic@yahoo.com***
Presentation link: ***https://www.upg-ploiesti.ro/en***

25.

Title: DEVICE FOR BENDING A RECESSED CONSOLE WITH DIGITAL MEASUREMENT OF ITS OWN ACTUATION FORCE
Patent/project number: RO-BOPI 9/2022 A0135999
Author/s: Bogdan – Roth Mihail, Romanet Mirela, Ripeanu George – Razvan
Institution/Country: Petroleum – Gas University of Ploiesti Ploiesti, Romania
Category: D
Description: *The invention relates to a device for bending test recessed bars driven by a force at the free end with the possibility of applying the force itself with a digital dynamometer. To measure the force, it is read on the digital display of the dynamometer.*
The device is intended for the investigation of plastic specimens subjected to bending in brackets. Due to the small size of the device, it can be inserted between the polarization filters of a photoelasticimeter, where the state of tensions in the specimen can be visualized in polarized light, depending on the load achieved by operating the operating wheel.
The self-pressure force can be precisely adjusted, as the force value is read on the display of the digital dynamometer with an accuracy of three decimal places.
Development stage: patent
Contact: 0744751905 ***rothinimagic@yahoo.com***
Presentation link: ***https://www.upg-ploiesti.ro/en***

26.

Title: STRAIGHT-TOOTHED CIRCULAR TOOTH-TESTING DEVICE
Patent/project number: RO-BOPI 7/2022 A0135898
Author/s: Bogdan – Roth Mihail, Romanet Mirela, Ripeanu George – Razvan
Institution/Country: Petroleum – Gas University of Ploiesti Ploiesti, Romania
Category: D
Description: *The invention relates to a device for testing the teeth of circular tooths with straight plastic teeth. The device conforming to the invention comprises a partially toothed metal wheel which can rotate around a fixed shaft engaged in the rotational movement by means of a movable rack operated by a testing machine.*
On the partially toothed wheel is mounted a metal piece of rack-and-pinion tooth type that acts on a plastic toothed wheel with the role of test specimen, mounted on the same horizontal shaft fixed on a support.
Development stage: patent
Contact: +40744751905 ***rothinimagic@yahoo.com***
Presentation link: ***https://www.upg-ploiesti.ro/en***

27.

Title: SELF-ADAPTIVE DIFFERENTIAL GROUP
Patent/project number: RO134406 / 30.03.2023
Authors: ROMEO CĂTĂLINOIU, SORIN AUREL RAȚIU, IMRE ZSOLT MIKLOS
Institution/Country: Coramex by Service Automobile SA, Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: D
Description: *The invention is an application of Patent RO134406 dated 30.03.2023 and refers to a gearbox intended to ensure the transmission of electrically powered automobiles with the aim of reducing energy consumption and increasing energy autonomy. The gearbox is characterized by the fact that it continuously varies the value of the transmission ratio, by varying the revolutions of the two electric motors, which can work individually or in tandem. The gearbox is a mechanical reducer characterized by the fact that it provides assistance when pedaling through an electric motor, assistance that can be achieved in three modes: low, medium and high, self-adaptive depending on the value of the load torque that must be overcome.*
State of development: prototype
Contact: *catalinoiuromeo@gmail.com sorin.ratiu@fih.upt.ro*
Presentation link: *https://www.youtube.com/@romeocatalinoiu5758/videos*

28.

Title: STAND FOR THE DETERMINATION OF STRESSES AND DEFORMATIONS ALONG AND AT THE HEIGHT OF THE TOOTH FOR GEARS WITH INCLINED TEETH AND LARGE WIDTHS BY THE METHOD OF RESISTIVE TENSOMETRY
Patent/project number: nr. A00095/12-03-2025
Author/s: Bogdan - Roth Mihail, Bucur Mihai -Tiberiu, Cananau Sorin, Romanet Mirela, Ripeanu George – Razvan, Dinita Alin
Institution/Country: Petroleum – Gas University of Ploiesti, Polytechnic University of Bucharest, Romania
Category: D
Description: *The invention relates to a stand for the determination of stresses and deformations in the length and height of the tooth for gears with inclined teeth and large widths by the method of resistive tensometry.*
With the original design stand, it is possible to simulate the operating behavior of gears with long, inclined, bent teeth, from the moment they enter the gear until they exit the gear. The variant of the stand designed by the author differs a lot from a constructive point of view compared to other stands.
The stand is designed to operate attached to a universal laboratory machine for compression, which generates the force applied tangentially to the tooth, a force that determines the bending moment of the tooth along its length and height.
Development stage: Doctoral research project
Contact: ***+40744751905*** *rothinimagic@yahoo.com*
Presentation link: *https://www.upg-ploiesti.ro/en*

29.

Title: MONO-BLOCK BODY FOR LOW-MASS VEHICLES
Patent/project number: Patent OSIM no.: RO133971- B1/ 30.12.2024
Author/s: Bere Petru Paul; Neamțu Călin Gheorghe Dan; Dudescu Cristian; Krolczyk Grzegorz
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: D
Description: *The invention relates to a monoblock body for motor vehicles and to a sandwich-type fiber-reinforced composite material for making the body, the composite structure exhibiting high mechanical resistance and low mass. According to the invention, the body is made of a sandwich-type composite structure consisting of a honeycomb-like aluminium core placed between an exterior layer and an interior layer made of a glass-fiber-, carbon-fiber- or Kevlar-reinforced composite material, the body consisting of two cones, a front one and a back one, for impact, continued with a floor provided, on the edges, with two sills made of composite material, onto which four pillars supporting the ceiling, are connected, on the edge they having a resistance structure, with a reinforcing element placed inside the door with the role of protecting the passengers in case of lateral impact, all the mentioned elements being obtained in a mould with multiple separation planes inter-connected during the process of composite lamination, the operation being performed simultaneously, to finally result in a complete monoblock body.*
State of development: patent, scientific paper, research project
Contact: *Liliana.Pop@staff.utcluj.ro*
Presentation link: *https://www.utcluj.ro/en/*

30.

Title: BRAKING MECHANISM WITH S CAM
Patent/project number: Patent OSIM no.: RO133631- B1/29.11.2024
Author/s: Laze Daniel
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: D
Description: *The invention relates to an "S" cam braking mechanism having an actuating system consisting of a body supporting a shaft, and an axial movable assembly formed by the pusher shaft and the spindle with balls sliding in the grooves and causing the cam to rotate. Wear compensation and holding of the shoes in the immediate vicinity of the drum is made with a mechanical reaction loop formed by the sawtooth coupling and the threaded assembly.*
State of development: patent, scientific paper, research project
Contact: *Liliana.Pop@staff.utcluj.ro*
Presentation link: *https://www.utcluj.ro/en/*

31.

Title: SIMULATION OF THE DYNAMIC AIR TRANSFER SYSTEM FOR SETRA BUS
Patent/project number: Research Project
Author/s: Flavius Bucur; Metors: Corneliu Birtok Baneasa, Ana Socalici

Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: D
Description: *This study is carried out in order to optimize the intake route in the case of buses. In this regard, a new external route was modeled and designed with the role of capturing and directing the air flow towards the intake route and towards the suction area of the air filter. This route is located on the outside of the bus in the region of the propulsion group. The efficiency of the collector consists of modeling and simulating the external collection region by implementing a diffuser shape customized according to the body architecture but taking into account the manufacturer's regulations regarding the bus's overall dimensions. The experiments and tests were conducted in the laboratories of the Faculty of Engineering in Hunedoara.* ***State of development: Simulation***
Contact: *flavius_bucur@yahoo.com*
Presentation link: *https://www.fih.upt.ro/ccmti/*

32.

Title: FRICTION STIR WELDING DEVICE WITH AIR COOLING OF THE FSW WELDING TOOL AND THE MATERIALS TO BE JOINED
Patent/project number: A/00028/27.01.2022 (publication number RO 137552A2), OSIM Bucharest, Romania
Author/s: Radu Cojocaru, Lia-Nicoleta Boțilă
Institution/Country: National Research and Development Institute for Welding and Material Testing – ISIM Timisoara, Romania
Category: D
Description: *The patent application refers to the development of a specialized welding device usable for friction stir welding FSW, whose constructive solution ensures an additional air-controlled cooling of the FSW tool and the materials to be joined, in the welding area and in adjacent areas.*
The constructive solution of the device meets the necessary technical conditions to protect the FSW welding tool and the materials to be joined from overheating, in the action area of the welding tool, during the actual welding process, by cooling them with an additional air flow. So, the overheating effect of the welding tool and of the materials to be joined by welding will be reduced, ensuring an increase of the tool service life and also protecting the bearings of the main shaft of the FSW welding machine.
State of development: concept
Contact: ISIM Timisoara, www.isim.ro, isim@isim.ro, +40256491831
Presentation link: https://www.osim.ro/images/Publicatii/Inventii/2023/inv_07_2023.pdf; https://ro.espacenet.com/publicationDetails/biblio?II=0&ND=3&adjacent=true&locale=ro_RO&FT=D&date=20230728&CC=RO&NR=137552A2&KC=A2

33.

Title: RETRACTABLE AND PIVOTING CAR REARVIEW MIRROR
Patent/project number: A2024 00484 / 21.08.2024, OSIM Bucharest, Romania
Author/s: Nicușor-Alin Sîrbu, Gabriela-Victoria Mnerie

Institution/Country: National Research and Development Institute for Welding and Material Testing – ISIM Timisoara, Romania
Category: D
Description: *The invention relates to a mandatory accessory related to the safety of the autovehicle, namely the side mirrors which provide visibility of the traffic behind the automobile together with the main rear-view mirror in the passenger compartment.*
The invention is based on the inventive concept that the rear-view mirrors of the car placed on the edges of the bonnet at the front of the car provide a direct and quasi-permanent (immediate) visibility by being placed in the driver's normal field of vision. Traffic safety is enhanced, and when stationary the rear-view mirror is completely retracted, hidden and protected under the bonnet, thus eliminating accidental knocks, or damage from vandalism.
State of development: concept
Contact: ISIM Timisoara *isim@isim.ro* ***+40256491831***
Presentation link: *www.isim.ro*

34.

Title: TELESCOPIC RETRACTABLE CAR REARVIEW MIRROR
Patent/project number: A2024 00485 / 21.08.2024, OSIM Bucharest, Romania
Author/s: Nicuşor-Alin Sîrbu, Gabriela-Victoria Mnerie
Institution/Country: National Research and Development Institute for Welding and Material Testing – ISIM Timisoara, Romania
Category: D
Description: *The invention relates to a mandatory accessory in the construction of land automobiles related to their safety in circulation, namely the side mirrors which provide visibility of the traffic behind the automobile together with the main passenger compartment rear-view mirror.*
The invention is based on the inventive concept that the car rear-view mirrors placed on the edges of the bonnet at the front of the car provide direct and immediate visibility by being placed in the driver's normal field of vision. Traffic safety is improved, and when stationary the rear-view mirror is fully retracted, hidden and protected under the bonnet eliminating accidental knocking or damage from vandalism.
State of development: concept
Contact: ISIM Timisoara *isim@isim.ro* ***+40256491831***
Presentation link: *www.isim.ro*

35.

Title: AUTOMATIC SYSTEM FOR MONITORING DRIVERS' ATTENTION
Patent/project number: CBI A/00319/2020
Author/s: TOADER Eusebiu, PAVĂL Mihaela, MILICI Dan Laurențiu, BOBRIC Crenguța Elena, IRIMIA Daniela, VLAD Valentin, NIȚAN Ilie, GRAUR Adrian

Institution/Country: Stefan cel Mare University of Suceava, Romania
Category: D
Description: *The automatic system for monitoring the attention of drivers according to the invention consists of a system of two sensors for evaluating the electrodermal resistance at the driver's hand, pulse, hand contact force and the steering wheel, the acceleration of the vehicle, the angular displacement of the steering wheel and its vibrations, place on the steering wheel by means of a cover. The retrieved data is processed using a microcontroller procurement system that will determine if the position of the hands on the steering wheel is correct and if the driver's condition allows him to drive.*
State of development: Laboratory prototype
Contact: *dam@usm.ro*
Presentation link: *https://usv.ro/en/homepage/*

36.

Title: PUMPING SYSTEM
Patent/project number: CBI A00503/2020
Author/s: TOADER Eusebiu, NIȚAN Ilie, PAVĂL Mihaela, MILICI Dan Laurențiu, CERNUȘCĂ Dumitru, MILICI Mariana Rodica, GRAUR Adrian, DIMIAN Mihai, UNGUREANU Constantin
Institution/Country: Stefan cel Mare University of Suceava, Romania
Category: D
Description: *The pumping system according to the invention consists of a cylindrical container, provided with a piston which is moved by means of a rod terminated with a T-shaped profile, provided at the lower end with a support fixing two nitinol springs and the upper part of the rod profile acts at the ends of the stroke the double microcontacts respectively, which controls the closing and opening of the electrovalve, the fans and disconnects the heating circuits of the nitinol springs controlled alternately by the relay contacts by means of a microcontroller.*
State of development: Laboratory prototype
Contact: *dam@usm.ro*
Presentation link: *https://usv.ro/en/homepage/*

37.

Title: WASTE PLASTIC RECYCLING PLANT
Patent/project number: 19215(1201800492)
Author/s: WAM ELVIS MBVIUGEH
Institution/Country: HOLY CENTER FOR RESEARCH AND PRACTICAL SCIENCES, HCRPS, COOP-BOD, CAMEROON
Category: D
Description: *This invention is aimed at cleaning the environment and the ecosystem for sustainable agriculture and used for the production of construction materials like tar oils, (asphalt and Bitumen)*

roofing tiles, insulators for floors and walls, damp proof course materials, electric poles, culverts, gutters, road sign posts and steam with Improvements of using the steam to generate electrical energy and to recover bio fuel.
The main aim is transforming waste plastics and metals into useful products and used as an apparatus for fast cooking and to facilitate the cracking of stones for masonry works. This creation will greatly help Africans for the protection of the environment for other generations, substantial agriculture and improve on soil fertility against famine. The author laid down some principles which richly increased the performance of the invention. The study of the thermodynamics, observation and experiments with the ancient style forging apparatus which in my mother's tongue is called ALAM.
The study of electronic components and tele-mechanique control systems helped the Author to design a rectifier circuit on the control panel, which is the magical power to cut down the consumption of the machine during operation; that is from 220v to 12v-24v and permits the plant to be able to operate with solar plant and less consumption.
State of development: PROTOTYPE
Contact: +237 677 45 82 90 *wamelvis@gmail.com*
Presentation link:
https://www.facebook.com/profile.php?id=61550083540535&mibextid=ZbWKwL

38.

Title: ALEX's MOTORCYCLES
Patent number: Research project
Author/s: Alex SZEKELY
Institution/Country: Classic Car Hunedoara, Romania
Category: D
Description: *Classic motorcycles are an exciting hobby for many enthusiasts, this activity involves the search, restoration and preservation of old and rare motorcycles, often for display in private collections or at specialist events. For enthusiasts, every motorcycle is a story and a piece of motoring history, and the restoration process is a way to bring those stories to life and preserve them for future generations. Hunedoara Classic Car Club is a passionate and dedicated group of classic car collectors and enthusiasts from Hunedoara County, Romania. Founded with the aim of promoting and preserving the historic automotive heritage, this club gathers around it lovers of vintage cars from different eras and brands. Club members are actively involved in the restoration and maintenance of their cars, attending local, national and international events to share their passion with other enthusiasts and promote classic car culture. The club serves as a meeting place to exchange ideas, experiences and advice related to restoration and maintenance, and encourages socialization and friendship among its members, thereby strengthening the community of classic car enthusiasts in the region.*
State of development: Classic motorcycles
Contact: *classiccarhunedoara@yahoo.com*
Presentation link: *https://www.facebook.com/ClassicCarHunedoara/*

39.

Title: MOTORSPORTS MY PASSION
Patent/project number: Student Project
Author/s: Ovidiu Tudor Ioan OPREA; Mentor: Prof. Corneliu BIRTOK-BANEASA
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: D
Description: *This study presents the evolution of my racecar project, a 1997 Bmw 3 Series Saloon, that started its life as a basic 4 cylinder 1.6 sedan. I got this specific chassis thanks to its results in the Super Touring races back in 1993 to 1995 – Super Touring, Class II or Class 2 was a motor racing Touring Cars category defined by the Federation Internationale de l'Automobile (FIA) for national touring car racing in 1993. It was based on the "2 litre Touring Car Formula " created for the British Touring Car Championship (BTCC) in 1990. The FIA organised a World Cup for the category each year from 1993 to 1995,and adopted the term "Super Tourer" from 1995. The car in cause was running a stroked M42 2.0 that used to be a 1.8 from the factory , running 320 naturally aspirated horsepower on a 1250kg chassis. My project is using the same suspension setup like the Super Touring E36, received a M42 swap, lighter flywheel , 286 mm braking setup from the 328i E36, lighter 17-inch Oz Racing Superturismo Rims , front and rear strut bars , 3 spoke RRS Racing Wheel, Sparco Bucket Seat and a Short Shifter. Future plans with my project? As the title says, I want it to look like a Racing car that was used 30 years ago in the Super Touring races and perform like one. How do I intend to use my project and where? Currently I have been to few open trackdays to learn my car better and learn to perform better as a driver, my latest and first competition was a local one named Cupa Caprioara II this autumn, where I was able to secure the first place on the podium, there is more competitions to come in the future!*
State of development: Prototype
Contact: *ioanovidiu200@yahoo.com*
Presentation link: *https://www.facebook.com/tudor.oprea.31* ***@_tudor321 Instagram***

40.

Title: Octavian's MOTORCYCLES
Patent number: Research project
Author/s: Orz Octavian
Institution/Country: Classic Car Hunedoara, Romania
Category: D
Description: *Classic motorcycles are an exciting hobby for many enthusiasts, this activity involves the search, restoration and preservation of old and rare motorcycles, often for display in private collections or at specialist events. For enthusiasts, every motorcycle is a story and a piece of motoring history, and the restoration process is a way to bring those stories to life and preserve them for future generations. Hunedoara Classic Car Club is a passionate and dedicated group of classic car collectors and enthusiasts from Hunedoara County, Romania. Founded with the aim of promoting and preserving the historic*

automotive heritage, this club gathers around it lovers of vintage cars from different eras and brands. Club members are actively involved in the restoration and maintenance of their cars, attending local, national and international events to share their passion with other enthusiasts and promote classic car culture. The club serves as a meeting place to exchange ideas, experiences and advice related to restoration and maintenance, and encourages socialization and friendship among its members, thereby strengthening the community of classic car enthusiasts in the region.
State of development: Classic motorcycles
Contact: *classiccarhunedoara@yahoo.com*
Presentation link: *https://www.facebook.com/ClassicCarHunedoara/*

41.

Title: MODULAR MECANUM WHEEL ASSEMBLY OPTIMIZED FOR TRACTION ON SANDY AND UNSTABLE SURFACES (ANSAMBLU MODULAR DE ROATĂ MECANUM OPTIMIZAT PENTRU TRACȚIUNE PE SUPRAFEȚE NISIPOASE ȘI INSTABILE)
Patent/project number: Patent Request in Progress (wait the number of registration)
Author/s: Aurel Mihail ȚÎȚU, Daniel BÂLC, Emanuel BÂLC
Institution/Country: Lucian Blaga University of Sibiu, ROMANIA
Category: D
Description: *This modular Mecanum wheel is specifically designed to ensure advanced mobility on low-traction surfaces or terrains that are traditionally challenging for this type of wheels, such as sand, gravel, or soft surfaces. Its modular design allows for rapid configuration and adaptation of individual components, providing a flexible solution for off-road applications or operations in difficult environments. Each roller is built using materials optimized for effective contact with sandy surfaces, featuring a profile that maximizes the contact area while minimizing sinking.*
State of development: prototype
Contact: Professor Aurel Mihail ȚÎȚU, Lucian Blaga University of Sibiu, Director of PATLIB Centre of Sibiu, President of the Romanian Association of Alternative Technologies Sibiu, 4 Emil Cioran Street, Room IM 101, Phone 0040 744 390 290, E-mail *mihail.titu@ulbsibiu.ro*
Presentation link: *https://www.ulbsibiu.ro/en/*

42.

Title: MECANUM WHEEL WITH INDIVIDUAL FLEXRING-EQUIPPED ROLLERS FOR VIBRATION DAMPING AND ENHANCED STABILITY (ROATĂ MECANUM CU ROLE DOTATE CU FLEXRING-URI INDIVIDUALE PENTRU ATENUAREA VIBRAȚIILOR ȘI CREȘTEREA STABILITĂȚII)
Patent/project number: Patent Request in Progress (wait the number of registration)
Author/s: Daniel BÂLC, Aurel Mihail ȚÎȚU, Emanuel BÂLC
Institution/Country: Lucian Blaga University of Sibiu / ROMANIA
Category: D

Description: *This Mecanum wheel incorporates a damping component, based on the use of flexrings mounted on each individual roller. Flexrings are flexible structures that absorb vibrations generated by the rollers' contact with the rolling surface. This adaptation brings multiple benefits, especially for precision applications such as industrial robots or autonomous vehicles operating in vibration-prone environments or on uneven surfaces.*

State of development: prototype

Contact: Professor Aurel Mihail ȚÎȚU, Lucian Blaga University of Sibiu, Director of PATLIB Centre of Sibiu, President of the Romanian Association of Alternative Technologies Sibiu, 4 Emil Cioran Street, Room IM 101, Phone 0040 744 390 290, E-mail mihail.titu@ulbsibiu.ro

Presentation link: *https://www.ulbsibiu.ro/en/*

43.

Title: HYBRID-ARCHITECTURE MECANUM WHEEL WITH INDEPENDENTLY ACTUATED ROLLERS (ROATĂ MECANUM CU ARHITECTURĂ HIBRIDĂ, AVÂND ROLE CU ACȚIONARE INDEPENDENTĂ FAȚĂ DE ROTAȚIA PRINCIPALĂ A ROȚII)

Patent/project number: Patent Request in Progress (wait the number of registration)

Author/s: Emanuel BÂLC, Aurel Mihail ȚÎȚU, Daniel BÂLC

Institution/Country: Lucian Blaga University of Sibiu / ROMANIA

Category: D

Description: *This Mecanum wheel represents a significant technological advancement by integrating an independent actuation system for the peripheral rollers. In traditional configurations, Mecanum wheel rollers are passive, rotating freely as the main wheel spins. In this hybrid wheel, each roller is equipped with its own actuation system, powered by a dedicated DC micro-motor capable of independently controlling the roller's speed and direction of rotation.*

State of development: prototype

Contact: Professor Aurel Mihail ȚÎȚU, Lucian Blaga University of Sibiu, Director of PATLIB Centre of Sibiu, President of the Romanian Association of Alternative Technologies Sibiu, 4 Emil Cioran Street, Room IM 101, Phone 0040 744 390 290, E-mail mihail.titu@ulbsibiu.ro

Presentation link: *https://www.ulbsibiu.ro/en/*

44.

Title: AUTONOMOUS PARKING DRONE (DRONĂ AUTONOMĂ DE PARCARE)

Patent/project number: Student Research Innovative Project

Author/s: Ionuț - Adrian ARMĂȘĂREANU, Robert GRAUR, Radu Ioan ȘERB; Coordonator: Profesor Aurel Mihail ȚÎȚU

Institution/Country: Lucian Blaga University of Sibiu / ROMANIA

Category: D

Description: *The project aims to develop a car-integrated robotic system capable of automatically identifying and occupying a parking space, reducing time and stress for drivers in congested areas. The idea started from the fact that in crowded cities it can be difficult to find a parking space. The autonomous parking drone is a small and efficient robotic system that can be integrated into a car and is automatically activated when the driver arrives in a high-traffic area or a large parking lot.*

Technical components include LIDAR sensors, GPS, 3D cameras, artificial intelligence algorithms for navigation and an efficient power system. The operating mechanism involves launching the drone from the car, searching for an empty space, assisting the car to park autonomously and returning to the vehicle. Advantages include reducing pollution and optimizing parking space, but there are technical challenges such as safety, battery range and weather conditions. Implementation involves three phases: hardware design, software development, prototype testing and improvements based on the results.

Disadvantages include high costs, legal limits and autonomy, but these can be addressed in future versions of the product. In the future we also want to collaborate with shopping malls or airports to make it easier to find parking spaces in their parking lots.

State of development: prototype

Contact: Professor Aurel Mihail ȚÎȚU, Lucian Blaga University of Sibiu, Director of PATLIB Centre of Sibiu, President of the Romanian Association of Alternative Technologies Sibiu, 4 Emil Cioran Street, Room IM 101, Phone 0040 744 390 290, E-mail mihail.titu@ulbsibiu.ro

Presentation link: *https://www.ulbsibiu.ro/en/*

45.

Title: RIM-INTEGRATED SENSORS FOR CURB DETECTION (SENZORI INTEGRATI IN JANTA PENTRU DETECTAREA BORDURILOR)

Patent/project number: Student Research Innovative Project

Author/s: Marian Cătălin BĂLAN, Bogdan Gabriel CROITORU, Radu Marian MESIA; Coordonator: Profesor Aurel Mihail ȚÎȚU

Institution/Country: Lucian Blaga University of Sibiu / ROMANIA

Category: D

Description: *The wheel-mounted sensors for detecting the distance to the curb represent a technological innovation designed to enhance the precision and safety of parking maneuvers. These sensors are integrated into the wheel structure and operate using advanced technologies such as ultrasound, radar, or LiDAR to detect, in real-time, the proximity of the curb or other obstacles near the wheels.*

By utilizing advanced data processing algorithms, the information collected by the sensors is transmitted to the vehicle's assistance systems, where it is analyzed and displayed as visual or acoustic warnings. Depending on the type of system used, the driver can receive detailed indications about the exact distance from the curb and the need to adjust the trajectory to avoid contact.

These sensors can function independently or in combination with other safety systems, such as parking cameras and body-mounted proximity sensors. Their integration allows for more precise monitoring of the vehicle's position relative to surrounding obstacles, helping to reduce the risk of wheel damage. Additionally, the technology is designed to function efficiently in various weather conditions, providing accurate detection even in low visibility or on wet surfaces. The sensors are manufactured from materials

resistant to external factors such as dust, water, and temperature variations, ensuring high durability and long-term reliable operation.
State of development: prototype
Contact: Professor Aurel Mihail ȚÎȚU, Lucian Blaga University of Sibiu, Director of PATLIB Centre of Sibiu, President of the Romanian Association of Alternative Technologies Sibiu, 4 Emil Cioran Street, Room IM 101, Phone 0040 744 390 290, E-mail mihail.titu@ulbsibiu.ro
Presentation link: https://www.ulbsibiu.ro/en/

46.

Title: FINGERPAY (PLATA PRIN AMPRENTĂ)
Patent/project number: Student Research Inovative Project
Author/s: Gabriel BANU, Ion-Dumitru BĂNĂȚEANU, Sebastian CÂRSTICA, Gabriel DODA, Dumitru BADIU; Coordonator: Profesor Aurel Mihail ȚÎȚU
Institution/Country: Lucian Blaga University of Sibiu / ROMANIA
Category: D
Description: *FingerPay is an innovative payment method that uses fingerprint recognition to authorize transactions. It works by scanning the user's fingerprint, which is then compared with data stored in a secure system. If the fingerprint matches, the payment is instantly approved.*
Contact: Professor Aurel Mihail ȚÎȚU, Lucian Blaga University of Sibiu, Director of PATLIB Centre of Sibiu, President of the Romanian Association of Alternative Technologies Sibiu, 4 Emil Cioran Street, Room IM 101, Phone 0040 744 390 290, E-mail mihail.titu@ulbsibiu.ro
Presentation link: https://www.ulbsibiu.ro/en/

47.

Title: COMPRESSED AIR ENGINE
Patent/project number: Student Project
Author/s: Truşcă Darius Ciprian, Vida Andrei Valentin, Cărăban Robert Fabian, Lup Lucian, Dumitras Alina Lucretia
Institution/Country: Transylvania Technical College Deva, ROMANIA
Category: D
Description: *A homemade air engine is a device that uses the energy of compressed air to generate mechanical motion. This type of engine can be made from readily available materials, using recycled parts, or hand-crafted components.*
Operating Principle
The engine operates on the basis of the expansion of compressed air, which is stored in a tank and released in a controlled manner to drive a piston or rotor. The energy of the compressed air is converted into mechanical work, similar to heat engines, but without the combustion of fuel.
State of development: prototype
Contact: luplucian@yahoo.com
Presentation link: https://cttdeva.ro/

48.

Title: ELECTRIC CAR MODEL
Patent/project number: Student Project
Author/s: Lup Lucian, Dumitras Alina Lucretia
Institution/Country: Transylvania Technical College Deva, ROMANIA
Category: D
Description: *It is a small-scale reproduction of an electric vehicle, made for educational purposes. It is constructed from various materials and includes a functional electric propulsion system.*
Main components of the model
Chassis and body – Made of plastic, wood, metal or composite materials, providing support and structure.
Electric motor – A small direct current (DC) motor, taken from electric toys or similar devices.
Transmission system – Includes gears or belts to transmit the motor's motion to the wheels.
Battery – The power source, a Li-ion battery.
Speed controller – The module that regulates the power to the motor.
Wheels and suspension – Functional or decorative elements to allow the model to move.
Electronic board – A microcontroller such as Arduino, used for advanced control of the motor and other functions (lights, sensors, etc.).
Materials Used
ABS or Acrylic Plastic – Easy to shape and durable
Wood (thin plywood, balsa) – Easy to work with by hand
Metal (aluminum, thin steel sheets) – More durable, but requires special tools
Recycled electronics – Motors, batteries, LEDs from old devices
Model Applications
STEM Education – Helps students understand the principles of electromechanics and electric propulsion.
Hobby and Modeling – Gives enthusiasts the opportunity to create and customize miniature vehicles.
Prototyping – Testing concepts for future real vehicles.
State of development: prototype
Contact: *luplucian@yahoo.com*
Presentation link: *https://cttdeva.ro/*

49.

Title: ELECTRIC VEHICLE CHARGING NETWORK AND ADMINISTRATION
Patent/project number: 33341144
Author/s: Smart Business & Technologies Solutions SRL
Institution/Country: Romania
Category: D
Description: *The complete solution for electric charging infrastructure. We are pioneers in electric charging infrastructure, with over 10 years of experience. Since 2014, we have built an extensive network of charging stations, serving over 50,000 users and facilitating the charging of over 20 GWh of energy, of which over 70% comes from renewable sources." Focus on sustainable and environmental growth Pioneers in the field, VOL TRELLI, powered by EV connect is a Romanian company with experience in developing*

and implementing complete charging solutions for electric vehicles. With an active presence on the Romanian market since 2014, we offer innovative and scalable solutions.
Since the first stations installed in 2014, VOLTRELLI, powered by EVconnect has experienced impressive growth, reaching over 50,000 users who have charged over 20 GWh of renewable energy.
Today, we are a global leader in electric charging solutions, with a significant presence in Europe, the Middle East and Latin America: Romania, the United Arab Emirates, Jordan, Saudi Arabia, Montenegro, Germany, Spain, France, Hungary, Bulgaria, Slovenia, the Netherlands, LATAM (Peru, Chile, Colombia).
State of development: Products
Contact: Ciobanu Mihai Dragos; +40754631068
Presentation link: *www.evconnect.ro https://web.facebook.com/evconnect.ro/*

50.

Title: OPTIMIZATION OF TECHNOLOGICAL PROCESSING BY CUTTING THROUGH USING THE GPS WALTER APPLICATION: ANALYSIS AND IMPLEMENTATION IN THE CONTEXT OF MECHANICAL PROCESSING
Project number: Scientific research contract: no.9 /04.06.2024
Author/s: Constanța Rădulescu, Ștefan Sorinel Ghimișu, Alin Stăncioiu, Nicoleta-Maria Mihuț, Aurora Cătălina Ianăși, Alin Nioață, Elena Loredana Stăncioiu
Institution/Country: University „Constantin Brâncuși" from Târgu-Jiu, Romania
Category: D
Description: *The general objective of the research project was to analyze and implement the Walter GPS application in machining processes, in order to increase their efficiency and productivity. The project aimed to identify and apply the most efficient technological solutions for optimizing work parameters, such as: cutting speed, feed and depth of cut, reducing production time and tool wear. It also aimed to improve the quality of machined parts and reduce operating costs. As a case study of the use of the Walter GPS platform, in order to determine the cutting regimes, a "distribution shaft" type part was chosen for the mass production variant, the operations: roughing turning and finishing turning.*
As a case study of the use of the Walter GPS platform, in order to determine the cutting modes, a "distribution shaft" type part was chosen for the mass production variant, the operations: roughing turning and finishing turning.
State of development: research and simulation
Contact: +40728028116 *constanta.radulescu@e-ucb.ro ctt.ucb@gmail.com*
Presentation link: *https://icdi.utgjiu.ro/centrul-de-transfer-tehnologic/*

51.

Title: OPTIMIZATION OF THE CNC PLASMA CUTTING PROCESS FOR COST REDUCTION AND IMPROVEMENT OF PERFORMANCE AND QUALITY
Project number: Scientific research contract: no.8 /04.06.2024
Author/s: Alin Stăncioiu, Ștefan Sorinel Ghimișu, Constanța Rădulescu, Nicoleta-Maria Mihuț, Aurora Cătălina Ianăși, Alin Nioață, Elena Loredana Stăncioiu
Institution/Country: University „Constantin Brâncuși" from Târgu-Jiu, Romania

Category: D
Description: *The project analyzes the optimization of the CNC plasma cutting process to reduce costs, improve performance, and enhance the quality of machined parts. This technology enables fast and precise cuts on conductive materials such as steel and aluminum, but its efficiency depends on process parameters and proper equipment configuration. The selection and adjustment of cutting current, arc voltage, and gas type influence the thickness, speed, and quality of the cut. The distance between the nozzle and the material also plays a crucial role, determining the precision and final appearance of the piece. The plasma cutting process requires careful configuration and calibration of the CNC equipment, with each component directly impacting overall performance. Monitoring the wear of consumables such as nozzles and electrodes helps maintain cutting quality and extend the equipment's lifespan. Implementing advanced technologies for automatic parameter adjustment aids in process optimization and reduces material waste. Cost reduction is achievable by adjusting cutting speed and current, using alternative gases, and adopting more energy-efficient solutions. These measures not only lower operational expenses but also contribute to reducing environmental impact. Continuous equipment monitoring through predictive maintenance systems allows for defect prevention and minimizes downtime. Optimizing the CNC plasma cutting process is essential for achieving high-quality products, reducing costs, and increasing sustainability. By precisely adjusting parameters and utilizing modern equipment, an efficient, cost-effective, and environmentally friendly process can be ensured, meeting the demands of the modern industry.*
State of development: research and testing phase
Contact: +40728028116 *constanta.radulescu@e-ucb.ro* *ctt.ucb@gmail.com*
Presentation link: *https://icdi.utgjiu.ro/centrul-de-transfer-tehnologic/*

52.

Title: EXPERIMENTAL STAND BATTERY CHARGE DISCHARGE VOLTAGE MONITOR
Patent/project number: student project
Author/s: Iulian Nistor, Alexandru Rus; Mentor: Corneliu Birtok Baneasa
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara; : National University of Science and Technology Politehnica Bucharest, Pitesti University Center, Romania
Category: D
Description: *XY-CD63L is a DC 6V-60V 30A Battery Charge Discharge Voltage Monitor. It is a discharge protector when the battery is connected to the input terminals. It is a charge protector when the battery is connected to the output terminals.*
It can connect voltage from DC 6V-60V Battery and the input/output voltage are same. It can set battery discharge/charge voltage to prevent the battery from over-discharging/over-charging and causing damage. The output voltage can continue to provide voltage to the load when the battery charging voltage rises to the allowable discharge value. Therefore, it can effectively protect the service life of the battery and make the use of the battery safer and more reliable.
State of development: Product
Contact: *nistoriulian71@yahoo.com*
Presentation link: *www.corneliugroup.ro* *https://www.fih.upt.ro/v4/eng/*

53.

Title: SIMULATION OF THE TIPPING STRUCTURE FOR MERCEDES SPRINTER 311CDI DOKA

Patent/project number: student project
Author/s: Călin Rareş TEODORESCU; Mentor Corneliu BIRTOK-BANEASA
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania

Category: D

Description: *The project presents a method of increasing the performance of the Mercedes van, model Sprinter 311cdi Doka, by implementing solutions to optimize the main functional systems, respectively the stages of the RAR approval procedure. Mercedes is a successful German brand, the Sprinter model launched on the market in 1995 and which established itself through performance, reliability/cost in the automotive industry, being among the most used vans worldwide.*

The Sprinter 311cdi Doka model was originally designed with a fixed integrated flatbed, without the possibility of tipping, the disadvantage of this feature is that it requires a relatively increased time to unload the load. The main change consisted in the implementation of a tipping kit, respectively the installation of a mobile flatbed with the aim of facilitating the faster unloading operation of the transported load.

State of development: Product

Contact: *trarescalin@icloud.com*

Presentation link: *www.corneliugroup.ro* *https://www.fih.upt.ro/v4/eng/*

E - Management, Teaching methods, Books, History and Cultural studies

1.

Title: *PATENTING OF INVENTIONS. GOOD PRACTICE GUIDE / BREVETAREA INVENTIILOR. GHID DE BUNE PRACTICI*
Patent/project number: *978-606-35-0405-1*
Author/s: *Tudor Iclanzan*
Institution/Country: *"Tudor Iclănzan" Industrial Property Office, Romania*
Category: *E*
Description: *The book meets justified expectations both from the inventors and from many specialists in the field. It is written with the main objective of developing quality patents on the conceptual platform that aims to facilitate technology transfer. Fundamental notions of patenting inventions that over the years have often suffered from inadequate interpretations are now clarified. The book really has the valences of a true guide of good practices by explaining some mistakes that frequently appear in the practice of patenting, by analyzing the evoked cases and especially by offering some solutions by the author. The main objective of each patenting or certification approach has always been the quality of the works performed so that the property titles obtained (patents, trademarks, designs/models) are viable and comply with the expectations of the clients.*
State of development: *Intellectual property book*
Contact: *tudor.iclanzan@yahoo.fr* *+40 744 647875*
Presentation link: *www.iclanzan.ro*

2.

Title: *I have knowledge! I know! / Ba Cunosc! Ba Stiu!*
Patent/project number: *Educational Project*
Author/s: *Sarah LASCU HARVAT*
Institution/Country: *EDUROD Association for Digital and Environmental Education, Romania*
Category: *E*
Description: *The EDUROD Association aims to bring together three important directions: digital education, environmental education, and cultural education, in order to help and support educators, youth, parents, and individuals from disadvantaged groups in education and art therapy.*

The main project "I have knowledge! I know!" / „Ba Cunosc! Ba Stiu!" aims to document as many professions from various locations as possible in order to make known to the general public their products and services, the people behind the professions, and the main activities required to carry out these professions.
State of development: Discovering and presentation of the professions in the form of a video
Contact: Sarah LASCU HARVAT *sarah@bacunosc.ro* ***+40728772758***
Presentation link: *https://bacunosc.ro/*

3.

Title: SCIENCE LABS & CAMPS
Patent/project number: Science workshops
Author/s: Tiberiu Stroia & Team
Institution: CASA STIINTEI ASSOCIATION
Category: E
Description: *Started three years ago, the project of the ASSOCIATION OF THE HOUSE OF SCIENCE is structured in two main directions. The first is to promote science among students through laboratory activities, science presentations and science camps. The second direction involves the training and preparation of students for Olympiads and other types of competitions with a scientific theme that require in-depth knowledge of mathematics or chemistry.*
There is already a SCIENCE HOUSE team, made up of students, teachers and instructors who carry out a series of activities. Some of these take place in the specially designed laboratory and the other scientific activities are carried out in the field.
The House of Science has been carrying out, for almost three years, a series of activities in which students passionate about natural sciences are invited to participate. Science camps, astronomical observation nights, zoom classes, science workshops held in the Association's laboratory and, starting this summer, scientific expeditions.
The study of gases
Children will obtain in the laboratory Oxygen, Hydrogen, Iodine, Acetylene, AMMONIA, HYDROGEN SULPHIDE, and Carbon Dioxide. They will learn the story of the discovery of each gas and will be able to observe, through experiment, the properties of these gases. Experiments carried out by the teacher: obtaining chlorine and ozone.
SCIENCE IS MAGIC THAT WORKS!
State of development: *scientific activities*
Contact: *contact@casastiintiei.ro* ***+40735 370 327***
Presentation link: *https://casastiintei.ro/ https://www.youtube.com/@casastiintei7098/featured*

4.

Title: GRAPEVINE GENOTYPES IN THE CONTEXT OF CLIMATE CHANGE
Patent/project number: ISBN 978-9975-165-49-5. 2023
Author/s: Eugeniu ALEXANDROV

Institution/Country: Institute of Genetics, Physiology and Plant Protection of the State University of Moldova, Republic of Moldova
Category: E
Description: *The photosynthesis irradiance curve makes it possible to understand the eco-physiological characteristics of a species, and in turn, these indices give us the opportunity to compare different plant genotypes in more or less similar conditions, thus determining the productive capacity and resistance to environmental factors. Studies have shown that the interspecific grapevine genotypes are characterized by much better adaptive features than intraspecific genotypes in relation to climate change. Taking into account the effectiveness of physiological processes, such as: photosynthesis, respiration, transpiration, stomatal conductance, assimilation etc., in the process of plant breeding, it is possible to identify plant genotypes with an increased potential for capturing carbon dioxide from the atmosphere, thus helping to maintain the global average temperature within limits that would not lead to an intensification of the greenhouse effect and climate change. This method can also be applied in the process of breeding different plant crops. In this case, it is necessary to apply techniques and methods of plant breeding to create plant genotypes that will be used to expand the forest areas, to stop desertification processes, to create protective forest belts, for the sustainable use of agricultural and other types of land etc., and which will be characterized by a high efficiency of the photosynthesis process under the new climatic conditions.*
State of development: Book. Chisinau. 2023. ISBN 978-9975-165-49-5. 131 pag.
Contact: *alexandrov.eugeniu@gmail.com*
Presentation link: *https://usm.md/?lang=en*

5.

Title: THE CREATION OF OWN-ROOTED INTERSPECIFIC GENOTYPES OF GRAPEVINE
Patent/project number: ISBN 978-9975-3161-5-6. 2020
Author/s: Eugeniu ALEXANDROV
Institution/Country: Institute of Genetics, Physiology and Plant Protection of the State University of Moldova, Republic of Moldova
Category: E
Description: *As a result of the development of the methodology for creating interspecific rhizogenic genotypes, which consists in elucidating the functionality of genetically related taxonomic entities Vitisvinifera L. and Muscadinia rotundifolia Michx with diminished combinative capacity, which can be overcome by involving two determining genetic factors: parental as a hybridization component - Vitisvinifera maternal parent, and Muscadinia rotundifolia - paternal and additive - through backcrossing. Finally, a wide induction of recombinant varieties takes place, which provides opportunities for streamlining distant hybridization in the process of improving valuable characters. By crossing the genotypes of V. vinifera L. with M. rotundifolia Michx., interspecific rhizogenic grapevine genotypes were obtained and selected in BC3, with valuable characters, which allows to expand the grapevine cultivation area to the northern limit, on own roots and reduce the number of chemical treatments.*
State of development: Book Chisinau. 2020. ISBN 978-9975-3161-5-6. 232 pag.
Contact: *alexandrov.eugeniu@gmail.com*
Presentation link: *https://usm.md/?lang=en*

6.

Title: A.D.O.R.
Patent/project number: Human rights support project
Author/s: Anca Maria Dorina & ADOR team
Institution/Country: Association for Human Rights and Representation, Romania
Category: E
Description: *The purpose of the ASSOCIATION FOR HUMAN RIGHTS AND REPRESENTATION – ADOR is in mainly, the support of human rights, and to increase it, it proposes a series of objectives, including:*

- *monitoring local, parliamentary, European parliamentary, presidential elections and referenda local and national, through accredited observers and through any other legal means;*
- *creation of information centers and legal advice in the matter of human rights and social protection;*
- *carrying out studies, analyses, researches, opinion polls on different topics;*
- *promoting volunteerism, especially among young people.*

Through the VOLUNTEERS FOR LIFE AND DEMOCRACY project we propose to initiate and introduce the practice of dialogue with the all actors can contribute ideas, to promote structured dialogue between decision-makers at political level and civil society, in order to ensure the effective participation of employees in the electoral process. Also, through active involvement of our non-governmental organization in non-formal and informal education activities, we will lay the foundations the process of introduction into the formal curriculum of political education.
Activities carried out:
- attracting/training volunteers;
- electoral information/education of students from colleges and high schools in Cluj-Napoca and Dej.
State of development: attracting and training volunteers
Contact: *asociatie.ador@gmail.com*
Presentation link: *https://asociatia-ador.ro/*

7.

Title: VIBRATII MECANICE – TEORIE SI APLICATII / MECHANICAL VIBRATIONS - THEORY AND APPLICATIONS
Patent/project number: ISBN: 978-606-35-0597-3 EDITURA POLITEHNICA TIMISOARA
Author/s: DANIELA-DELIA ALIC
Institution/Country: POLITEHNICA UNIVERSITY TIMISOARA, FACULTY OF ENGINEERING HUNEDOARA / ROMANIA
Category: E
Description*: This book introduces mechanical vibration theory with applications on Automotive related topics. Centered on Automotive applications of mechanical vibration theory, this book explains physical phenomena with examples, images, and real system models using open resources and simulation tools. It explores system responses to disturbances through physical and mathematical modeling, derives motion laws, and solves equations using analytical or numerical methods. The results are then analyzed and interpreted within the framework of vibration theory. Aiming to develop problem-solving skills for students,*

teachers, and researchers, the seven chapters of the book presents theoretical concepts and practical applications in science, engineering, and everyday life.
State of development: BOOK PUBLISHED 2024
Contact: *daniela.alic@upt.ro* ***+40770823588***
Presentation link: *https://www.fih.upt.ro/personal/daniela.alic/*

8.

Title: INITIATION IN THE C++ PROGRAMMING LANGUAGE AT THE INFORMATICS CIRCLE AT THE DEVA CHILDREN'S PALACE
Patent/project number: Educational Program
Author/s: Bianca Claudia POPESCU
Institution/Country: Deva Children's Palace, Romania
Category: E
Description: *At the IT circle at Palatul Copiilor Deva, students are introduced to the C++ programming language, a language used to develop complex software applications, games and even operating systems, but also in programming applications such as simulations, scientific calculations, engineering, financial applications. This language was developed in the 1980s as an extension of the C language, but adding object-oriented programming (OOP) functionality. C++ is a compiled language, which means that the source code written by the programmer is translated into machine code that the computer can execute. In the computer science circle, students learn to download and use the CodeBlocks programming environment for writing and running programs in C++. The beginner groups study some basic concepts of the language: the structure of a program in C++, the meaning of the instructions used, the data types in C++, the declaration and initialization of variables, simple operations with variables. In C++ there are many types of structures and concepts that students learn in order to write correct and efficient programs. Students in advanced groups are introduced to the use of control structures, namely: if-else-which allows a decision to be made, switch-case-used to choose between several options based on a value, for-used to repeat a block of code a given number of times, while-which is an instruction that is executed while the set condition is met, do-while – similar to while, but the condition is checked at the end of each iteration, so that the little once Performance group students learn one-dimensional (vectors) and two-dimensional (matrices) text files and arrays in C++, used in a variety of applications. Text files are an essential part of programming because they are used to store and retrieve data in the form of text (characters), that is, information that can be read and processed by humans or programs.*
State of development: C++ programming language
Contact: *popescu_bianca7@yahoo.com*
Presentation link: *http://www.palatulcopiilordeva.ro/cercuri/deva-2/informatica/*

9.

Title: TECHNICAL TRANSLATION: A COMPLEX JOURNEY
Patent/project number:
Author/s: Oana GĂIANU-LUCA

Institution/Country: Politehnica University of Timisoara, Engineering Faculty of Hunedoara, Romania
Category: E
Description: *This project discusses the challenges of translating technical language from Romanian to English, focusing on the importance of precise terminology, structural differences, and standardization. Translation is an intricate process that requires linguistic proficiency, cultural awareness, and technical expertise, particularly when dealing with specialized fields. Translating technical language from Romanian to English presents unique challenges, as it involves industry-specific terminology, context-sensitive phrases, and structural differences between the two languages. One of the main difficulties in translating technical texts from Romanian to English is the precision required for specialized terminology. Based on research, it is observed that terminology is defined as the discipline that deals with the study of terms, analyzing their creation, meaning, evolution, and usage. It represents a collective body of terms, offering an alternative approach to studying the lexicon by utilizing analytical techniques and methods for an object formed through the entirety of terminologies. From the perspective of specialists, terminological science involves the strict standardization of terms through codes established by international authorities. Technical language often relies on precise, standardized terms that do not always have direct equivalents in the target language.*
State of development: Research project
Contact: *oanagaianu@yahoo.com*
Presentation link: *https://www.fih.upt.ro/personal/oana.gaianu/*

10.

Title: DISCOVER TRANSYLVANIA GUIDED BY A MEDIEVAL KNIGHT
Patent/project number: Educational Guide Program
Author/s: Harald-Alexandru SUSANYI
Institution/Country: Susanyi Harald Alexandru PFA
Category: E
Description: *My name is Harald, I was born in Hunedoara and I guide in the beautiful province of Transylvania dressed in a knight templar suit. I'm studying history at the „1 December 1918" University of Alba Iulia and I'm fond of history of Transylvania and of the Corvin's family from Hunedoara.*
I began my activity in high school in 10th grade, when I was 17 years old. I participated into a program named „Guide for a day", organized together with the Corvin's Castle Museum. Almost 70 pupils from my high school had the chance to guide tourist groups in the castle for an entire week. I had at home a knight's tunic and I decided to take it and guide dressed in a „medieval knight". I put the quotation marks because I had sneakers on my feet, ordinary trousers and a vintage belt. I had four children groups in that day and all of them were enjoying to be guided by a medieval knight. I loved the atmosphere and their true emotions and I decided to study more about the castle and to buy new items. For some time, I guided as a volunteer guide in the castle and my passion grew. This guiding activity is the reason that I chose to go to the history faculty from Alba Iulia.
Since 2019, I offer to my tourist groups some unique experiences, let's say „medieval experiences", managing to make history interact with them. I will not mention them here, but I invite you to discover

them together. My tours are based on emotions, because information can be easily forgotten, but emotions remains alive in our hearts for years.
The main purpose of my work is to promote the history, traditions and legends of Transylvania and especially of the Corvin's family, a 15th century noble family from Hunedoara, with the great John Hunyadi, remembered every day by the Catholic Church for more than 500 years.
I have a lot of medieval elements which make the difference between me and an ordinary guiding experience. I have a sword, shield, chainmail, helmet, gauntlets, blowing horn, medieval parchment, coins etc.
So far, I can tell my groups the stories of the Corvin's Castle and of the towns of Alba Iulia and Sibiu. I have many surprises to prepare for the next years and I propose myself to guide in all of Transylvania and to promote its history to anyone who wants to discover „The land beyond the forest" (That's the translation from latin of the name of „Transylvania")
State of development: Guide Services
Contact: +40770 806 840 *harald.s2001@yahoo.ro* *www.Ghidtransilvania.ro*
Presentation link: *https://www.facebook.com/share/1BLVSzjVFo/*

11.

Title: ACTA TECHNICA CORVINIENSIS–Bulletin of Engineering
Patent/project number: Research project
Author/s: Imre KISS
Institution/Country: Politehnica University of Timisoara, Engineering Faculty of Hunedoara, Romania
Category: E
Description: *ACTA TECHNICA CORVINIENSIS –Bulletin of Engineering is an international and interdisciplinary journal which reports on scientific and technical contributions and publishes invited review papers covering the full spectrum of engineering. Every year, in four online issues (fascicules 1 -4), ACTA TECHNICA CORVINIENSIS –Bulletin of Engineering[e-ISSN: 2067-3809]publishes a series of reviews covering the most exciting and developing areas of engineering. Each issue contains papers reviewed by international researchers who are experts in their fields. The result is a journal that gives the scientists and engineers the opportunity to keep informed of all the current developments in their own, and related, areas of research, ensuring the new ideas across an increasingly the interdisciplinary field. We are looking forward to a fruitful collaboration and we welcome you to publish in our ACTA TECHNICA CORVINIENSIS –Bulletin of Engineering. The journal's coverage will reflect the increasingly interdisciplinary nature of engineering, recognizing wide-ranging contributions to the development of methods, tools and evaluation strategies relevant to the field. Numerical modelling or simulation, as well as theoretical and experimental approaches to engineering will form the core of ACTA TECHNICA CORVINIENSIS –Bulletin of Engineering's content, however approaches from a range of environmental science and economics are strongly encouraged.*
State of development: ACTA TECHNICA CORVINIENSIS –Bulletin of Engineering [e-ISSN: 2067-3809]
Contact: *redactie@fih.upt.ro*
Presentation link: *http://acta.fih.upt.ro/*

12.

Title: ANNALS of Faculty Engineering Hunedoara–International Journal of Engineering
Patent/project number: Research project
Author/s: Imre KISS
Institution/Country: Politehnica University of Timisoara, Engineering Faculty of Hunedoara, Romania
Category: E
Description: *ANNALS of Faculty Engineering Hunedoara –International Journal of Engineering is a free-access international and multidisciplinary publication of the Faculty of Engineering Hunedoara, which reports on scientific and technical contributions.*
The development of the international dimension of higher education and scientific research, have lead to the strengthening of direct relations with researchers from the neigh boring countries and to the extension of the scientific collaborations in elsewhere in the World.
Within this context, the achievement and functioning of an interactive partnership, corresponding to the exigencies of the modernization process and connection to the European space required a re-evaluation of the contents and layout of our JOURNAL, both by adopting stricter criteria maintaining the contents of the scientific materials we publish and by changing its title, which was made in order to insure the universal accessibility of the ANNALS of Faculty Engineering Hunedoara–International Journal of Engineering.
Publishing in ANNALS of Faculty Engineering Hunedoara –International Journal of Engineeringis free of charge. There are no author fees. All services including peer review, copy editing, typesetting, production of web pages and reproduction of color images are included. The journal is free of charge to access, read and download.
State of development: ISSN: 1584-2665(printed editions, in two fascicules)
ISSN: 1584-2673(CD-ROM edition, in two fascicules)
ISSN: 2601-2332(online, all four fascicules)
ISSN-L: 1584-2665
Contact: e-mail: redactie@fih.upt.ro
Presentation link: http://annals.fih.upt.ro/

13.

Title: CHEMISTRY IN TWO VERSE / CHIMIE ÎN DOUĂ VERSURI
Patent/project number: 978-606-93427-4-9
Author/s: Claudiu Nicolae ȘIMONAȚI
Institution/Country: Napoca Nova publishing house, Cluj Napoca, Romania
Category: E
Description: *The book combines two great passions of the author: Literature and Chemistry. This book of poems in two lines, with a humorous tone (distihurs), I wanted it to be an original work also due to the fact that, in fact, everything that surrounds us is CHEMISTRY.*
Despite the small proportions, these comic poems are full of substance, they can be grouped into: medical poems, love poems, hedonic poems, kitchen poems, household poems. As in the case of all humorous writings, beyond the form intended to provoke laughter, there is a deep background, which expresses

universally valid human truths. Also through this work, I wanted to come to the aid of students and enthusiasts of this field, to be able to more easily remember different chemical formulas, of substances that we face all the time in our everyday life, chemical formulas, which if you put them in rhymes form these short micro poems, which also teach you what to use these chemical compounds for.
State of development: Book
Contact: *claudiu.simonati@yahoo.com*
Presentation link: *https://www.napocanova.ro/carte/chimie-in-doua-versuri*

14.

Title: TECHNOLOGICAL TRANSFER CENTER CTT-UCB
Patent/project number: CTT-UCB
Author/s: Rădulescu Constanța, Bălăcescu Aniela, Călina Denis, Boncea Adrian, Anghelescu Lucica, Borcoşi Corina
Institution/Country: University „Constantin Brâncuşi" from Târgu-Jiu, Romania
Category: E
Description: *The CTT-UCB Technological Transfer Center aims to become an important structure of the regional innovation ecosystem in South-West Oltenia, acting both as a connecting element between the people/entities working in the CDI sector, the business environment and end users, but also as an accelerator of innovative products and services developed either by exploiting research results or by covering the specific needs of companies to develop/improve/test/validate/transfer a new product or technology to the market that responds to consumer problems.*
CTT-UCB aims to increase the technology transfer capacity and achieve a unitary process for the development of management and the monitoring of the technology transfer activity through the need to professionalize the human resource within UCB as well as through the need to develop a culture of collaboration between the human resource from the different departments of the university, but also with public entities and economic entities.
The areas of activity of CTT-UCB are:
1. The field of Industrial Engineering and Materials, with the subfields: Systems, installations, equipment, machines/equipment for construction and other industries; Systems, processes, installations, equipment, environmental technologies/Environmental protection; Systems, equipment, technologies for the agri-food, aeronautical, sanitary sector; Advanced materials, composites; Recovered materials, materials from bioresources;
2. The field of ICT and Digitization with the subfields: Smart city, smart village; Products innovative in the IT field, with an emphasis on medium fields, energy, heritage, tourism; Digitization of the economy;
3. The Bioeconomy domain with the sub-domains: Safe and sustainable food, Agriculture 4.0, Technologies for organic farming, agroecology, Seed and breed improvement.
State of development: Technological Transfer Center
Contact: +40728028116 *constanta.radulescu@e-ucb.ro* *ctt.ucb@gmail.com*
Presentation link: *https://icdi.utgjiu.ro*

15.

Title: NATURAL THERAPEUTIC FACTORS AND TOURIST ATTRACTIONS IN THE GEOAGIU BAI / FACTORI TERAPEUTICI NATURALI ŞI OBIECTIVE TURISTICE DIN STAŢIUNEA GEOAGIU BĂI
Patent/project number: 978-630-325-045-8
Author: Claudiu Nicolae ŞIMONAŢI
Institution/Country: Rafet publishing house, Râmnicu Sărat, Romania
Category: E
Description: *In this small paper about the presentation of the Geoagiu Băi resort (Ancient "GERMISARA"), as it was known in ancient times, I wanted to highlight some aspects of what this area blessed by the Good God, at the foot of the Metaliferous Mountains, means from a geographical, therapeutic, touristic and, last but not least, historical point of view, because here, practically at every step taken, the place in ancient history and not only "MUSTESTE". I wanted to design this tourist guide also for the fact that many of the tourists who arrived in the area wanted to have the related information somewhere in writing, in order to retain it better, but at the same time I wanted what I conveyed here not to be lost over the years, to remain in the mind of the reader and the future guest who wants to learn about what this place means and what they could do if they come here for a few days.*
State of development: Book
Contact: *claudiu.simonati@yahoo.com*
Presentation link: *https://www.editurarafet.ro/*

16.

Title: TehnoART
Patent/project number: competition of technical creativity
Author/s: Demeter Sorin & LTTD Team
Institution/Country: Technological High School "Transilvania" Deva
Category: E
Description: *Techno-ART is a national competition for high school students and more. The aim of Techno-ART is technical creativity in this sense students are invited to present their ingenious projects.*
The Techno-ART competition focuses on environmental protection so we encourage students to use recycled components from scrap yard.
The participating students transform these scrap into robots, cars, statues, lighting fixtures, figurines or various installations, which leads to the development of the practical skills so necessary for their future careers.
State of development: competition for high school students
Contact: *secretariat@cttdeva.ro*
Presentation link: *https://cttdeva.ro/*

17.

Title: LAPAROSCOPIC HYSTERECTOMY. UP-TO-DATE, SURGICAL MANAGEMENT AND ANESTHETIC PECULIARITIES / HISTERECTOMIA LAPAROSCOPICĂ. ACTUALITĂȚI, MANAGEMENT CHIRURGICAL ȘI PARTICULARITĂȚI ANESTEZICE
Patent/project number: ISBN 978-606-23-1530-6
Author/s: Alexandru-George FILIPESCU, Andreea BOIANGIU, Gabriel-Petre GORECKI
Institution/Country: Titu Maiorescu University, Faculty of Medicine; University of Medicine and Pharmacy "Carol Davila", Romania
Category: E
Description: *Monograph "Laparoscopic hysterectomy. News, surgical management and anesthetic peculiarities" analyzes both the problems related to the actual surgical act and the entire perioperative management of the patient proposed for laparoscopic hysterectomy. The work begins with the presentation of the physiological changes occurring from birth to the onset of menopause, going through all the stages of a woman's development: the perinatal period, puberty, menarche, the procreation period. Next, a brief history of laparoscopic hysterectomy worldwide is made, and later, notions of surgical anatomy are presented clearly and explicitly, followed by a description of the instruments and surgical equipment necessary for carrying out the surgical intervention in optimal conditions, the operative indications and the impact of this intervention on the quality of life of the woman, the technique of hysterectomy and laparoscopic myomectomy and the main postoperative incidents and complications.*
State of development: Medical Book
Contact: *gabriel.gorecki@prof.utm.ro*
Presentation link: *https://www.anticariat.net/coperti_full/377562/histerectomia-laparoscopic%C4%83-actualit%C4%83%C5%A3i-management-chirurgical-%C5%9Fi-particularit%C4%83%C5%A3i-anestezice.pdf*

18.

Title: PROGRAM-YOUTH FUTURE FOR COUNTRY
Patent/project number: Educational program
Author/s: Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: E
Description: *JAM Company Program® empowers high school students (Grades 5-18) we are fill a need or solve a problem in their community and teaches them practical skills required to conceptualize, capitalize, and manage their own business venture. Community volunteers and mentors provide real-world guidance and experience to the student-led-startup.*
Throughout the process of building their own company, students will be able to:
Collaborate with team members.
Make crucial business decisions.
Communicate with multiple stakeholders.
Develop entrepreneurial knowledge and skills.

JAM Company Program is part of the JA Entrepreneurship Pathway and is recommended for high school students (Grades 9-12). This learning experience can be volunteer or educator led and is available in classroom based, remote live, or after school implementation. It may be completed during one semester or throughout an entire-school-year. JAM teachers and volunteers are encouraged, as part of this program, to utilize the resources available in JAM Connect® Learning Pathways, located at connect.ja.org.europe. This self-guided experience includes interactives, JAM Here to Career, and games and apps for student use. JAM Learning Experiences support national and state standards in reading, mathematics, social studies, and work and career readiness. See below for more information on alignment with national and state standards.

State of development: JAM Company Program
Contact: *silvia.scortescu@yahoo.com*
Presentation link: *https://jamoldova.org.md/index.php/en/*

19.

Title: TRACES AND SPURS. MIGRATION OF PEOPLES IN THE REFLECTION OF SPECTROMETRY
Project number: # 011210
Author/s: Sergiu MATVEEV, Veaceslav SPRINCEAN, Vlad VORNIC
Institution/Country: Moldova State University, Republic of Moldova
Category: E
Description: *Determining the place of production of the 3rd-4th century iron spur discovered in Lipoveni (Cimişlia district, Republic of Moldova). SOLUTION: EDS analysis was performed on an iron spur from the Lipoveni site (Cimişlia district), dated to the Great Migration period (3rd-4th century AD) and considered to be culturally related to the Goth community. The results obtained allowed the determination of the granulometry, the structure of the material, the texture of the matrix, as well as the degree of porosity. The most valuable result was the identification of wollastonite in the metal composition. A mineral widespread in the world, the places where it appears in massive quantities in Europe are in the region of Mount Vesuvius and Monte Somma (Italy), Banat (Romania), Saxony (Germany). Only the latter location could have served as a source of metal for the equipment of the Gothic knights in the 3rd-4th centuries AD.*
State of development: At the laboratory level and preparing the publication.
Contact: *sergiu.matveev@usm.md veaceslav.sprincean@usm.md*
Presentation link: *https://usm.md/?lang=en*

20.

Title: BALANCED FOOD - VITAL FACTOR OF BIODIVERSITY ZOOS
Book: ISBN 978-9975-180-16-0.
Author/s: Sergiu BALACCI, Ion BALAN, Roman CRETU
Institution/Country: Moldova State University, Institute of Fisiology and Sanocreatology, Republic of Moldova
Category: E

Description: *The paper analyzes and presents the importance of a balanced diet and the variety of food rations in maintaining the welfare and reproduction of animals in zoos. In carrying out this work, not only the performance of the practice of numerous zoos in maintaining biodiversity was taken into account, but also the contribution of specialists in the field, good practices and results from existing specialized sources, including own analyses and research in the field of standardized nutrition, in compliance with an optimal scientifically proven balance of food ration compounds. Rations are developed in accordance with the nutritional needs of the species at various stages of development and according to the seasonal activity of the animals. In particular, rations for the many species for which information on nutritional requirements is limited or non-existent are presented. The exposed food rations contain, in quantitative and qualitative balance, the substances necessary for the vital functions of the organism. Rations are also adapted to metabolic particularities depending on the species, size and age of the animals, as well as according to the environmental conditions and physiological status of individuals, in particular, those in various periods of the reproduction and hibernation process. The main purpose of this paper is to adjust the accessible recommendations and guidelines confirmed in modern zoo animal feeding practices. Therefore, the paper represents a variable document, which will be regularly updated to reflect new successes in the field of captive animal feeding and zoo best practice management. The work is intended for all those interested in biodiversity in zoos, PhD students, students and representatives of the authorities responsible for the animal world and its conservation for future generations.*
State of development: Book.
Contact: *balanion@rambler.ru* ***(+373 22) 69124702***
Presentation link: *https://usm.md/?lang=en*

21.

Title: SOCIAL MEDIA IN TOURISM
Patent/project number: Student Project
Author/s: Carla PARPUCEA
Institution/Country: Economic College "Dionisie Pop Martian" Alba Iulia, Romania
Category: E
Description: *Social media has become an essential tool in the tourism industry, influencing the way travelers choose destinations and tourism services. From online reviews and recommendations to promotional campaigns and direct interactions with tourists, social media platforms are transforming the tourism experience. With the rise of platforms like Instagram, Facebook, and TikTok, travel companies have an effective tool to engage with their audiences, showcase their offerings, and influence travel decisions. From stunning imagery to user-generated content and personalized recommendations, social media plays a major role in shaping how people plan, experience, and remember their travels.*
This study highlights:
✓ *The main platforms used in tourism marketing;*
✓ *The impact of online reviews and recommendations on traveler choices;*
✓ *Effective strategies for tour operators;*
✓ *The evolution of social networks from simple communication channels to sales tools;*
State of development: Social Study Tourism Industry
Contact: *carlaparpucea@gmail.com*

22.

Title: BAČKA PALANKA CULTURAL CENTER
Patent/project number: Cultural Center
Authors: Olja Nađ & Team
Institution: Bačka Palanka Cultural Center
Category: E
Description: *The Bačka Palanka Cultural Center was founded as a cultural institution by the decision of the Bačka Palanka Municipal Assembly in 1990 as a professional institution in the field of culture of special importance and interest. From the very beginning, this institution occupied a prominent place in the cultural life of our municipality. The Bačka Palanka Cultural Center launched a series of events, activities and manifestations that contributed to the affirmation and better quality of life in our environment: we will only mention the traditional manifestations Blues-Jazz-Rock, Theater Autumn and Theater Spring, as well as participation in the Night of the Museum event. The cultural center in Bačka Palanka provides its citizens with a variety of content. Within it, there is a city cinema where film screenings of recent films and performances by theater troupes are held. Also, the Gallery of the Cultural Center exhibits the works of renowned painters every day, and concerts are held.*
State of development: Cultural Center
Contact: *kulturnicentarbp@gmail.com*
Presentation link: *https://kcbp.rs/*

23.

Title: THE IMPORTANCE OF EDUCATION AND CREATIVITY FOR YOUNG STUDENTS
Patent/project number: Educational Project
Author/s: Prof. Dr. Anuja Malik
Institution: New era group of science and technology, New Delhi, India
Category: E
Description: *Knowing and understanding the importance of education and creativity in young students has a profound effect on their adulthood. The benefits of instilling a love for learning and creative endeavors early in life are numerous, and the sooner we recognize this, the better our children's futures will be.*
Importance of Education:
Opening New Horizons

- *Allows youngsters to gain knowledge, develop critical thinking skills, and become aware of the world around them.*
- *Alleviates socioeconomic barriers, offering a level playing field where anyone can learn and grow.*
- *Provides the flexibility to learn at one's own pace, irregardless of location or time constraints.*

The Harmony of Education and Creativity:
Unleashing Potentials
The education system should aim to foster creativity, elevating students' potential. Creativity empowers students to think out of the box, enabling them to approach problems from novel perspectives. It enhances their flexibility, adaptability, and resilience, thereby preparing them for the rapidly changing world.

Education and Creativity:
A Step Towards a Brighter Future
The significance of both education and creativity for young students cannot be overstated. Not only does it equip young minds with necessary life skills, but it also harnesses their unique potentials. The amalgamation of online or free education and creativity is a window for immeasurable opportunities that young students ought to embrace.
Meta-description: Discover the pivotal role of education and creativity in the lives of young students. Uncover how their intersection can shape a brighter future for our young generation.
State of development: technical teaching
Contact: *anujamalik777@gmail.com*

24.

Title: ANALYSIS OF ENVIRONMENTAL COSTS IN THE ELECTRICAL EQUIPMENT INDUSTRY
Patent/project number:
Author/s: Students: Iulia NISTORA, Gavriela RĂDĂUȚIU, Lavinia TÎRNĂVEAN, Flavia VIERU; Menthors: Mihaela ŞTEFAN, Ioana FĂRCEAN
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: E
Description: *A clear distinction between environmental costs and other costs of an economic entity is rendered by Recommendation 453/2001 of the European Commission. Thus, the environmental costs represent those costs of the actions taken the name of an economic entity for the purpose of preventing, reducing or repairing environmental damage resulting from operational activities. These costs include: waste storage and disposal, soil protection, groundwater and surface water protection, clean air and climate protection, noise reduction, biodiversity and landscape protection. Another international organization, UNCTAD, states that these costs encompass expenses related to measures necessary for managing the environmental impact of a company's activities responsibly, along with other costs driven by the company's environmental goals and regulatory requirements.*
The research also analyzes the dependence between the resulting waste and the volume of production by category. The utility of determining these dependencies leads to the identification of product categories with significant influence on environmental expenditures.
The study supports the development of a sustainable environmental accounting system in the electrical equipment industry, helping to identify products that produce significant waste. This enables management strategies to be outlined to improve production technologies, optimize products and reduce environmental impact. This allows for the development of management strategies to enhance production technologies, refine products, and minimize environmental impact.
State of development: Student project
Contact: *iuliamaria61@yahoo.com*
Presentation link: *https://www.fih.upt.ro/v4/#*

25.

Title: NEGOCIERI TRANSATLANTICE. COOPERAREA ROMÂNO – AMERICANĂ ÎN EDUCAȚIE, CULTURĂ ȘI ARTE / TRANSATLANTIC NEGOTIATIONS. ROMANIAN - AMERICAN COOPERATION IN EDUCATION, CULTURE, AND ARTS
Patent/project number: ISBN 978-606-37-2356-8, Cluj Napoca: Editura Presa Universitară Clujeană, 2024, 284 pp. CNCS A.
Editors: Cornel Sigmirean, Sonia D. Andraș, Carmen Andraș, ed.,
Institution/Country: Institute of Socio-Human Research "Gheorghe Șincai", ROMANIA
Category: P
Description: *Negocieri transatlantice. Cooperarea româno – americană în educație, cultură și arte / Transatlantic Negotiations: Romanian-American Cooperation in Education, Culture, and Arts explores the intricate intellectual, scientific, and cultural pathways that have influenced Romanian-American relations. It highlights foundational elements fostered through scholarships, academic exchanges, initiatives of philanthropic institutions and humanitarian organizations in America, the impact of the American War correspondents' representations on mutual knowledge, Romanian personalities in American archives, museums and libraries, the portrayal of the American automotive industry in Romanian press, the relations between the YMCA/ACT and the National Legionary State, emphasizing the complexity of these relations. The approach delves into the complex cultural and artistic interactions between Romania and the United States, shedding light on significant individuals, impactful initiatives, noteworthy events, and various organizations instrumental in nurturing this dialogue. The authors have explored how American cultural frameworks, identity constructs, and gender paradigms influence perceptions and interactions with Romania. Transatlantic Negotiations studies the dynamic flow of ideas and the intricate cultural exchanges that have given rise to various mutual representations. It describes the political and identity implications of Romanian-American relations. It underscores the exchange of ideas, ideologies, and policies between the two nations, accentuating the significance of Romanian scholarly, cultural, and artistic contributions within the United States. It recognizes the influential individuals involved in these interactions and the noteworthy literary and artistic movements they inspired. The multi-perspectival, interdisciplinary and comparative methodology thus highlights the continuity and discontinuity in Romanian-American relations from the birth of Greater Romania to the present day. It encourages cultivating intercultural and international dialogue, enhancing openness in Romanian-American relations. Emphasizing a dedication to diverse methodologies that span disciplines, cultures, and perspectives, this work invites a comprehensive exploration of the intricate relationships between these two nations.*
State of development: Published volume - This volume was supported by the Executive Agency for Higher Education, Research, Development and Innovation Funding-UEFISCDI, the National Research Council - CNCS, the Ministry of Education (Romania), Project PN-III-P4-PCE-2021-0688, Contract 29 from 27 May 2022, title The Ethos of Dialogue and Education: Romanian - American Cultural Negotiations (1920-1940).
Contact: *cornel.sigmirean@umfst.ro*
Presentation link: *http://www.editura.ubbcluj.ro/bd/ebooks/pdf/3854.pdf*

26.

Title: THE ANALYSIS OF THE "JAPANESE YEN" CURRENCY IN RELATION TO THE SPECIAL DRAWING RIGHTS (SDR) BASKET
Patent/project number: Student project
Author/s: Student: Cristina SELEA, Coordinator: Ioana FĂRCEAN
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: E
Description: *The Special Drawing Rights (SDR) basket is a set of currencies used by the International Monetary Fund (IMF) as a global unit of account. The SDR is not an actual currency, but an artificial reserve unit that that helps stabilize the global financial system. The Special Drawing Rights (SDR) basket includes five key currencies, chosen for their significance in global trade and finance: the US dollar (USD), Euro (EUR), Chinese Yuan (CNY), Japanese Yen (JPY), and British Pound (GBP). The Yen (¥), Japan's official currency, was introduced during the Meiji Restoration and has evolved significantly with the country's rapid modernization. According to the most recent data provided to the general public by the IMF, the Japanese Yen has a weight of 7.59% in the Special Drawing Rights (SDR) basket, which reflects his importance in the global economy, its use in international transactions and its high degree of liquidity. The Yen ranks third in terms of liquidity in global financial markets (21%), after the USD and EUR, but is more liquid than the GBP and CNY. The fluctuations of the Japanese Yen have significant implications for the global economy and international trade, influencing economic stability and the dynamics of trade transactions. So that currency came to be considered a currency of refuge in times of global economic uncertainty. This project provides a comprehensive evaluation of the Japanese yen (JPY) and its significance within the Special Drawing Rights (SDR) basket, analyzing its contribution to global financial stability, its influence on international trade, and its liquidity as a reserve currency.*
State of development: Student project
Contact: *seleacristina@gmail.com*
Presentation link: *https://www.fih.upt.ro/ccmti/*

27.

Title: „TRAVELERS AND TRAVELS – HISTORICAL-CULTURAL AND SPIRITUAL FORCES„ in Revista de Etnologie şi Culturologie/ Journal of Ethnology and Culturologhy
vol. XXXVI/2024, Chişinău, pp. 13-18, ISSN: 1857-2049, E-ISSN: 2537-6152, accredited by ANACEC in category A, indexed to BDI: SCOPUS, ERIH PLUS, DOAJ, CEEOL, ROAD, OAJI, ISIFI, CiteFactor.
Patent/project number: ISSN: 1857-2049, E-ISSN: 2537-6152
Authors: Gherghina BODA, Dumitru-Cătălin ROGOJANU
Institution/Country: Museum of Dacian and Roman Civilization, Romania
Category: E
Description: *Ever since his appearance, man has been driven by various needs to move beyond his comfort zone, his actions and activities often requiring him to travel around. Thus, he becomes a traveler in search of food, living space, conquest of new territories, curiosity, pilgrimages, pleasure, relaxation, and*

entertainment. If the testimonies from Antiquity about journeys and travelers are quite brief and sporadic, over time they have multiplied and become valuable historical sources, especially through travel diaries or descriptions of events, such as armed confrontations and their movement around different areas of the world. Thus, people have obtained information about spaces other than their homelands, about cultures, traditions, customs, rites and rituals, religions, monuments and works of art, etc. of Others, compared to their own. The individual is excited to travel, to make direct contact with other peoples and communities, with their famous monuments, which he assimilates in a subjective way, psychologizes them and reinvests them with new values, thus bringing his own contribution to the process of heritagization of some special objects, outstanding products of human creativity.

State of development: Scientific Article published in a Journal indexed in International Databases

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Presentation link:
https://doi.org/10.52603/rec.2024.36.02
https://ibn.idsi.md/vizualizare_articol/218719

28.

Title: "ISTORICUL BAROULUI HUNEDOARA"/ "HISTORY OF THE HUNEDOARA BAR", in Ziridava. Studia Historica XXIX/2024, pp. 201-214 (indexed to BDI: CEEOL, Crossref).
Patent/project number: Print ISSN: 3061-399X, Online-ISSN: 3061-4015, Publishing House: Editura Mega Print SRL Cluj-Napoca.
Author: Gherghina BODA
Institution/Country: Museum of Dacian and Roman Civilization, Romania
Category: E
Description: *The legal phenomenon has accompanied human society at all stages of its development, which has required the establishment of specific bodies to regulate people's misconduct, as well as punitive means associated with each violation of social rules.*
Each historical period is characterized by a legal system that met the requirements of the time and that, like society, has been constantly perfected and improved. Bars appeared in the second period of the 19th century, first in Bucharest, then in Iaşi, Dolj-Jiu, and in Deva in 1923. The lawyers' contribution to the Hunedoara society was not limited only to the field of justice, but also to participate in some events of a national nature, such as the Great Union.
They have become true symbols in which there are "values and hopes, ideals and faith, unity and dignity", common struggle with the other citizens of the country, demonstrating a mentality professional life, solid traditions of the legal profession and the enlightened spirit of the times that strongly demanded the ideal of national unification.
State of development: Scientific Article published in a Journal indexed in International Databases
***Contact:** ginaboda15@gmail.com*
Presentation link: *https://www.doi.org/10.70654/ZIRIDAVA.2024.11*
https://www.ceeol.com/search/journal-detail?id=2938

29.

Title: „THE SYMBIOSIS BETWEEN THE CONTEMPORARY MUSEUM, EMOTIONAL AND EXPERIENTIAL TOURISM" in Revista de Etnologie şi Culturologie / Journal of Ethnology and Culturology , vol. XXXV/2024, Chişinău, pp. 12-18, accredited by ANACEC in category A, indexed to BDI: SCOPUS, ERIH PLUS, DOAJ, CEEOL, ROAD, OAJI, ISIFI, CiteFactor.
Patent/project number: ISSN: 1857-2049, E-ISSN: 2537-6152
Author: Dumitru-Cătălin ROGOJANU
Institution/Country: Museum of Dacian and Roman Civilization / Romania
Category: E
Description: *The extremely rapid transformations that human society has experienced in recent decades have entailed changes in all fields and institutions, which have been forced to accept them in order to ensure their own survival. The museum, as a cultural institution preserving the national heritage, has entered this whirlwind of paradigm changes precisely to face an increasingly fierce competition in the cultural field. It has expanded its characteristics by also adopting methods of tourism, particularly from the experiential tourism and the emotional tourism, that are traveler/visitor-oriented so as to meet their cultural needs through the most sophisticated means of cultural mediation that incite curiosity and emotions, as well as to involve him/her in actions that will transform him/ her from spectator to actor. The relationship between the museum and tourism is relevant for the post-modern period, characterized by great mobility both nationally and especially internationally. The contemporary museum permanently adopts and creates means of heritage mediation. If tourism provides the traveler with a wide range of cultural destinations, the museum, through its events, tries to absorb as many tourists as possible. In this case the relationship between these two institutions becoming a symbiotic one, with benefits on both sides, but the main winner remains the traveler/visitor, who, if the museum has achieved its goal, leaves more cognitively and emotionally enriched, with the desire to return.*
State of development: Scientific Article published in a Journal indexed in International Databases
Contact: *rogojanucatalindumitru@yahoo.com* ***+40762579100***
Presentation link: *https://doi.org/10.52603/rec.2024.35.02*
https://ibn.idsi.md/vizualizare_articol/216943

30.

Title: MANFACTURING PROCESSES OF MICRO-ELECTRO-MECHANICAL-SYSTEMS WITH APPLICATIONS IN MEDICINE
Patent/project number: ISBN 978-973-720-903-0
Author: MARINESCU MARIA-ROXANA
Institution/Country: National Institute for Research and Development in Microtechnologies – IMT Bucharest, Romania
Category: E
Description: *Technology represents the processes, methods and operations used to obtain a particular product. Microelectronics and nanoelectronics are two areas with a significant contribution to technological progress.*

The research-development-innovation activities within the two fields, have produced valuable results of reference for the current work: micro-electro-mechanical systems (MEMS). MEMS are miniaturised systems with small dimensions and weights that can be easily integrated into various commercial applications. These small aids with high technology are increasingly present in our daily lives. Innovative structures allow us to control the environment better and help us increase the energy efficiency of devices. All the applications in the current era, Industry 4.0 (the fourth industrial revolution), integrate sensing devices, data processing and transmission, and actuation devices. Within the work entitled "Manufacturing processes of micro-electro-mechanical systems with applications in medicine", a "lab-on-a-chip" type device was designed, modelled, simulated and manufactured, with the help of which it can be identified and measured blood T lymphocyte concentrations. Therefore, the work can be included in the field of bioengineering. In this branch of science, concepts are developed from the molecular level to the systemic level, with the role of developing new biological products, materials and medical devices for the diagnosis, prevention and treatment of diseases, as is the case of the device resulting from this work. The field of medical engineering is closely related to the following subfields: biomechanics, biomaterials, electronics, mechatronics, biophysics, medical imaging, telemedicine, nanotechnology, cellular engineering and genetics; therefore, it is a field with evident multidisciplinary character. The micro-electro-mechanical devices in the present work were made within the National Institute for Research and Development in Microtechnologies – IMT Bucharest.

State of development: Published book

Contact: +40767.000.336 *roxana.marinescu@imt.ro*

Presentation link: *https://www.agir.ro/carte/procese-de-fabricatie-a-sistemelor-micro-electro-mecanice-cu-aplicatii-in-medicina-124313.html*

31.

Title: RESEARCH TECHNIQUES AND ACADEMIC WRITING

Patent/project number: Book

Author/s: Angela Solcan, Monica Vlad

Institution/Country: Ion Creanga State Pedagogical University, Republic of Moldova

Category: E

Description: *Research Techniques and Academic Writing, authored by Angela Solcan and Monica Vlad, is a comprehensive course guide tailored for master's students specializing in the didactics of non-linguistic disciplines in English, French, or Romanian. This book serves as a structured and practical resource, guiding students through the essential stages of academic research and dissertation writing while adhering to rigorous scholarly standards.*

The book is designed to equip students with the necessary tools for formulating research problems, constructing hypotheses, and developing a well-organized dissertation. It provides an in-depth exploration of identifying and operationalizing the research corpus, offering insights into different types of corpora and methods of analysis that ensure a solid foundation for academic inquiry. Through clear explanations and practical examples, the authors help students understand how to critically select and structure their research material to support their arguments effectively.

One of the book's key strengths lies in its systematic approach to dissertation writing. It dedicates specific sections to the introduction and conclusion, outlining different types of introductory and concluding

structures that students can use to frame their research coherently. The theoretical chapter, another fundamental component of a dissertation, is discussed in detail, with guidance on organization, keyword selection, and proper referencing techniques. Students will find valuable strategies for citing sources correctly – whether through direct quotations or paraphrasing – ensuring both academic integrity and clarity in argumentation.

Bibliographic writing is another crucial aspect covered in this guide. The book presents various citation styles, offering examples of bibliographic formatting and discussing typographic constraints that may arise in the dissertation-writing process. By addressing these technical aspects, the authors provide students with the necessary skills to compile a properly formatted and credible reference list, a key requirement in academic writing.

Recognizing the importance of ethical considerations in research, Research Techniques and Academic Writing also emphasizes academic integrity and deontological principles. It explores common issues related to plagiarism, presents best practices for avoiding academic misconduct, and introduces students to anti-plagiarism software, explaining its role in maintaining originality and credibility in scholarly work. This focus on ethics ensures that students develop a responsible approach to research and writing.

The final section of the book is dedicated to preparing and delivering an effective dissertation defense. It covers practical aspects such as structuring a PowerPoint presentation, designing visually engaging slides, and adhering to best practices for oral presentation. Students will learn essential public speaking techniques and strategies for confidently presenting their research before an academic committee.

Overall, Research Techniques and Academic Writing is an invaluable resource for master's students, offering clear explanations, step-by-step guidance, and practical examples to support them in navigating the complexities of academic research and writing. By bridging theoretical knowledge with practical application, this course guide ensures that students are well-equipped to produce high-quality dissertations while upholding academic standards and ethical research practices.

State of development: Course guide intended for master's students in the Didactic of Non-Linguistic Disciplines in English/French/Romanian.

Contact: *secretariat@upsc.md*

Presentation link: *https://upsc.md/universitate/*

32.

Title: VALORI POSTMODERNE ÎN ÎNVĂȚĂMÂNTUL PRIMAR: DEZVOLTAREA PROFESIONALĂ A ÎNVĂȚĂTORILOR ÎN RAPORT CU EDUCAȚIA LINGVISTICĂ A ELEVILOR / POSTMODERN VALUES IN PRIMARY EDUCATION: TEACHERS' PROFESSIONAL DEVELOPMENT IN RELATION TO STUDENTS' LANGUAGE EDUCATION

Patent/project number: Book

Author/s: Silvia Golubițchi

Institution/Country: P.I. „Ion Creanga" State Pedagogical University of Chisinau, Republic of Moldova

Category: E

Description: *This monograph presents an analysis of how postmodern approaches influence the training and professional development of teachers, particularly in the context of students' linguistic education. It is structured around the following key concepts: postmodern values, primary education, professional*

development, students' linguistic education, relationships, practical wisdom and the cultivation of phronesis.
In this study, we aim to identify, within the general framework of pedagogical mentality and the specific framework of primary education, the phenomenon that characterizes and determines the essence of teachers' professional development from a postmodern perspective-namely, their practical wisdom in their professional activity. To achieve this, we have engaged in discussions about the specificities of primary education in light of changes in dimensions, processes, criteria, connections, reconfigurations, content, integration, and more. Additionally, we have addressed the pragmatic and communicative dimensions of linguistic education, as well as multifunctional learning and professionalization from the perspective of its components, its polysemic nature, its effects in the classroom and its guiding principles.
A special focus is given to the issue of postmodern values and postmodernism as a factor of evolution and as one of the determining conditions. Differentiating between modernism and postmodernism requires identifying their defining features based on a comparative approach that highlights their general points of reference.
These theoretical approaches, alongside other similar perspectives from various branches of educational sciences, seek to highlight the demands of the new educational orientation in the evolving landscape of professional activity. The interpretation is examined from multiple perspectives-philosophical, psychological, anthropological, praxeological, relational, logical, etc. Equally important is the exploration of the pedagogical characteristics of postmodernism, which are described in the paper.
The vision we propose, through the lens of postmodern values in the process of professional development, aims to recover, at least in part, the real complexity of the pedagogical phenomenon of teachers' practical wisdom within the real context of their attitudes.
Bringing together multiple domains within the same study, as is actually recommended in educational sciences, even when addressing issues from a specific field, might initially seem risky. However, from our chosen perspective the one of postmodern values a number of highly significant correlations are absolutely necessary.
We express our belief that this monograph can serve as a valuable resource for both core and elective courses for students, master and doctoral candidates, as well as students from pedagogical colleges. Additionally, it can support practitioners teaching staff and school administrators in their continuous professional development.
State of development:
Contact: *secretariat@upsc.md*
Presentation link: *https://upsc.md/universitate/*

33.

Title: ANIMALS. ILLUSTRATED ENCICLOPEDIA (Vol. 3)
Patent/project number: Book
Author/s: Tudor Cozari, Mihai Cîrlig
Institution/Country: Ion Creanga State Pedagogical University of Chisinau, Orhei National Park, Republic of Moldova
Category: E

Description: *Study at local, regional and European level on about diversity, ecological and conservation status of animals was carried out. Expeditions to collect the original material and a photographic study of the animals (habitat, life cycle, degree of rarity, conservation status, ecology at local (Republic of Moldova), regional level (Ukraine, Romania) and partly European level (Bulgaria, Italy, Austria) have been. For the first time the illustrated encyclopedia – ANIMALS. ILLUSTRATED ENCICLOPEDIA (Vol. 3) was edited. This one contains data about 25 ANIMAL species from Europe, presented in over 1,200 original color images. During 5 years the author traveled across 20 000 km crossing Republic of Moldova, Ukraine, Romania, Bulgaria, Austria and Italy.*

Investigated and presented animals in the encyclopedia are protected species at European level, see the sources:

- *– IUCN Red List (Red List of International Union for Conservation of Nature)*
- *– Concil Directive 79/409/EEC on the Conservation of Wild Birds; 1979/1981;*
- *– SPEC (Species of European Conservation Concern);*
- *– ConventionontheConservationofEuropeanWildlifeand natural habitats, BERN 1979/1982;*
- *– Convention on the Conservation of Migratory Species of Wild Animals; BONN, 1979/1983*

State of development: Book
Contact: (+373 22) 73-36-19; cozaritudor@gmail.com
Presentation link: https://upsc.md/universitate/

34.

Title: GEOGRAFIE, REPUBLICA MOLDOVA ŞI LUMEA CONTEMPORANĂ / GEOGRAPHY, THE REPUBLIC OF MOLDOVA AND THE CONTEMPORARY WORLD
Patent/project number: ISBN 978-5-36241-357-6
Author/s: Igor Codreanu, Serafima Roscovan
Institution/Country: State Pedagogical University "Ion Creanga" from Chisinau, Republic of Moldova
Category: E
Description: *The school manual, developed for students studying in the twelfth grade, has the title ,, Geography, the Republic of Moldova and the contemporary world",*
ISBN 978-5-36241-357-6, "Bons Offices" publishing-printing house, 2024.

The work includes extensive information about the problems of the Geographical Environment in the world and in the Republic of Moldova (Geografie, Republica Moldova şi lumea contemporană), including about the quality, valorization and protection of the environment at the global, regional and local level, including about the social problems of the contemporary world. The manual includes contents related to the peculiarities and legalities of the Geographical Environment as an integrated system, the mutual relations between its components, the negative human impact and the consequences on the environment.

The competencies that form and deepen this work will prepare the future generation will be based on the accumulation of knowledge, the formation of skills and constructive attitudes to solve the most pressing problems of the environment and the contemporary world, with a view to a sustainable future.

State of development: Book
Contact: State Pedagogical University "Ion Creanga" from Chisinau, Republic of Moldova

Faculty of Geography, Department of Geography and Tourism Igor Codreanu, Tel. +373-079538908 *codreanu.igor@upsc.md*
Presentation link: *https://upsc.md/universitate/*

35.

Title: ELEMENTE DE bionică
Patent/project number: Book
Author/s: Eugenia Chiriac, scientific coordinator-Liubomir Chiriac
Institution/Country: „Ion Creanga" State Pedagogical University from Chisinau, Republic of Moldova
Category: E
Description: *Currently, both natural and real sciences have experienced an impetuous development that has materialized through transfers of ideas, concepts, applications from the field of biology to that of technique and technology. At the same time, some interference sciences have also emerged, such as: biochemistry, biophysics, bioengineering, biochemistry, biocybernetics, biomathematics, etc. These sciences also include bionics, a relatively young discipline that draws inspiration from the structures, functions and processes characteristic of living organisms, in order to transpose them into practice, as technical or technological solutions. This requires learning strategies that integrate knowledge and research skills from biology, along with other disciplines, which complement each other and are based on rediscovery and reinvention, originality and creativity in thinking, aiming at the conscious and efficient acquisition of notions from the disciplines studied, and the practical application of modeling skills of structures and processes characteristic of living beings.The manual contains examples of bionic research of flora and fauna from the most renowned research centers and universities in the world that have had and continue to have an impact on the progress of human development. At the same time, the work aims to: familiarize students with the achievements in the field of bionics, based on the interaction of biological disciplines and modern technologies, as well as with the achievements of bionics that are increasingly used in various fields of human activity.*
Based on these considerations, the manual contains an introductory part with reference to bionics as an inter-transdisciplinary science, where general definitions are given and the objectives of bionics are specified, the connections of bionics with other disciplines, research and teaching methods in bionics, the history of bionics worldwide with highlighting the main bionic research and their future prospects. This is followed by a set of modules that include the main, theoretical and practical directions in bionics, with the description in chapters and subchapters of concrete examples from the plant and animal world, based on biology, research, and the application of models from nature in practice. Each module concludes with evaluation activities.Studying bionics deserves special attention at both general and university levels, thus stimulating research education, focused on inter- and transdisciplinarity, as well as behavioral education that can have a significant role in nature protection, and beyond.
State of development: Republic of Moldova
Contact: Telephone: (+373) 68511470 *eugeniachiriac@gmail.com*
Presentation link: *https://upsc.md/universitate/*

36.

Title: TRECUTUL PREZENT. SECVENŢE CRITICE
Patent/project number: Book
Author/s: Burlacu Alexandru
Institution/Country: Universitatea Pedagogică de Stat "Ion Creangă" din Chişinău /Republica Moldova
Category: E
Description: Trecutul prezent însumează aproape patru decenii de preocupări literare ale profesorului de teorie şi istorie literară şi criticului Alexandru Burlacu. Ambele paliere ale activităţii sale se revăd, într-o interdependenţă benefică, în textele incluse în această carte. Criticul literar, sistematizator şi catalogator de perioade, procese, fenomene şi nume literare, găseşte în teorie şi istoria literaturii instrumente care îi oferă perspective inedite şi sprijinul pentru o argumentare solidă a punctelor sale de vedere. Este o cale pentru realizarea unor „texistenţe" memorabile. The past and present sum up almost four decades of literary preoccupations of the professor of literary theory and history and critic Alexandru Burlacu. Both levels of his activity are seen again, in a beneficial interdependence, in the texts included in this book. The literary critic, systematizer and cataloger of periods, processes, phenomena and literary names, finds in the theory and history of literature tools that offer him new perspectives and the support for a solid argumentation of his points of view. It is a path to achieving memorable "textistences"
State of development: Book
Contact: *rectorat@upsc.md*
Presentation link: *https://upsc.md/universitate/*

37.

Title: MDIR Constructor 3.0 -software for creating interactive textbooks
Patent/project number: Certificate of Copyright and Related Rights, AGEPI Moldova (Series: PC (computer program), Number: 7906, registration date 27.03.2024)
Author/s: Balmuş Nicolae, Chiriac Tatiana
Institution/Country: "Ion Creangă" State Pedagogical University of Chisinau, Republic of Moldova
Category: E
Description: *MDIR Constructor 3.00 is an upgraded version of MDIR Constructor 2.00 software, which was created in the Delphi 11 (FMX) integrated development environment using TMS SOFTWARE and WinSOFT tools. This software allows users to create interactive digital textbooks of their own design for a variety of academic subjects based on a *.pdf file. Version 3.00 of the application includes new features like improved design, new learning and knowledge testing activities, multilingual interface translation options, an integrated robot for voice reading, a new algorithm for placing resources on textbook pages and fields, and a new algorithm for creating student textbooks that teachers can password protect. Version 3.00 of the student textbook allows for the addition of student-designed resources to the fields of the manual. These resources can include audio/video sequences, images, documents, notes, and programming activities created in a variety of programming languages, including Pascal, Delphi, C++, Python, and Scratch.*
State of development: Implementation in the training process

Contact: *balmus.nicolae@upsc.md chiriac.tatiana@upsc.md*
Presentation link: *https://upsc.md/universitate/*

38.

Title: *AXIOLOGY OF EDUCATION (AXIOLOGIA EDUCAȚIEI)*
Patent/project number: *ISBN 978-606-36-2430-8*
Author/s: *Diana ANTOCI, Maia BOROZAN*
Institution/Country: *"Ion Creanga" State Pedagogical University of Chisinau, Republic of Moldova*
Category: *E*
Description: *The university textbook is provided for the study discipline "Axiology of education" being a fundamental course in the professional training of teaching staff, which contributes to the formation of a general vision on the philosophical evolution of pedagogical thinking regarding the complex issue of values. "Axiology" ensures the in-depth foray into the knowledge of the theory of values necessary for the understanding of pedagogical values and educational innovation processes from an axiological perspective. The practical importance of the Axiology of education results from the fact that in a constantly changing society, understanding the meaning and internalizing the fundamental values become essential in education. The strategic approaches designed in the course will favor the promotion of professional responsibilities and respect in the educational environment. The university textbook, a didactic work developed in accordance with the principles of the philosophy of pedagogical science, is made up of 4 chapters and provides informative support regarding the fundamental elements of the axiology of education as a university study discipline, addresses the specific basic notions, includes autonomous learning activities and self-assessment, assignments for independent study, glossary of terms, bibliographic references and annexes corresponding to the 4 course units. The university textbook "Axiology of education" is intended for university teaching staff for use in the process of initial professional training of future pedagogues in higher education, constituting a benchmark for students, master's students, doctoral students and researchers in the field of education sciences. The theoretical content and practical activities can serve as support in the continuous professional training of teachers, concerned with the development of the axiological referential of the students and their own professional referential.*
State of development: *university textbook*
Contact: *+37379515575*
Presentation link: *https://upsc.md/universitate/*

39.

Title: *STUDY OF USEFUL PROPERTIES OF SOME COORDINATION COMPOUNDS CONTAINING OXIME LIGANDS*
Patent/project number: *ISBN 978-3-9402237-24-8*
Author/s: *COROPCEANU Eduard, CILOCI Alexandra, ȘTEFÎRȚĂ Anastasia, BULHAC Ion*
Institution/Country: *"Ion Creanga" State Pedagogical University of Chisinau, Republic of Moldova*
Category: *E*

Description: *The synthesis of a series of coordination compounds of Co(III), Cu(II), Zn(II) with various organic ligands containing oxime, carboxylic, pyridine, amine functional groups was carried out, which exhibit stimulating effects on physiological processes in crop plants, fungi, algae, etc. The composition and structure of the new compounds were studied using contemporary physical analysis methods (IR, UV-Vis, NMR spectroscopy, X-ray diffraction, etc.). The use of organic molecules with various electron-donating atoms (N, O, S) and with a wide variety of geometric configurations has allowed the assembly of coordination compounds with novel structures and properties. When introducing synthesized coordination compounds into the nutrient media of fungi from the genera Aspergillus, Alternaria, Botrytis, Fusarium, Penicillium, Rhizopus, Mucor, Sporotrichum, Trichothecium, Sclerotinia, Chaetomium and Trichoderma, positive results were obtained in increasing biomass productivity, enhancing enzymogenetic processes, shortening the technological cycle period, etc.*
State of development: university textbook
Contact: +37379443973
Presentation link: *https://upsc.md/universitate/*

40.

Title: SERBIAN-HUNGARIAN BILATERAL COOPERATION FOR THE YEARS 2025-2026: "Structural optimization of additively manufactured cellular titanium implant using artificial intelligence"
Patent/project number:
Author/s: Principal Investigators: Nataša Trišović, Tamas Mankovits
Institution/Country: University of Belgrade, Serbia, University of Debrecen, Hungary
Category: E
Description: *The artificial development of cellular structures has been a subject of research for decades, drawing inspiration from naturally occurring structures such as bone, wood, and sea sponges. These structures continue to attract significant interest due to their exceptional physical and mechanical properties. While metallic cellular structures have been produced for a long time, the advent of additive manufacturing has introduced new possibilities for their design and fabrication. Despite the technological advancements, several challenges remain, particularly in characterizing these structures and determining their mechanical behavior under different loading conditions, both experimentally and numerically. One of the key areas of interest is the development of patient-specific implants, which offer significant advantages over standard implants. Titanium implants, produced via 3D printing and designed with strategically open cellular structures based on medical considerations, can improve osseointegration and better match the mechanical properties of bone. Currently, titanium 3D printing technology is available, but the integration of cellular structures into human implants is still in progress. A major obstacle is the lack of comprehensive knowledge regarding the mechanical properties of these structures and the complexities of finite element modeling due to their intricate geometries. For the past four years, a research team from the University of Debrecen has been actively engaged in titanium 3D printing, developing various cellular structures for biomedical applications. Within the framework of the successful GINOP project "Research on Implant Osteosynthesis and Development of Trabecular Structures Using Additive Manufacturing", they have optimized their 3D printing process to achieve high precision manufacturing. On the Serbian side, researchers have conducted a comprehensive analysis of titanium alloys used in biomedical applications,*

focusing on artificial joint implants and fixation plates. Their study emphasizes fracture mechanics, specifically fatigue crack initiation and propagation. The research includes both experimental and numerical investigations, examining the mechanical behavior of fixation plates and hip replacement implants. Experimental studies utilized standard mechanical testing methods combined with Digital Image Correlation (DIC), while Finite Element Method (FEM) simulations were employed to enhance predictive modeling.

State of development: In Progress
Contact: Nataša Trišović ***ntrisovic@mas.bg.ac.rs*** ***Tel: +38163283507***
Presentation link:
https://www.nitra.gov.rs/images/Bilateralna%20Saradnja/Madjarska/Decesion%20Document%20SR%20HU%20and%20the%20list%20of%20the%20projects.pdf

41.

Title: STRENGTH OF MATERIALS – COMPREHENSIVE WORKBOOK
Patent/project number: ISBN 978-86-6060-074-7
Author/s: Ana Petrović, Milorad Milovančević, Momčilo Dunjić
Institution/Country: Faculty of Mechanical Engineering, University of Belgrade, Serbia
Category: E
Description: *It's a comprehensive workbook written to be used by students attending course of a Strength of Materials (1st year of Bachelor Studies at the Faculty of Mechanical Engineering, University of Belgrade). It contains over 50 problems solved in detail, using over 200 sketches to illustrate the problem and its solutions, and uncountable number of equations. It is divided in four main Chapters: Moments of Inertia, Axial Loading, Torsion, and Bending.*
State of development: Published in 2022
Contact: Ana Petrović, +381 69 2308888 ***aspetrovic@mas.bg.ac.rs***
Presentation link: ***https://www.mas.bg.ac.rs/biblioteka/izdanja/24*** ***(book no. 1)***

42.

Title: MECHANICAL POWER TRANSMISSIONS – Problems with Solution
Patent/project number: ISBN: 978-86-6060-116-4
Author/s: Tatjana Lazović, Aleksandar Marinković
Institution/Country: Faculty of Mechanical Engineering, University of Belgrade, Serbia
Category: E
Description: *The book of tasks and complex problems covers the following chapters from power transmission theory: gear pairs (spur, helical, bevel, worm), belt and chain drives, couplings. It contains 23 small tasks with solutions, 19 combined complex problems solved in detail, 24 tables, and 9 pictures with data and diagrams needed to solve the tasks. Additionally, the book includes 44 illustrations and 17 references. The total length of the book is 206 pages.*
State of development: Published, Faculty of Mechanical Engineering, Belgrade, Serbia, 2022
Contact: ***tlazovic@mas.bg.ac.rs***
Presentation link: ***https://www.mas.bg.ac.rs/biblioteka/izdanja/22***

43.

Title: MY BOOKS – Carte de teste pentru Evaluarea Nationala – Limba si literature Romana; Claca si sezatoarea in zonele Bistrita-Nasaud si Hunedoara; Amprente scrise. Amprente pe hartie
Patent/project number: Books
Author/s: Iulia-Maria Ciherean
Institution/Country: Iulia's Books, Romania
Category: E
Description: *I write 3 books in the last years as unique author, but also over 60 books where I am co-author. Also I write many articles about Romanian literature, different authors and traditions. My 3 books as unique author: the first is according to the students; the second is about two traditions that happen in autumn; the third is more complexe because the main subject is literary criticism.*
State of development: Published
Contact: *iuliamariaciherean@gmail.com* ***+40745 174870***
Presentation link: *https://www.facebook.com/share/18rdv4fwvA/?mibextid=wwXIfr*

44.

Title: PHOTON AND THE LOST TREASURE
Patent/project number: Educational Program
Author/s: Friendship Team, Mentors: Stanca Maria Anca, Ionescu Adriana
Institution/Country: Şoimus Middle School, Romania
Category: E
Description: *Objective: Students will use the Photon robot to navigate an interactive map, solving language challenges in English to find the „lost treasure."*
How It Works?
1. Creating the Scenario:
A track is set up on the floor (using tape or A3 sheets), divided into multiple stations. Each station contains a language challenge that students must solve for Photon to continue its journey.
2. Stations and Challenges:

✓Start: „The Journey Begins" – Students must give a simple command to Photon in English (e.g., „Go forward" / „Turn left") to start the adventure.
✓Station 1: „The Riddle of Colors" – Photon stops at a card showing different colors. Students must describe objects using the correct color, e.g., „The sun is yellow" or „The sky is blue."
✓Station 2: „The Mystery of Actions" – Cards illustrate different actions (run, jump, swim, dance). Students must act out the action and say a correct sentence, e.g., „I am running fast." If they succeed, Photon can move forward.
✓Station 3: „The Secret Code" – A language puzzle where students must arrange words into a correct sentence (e.g., „The cat is sleeping on the bed.").

✓*Station 4: „The Final Key" – Photon reaches the last obstacle. Students must create a short story about Photon using at least three sentences in English. Example:*
„Photon is in the jungle. He sees a big treasure chest. He opens it and finds a magic book."
✓*Finish: The Lost Treasure! – If all challenges are solved correctly, Photon reaches the treasure and lights up in a special color (e.g., gold).*
3. Adaptations & Extensions:
Additional grammar or vocabulary questions can be added depending on the students' level.
QR codes at each station can provide audio instructions in English.
It can be turned into a team competition, with points awarded for each correct challenge.
4. What Do Students Learn?
✓*Essential vocabulary (colors, actions, objects, places)*
✓*Building correct sentences in English*
✓*Collaboration and problem-solving skills*
✓*Basic programming through Photon control*
This lesson makes learning English fun, interactive, and engaging!
State of development: Concept stage – The project is currently in the concept stage. The lesson plan and challenges have been designed, and the next step is testing the activity with students.
Contact: +40254237322 *scoalasoimus@gmail.com*
Presentation link: *https://scoalasoimus.ro/*

45.

Title: INNOVATIVE LEARNING WITH VR: EXPLORING THE FUTURE OF EDUCATION
Patent/project number: 2
Author/s: Friendship Team, Mentors: Stanca Maria Anca, Ionescu Adriana
Institution/Country: Şoimus Middle School, Romania
Category: E
Description: *This project explores the transformative potential of Virtual Reality (VR) in education, making learning more engaging and interactive. By integrating VR headsets into different subjects, students gain immersive experiences that enhance their understanding of complex concepts.*
1. „Explorers of the Universe"
Idea: Students use VR headsets to explore the solar system and the galaxy. Through an educational VR application, they can „travel" to different planets, observe stars, and better understand astronomical distances.
2. „Anatomy in Virtual Reality"
Idea: VR headsets are used to study the human body in detail. Students can explore internal organs, the circulatory system, and other biological structures interactively, helping them understand how the body functions.
3. „Time Travels with Us"
Idea: This project offers an interactive historical experience. Students can „walk" through Ancient Rome, explore Pharaonic Egypt, or witness important historical events like the Industrial Revolution, making learning more immersive.
4. „VR Architect: Build Your Own World"

Idea: Using VR, students design their own cities, houses, or architectural structures. They learn about design, urban planning, and sustainability while experimenting with different architectural styles.
5. „Safe Chemistry Lessons"
Idea: VR allows students to conduct dangerous chemical experiments in a safe environment. They can mix substances and observe reactions without risks, learning about chemical properties in an interactive way. This project showcases how VR technology can transform education, making learning more engaging and interactive.
State of development: Concept stage – The projects have been established, and the next step is testing the activity with students.
Contact: +40254237322 *scoalasoimus@gmail.com*
Presentation link: *https://scoalasoimus.ro/*

46.

Title: SILENT PROTOCOL: THE UNSPOKEN POWER OF ENGLISH IN MODERN WARFARE AND TECH
Patent/project number: research project
Author/s: MIHAIL-ALEXANDRU STANESCU, MIHAI FLORIAN MIU; COORDINATOR - ELENA MATEI
Institution/Country: National University of Sciences and Technologies Politehnica Bucharest, Romania
Category: E
Description: *English has become the main language for defense communication, used by organizations like NATO, the United Nations, and various multinational groups. This study looks at how English became the dominant language in military settings, its integration into technologies like AI, cybersecurity, and autonomous systems, and some of the challenges that come with it, such as language barriers and biases in AI systems. Using a descriptive-analytical approach, the research traces the rise of English within military alliances and examines how it plays a role in modern defense technologies. The findings highlight just how much English is relied upon 99% of cybersecurity fields (such as ethical hacking, malware analysis, and DevSecOps) and 95% of communication in autonomous systems are in English, even during multinational operations. Furthermore, over 70% of defense AI technologies and 85% of cybersecurity protocols are based on English systems. The study shows how crucial English has become for global defense cooperation and technological innovation, especially in areas like cybersecurity and AI. However, challenges still exist, including language barriers in multinational missions and biases in AI tools trained on English-heavy data. This language is likely to remain the primary language in military communication for the foreseeable future. To sum up, this research highlights how English is not just a driver of technological progress but also a key factor in international security cooperation, solidifying its continued role in modern warfare and peacekeeping.*
State of development: research project
Contact: +40721520080 *mihailstanescu.24@gmail.com*
Presentation link:
https://drive.google.com/file/d/1rFqiDA9SjHlLWYAK3RP6b5qmD9g6DwiV/view?usp=sharing

47.

Title: METHOD OF USE OF AUGMENTED REALITY IN ONCOLOGY THROUGH 3D-PRINTING TECHNOLOGIES FOR DIDACTICAL AND PRACTICAL PURPOSES
Patent/project number: Certificate of Innovator No.6264 / 25 June 2024
Author/s: Valic Eugeniu, Valic Vladimir, Ciobanu Daniela, Şchiopu Victor
Institution/Country: Nicolae Testemiţanu State University of Medicine and Pharmacy from Republic of Moldova
Category: E
Description: *The innovation consists in combining augmented reality (AR) with 3D-printing technologies (3D-PT), which allows viewing objects in an interactive and innovative three-dimensional format. This principle facilitates the studying process of the anatomical structures of healthy and pathological organs, tissues and cells in much more details, with a better understanding of morphology, topographical localization and subsequently treatment tactics. Also, it would allow the study of molecules models, from open-source databases, especially their complex quaternary structure, in a didactic, research and curative role. The 3D virtual models developed could be used in workshops and open lessons for didactic-scientific purposes for medical workers in the oncology field or for the general population, in order to inform and raise awareness of oncological screening and the prevention of certain types of cancer, with the ability to quickly scan, redirect and save the anatomical model over a long period of time on s specialized platform, saving the memory on the user's device.*
State of development: Interactive 3D-printed models at Oncology Department, Nicolae Testemiţanu State University of Medicine and Pharmacy from Republic of Moldova
Contact: *eugenvalic99@gmail.com*
Presentation link:
https://drive.google.com/file/d/1E0jyfAsu_w_fvcUw3HVQBEY04MLGgqo8/view?usp=sharing

48.

Title: INTERACTIVE MODEL OF CHILDREN PLAYGROUND FOR EDUCATIONAL-INSTRUCTIONAL PURPOSES
Patent/project number: Certificate of Innovator No. 6266 / 27 June 2024
Author/s: Ciobanu Daniela, Valic Eugeniu, Valic Vladimir, Cociu Svetlana, Cazacu-Stratu Angela, Cebanu Serghei
Institution/Country: Nicolae Testemiţanu State University of Medicine and Pharmacy from Republic of Moldova
Category: E
Description: *This innnovation represents an interactive model of a children playground. It consists of a landscape represented by a terrain arranged with models of playhouses with slides, houses with bridges and climbing nets, a carousel equipped with support bars, a playground arranged with a swing, a model of a lantern that illuminates the terrain, representing a faithful copy of the real elements of a playground according to EN 1176 safety standards. The working principle is based on the interactive representation of a children's playground model, equipped with appropriate elements. Also, the materials used in the creation of this model were environmentally friendly, durable, and pleasant and resistant during their*

demonstration for children, parents and the general population. As of advantages, The given model of the children's playground would constitute a theoretical, methodical and practical support within open lessons intended for the category of preschool children, parents and the general population regarding information, awareness and training about children's traumas at playgrounds, rules of behavior and preventive measures. The ergonomic design, small dimensions, ecological and accessible materials allow for maintenance and use with minimal costs, with the possibility of transportation and demonstration both in closed rooms and open spaces.

State of development: The innovation and model were implemented at Hygiene Discipline from Preventive Medicine Department of Nicolae Testemițanu SUMPh for use in the instructional-didactic process during the study of the characteristics of trauma in children within the Child Hygiene Module, as well as in open lessons intended for preschool children, parents, and the general population regarding information, awareness-raising, and training about children's trauma on playgrounds, rules of behavior, and their preventive measures.

Contact: *daniela.ciobanu.art2020@gmail.com*

Presentation link:

https://drive.google.com/file/d/1-Y8BqedXtf5s0hk63DsqEP_IJ8NIdJKL/view?usp=sharing

49.

Title: CANTECELE ZIENELOR / THE SONGS OF THE ZIENES

Patent/project number: ISBN 978-606-799-790-3 / Limes Publishing House

Author/s: Asociatia Culturala „Ziene Sanziene"

Institution/Country: Cultural Association „Ziene Sanziene" Calan, Romania

Category: E

Description: *The folk group "Ziene Sânziene" was founded in 2012 by teacher Violeta Deminescu, inspired by the desire of her students to become folk music soloists. This group continued the activity of a previous folk ensemble, "Îngerașii", and quickly distinguished itself by participating in shows and competitions. Under the patronage of Saint Arsenie Boca, the group became a vibrant community of young folk music performers. Over time, the group collaborated with teachers, musicians and composers to create and record folk songs, which led to its recognition at the local and national level. Many of the group members pursued musical careers, and "Ziene Sânziene" turned into a true nursery of future artists of the folk tradition. To support the activities, a cultural association was also established, which obtained funding and carried out cultural projects. Professor Violeta Deminescu, also a folk music soloist, has produced and presented folklore shows on local television, promoting young artists. She expresses her gratitude to all those who contributed to the group's success and to her "Sanțian ancestors."*

State of development: Book

Contact: *violetamyrdeminescu@yahoo.com*

Presentation link: *https://www.facebook.com/deminescu.violeta/?locale=ro_RO*

50.

Title: NEBUNUL DIN TAROT / THE TAROT MADMAN

Patent/project number: ISBN 978-606-799-791-0 / Limes Publishing House



Author/s: Violeta Deminescu
Institution/Country: Cultural Association „Ziene Sanziene" Calan, Romania
Category: E
Description: *This is a book of poetry written by Violeta Deminescu, published by Mirabilia Publishing House. It contains three reviews signed by Silviu Guga, Ioan Barb and Ottilia Ardeleanu, which highlight the author's talent and poetic maturity. Silviu Guga describes her as an authentic poet, who makes her editorial debut with a profound volume, "The Fool in the Tarot". Ioan Barb emphasizes that her debut, although belated, is a gain for poetry, and her verses confirm its literary value. Ottilia Ardeleanu notes the author's special lyricism, characterized by tenderness and spirituality, emphasizing that Violeta Deminescu sees the supreme poet in God.*
State of development: Book
Contact: *violetamyrdeminescu@yahoo.com*
Presentation link: *https://www.facebook.com/deminescu.violeta/?locale=ro_RO*

51.

Title: ADVANCED AUTOMOTIVE DIAGNOSTICS TRAINING
Patent/project number: advanced training courses
Author/s: Gidali Adrian, Simon Florin
Institution/Country: Sc Garage Training SRL, Romania
Category: E
Description: *GARAGE TRAINING's field of activity is the development and support of advanced training courses for automotive diagnosticians and qualified technical personnel in automotive repair workshops (mechatronics, electricians and car mechanics). The courses focus on the application of practical diagnostic methods, on detailed knowledge of the systems and components of the proposed topic, on the optimal use of specific measuring and testing equipment (diagnostic tester-oscilloscope-multimeter-specific equipment), as well as on compliance with the maintenance and repair standards imposed by automotive manufacturers. The initial segment of the course structure represents a series of introductory training sessions, developed specifically to understand the functioning of AUTOMOTIVE MECHATRONIC SYSTEMS. The course schedule is from 9:00 AM to 5:00 PM, with a lunch break from 1:00 PM to 2:00 PM and coffee breaks at 11:00 AM and 3:00 PM.*
Advanced training courses:
- *AUTO ELECTRICITY (7 DAY COURSE)*
- *ADVANCED OSCILLOSCOPE USAGE TECHNIQUES (2 DAY COURSE)*
- *SPECIFIC APPLIED COURSES*
- *ELECTRONIC MANAGEMENT AND DIAGNOSTICS OF THE AIR SUPPLY SYSTEM (1 DAY ADVANCED OR 3 DAY ENTRY LEVEL COURSE)*
- *ELECTRONIC MANAGEMENT AND DIAGNOSTICS OF THE FUEL SUPPLY SYSTEM (Bosch – CP4 – Piezoelectric injectors- 1 DAY ADVANCED OR 3 DAY ENTRY LEVEL COURSE)*
- *ELECTRONIC MANAGEMENT AND DIAGNOSTICS OF THE GAS AFTERTREATMENT SYSTEM (DPF Particulate Filter - AdBlue SCRCOURSE OF 2 DAYS)*
- *ELECTRONIC MANAGEMENT AND DIAGNOSTICS OF 6-SPEED DSG 02E ROBOTIC TRANSMISSIONS (CLUTCHES WET) AND DSG 0AM 7 SPEED (DRY CLUTCHES)-2 DAY COURSE*
- *ELECTRIC AND HYBRID VEHICLE DIAGNOSTICS - 3-DAY COURSE*

- *DIAGNOSTIC OF MULTIPLEXED COMMUNICATION NETWORKS (2 DAY COURSE)*

State of development: teaching stand
Contact: *cursuri.garagetraining@gmail.com*
Presentation link: *https://www.facebook.com/adrian.gidali*

52.

Title: EDUCATION AND INNOVATION IN THE HATEG COUNTRY UNESCO GLOBAL GEOPARK
Patent/project number: UNESCO Global Geopark
Author/s: Alexandru Andrăşanu, Cristian Ciobanu, Adina Popa, Dan Horaţiu Popa, Maria Tănăsescu, Cristina Toma
Institution: University of Bucharest – Hateg Country UNESCO Global Geopark, Romania
Category: E
Description: *The Country Haţegului UNESCO Global Geopark is the first territory in the country recognized by UNESCO for the creative way of touristic, educational and scientific valorization of a special geological and cultural heritage. You can find us in the southwest of Transylvania, in Ţara Haţegului in Hunedoara County. Practically, wherever you walk through Ţara Haţegului, you are in the Geopark and in a UNESCO site. The University of Bucharest is the one that ensures the administration of this UNESCO site, coordinating and carrying out research, education, interpretation and promotion activities of the Geopark. The Geopark is a space for multidisciplinary scientific studies, covering fields such as paleontology, geology, education, biology, sociology, philosophy, art, etc. These studies contribute to a better understanding of the relationship between man and planet Earth. The projects carried out in these areas facilitate collaboration between researchers, teachers and local communities, supporting sustainable development and the active involvement of residents in protecting and valorizing the natural and cultural heritage of Ţara Haţegului.*
State of development: UNESCO Global Geopark
Contact: *cristian.ciobanu@unibuc.ro* *https://www.hateggeoparc.ro/new/index.php/en/home/*
Presentation link: *https://www.youtube.com/@hateggeoparc1644*

53.

Title: THE ETERNAL POET SOUL / SUFLETUL POET ETERN
Patent/project number: ISBN: 978-606-517-101-5
Author/s: Adriana VLAD
Institution: Colophon Typography, Romania
Category: E
Description: *For man, refuge in art is the chance to heal from the wounds suffered throughout life, it is a form of overcoming trials and overcoming. Of all the arts, the metaphorizing word, in a process of infinite germination, is the only one that can encompass the complexity of the soul of the being, the intense experiences throughout existence, the aspirations, the tragedy of life and the joy of fulfillment. The new volume of poems signed by professor Adriana Vlad is a poetic exercise in converting life into metaphor,*

wishing for a condensation of suffering and happiness in the word, the supreme gift that man received through Creation from God.
State of development: Book
Contact: *vladadriana11@gmail.com*
Presentation link: *https://www.facebook.com/p/Adriana-Vlad-100078134606773/*

54.

Title: ESSENCE VOLUME OF POEMS / ESENTA VOLUM DE POEZII
Patent/project number: ISBN: 987 606 9224113
Author/s: Adriana VLAD
Institution: Colophon Typography, Romania
Category: E
Description: *Adriana Vlad's debut volume highlights a special poetic sensitivity, a spirit concerned with dressing in lyrical form the numerous spiritual turmoils and questions that the poet asks herself. Each poem has a quote from great writers or philosophers attached at the end, which emphasizes the deeply meditative nature of the poems. The book launch will end with an autograph session offered by the poet to poetry lovers who will come to this event", says the manager of the County Library, Ioan Sebastian Bara.*
State of development: Book
Contact: *vladadriana11@gmail.com*
Presentation link: *https://www.facebook.com/p/Adriana-Vlad-100078134606773/*

55.

Title: MECANISME PENTRU DEBITAT PRODUSE METALURGICE ANALIZA CINEMATICĂ ŞI CINETOSTATICĂ / MECHANISMS FOR FLOWING METALLURGICAL PRODUCTS KINEMATIC AND KINETOSTATIC ANALYSIS
Patent/project number: ISBN 978-606-35-0533-1
Author/s: Adina BUDIUL BERGHIAN
Institution: Politehnica University of Timisoara, Engineering Faculty of Hunedoara, Romania
Category: E
Description: *Shears for cutting metal products play an important role in the steel industry. Due to the specificity of their operation, these machines are relatively difficult to study in depth their structure because any non-technological stops imply blockages of the rolling process. Once put into operation, the shears acquire a "closed box" character, being able to observe only the mode of action of the knives. As a result, most studies regarding these machines are of an experimental type. Such a study is also attempted to be developed in the present work which proposes the use of empirical and phenomenological models of a shear with 8000 kN parallel knives.*
State of development: Book
Contact: *adina.budiul@fih.upt.ro*
Presentation link: *https://www.fih.upt.ro/v4/#*

F - Medicine, Paramedical, Pharmacy, Cosmetics, Hygiene

1.

Title: NEW TECHNIQUE TO CONVERSION OF BLOOD GROUP (RH) FROM POSITIVE TO NEGATIVE BY IMMUNO-COATED METHOD
Patent/project number: 6438
Author/s: Prof.Dr. Ali Abdulhussein Mahdi, Dr.Abdulameer Jasm Mohammed
Institution/Country: College of Health and Medical Techniques, Middle Technical University, Iraq
Category: F
Description: *A new technique to convert +ve blood group to -ve blood group that can be transferred to a patient with -ve blood group through the immune coverage technique. Through this innovation, any Positive blood type is converted into a Negative blood type regardless of the type of blood type (O or A or B or AB) through the encapsulation of Rh (D) antigens on the red blood cell surface, In the blood of people with the positive category of the blood type, the idea is based on the cracking of laboratory-produced antibodies against the Rh antigen (D). The antibody is broken through a site dedicated to cracking, which is usually found on these antibiotics.*

It is universally known as the "papain cleavage site", (papain enzyme) to crack the antibody and uses the fab part of the antigen to encapsulate the surface of the Ag "Rh (D)" and is completely blocked from the immune definition The body, which converts the blood type from Rh (+ ve) to Rh (-ve)
State of development: New technology for medical immune coverage
Contact: *ali.abdulhussein@mtu.edu.iq* ***+9647806790023***
Presentation link: *https://mtu.edu.iq/*

2.

Title: DEVELOPING A MICROSCOPE TO A THREE-DIMENSIONAL MICROSCOPE
Patent/project number: 00240007
Author/s: Prof.Dr. Ali Abdulhussein Mahdi*, Dr. HASHIM ABED ABBAS**
Institution/Country: *College of Health and Medical Techniques, Middle Technical University, Iraq; **University Diyala / College of Medicine, Iraq
Category: F
Description: *Manufacture a three-dimensional vision microscope system, which shows us the true image of the model and its three dimensions by placing a laser diodes system. The image that we see in the ordinary*

light microscope is in fact a false image with dimensions greater than the real size that the model under the microscope looks like because it represents the shadow of the model and not the image of the original model and this image has only two dimensions; and since some laboratory diagnoses depend in their diagnosis on the shape and dimensions of cells, there was a need to manufacture a three-dimensional vision microscope system, which shows us the true image of the model and its three dimensions by placing a laser diodes system that is installed on the ordinary optical microscope simply and easily.

Through this microscope, our concept of the images taken by the ordinary microscope will change from the images taken by the three-dimensional vision microscope.

State of development: Prototype
Contact: *abd4321@gmail.com* ***+9647806790023***
Presentation link: *https://mtu.edu.iq/*

3.

Title: **A NEW TECHNIQUE FOR ESTIMATING PHAGOCYTIC ACTIVITY OF CELLS**
Patent/project number: Research project
Author/s: Dr. Omar Sadik Shalal, Dr. Ali Abdulhussain Mahdi
Institution/Country: College of Health and Medical Techniques, Middle Technical University, Iraq
Category: F
Description: *This innovative technique involves utilizing bacteria labeled with fluorescent nanoparticles as bait to evaluate the phagocytic activity of cells, including mononuclear and neutrophil cells. The procedure entails mixing labeled bacteria with a drop of blood on a glass slide, incubating the slide at 37°C for three hours, and examining it under a fluorescent microscope. Labeled bacteria appear as fluorescent entities inside or outside the cells. The phagocytic activity rate is calculated by counting the number of cells containing fluorescent bacteria, dividing it by the total cell count, and multiplying the result by 100%. This method boasts a low error margin (less than 0%), as it relies on fluorescence-based detection rather than traditional staining methods, overcoming issues of dye crystallization and incomplete bacterial staining.*
State of development: Innovative medical technique
Contact: *omar.sadik@mtu.edu.iq* ***+9647817686114***
Presentation link: *https://mtu.edu.iq/*

4.

Title: PURIFICATION OF BLACK CARROT DYE AND ITS USE AS A COLOR REAGENT
Patent/project number: 4289
Author/s: Dr. Rabab Mohammed Abood, Azhar Mousa Mohammed
Institution/Country: College of Health and Medical Techniques, Middle Technical University, Iraq
Category: F

Description: *Purification of black carrot dye and its use as a color reagent 3-points Acidic-Neutral Alkaline. A paper industry was reached that reveals acidic, basic and neutral solutions through the color change occurring in it, where the acid has a red color and when the neutral is purple and when the base is green, and the color guide used in this experiment is extracted from the carrot plant Daucus carota after the extraction process on it.*

This method is distinguished from the method of sunflower paper by the following:

1- It's made of non-toxic natural materials while sunflower paper is made of toxic chemicals.

2- Made of materials available in nature and inexhaustible.

3- It is characterized by the fact that the new method has three points of color change: red, green and purple, while the sunflower leaf has two points of color change, which are red-blue.

4- Color stability chemically, as they do not disintegrate and do not interact with the materials used with them, which gives them color stability.

State of development: Innovative medical technique

Contact: *rrere796@gmail.com* ***+9647806790023***

Presentation link: *https://mtu.edu.iq/*

5.

Title: THE CONNECTION BETWEEN WELFARE SYSTEMS, EMPLOYMENT CONDITIONS IN ISRAELI HOSPITALS

Patent/project number: Employment conditions research

Author/s: Dr. MILANA MAZAL MAZOR

Institution/Country: Sheba Tel-HaShomer Medical Centre, Israel

Category: F

Description: *This study explores the impact of employment conditions on nurses' job satisfaction, with a focus on technological innovations that can improve working conditions in the healthcare system. The research examines how new technologies, such as digital management systems and automated tools, can enhance work efficiency, reduce workload, and improve employee well-being. Proper utilization of technology has the potential to significantly increase job satisfaction, which in turn can lead to improvements in the quality of patient care. In Israel, significant advancements in healthcare technology have empowered nurses with extensive training, broader authority, and increased autonomy. These developments enhance job satisfaction by giving nurses more control over their work, improving both efficiency and professional fulfillment.*

State of development: Technological Innovations as a Tool for Improving Work Quality

Contact: *mazalr44@gmail.com*

Presentation link: *https://eng.sheba.co.il/Center-for-Treatment-of-Benign-Prostate-Enlargement*

6.

Title: THE BEAUTY ROOM - THE WORD OF NAILS
Patent/project number: C.U.I 41936178, F20/680/2019
Author/s: Ana Maria TIMPEAN
Institution/Country: Timpean Ana Maria Individual Enterprise, Romania
Category: F
Description: *The nail is a thin plate that grows on the top of the last phalanx of the fingers and covers the top of the fingertips. The most important methods to style a nail is semi-permanent nail polish, and to give it length you can use the construction on the template or the construction from smart shapes tips. There is also the old tips that are no onger used. The construction of gel nails is recommended for people who want a flawless manicure for a long time but it is very effective and for women whose natural nails are not very resistant, they break quickly or exfoliate immediately.*
State of development: Nails Services
Contact: +40736358913 *welcome_anna14@yahoo.com*
Presentation link: *https://www.facebook.com/share/1CWYkgZ9D9/*

7.

Title: OPTOELECTRICALLY STIMULATED SELF-DISINFECTION MEMBRANE
Patent/project number: A/00081/01.03.2024
Author/s: Bănică Radu Nicolae, Ursu Daniel Horaţiu, Moşoarcă Cristina, Eftimie Mihai Alexandru, Panaitescu Paul-Ştefan, Şchiopu Pavel, Costache Carmen-Anca, Melinescu Mihaela-Alina, Colosi Ioana-Alina
Institution/Country: National University of Science and Technology "POLITEHNICA" of Bucharest; Faculty of Chemical Engineering and Biotechnology, Romania
Category: B
Description: *The invention relates to an optoelectrically stimulated self-disinfecting membrane based on the action of ultraviolet light and silver ions on bacteria on septic surfaces, and to the process for obtaining the same. The demonstrative experimental model of UV glass enhanced antibacterial membranes synthesis method implies the design, synthesis and complex characterization of the developed glass compositions and of Ag nanowires on the polymer. Subsequently, the layered material is obtained and currently optimized, followed by demonstration of the experimental model, evaluation of the antibacterial parameters of material. All of these are based on correlation between experimental model characteristics of synthesis method, glass' UV transmittance and antibacterial applications. Self-disinfecting membrane made by polymer with good transparency in the UVB and UVC range to a transparent glass surface have silver nanowire electrodes applied, separated by an ion-exchange layer. The whole assembly is illuminated through the glass by germicidal UVB-UVC emitting diodes.*
State of development: prototype
Contact: *mihai.eftimie@upb.ro*

8.

Title: CO-TECH- TEST, MEASURE, BALANCE(INNOVATIVE CONCEPT OF AUTOMATED SOFTWARE PROCESS FOR EVALUATION AND THERAPY THROUGH BIOFEEDBACK)
Patent/project number: OSIM 301240/29.12.2023
Author/s: Senior Lecturer Dr. Oana Codruta Bacean Miloicov
Institution/Country: SC Holistic Lounge SRL, Romania
Category: F
Description: *CO-TECH software process automation is an innovative and copyright-protected concept that brings a new perspective to patient evaluation and therapy. By using biofeedback, this system allows for the optimization of evaluation processes, improvement of therapies, and reduction of execution times, resulting in an optimized therapeutic approach with accelerated efficiency. One of the core features of CO-TECH is its ability to obtain precise and detailed data about patients through biofeedback. This process involves measuring and monitoring the physiological responses of the patient in real-time. As a result, therapists can have access to essential information about the patient's health status and can adapt the treatment based on these data. By applying CO-TECH software process automation in therapies, specialists can more accurately evaluate the patient's health condition and rapidly identify problems or difficulties they may face. Additionally, this system enables continuous monitoring of therapeutic progress, facilitating real-time adjustment and optimization of the therapy.*
Moreover, CO-TECH software process automation brings a significant change in terms of the time required for therapies. By utilizing this innovation, therapists can considerably reduce the overall duration of therapies as they can quickly identify and eliminate inefficient or unnecessary methods. Consequently, patients will benefit from more time dedicated to other types of therapies without compromising the effectiveness of the main treatment.
Another significant value brought by CO-TECH is its capacity to provide an optimized, personalized, and tailored therapeutic approach to each patient's needs. Through efficient resource utilization, therapists can develop specific strategies for each patient and track their evolution and health status in real-time. Through the use of CO-TECH software process automation, therapies become more efficient, faster, and personalized. This revolutionary concept offers the possibility to evaluate and treat patients more accurately, reducing therapy periods and maximizing therapeutic outcomes. CO-TECH brings benefits to the field of biofeedback evaluation, therapy improvement, and streamlining of therapeutic approaches, thus transforming the way patients are treated and cared for.
Affections that we have already used the CO-TECH- test, measure, balance concept for: depression, neoplasms, burnout, vitiligo, neurological diseases.
State of development: product
Contact: *baceano@gmail.com* ***+40745170879*** *www.healthyvibe.ro*
Presentation link: *https://www.healthyvibe.ro/product/evaluare-energetica-si-terapie-cu-aparatul-scio-o-sedinta/*

9.

Title: QVIBE FREQUENCY GENERATING THERAPEUTIC DEVICE- USED AGAINST PARASITIC INFECTIONS
Patent/project number: OSIM 301243/29.12.2023
Author/s: Senior Lecturer Dr. Oana Codruta Bacean Miloicov
Institution/Country: SC Holistic Lounge SRL, Romania
Category: F
Description: *Intestinal parasites in children are organisms that develop and live in their intestinal tract, causing various symptoms and health problems. The causes of parasitic infestation can be varied, including consuming contaminated food or water, contact with infected animals, or lack of proper hygiene.*
The effects of intestinal parasites on children's health can be quite severe. These parasites can affect nutrient absorption, causing nutritional deficiencies and delays in growth and development. They can also cause abdominal pain, diarrhea, nausea, weight loss, fatigue, and irritability. Persistent parasite infestation can compromise the child's immune system and lead to the development of other serious conditions.
To combat intestinal parasite infestation in children, an effective and non-invasive device is the Q Vibe - a therapeutic anti-parasitic frequency generator. This device provides a natural and gentle solution, eliminating the need for aggressive or invasive chemical substances in treatment.
Q Vibe works by generating and transmitting specific frequencies that are highly unpleasant and harmful to parasites. These frequencies disrupt and destroy the parasitic organisms, eliminating them from the child's body. The use of the Q Vibe device is easy and convenient, so it can be used at home or in a clinic setting.
Another advantage of using Q Vibe is its immediate effectiveness. After applying the therapeutic frequencies, the child will experience rapid relief of symptoms and an improvement in overall health. Treatment with Q Vibe is completely non-invasive and does not cause any negative side effects.
In short, the Q Vibe device provides a non-invasive, natural, and effective solution for combating intestinal parasite infestation in children. By using therapeutic anti-parasitic frequencies, this technology offers immediate benefits and completely eliminates the harmful effects of chemical substances.
Q Vibe is a therapeutic frequency generating device, an inovative concept made out of frequencies that are imprinted on it, the final result is a special, unique algorithm, modified according to the pathologies of the patients. We applied the device as a therapy(local external application) for these cases on the right hand on the radial arthery, where we can feel the pulse. It is recomanded to use QVibe deviece everyday, all the time, especially during the night, the frequency recipie is a unique registered algoritm imprinted on the device that generates the frequencies as therapy.
In cases of abdominal discomfort caused by colics, inflammation, abdominal bloating, intestinal parasites or imbalance of intestinal flora.
State of development: Inregistrat / Registered 06/05/2022, No 009015340-0001
Contact: *baceano@gmail.com* ***+40745170879*** *www.healthyvibe.ro*

Presentation link: *https://www.healthyvibe.ro/product/incarcare-dispozitiv-q-vibe-basic-antiparazitar/*
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10.

Title: ANTISTRESS PROTOCOL used in a vitiligo case
Patent/project number: OSIM 301240/29.12.2023
Author/s: Senior Lecturer Dr. Oana Codruta Bacean Miloicov
Institution/Country: SC Holistic Lounge SRL, Romania
Category: F
Description: *The results obtained, including physical outcomes, clinical appearance, and psycho-emotional levels, demonstrate the effectiveness of this innovative copyrighted protocol. Its non-invasive nature, combined with optimized clinical parameters, enhances skin appearance and mental equilibrium, as confirmed by the results. The therapeutic ANTISTRESS PROTOCOL has shown significant benefits in the treatment of this case of vitiligo. Beyond its impact on the physical manifestations of the condition, it also addresses the psycho-emotional aspects that can accompany the disease. By promoting psycho-emotional balance, this protocol helps individuals cope with the psychological impact of vitiligo. It addresses the underlying traumas stored in the subconscious, aiding in their release and healing. Furthermore, the therapeutic ANTISTRESS PROTOCOL focuses on CHACKRA balancing, which plays a vital role in overall well-being. Through this process, the energy centers of the body are harmonized, resulting in improved physical and mental health. The protocol also includes AURA correction, which helps restore the energetic field surrounding the body. By addressing imbalances and blockages within the aura, the therapy promotes healing on multiple levels. By targeting the imbalances caused by stress factors, this protocol aids in restoring the body's equilibrium. It addresses the impact of external stressors and supports the body's ability to withstand and recover from them. The use of this innovative ANTISTRESS PROTOCOL has shown remarkable clinical and psycho-emotional improvements. It offers a non-invasive approach to treating vitiligo, enhancing both physical appearance and mental well-being. With the support of copyright protection, this protocol stands as a testament to its effectiveness and results. The image on the LEFT- BEFORE represents the photo taken at the initiation of the therapy. The image in the middle, intermediate stage. The image on the right, the RESULT- AFTER obtained after three months from the initiation of the therapy!*
State of development: (concept): product, copyright-protected concept
Contact: *baceano@gmail.com* ***+40745170879*** *www.healthyvibe.ro*
Presentation link:
https://www.facebook.com/heathyvibeholistictherapy/photos/pb.100063593891341.-2207520000./127958042188746/?type=3

11.

Title: QVIBE FREQUENCY GENERATING THERAPEUTIC DEVICE - USED IN FIBRILLATION
Patent/project number: No 009015340-0001, 06/05/2022
Author/s: Senior Lecturer Dr. Oana Codruta Bacean Miloicov
Institution/Country: SC Holistic Lounge SRL, Romania
Category: F
Description: *Fibrillation represents a cardiac arrhythmia characterized by rapid, irregular contractions of myocardial fibers, resulting in ineffective cardiac output. This condition poses a significant risk of complications including cerebrovascular accidents, congestive heart failure, and sudden cardiac death. Traditional therapeutic modalities have primarily involved pharmacological interventions, such as antiarrhythmic agents, aimed at restoring normal sinus rhythm. In refractory cases, interventional approaches such as catheter ablation or implantation of cardiac rhythm management devices may be necessary to achieve rhythm control. The innovative QVibe device offers a novel approach to fibrillation management, utilizing therapeutic frequencies to modulate myocardial activity. Unlike conventional therapies, QVibe provides a non-invasive and physiologically harmonious intervention. Mechanism of Action: QVibe operates by emitting targeted frequencies tailored to counteract the pathophysiological mechanisms underlying fibrillation. Its unique formulation integrates anti-inflammatory agents to mitigate myocardial inflammation, optimize coronary perfusion, and enhance myocardial contractility and conduction. Patients can conveniently integrate QVibe into their daily regimen, benefiting from its therapeutic effects irrespective of their location.*
State of development: product, copyright-protected concept
Contact: *baceano@gmail.com* ***+40745170879*** *www.healthyvibe.ro*
Presentation link: *https://www.healthyvibe.ro/product/incarcare-dispozitiv-q-vibe-medium-circulatie/*

12.

Title: QVIBE FREQUENCY GENERATING THERAPEUTIC DEVICE- USED IN A PSORIASIS CASE
Patent/project number: No 009015340-0001, 06/05/2022; OSIM: 301241/29.12.2023
Author/s: Senior Lecturer Dr. Oana Codruta Bacean Miloicov
Institution/Country: SC Holistic Lounge SRL, Romania
Category: F
Description: *Psoriasis is a chronic autoimmune skin condition characterized by the rapid overproduction of skin cells. This results in the formation of red, scaly patches on the skin's surface. The exact cause of psoriasis is unclear, but it is believed to involve a combination of genetic and environmental factors. Psoriasis can cause discomfort and itchiness, on face, neck, arms, in this case that we present. Q Vibe is a therapeutic frequency generating device, an inovative concept made out of frequencies that are imprinted*

on it, the final result is a special, unique algorithm, modified according to the pathologies of the patients. We applied the device as a therapy(local external application) for this case. The subject used the QVibe deviece everyday, the frequency recipie is a unique registered algoritm imprinted on the device that generates the frequencies as therapy; we can clearly see the difference. It is successfully used as well in balancing other pathologies as(allergies/digestive problems/renal diseases/melanoma/nervous system lessions/viral or bacteriological infections/parasitic infestations/bone diseases, etc.), it optimises the state of health, according to the improvement of the clinical and paraclinical paramethers.
State of development: Inregistrat / Registered 06/05/2022, No 009015340-0001
Contact: *baceano@gmail.com* ***+40745170879*** *www.healthyvibe.ro*
Presentation link: *https://www.healthyvibe.ro/psoriazis-m-r/* ***©Healthy Vibe by Dr. Oana Codruța Bacean Miloicov***

13.

Title: Solutie Virala "SV" / Viral solution "SV"
Patent/project number: 1/20.03.2020; OSIM 301242/29.12.2023
Author/s: Senior Lecturer Dr. Oana Codruta Bacean Miloicov
Institution/Country: SC Holistic Lounge SRL, Romania
Category: F
Description: *Substance composition - BASE: 5 ml Swedish Bitter, 25 ml ozonated pure water*
The product is obtained by energetic imprinting with specific frequencies of known viruses; according to scientific studies, any energetically imprinted liquid generates those frequencies for a duration of approximately one month, after which the liquid no longer retains the energetic imprint. I used this aspect and reprinted another solution after the deadline. I have used the product in hundreds of cases of viral infections, with spectacular results even from the first days; method of administration: the first two days: 7pic x 5/day, then: 7pic x 3/day, until the bottle is used up. It is interesting that the base consists of a tincture of plants, natural and without adverse effects, but the therapy is actually made from the energetically imprinted frequencies on the solution. We started from the premise that digestion begins in the oral cavity, where absorption is very good (ex.: Nitroglycerin that is administered sublingually), as a result, statistics, kinesiological tests and the clinical evolution of the cases have shown us that the product is efficient reducing the occurrence of the symptoms, increasing immunity - much improved clinical condition after administration, significant reduction of inflammation, edema and nasal congestion.
The remedy is energetically imprinted with the help of the only device of this type in RO, the recipie concept being registered with copyright.
Other benefits:
- adjuvant in upper respiratory infections (rhinitis, sinusitis, tonsillitis, laryngitis)
- adjuvant in lower respiratory infections
- anti-inflammatory
- antiviral
- can be anywhere administered

- does not require travel to get the solution, it can be send anywhere
State of development: (concept): product, copyright-protected concept
Contact: *baceano@gmail.com* ***+40745170879*** *www.healthyvibe.ro*
Presentation link:
https://m.facebook.com/story.php?story_fbid=414014857486649&substory_index=414014857486649&id=100063593891341

14.

Title: METHOD OF TESTING BLOOD IN IMMUNOCOMPROMISED PEOPLE FOR VIRAL HEPATITIS E MARKERS
Patent deposit number: S 2024 0087 dated 06.09.2024
Author/s: Sajin Octavian, Iziumov Nina, Paraschiv Angela, Ţurcanu Adela, Holban Tiberiu, Blaj Valentina
Institution/Country: National Agency for Public Health, Republic of Moldova
Category: F
Description: *The invention involves a method for diagnosing Hepatitis E virus (HEV) infection in immunocompromised individuals, including hemodialysis patients, using an optimized sequence of diagnostic steps. The method begins with testing for the presence of anti-HEV IgG and anti-HEV IgM markers in the blood using an enzyme-linked immunosorbent assay (ELISA). If the anti-HEV IgM is positive, a PCR test is then conducted to detect HEV RNA. If the PCR result is positive, the diagnosis of acute HEV infection is confirmed.*
The novelty of the invention lies in modifying the sequence of immunoenzymatic reactions to improve testing efficiency and accuracy. The optimized procedure involves a sequence of reagent additions and incubations in specific wells, ensuring precise and effective detection of HEV markers.
This protocol enhances the photometric measurement of optical densities, enabling faster and clearer evaluation of HEV infection in immunocompromised individuals.
The procedure also includes detailed washing and enzyme conjugation steps, followed by colorimetric detection of the enzyme-substrate reaction, which provides a reliable result based on the optical density (OD) values.
The interpretation of results is based on the ratio of serum OD to the cutoff OD, allowing for clear categorization into negative, gray zone, or positive results. If results are ambiguous, the test can be repeated after two weeks for confirmation. This method optimizes both the accuracy and speed of Hepatitis E diagnosis, particularly in vulnerable patient populations.
State of development: The patent application for this invention has been submitted and is currently under examination.
Contact: *octavian.sajin@ansp.gov.md* ***+373 69815023***
Presentation link:
https://docs.google.com/document/d/13VevpLtG2qGDEhfsXBWMAV97J7NM6fgN/edit

15.

Title: ASSESSMENT OF THE PREVALENCE AND RISKS ASSOCIATED WITH HEPATITIS E VIRUS INFECTION IN PREGNANT WOMEN (2024-2027)
Project number: 130104 PRIHEF
Author/s: Sajin Octavian, Iziumov Nina, Blaj Valentina
Institution/Country: National Agency for Public Health, Republic of Moldova
Category: F
Description: *The subprogram represents a pioneering initiative in assessing the seroprevalence of Hepatitis E Virus (HEV) among pregnant women in the Republic of Moldova, marking the first nationwide investigation in this field. Its objectives are: - Assessing the prevalence of Hepatitis E Virus infection among pregnant women; - Evaluating the impact of Hepatitis E Virus infection on maternal-fetal health; - Identifying and analyzing risk factors associated with Hepatitis E Virus infection in pregnant women; - Analyzing the effectiveness of preventive and control measures for Hepatitis E Virus infection in pregnant women, with optimization.*
Relevance: The proposed project holds major significance in the context of maternal-fetal health, addressing a significant gap in the research on Hepatitis E Virus infection among pregnant women in the Republic of Moldova. The comprehensive approach to prevalence and clinical impact can provide crucial information for adapting control and response measures, with significant consequences for public health.
Methods: The study will rely on enzyme-linked immunosorbent assay (ELISA) methods for determining HEV markers in pregnant women (seroprevalence). It will also use questionnaires and analysis of medical records to highlight relevant risk factors and clinical evolution characteristics. Statistical analysis and data interpretation will be employed to obtain conclusive results. Evaluating the obtained results will provide essential data for grounding preventive measures.
Expected Results: Precise data on the prevalence of Hepatitis E Virus infection among pregnant women, identification of relevant risk factors, and highlighting clinical characteristics of infection evolution in this cohort are anticipated. The results will serve as a basis for optimizing preventive and control measures, with the potential to reduce the impact on maternal-fetal health and contribute to the efficiency of the healthcare system.
State of development: The project is currently in the implementation phase.
Contact: *octavian.sajin@ansp.gov.md* ***+373 69815023***
Presentation link:
https://ansp.md/wp-content/uploads/2024/04/PROGRAM-INSTITUTIONAL-DE-CERCETARE.pdf

16.

Title: VIRAL HEPATITIS E: FROM VIRUS DISCOVERY TO DISEASE TREATMENT
Patent/project number: Scientific Work No. 7947, May 22, 2024
Author/s: Sajin Octavian, Iziumov Nina, Blaj Valentina, Guțu Veaceslav
Institution/Country: National Agency for Public Health, Republic of Moldova

Category: F

Description: *Viral Hepatitis E: From Virus Discovery to Disease Treatment is an in-depth monograph that offers a thorough exploration of hepatitis E, a growing concern in global health. Authored by experts in the field, it examines the virus from its discovery to the current understanding of its impact on human health. The book delves into the virus's properties, its genetic diversity, and the mechanisms behind its transmission, identifying high-risk groups and modes of infection.*

Key sections of the monograph include detailed discussions on the epidemiology, pathogenesis, and clinical manifestations of the disease. It covers acute and chronic forms of hepatitis E, liver failure, and extra-hepatic effects. The diagnostic processes, laboratory methods, and differential diagnosis are presented, along with current treatment options for managing the disease.

The monograph also emphasizes prevention, detailing both non-specific and specific measures to reduce transmission. It aims to enhance knowledge about the disease and offer practical guidance for medical professionals, researchers, and students. This work is a critical resource for advancing research and promoting better understanding and management of hepatitis E.

State of development: The monograph is implemented in academic institutions, research centers, and public health organizations, serving as a key resource for healthcare professionals, researchers, and students. It supports training programs and healthcare initiatives focused on diagnosing, treating, and preventing hepatitis E.

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Presentation link:

https://drive.google.com/file/d/1pbDtenxSezyY3Gs4uc5QK9qDJuf2Sxf1/view?usp=sharing

17.

Title: THE EVOLUTION OF HUMAN POPULATIONS' HEALTH OR THE THEORY OF EPIDEMIOLOGICAL TRANSITION

Patent/project number: The book has been submitted for obtaining the scientific work certificate

Author/s: Sajin Octavian

Institution/Country: National Agency for Public Health, Republic of Moldova

Category: F

Description: *This book delves into the concept of epidemiologic transition, a fundamental shift in the causes of diseases and deaths within populations. Health, a basic human right, has been challenged throughout history by infectious diseases and malnutrition, which have significantly impacted life expectancy and quality of life. However, in recent decades, advancements in medicine, technology, and lifestyle have dramatically altered this reality. The concept of epidemiologic transition emerges as a result of these changes, highlighting the shift from infectious diseases and malnutrition to chronic non-communicable diseases such as cardiovascular diseases, diabetes, and cancer, which are now the leading global causes of morbidity and mortality. Through this book, the reader will explore the evolution of disease causes and mortality trends over time, analyzing the factors that have contributed to these transitions,*

including medical and technological innovations, changes in lifestyle, increased education, and economic progress. The book also examines the consequences of these transitions for population health and addresses how health systems must adapt to meet the challenges posed by the rise of chronic non-communicable diseases. The book provides an in-depth look at the patterns of epidemiologic transition across various regions of the world, comparing the evolution of disease causes and death rates in different countries. It also identifies the obstacles faced in controlling and preventing chronic diseases, offering solutions to address these growing concerns. This book is designed for a broad audience, including health professionals, students, researchers, and decision-makers. It serves both as an informative resource and a practical guide to understanding epidemiologic transitions. The book provides a comprehensive exploration of how the causes of diseases and deaths have evolved over time and the factors that have contributed to these changes. It offers deep insights into how society can adapt its health systems and policies to address the challenges presented by the rise of chronic non-communicable diseases. Whether used as a training resource or a strategic tool for disease prevention, this book aims to contribute to improving public health through approaches tailored to the specific needs of the current stage of epidemiologic transition.

State of development: The book is implemented in academic institutions, research centers, and public health organizations, serving as a key resource for healthcare professionals, researchers, and students.

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Presentation link:
https://drive.google.com/file/d/1u-EdkSljaHpP9DzHs58q6pzicN-cZ1QD/view?usp=sharing

18.

Title: JACUZZI SYSTEM FOR THERMALISM WITH HYDRO-/AIR-MASSAGE AND HALOCHAMBER TREATMENTS WITH SOLIONS
Patent/project number: RO134023
Author/s: I.G. SANDU, A.V. SANDU, I. SANDU, K. EARAR, V. VASILACHE, C.M. ŞTIRBU, R.A. CRIŞAN DABIJA, M. CHIRAZI, A. VLADESCU, M.C. COTRUT, M.D. VRANCEANU
Institution/Country: Gheorghe Asachi Technical University of Iasi, Romania
Category: F
Description: *The invention relates to a jacuzzi system for thermalism with hydro-/air-massage and halochamber treatments with solions, to be used for the prevention and treatment of cardio-respiratory, osteo-muscular and neuro-motor diseases as well as for improving performance in children, elderly and sportsmen or persons performing intense physical activity. The system consists of a parallelepipedal or circular tight chamber, with ionized windows, with UV filters, having, in central position, a round-, oval- or lagune-shaped basin made of glass fibers and photo-thermal resistive polymer, an aerosol-generating bubbling device with concentrated solution of NaCl, KCl, CaCl, MgCland KI in a mass ratio equal to 7.95 : 1,0 : 0.5 : 0.5 : 0.05, where, through the frits from the bottom side, overheated water vapours are purged to reach the preset levels of solions, the bubbling device being placed in a niche next to the entrance door, where for the control, in real time, of the working parameters, there are used devices with specific sensors*

coupled to a microcomputer, which also enables modification of the water vapour flow-rate for bubbling, the basin volume is correlated with the halochamber volume and it ranges between 1000 and 10000 liters, with a depth of 0.5...1.5 m, and the working temperature ranges between 35...40°C.
State of development: prototype
Contact: *euroinvent.org@gmail.com*
Presentation link: *https://www.tuiasi.ro/?lang=en*

19.

Title: BIOMECHANICAL HAND PROSTHESIS
Patent/project number: A00590/2024
Author/s: Mihaiela ILIESCU, Emilia FURDU-LUNGUȚ, Gabriel-Petre GORECKI, Gabriela-Corina RADU, Dan-Gabriel COSTEA, Vitalie COBZAC, Ionuț-Simion COMAN, Valentin-Titus GRIGOREAN, Horațiu MOLDOVAN
Institution/Country: Titu Maiorescu University, Faculty of Medicine, Romania
Category: F
Description: *Designing and manufacturing friendly users and affordable prostheses for the upper limb is a challenging topic for doctors and researches, all having the target to enable good active assistive living for people with missing or upper limb amputation. The invention refers to bimechanical hand prostehsis, wearable by people with upper limb amputation. The prosthesis enables rotational motions of both the phalanges and the whole finger. The rotational motions of each finger are independent ones. The hand prosthesis prototype has been manufactured using Digital Light Processing (DLP) technology. The methodology involved the steps that follow next. Detailed study on the state of the art in the field of upper limb prostheses has been done. Based on the information gathered, there has been decided on the concept and design of the new hand prosthesis. The finger has three phalanges with rotational motions for each of the phalanx and there is an additional, innovative rotational motion for the whole finger, around the vertical axis. Basically, there are four rotational motions driven independently by three micro-motors, for each of the five fingers of the prosthesis.*
State of development: Research project
Contact: *gabriel.gorecki@prof.utm.ro*
Presentation link: *http://www.utm.ro/en/*

20.

Title: NEW MOLECULAR INHIBITOR AS ANTICANCER AGENT
Patent number: MD 4899 / 2024.08.31
Author/s: Aurelian GULEA, Victor ȚAPCOV, Dorin ISTRATI, Donald POIRIER
Institution/Country: MOLDOVA STATE UNIVERSITY, Republic of Moldova
Category: F

Description: *The invention relates to chemistry and medicine, namely to a biologically active coordination compound from the class of thiocarbazidates of transition metals. It may find application in medicine for the prophylaxis and treatment of human liver cancer. The claimed compound inhibits the proliferation of liver cancer HepG2 cells 4 times more effectively than the prototype. The discovered properties of this substance are of interest for medical practice for enhancement of the arsenal of inhibitors of liver cancer cells.*

State of development: Laboratory

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Presentation link: ***https://usm.md/?lang=en***

21.

Title: NEW INHIBITORS OF THE PROLIFERATION OF FUNGI OF THE SPECIES Candida albicans

Patent: MD 4886 / 2024.09.30; Request for patent MD a 2024 0021/ 2024.06.17

Author/s: Aurelian GULEA, Ianina GRAUR, Vasilii GRAUR, Diana CEBOTARI, Sébastien FLOQUE, Victor ȚAPCOV, Greta BĂLAN, Carolina LOZAN-TÎRŞU

Institution/Country: MOLDOVA STATE UNIVERSITY, Republic of Moldova

Category: F

Description: *The invention relates to chemistry and medicine, namely to the biologically active synthetic compounds of the thiocarbamide derivatives. The described compounds possess fungiostatic and fungicidal activity within the limits of concentrations 0.004-0.031 µg/mL against fungi of the species Candida albicans, which exceeds 23-175 times the activity of the prototype. The present inventions expand the arsenal of fungal inhibitors of the Candida albicans species with high antifungal activity.*

State of development: Laboratory

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Presentation link: ***https://usm.md/?lang=en***

22.

Title: SYNTHESIS OF PHOTOPOLYMER MATERIAL

Patent/ Patent application number: MD 4912 / 2025.01.31; MD a 2022 0046 / 2022.10.26

Author/s: Ştefan ROBU, Tamara POTLOG, Ion LUNGU, Ana POPUŞOI, Iacob GUȚU, Ion BULIMESTRU

Institution/Country: Moldova State University, Republic of Moldova

Category: F

Description: *The invention relates a photoactive polymeric material created by grafting dextran with mono-(O-carboxybenzamidomethylene)ZnPc, with a content of 10-50% by weight of mono-(O-*

carboxybenzamidomethylene)ZnPc. This material is highly soluble in water and is synthesized using simpler, more affordable reagents compared to prior art. It also exhibits an extended excited state lifetime of over 10-7 seconds, making it ideal for applications in photodynamic therapy (PDT). The invention addresses the limitations of previous materials by providing a more cost-effective and high-performance solution.

State of development: Laboratory level.

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Presentation link: https://usm.md/?lang=en

23.

Title: METHOD FOR SYNTHESIS OF ZINC PHTHALOCYANINE DERIVATIVE -ASPARTIC ACID COMPOSITE

Patent application number: MD s 2024 0100 / 2024.10.23

Author/s: Tamara POTLOG, Ana POPUȘOI, Ion LUNGU, Tatiana BULIMAGA

Institution/Country: Moldova State University, Republic of Moldova

Category: F

Description: *The $ZnPc(COOH)_4$:Asp.A self-assembled composite exhibits advantageous characteristics for photodynamic therapy, including absorption peak at 700 nm for enhanced tissue penetration, an excited state triplet lifetime of approximately 10^{-6} seconds, a phosphorescence spectrum with peaks situated at 695 nm , 770 nm, and a high triplet quantum yield of 89.4%, surpassing commercial photosensitizers like Fotofrin II or Photosens.*

State of development: Laboratory level

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Presentation link: https://usm.md/?lang=en

24.

Title: MECHANISMS FOR REGULATING THE ORGANISM'S HOMEOSTASIS AND HEALTH AND THE ELABORATION OF PROCEDURES AND MEASURES TO MAINTAIN IT

Project number: # 011001

Author/s: Valentina CIOCHINA, Ion BALAN, Nicolae ROSCA, Vladimir BUZAN, Sergiu BALACCI, Galina OSIPCIUC, Ion MEREUTA, Vlada FURDUI, Vasile HAREA, Roman CRETU, Parascovia TURCANU, Gheorghe BACU, Valerian POPA, Vlad TEMCIUC, Ecaterina VIHRIST, Artiom FILIPPOV

Institution/Country: Moldova State University, Institute of Fisiology and Sanocreatology, Republic of Moldova

Category: F

Description: *The importance of scientific research lies in identifying the decisive factors and causes that deteriorate health, determining the functional systems that maintain and strengthen health, and developing*

procedures, methods and algorithm for maintaining and strengthening it, which will contribute to improving the health of the population and preventing early biological degradation.
The need for scientific research is undeniable and determined by the disorder of homeostasis and the high incidence of physiological dysfunctions, metabolic-functional disorders and fertility and chronic non-invasive diseases, as well as by the premature biological degradation of the human organism and society.
The novelty and originality of the research consists in identifying the most obvious intrinsic and extrinsic factors that deteriorate health and in highlighting for the first time the functional systems that determine the homeostasis of the organism as an integral unit of activity and the maintenance and directed strengthening of health, the mechanisms of coordination and synchronization of vital organs and systems and the proposal of a new scientific approach in maintaining and strengthening health.
The results obtained within the project will open new horizons in the maintenance and targeted strengthening of somato-vegetative health, and the socio-economic effect will be manifested by decreasing the vulnerability of vital physiological systems and increasing their resistance to the action of intrinsic and extrinsic factors, decreasing the incidence of chronic diseases, preventing early biological degradation, increasing life expectancy and its quality.
State of development: Scientific product.
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Presentation link: *https://usm.md/?lang=en*

25.

Title: DIETARY SUPPLEMENT FOR THE PROPHYLAXIS OF HYPOTHYROIDISM IN CARBOHYDRATE METABOLISM DISORDERS IN RODENTS (RATTUS NORVEGICUS)
Patent application number: a 2025 0005/ 2025.01.28
Author/s: Iurie BACALOV, Aurelia CRIVOI, Elena CHIRIȚA, Adriana DRUȚA
Institution/Country: Moldova State University, Republic of Moldova
Category: F
Description: *The present invention is a dietary supplement with homeostatic action, which ensures greater efficiency in the prevention of hypothyroidism caused by carbohydrate metabolism disorders, both by maintaining blood glucose levels and by regulating the functional state of the thyroid, which is often affected in endocrine pathologies. Thus, it maintains interglandular balance; being purer, it does not contain toxic substances and helps prevent the onset and progression of complications characteristic of both pathologies, as well as disorders of other endocrine glands. The developed dietary supplement, as a bioactive substance, contains an infusion of Cucurbita maxima leaves, Hippophae rhamnoides, Cydonia oblonga, and the aerial parts of Equisetum arvense, Lavandula angustifolia, Anethum graveolens.*
State of development: Laboratory.
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Presentation link: *https://usm.md/?lang=en*

26.

Title: CASE 1st AID DISTRIBUTOR
Patent/project number: 005/2025
Author/s: Thaninkit Prasitdumrong, Pran Udomsawaengsup, Sirarin Prasitdumrong, Lapas Udomsawaengsup, Jeerasak Jitrotjanarak
Institution/Country: Shrewsbury International School Bangkok, Pathumwan Demonstration School and Chulalongkorn University Demonstration Elementary School, Thailand
Category: F
Description: *CASE 1st Aid Distributor has been invented as a vending machine designed to provide first aid care kits when needed. This innovative machine features three channels, each controlled by a sling mechanism, and each containing a different type of kit set box. The kits are tailored to specific types of injuries or medical situations and come equipped with essential supplies and detailed instructions.*
*1. **Wound Care Kit**: This kit is designed to treat abrasions and cut wounds. It includes sterile swabs, gauzes, a 0.9% NaCl solution, and antiseptic medication. An instruction leaflet is provided, along with QR codes that link to a PDF file and a video clip with instructions for mobile devices.*
*2. **Fainting Kit**: This kit is intended for use with conscious patients experiencing dizziness. It contains a glucose solution and an ammonium swab. An instruction leaflet guides users on what to do if they encounter a fainting person. It emphasizes that if the patient is unconscious, an initial evaluation for breathing and pulse must be conducted, and the kit should not be used – instead, CPR guidelines and calling for an ambulance should be considered. QR codes are available for accessing a PDF file and a video clip with instructions.*
*3. **Insect Bite Kit**: This kit provides relief from insect bites and includes an anti-inflammatory medication tube. An instruction leaflet is included, as well as QR codes for a PDF file and a video clip with instructions for mobile devices.*
State of development: product
Contact: *j_jerasak@hotmail.com* ***+66846396363***
Presentation link: *https://youtu.be/7_9O_GMZfp4*

27.

Title: ANKLE HERO: SAVING THE DAY FOR YOUR FEET
Patent/project number: 006/2025
Author/s: Baramate Charoenchaisombat, Kantapon Prasarnsuk, Supakorn Kittananun Jennavat Uthaicharatratsame, Jeerasak Jitrotjanarak
Institution/Country: Chulalongkorn University Demonstration Secondary School, Thailand
Category: F
Description: *When someone hurts their ankle or foot, it can take a long time to heal and recover. This is because it's hard to move the ankle, and the muscles and joints can get stiff. Traditionally, doctors will use*

fixed braces or casts and manual exercises to help, but these methods don't always give the ankle the movement it needs to get better faster.

That's why we created the " Ankle Hero". It's a special machine that helps people move their ankles in a safe and controlled way. The " Ankle Hero" has a motor and special mechanics to moves the ankle in a safety range and it can be adjusted to fit each person's physical condition such as speed and frequent control. It's like having a personal trainer for your ankle!

The advantages of our device is small, portable, easy to apply and can be used at home or in a hospital. It helps make the ankle stronger, more flexible, and helps people recover faster after prolonged casting or surgery of foot or ankle. We're still working on making it even better by adding sensors or smart technology to make it super helpful and easier to use.

With the " Ankle Hero" we hope to make healing faster with better functional outcome for everyone with ankle or foot injuries. It's a fun and smart way to use "Ankle Hero" to help people feel better!

State of development: Prototype Testing for Evaluate and refine solutions based on user feedback

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Presentation link: *https://youtu.be/GBfoLABJqZQ*

28.

Title: WELLNESS ARMOR

Patent/project number 0010/2025

Author/s: Waranyu Kittithawornkul

Institution/Country: Chulalongkorn University Demonstration Secondary School, Thailand

Category: F

Description: *Currently, chronic diseases, or NCDs (e.g. heart disease, stroke, cancer, and diabetes, etc.) are a global health crisis, responsible for 70% of deaths worldwide. Half of those are on disability which being a family burden. Many countries face issues related to these problems. "Wellness Armor" invention is the best approach to control NCDs by focusing on prevention and reducing risk factors that can worsen the disease severity. It is an incorporating modern technology consists of 2 main components (i.e. Smart wristband and Smart Application with 4 functions) for self-monitoring of health check-up, reporting of health, nutritional value, sleeping and exercising and also giving advice of NCDs risk factors. Which patient can check up health anywhere and anytime. As good health and well-being is the goal of "Wellness Armor".*

"Wellness Armor" is a platform designed to effectively prevent diseases and reduce risk factors associated with NCDs by incorporating modern technology in the following ways:

1. Smart Wristband

Equipped with IoT devices to continuously monitor health data, including sensors for measuring blood pressure, blood sugar levels, heart rate, oxygen levels, sleep patterns, and appropriate exercise. It also features a GPS tracker to continuously monitor the location of individuals with health issues. All this data is collected and automatically stored on a cloud server.

2. Smart Application

A mobile application that acts as a personal nutritionist and health advisor. It analyzes the food consumed in each meal and promptly alerts users of any abnormal symptoms. Utilizing Big Data and artificial intelligence (AI), it analyzes and evaluates nutritional information and health risk factors. This Smart Application includes 4 functions:

2.1 Nutritional Data Analysis

Patients take photos of their meals and beverages. The system analyzes the type, group, and proportion of the food to assess its nutritional value and provide recommendations to reduce certain types of food that may trigger or worsen NCDs.

2.2 Nutrition and Health Report

Patients can view daily, weekly, or monthly nutrition reports to understand and adjust their eating habits. These reports identify risk factors and whether the patient is consuming too much or too little of certain food groups. Additionally, health reports track blood pressure, blood sugar levels, heart rate, oxygen levels, sleep, and exercise to help patients adjust their lifestyle.

2.3 Medical Appointment

In case of the health report indicates symptoms that require further examination, the patient can choose a doctor, convenient date, and time to make an appointment and send the information to the desired hospital immediately.

2.4 Emergency Assistance

Whenever the IoT devices detect abnormal physical symptoms, an alert is sent to the patient, who can press an SOS button to notify the nearest hospital. An ambulance and medical team will be dispatched to the patient's location promptly via the GPS tracker.

Remark: This invention achieved the award of Gold Medal and Special Prize at 9th annual edition of iCAN 2024.

State of development: Virtual Idea

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Presentation link:

https://drive.google.com/file/d/1uYbBx4o4FlyxC_xbhChXZdxirlAAh3eE/view?usp=sharing

29.

Title: BEE KNEE

Patent/project number: 0012/2025

Author/s: Jinnipa Jinwan, Ratchanon Adisakpirom, and Phichphanita Mathasuriyapong

Institution/Country: Chulalongkorn University Demonstration Secondary School, Thailand

Category: F

Description: *Gained some insight into the Chanlleges faced by the medical team and prosthetics technicians to the 172nd Royal Mobile Prosthetics Unit in Nong Khai Province in December 2024 This led to the medical team and prosthetists being informed of the problem that patients who come to receive*

prosthetic legs are usually those who have lost their legs for a period of time, causing the remaining legs to be unusable and not as strong as before.
Patients seeking prosthetic legs often have weakened remaining limbs due to the prolonged loss of their legs. To successfully fit a prosthetic, it's essential to strengthen the remaining leg through exercise. However, some patients may initially struggle with rehabilitation and may need equipment to assist with leg management or exercise.

State of development:

Technical Points
Below Knee Exercise Equipment (BKEE)
The Below Knee Exercise Equipment (BKEE) is a versatile, user-friendly device designed to assist patients in strengthening the stump below the knee for prosthetic leg preparation. It helps create movement through hand-driven push-and-pull mechanisms, enabling rehabilitation for patients who may have difficulty exercising on their own.
The BKEE offers a practical and essential solution to improve leg rehabilitation and enhance the quality of life for patients preparing for prosthetic limbs.
Key Features:
1. Adjustability & Compatibility:
BKEE can be used for both the left and right legs and is easily adjustable to accommodate different leg sizes and patient needs.
2. Attachment Options:
The device can be securely attached to a tripod or walker, allowing it to be customized based on the patient's specific condition and level of mobility.
3. Quality and Cost-Effective Materials:
Made from durable, locally available materials, BKEE ensures ease of access for maintenance or replacement. The materials are chosen for their affordability and reliability, making it accessible for a wide range of patients.

Contact: Mr. Jeerasak Jitrotjanarak, j_jerasak@hotmail.com
Presentation link: https://satitm.chula.ac.th/

30.

Title: CO-TECH- TEST, MEASURE, BALANCE - innovative concept of Automated Software Process for evaluation and therapy through biofeedback
Patent/project number: OSIM 301240/29.12.2023
Author/s: Senior Lecturer Dr. Oana Codruta Bacean Miloicov
Institution/Country: SC Holistic Lounge SRL, Romania
Category: F

Description: *CO-TECH is an innovative and copyright-protected concept that brings a new perspective to patient evaluation and therapy. Using biofeedback, this system optimizes evaluation processes, improves therapies, and reduces execution times, resulting in a more efficient therapeutic approach.*
The Role of Prevention in Hypertension and Reducing Major Stroke Risk
Stroke is one of the leading causes of mortality and disability. After the first stroke, the risk of recurrence increases significantly, worsening prognosis.
• A second stroke is frequently associated with severe neurological sequelae, including hemiparesis, aphasia, cognitive impairment, and vascular dementia.
• A third stroke, though theoretically possible, has an extremely low survival rate, with most patients not surviving.
In this context, prevention is crucial in managing hypertension (HTN) and reducing the risk of stroke.
Clinical Case Presentation
📌 *Patient: Male, 68 years old, chronic hypertensive, no apparent neurological symptoms before January 2025.*
📌 *Remote Biofeedback Monitoring:*
• Since February 2024, the patient was consistently evaluated for stroke risk using biofeedback remote sessions.
• Significant fluctuations in cardiovascular and cerebral circulation parameters were observed in the biofeedback remote sessions.
• Over 7 months, personalized therapies were conducted to improve cerebral circulation, promote neuronal regeneration, and reduce inflammation.
📌 *Acute Event:*
• In January 2025, the patient suddenly developed neurological symptoms (acute confusion).
• Emergency department-confirmed diagnosis: Subacute ischemic stroke in the left middle cerebral artery territory.
📌 *Outcome:*
• No neurological sequelae, thanks to prior therapies.
• Significantly shortened recovery time.
• Reduced risk of post-stroke complications.
State of development: Software Process
Contact: *baceano@gmail.com* ***+40745170879*** *www.healthyvibe.ro*
Presentation link: *https://www.healthyvibe.ro/transformarea-hipertensiunii-arteriale-prin-terapia-biofeedback-remote/?_gl=1*vhzs0z*_up*MQ..*_ga*MTc3Mzc5MDcxLjE3Mzk0MzgwMjA.*_ga_BZ5RWJGVXF*MTczOTQzODAxOS4xLjEuMTczOTQzODAyNi4wLjAuMA..*

31.

Title: QVIBE FREQUENCY GENERATING THERAPEUTIC DEVICE - QVibe – Revolutionizing Complementary Therapy for Hashimoto's Thyroiditis and Thyroid Nodules

Patent/project number: OSIM 301243/29.12.2023
Authors: Senior Lecturer Dr. Oana Codruta Bacean Miloicov
Institution/Country: SC Holistic Lounge SRL, Romania

Category: F

Description: *Hashimoto's thyroiditis is an autoimmune condition affecting the thyroid gland, leading to fatigue, weight gain, and hormonal imbalances. Thyroid nodules, often associated with this condition, can severely impact thyroid function and overall health.*

Innovative Solution – Q-Vibe Device

Q-Vibe is an innovative therapeutic frequency generator providing a natural, non-invasive, and side-effect-free solution for supporting thyroid health.

How Does Q-Vibe Work?

Q-Vibe emits therapeutic frequencies through a unique, registered algorithm tailored to the patient's pathology. The device is applied externally on the radial artery of the right hand, locally or as a necklace.

Recommended Protocol:

Daily use, especially during nighttime, ensures continuous energetic balance.

Case Study – July 17, 2024

Patient: 42-year-old female diagnosed with Hashimoto's thyroiditis and thyroid nodules.

Initial Observation:

- *Presence of an imprecisely defined thyroid nodule.*
- *Significant hormonal imbalances.*
- *Chronic fatigue and heightened emotional sensitivity.*

Intervention: Daily therapy with Q-Vibe for 3 months.

Results Obtained:

Reduction of nodule volume confirmed via imaging.

Restoration of hormonal balance, with improved TSH, T3, and T4 levels.

Increased energy levels and reduced chronic fatigue.

Improved emotional stability and reduced anxiety.

Advantages of Q-Vibe Therapy:

Non-invasive: No painful procedures or aggressive medications.

Natural: No chemicals or side effects.

Personalized: Unique algorithm tailored to patient pathology.

Effective: Rapid and visible improvements in overall health.

Easy to use: Suitable for daily wear, including nighttime.

State of development: Device
Contact: *baceano@gmail.com* **+40745170879** *www.healthyvibe.ro*
Presentation link: *https://www.healthyvibe.ro/product/incarcare-dispozitiv-q-vibe-medium-inflamatii/?_gl=1*1r3963g*_up*MQ..*_ga*MTc3Mzc5MDcxLjE3Mzk0MzgwMjA.*_ga_BZ5RWJGVXF*MTczOTQ0MzI5NS4yLjAuMTczOTQ0MzI5NS4wLjAuMA..*

32.

Title: HUMIDITY SENSE
Patent/project number: Student Project
Author/s: Ciubuc Vasile; Mentor: physics teacher Ciuvaga Victor
Institution/Country: Petru Rares Theoretical High School, Soroca, Republic of Moldova
Category: F
Description: *Humidity Sense is a smart humidifier created using the Arduino platform. It uses humidity and temperature sensors for a constantly monitor air quality and to automatically adjust the humidity level, thus ensuring a healthier and more comfortable environment. The system is based on an Arduino platform, allowing for easy customization and programmability to suit a variety of needs. A humidity sensor (such as DHT11 or DHT22) provides real-time data, which the system uses to regulate the humidifier, turning it on or off as necessary to maintain optimal air quality. The user interface can be designed to display current humidity levels and settings, making the system interactive and user-friendly. It may include features such as an LCD screen or a mobile app for remote control. The intelligent design of the HumidiSens project ensures that the humidifier operates efficiently, reducing energy consumption by activating only when needed. The system can also be customized to include additional sensors or features like temperature measurement or Wi-Fi connectivity for further automation. This project showcases the potential of Arduino-based systems in creating smart home solutions, offering an affordable and effective way to improve indoor air quality.*
State of development: prototype
Contact: *Ciubucvasile215@gmail.com*
Presentation link: *https://www.facebook.com/groups/156413631608281/*

33.

Title: PLACENTA PROCESSING DEVICE
Patent/project number: MD 2625
Author/s: Jian Mariana, Savca Ion, Balan Mihail, Nacu Viore, Cobzac Vitalie, Mostovei Andrei, Solomon Oleg
Institution/Country: Nicolae Testemițanu State University of Medicine and Pharmacy of the Republic of Moldova, Republic of Moldova
Category: F

Description: *The invention relates to the medical technique, namely to a device for processing the placenta at the stage of blood removal in the process of extracting total collagen, which can be used in regenerative medicine and tissue engineering. The advantages of the device consist in creating a device that allows a wash effective of the placenta in the collagen extraction process, at the scheduled time and speed desired, avoiding the unexpected stoppage of the rotation of the material in the vessel, thus preventing distortion this one. The result of the invention consists in processing the pieces of placenta and avoiding stopping of the blood washing process, namely the elaborated device allows the exact control of the number of rotations of the vessel in which the material is located and the processing time, thus it is avoided the long process of washing and denaturing the protein needed to extract it from the placenta. The device is convenient, mobile, practical, compact, portable and has a relatively low price for manufacturing.*
State of development: the invention is carried out within the project with the code 23.70105.8007.01T.
Contact: +373 68974524
Presentation link: *https://usmf.md/en*

34.

Title: AI-GUIDED VENTILATOR MANGEMENT: CAN MACHINE LEARNING IMPROVES OUTCOMES?
Patent/project number: Student Project
Author/s: EUGEN-ŞTEFAN NICOLESCU, ANDREI BODOR; Scientific coordinator: Assoc. Prof. GABRIEL-PETRE GORECKI
Institution/Country: Titu Maiorescu University, Faculty of Medicine, Romania
Category: F
Description: *Designing and manufacturing friendly users and affordable prostheses for the upper limb is a challenging topic for doctors and researches, all having the target to enable good active assistive living for people with missing or upper limb amputation. The invention refers to bimechanical hand prostehsis, wearable by people with upper limb amputation. The prosthesis enables rotational motions of both the phalanges and the whole finger. The rotational motions of each finger are independent ones. The hand prosthesis prototype has been manufactured using Digital Light Processing (DLP) technology. The methodology involved the steps that follow next. Detailed study on the state of the art in the field of upper limb prostheses has been done. Based on the information gathered, there has been decided on the concept and design of the new hand prosthesis. The finger has three phalanges with rotational motions for each of the phalanx and there is an additional, innovative rotational motion for the whole finger, around the vertical axis.*
State of development: Research project
Contact: *gabriel.gorecki@prof.utm.ro*
Presentation link: *http://www.utm.ro/en/*

35.

Title: ***FACTORS ASSOCIATED WITH MDR IN Helicobacter pylori INFECTION***
Patent/project number: Student project
Author/s: Andrei MITACHE; Scientific coordinator: Assoc. Prof. Gabriel Petre GORECKI, MD, PhD
Institution/Country: Titu Maiorescu University, Faculty of Medicine, Romania
Category: F
Description: *The widespread misuse of antibiotics contributes to multidrug resistance (MDR) in Helicobacter pylori, with outpatient antibiotic consumption linked to resistance to macrolides and fluoroquinolones. Efflux pumps, biofilms, and poor adherence to treatment guidelines further exacerbate MDR, making detection and eradication more challenging. The objectives of this student scientific review is to analyze and summarize the various factors contributing to multidrug resistance (MDR) in Helicobacter pylori infection, including the role of antibiotic overuse, efflux pumps, biofilms, genetic mutations, and treatment adherence, as well as to explore potential strategies for improving eradication therapies and addressing resistance in different geographical regions. Global antibiotic resistance in Helicobacter pylori (Hp) is reducing treatment effectiveness, with about 10% of patients experiencing persistent infections, highlighting the need for new strategies. Bismuth-containing quadruple therapies (BQTs) remain a recommended first-line treatment, and adding bismuth to a 14-day triple therapy can improve eradication rates by up to 40%, particularly in regions with high resistance to clarithromycin and metronidazole.*
State of development: Research project
Contact: *gabriel.gorecki@prof.utm.ro*
Presentation link: *http://www.utm.ro/en/*

36.

Title: ***RESISTANCE AND VIRULENCE PATTERNS IN GRAM NEGATIVE AND GRAM POSITIVE RODS ISOLATED FROM THE HOSPITAL ENVIRONMENT***
Patent/project number: Student project
Author/s: Andra-Denisa GORECKI; Scientific coordinator: Assoc. Prof. Mihaela-Magdalena MITACHE
Institution/Country: Titu Maiorescu University, Faculty of Medicine, Romania
Category: F
Description: *The widespread misuse of antibiotics contributes to multidrug resistance (MDR) in Helicobacter pylori, with outpatient antibiotic consumption linked to resistance to macrolides and fluoroquinolones. Efflux pumps, biofilms, and poor adherence to treatment guidelines further exacerbate MDR, making detection and eradication more challenging. The objectives of this student scientific review is to analyze and summarize the various factors contributing to multidrug resistance (MDR) in*

Helicobacter pylori infection, including the role of antibiotic overuse, efflux pumps, biofilms, genetic mutations, and treatment adherence, as well as to explore potential strategies for improving eradication therapies and addressing resistance in different geographical regions. Global antibiotic resistance in Helicobacter pylori (Hp) is reducing treatment effectiveness, with about 10% of patients experiencing persistent infections, highlighting the need for new strategies. Bismuth-containing quadruple therapies (BQTs) remain a recommended first-line treatment, and adding bismuth to a 14-day triple therapy can improve eradication rates by up to 40%, particularly in regions with high resistance to clarithromycin and metronidazole.

State of development: Research project
Contact: *gabriel.gorecki@prof.utm.ro*
Presentation link: *http://www.utm.ro/en/*

37.

Title: ADJUSTABLE PESSARY FOR GENITAL PROLAPSE
Patent/project number: A 00125/2023
Author/s: Romina-Marina Sima, Gabriel-Petre Gorecki, Liana Pleș
Institution/Country: Titu Maiorescu University, Faculty of Medicine, University of Medicine and Pharmacy "Carol Davila" Romania
Category: F
Description: *Genital prolapse is a condition characterized by a descensus of the pelvic organs at the perineal level. It is found most frequently in patients with advanced age and associated medical or surgical pathologies. The surgical methods are multiple and often have a favorable result. However, there is a separate category of patients who can no longer benefit from surgical interventions for various medical reasons. In these patients, a non-invasive treatment such as cervical pessaries for genital prolapse is recommended. The adjustable pessary for genital prolapse, according to the invention, is a device made of silicone with different densities, consisting of a silicone anvelope - the basic anvelope, inside which is another smaller inflatable anvelope provided with a valve on the outside. On the outside of the basic anvelope there is an accessory anvelope and 4 additional side areas, all of these areas are inflatable and each has its own valve. The peculiarity of the adjustable pessary for genital prolapse according to the invention compared to other devices is that it has the possibility of adjustment depending on the clinical and anatomical particularities of the patient. The pessary is folded laterally and placed in the vagina with the dominant hand. After placement in the vagina, it is adjusted according to the patient's characteristics as follows: inflate anvelopes or accessory areas as needed through the valves that connect to the empty syringe.*
State of development: Research project
Contact: *gabriel.gorecki@prof.utm.ro*
Presentation link: *http://www.utm.ro/en/*

38.

Title: RAPID FEEDBACK DEVICE FOR CARDIOPULMONARY RESUSCITATION
Patent/project number: A-2019/00155-OSIM
Author/s: PhD Student Dimitrie-Cristian FODOR
Institution/Country: Doctoral School of the "Gheorghe Asachi" Technical University of Iași, Romania
Category: F
Description: *The invention pertains to a device designed for independent use or in conjunction with an automated external defibrillator. The device is intended to support the vital functions of a person in cardiac arrest by facilitating pulmonary ventilation and providing clear instructions to the rescuer regarding the necessary steps during the rescue process. The innovation is characterized by the incorporation of a head hyperextension mechanism that is activated prior to the initiation of ventilation, situated between sequences of 30 external chest compressions. Additionally, the device is equipped with an instantaneous air heating system, a feature that enhances the efficacy of ventilation and mitigates the risk of thermal shock at the pulmonary level.*
State of development: Experimental prototype
Contact: +40758944223 *cristifodorbim@gmail.com*
Presentation link: *linkedin.com/in/cristian-fodor-bim*

39.

Title: SPECIMEN FIXING RACK DEVICE FOR TESTING AT CYTOTOXICITY
Patent/project number: MD 2612
Author/s: Cobzac Vitalie, Jian Mariana, Nacu Viorel, Mariţoi Tatiana, Mostovei Andrei, Solomon Oleg
Institution/Country: Nicolae Testemiţanu State University of Medicine and Pharmacy of the Republic of Moldova, Republic of Moldova
Category: F
Description: *The invention relates to regenerative medicine and cell engineering. The problem that the invention solves is the creation of a device that allows the suspension of flat and large samples, in the nutrition medium, above the layer of adherent cells, thus avoiding the mechanical influence on them. The use of that device allows cytotoxicity tests to be performed on flat, heavy and large samples with high precision. The result is that the said device can be used to neutralize any mechanical action of flat, heavy and large samples on the layer of adherent cells in the wells of cell culture plates in which cytotoxicity tests are performed, thus avoiding false negative results. The advantages of the device are easy loading of the device shelf with flat, heavy and large samples, and thanks to the side wings that rest on the edges of the wells, there is no direct contact of the device and the required samples to be tested with the layer of adherent cells on the cell culture surface, however, the length of the wings can vary depending on the diameter of the*

plate wells, and the diameter of the cylinder can vary depending on the size of the sample and the plate wells.

State of development: the invention is carried out within the project with the code 24.80012.8007.02TC.

Contact: +373 68974524

Presentation link: https://usmf.md/en

40.

Title: MODULAR-ADAPTIVE STEM FOR TOTAL HIP PROSTHESIS, USING SMART MATERIALS

Patent number: RO 132628/ 30.01.2025

Authors: Tarniță Dănuț Nicolae, Tarniță Daniela

Institution/Country: University of Craiova, Faculty of Mechanics; University of Medicine and Pharmacy Craiova, Romania

Category: F

Description: *The invention relates to a modular-adaptiv modular total hip prosthesis using smart materials. It is part of a hip prosthesis and it is placed in the femoral canal and serves to stabilize the hip prosthesis into the medullary canal of the femur. It consists of three modules: A, B and C. The modular design of the stem allows more accurately adapt stem femur length that can vary from patient to patient. Module B is dressed by a cylinder composed of Nitinol bars, a shape memory material, and it can achieve a more superior fixation of the stem in the femoral canal and a better adaptation to the femoral canal imperfections. Module A is a cylinder that can rotate 360 degrees around the B module, and allows the femoral neck optimal anteversion in relation to the acetabular component.*

State of development: Patent

Contact: daniela.tarnita@edu.ucv.ro

Presentation link: https://www.ucv.ro/en/

41.

Title: ORTHOTIC DEVICE USED FOR HUMAN KNEE JOINT AFFECTED BY GONARTHROSIS

Patent number: RO 132075/ 30.09.2019

Author/s: Tarniță Daniela, Catană Marius, Tarniță Dănuț-Nicolae

Institution/Country: University of Craiova, Faculty of Mechanics, INAS Craiova, University of Medicine and Pharmacy Craiova, Romania

Category: F

Description: *The invention relates to an orthotic device used in the human knee joint orthotics affected by osteoarthritis in the medial compartment. It has the possibility of adjusting the angles of the components.*

The orthotic device used in the human lower limb orthotics wherein presents new elements that lead and contribute to minimizing the internal space of the lower limb and orthotic device by change of position components. Through fixing and tightening there are stabilized lateral movements in flexion-extension movements. The orthotic device makes it possible to conduct the people affected in the human knee showing the various stages of the osteoarthritis. This system has the advantage of being simple to make, having a lower cost than similar devices on the market, being lighter, having no blunt elements that could damage tissues, being more flexible and adapting much more easily to the knee due to the multiple joints of the system which offer it much greater adaptability to the landmarks of the affected knee.

State of development: Patent, prototype

Contact: *daniela.tarnita@edu.ucv.ro*

Presentation link: *https://www.ucv.ro/en/*

42.

MODULAR PLATE SYSTEM FOR THE OSTHEOSYNTHESIS OF THE LONG BONES FRACTURES AND METHOD FOR THEIR USE

Patent number: RO 126084/ 29.11.2012

Authors: Tarniță Daniela, Tarniță Dănuț Nicolae, Bizdoacă Nicu George

Institution/ Country: University of Craiova, Faculty of Mechanics; University of Medicine and Pharmacy Craiova, University of Craiova, Faculty of Automation and Computers, Romania

Category: F

Description: *The patent's subject refers to the fabrication of modular orthopaedics implants for the ostheosynthesis of the long bone fractures which comprise a predefined number of modules which, by mechanical coupling, and forms various dimension plates adaptable to the fractured bones and to the tensions developed in the bone by muscular forces. The coupling system of the adjacent modules with regard to the fracture place is made of Nitinol clips which act by the property of shape memory, enabling a continues compression over the fracture fragments, fact which repre- sents an essential factor of the healing process. Main advantages:*

1) by combining a certain number of modules we can obtain implants with various lengths depending of type, position or dimension of the fracture;

2) the use of the Nitinol staple enables the stabilization of the implants and the good union of the bone fractures, a key element in the healing process;

3) the small sizes of the modules enable the surgeon to use minimally invasive surgical techniques, with following advantages:

- *reduction of soft tissues destruction;*
- *eliminating intra-operator infections;*
- *reduction of blood losses;*
- *reduction of infection risk;*
- *reduction of the healing time for the plagues;*
- *reduction of the scar (the aesthetic aspect).*

State of development: Patent, prototype
Contact: daniela.tarnita@edu.ucv.ro
Presentation link: https://www.ucv.ro/en/

43.

Title: ELBOW PROSTHESIS TYPE BALL JOINT
Patent number: RO 129147/ 30.08.2018
Authors: Tarniță Daniela, Tarniță Dănuț Nicolae, Boborelu Cristian, Popa Dragos
Institution/Country: University of Craiova, Faculty of Mechanics; University of Medicine and Pharmacy Craiova, Romania
Category: F
Description: *The invention relates to a new model of elbow prosthesis which has the operating principle hinge model, with a spherical shape. The invention relates to an elbow prosthesis which is implanted by cementation in the humerus and cubitus, respectively. According to the invention, the prosthesis consists of three metallic components, first component (A) consisting of a metal sphere, of which a square profile rod is fixed to a pole and the second component (B) being formed by a hemispherical cup so designed that the sphere of the first component (A) is contained in the cup with a minimum tolerance which ensures the movement of the hemispherical cup being fixed to a square profile rod, continued on the surface of the bowl with a rib in which several holes (b) are diametrically opposed to the ribs the cup having a cut which extends from the edge of the cup to the base of the square-shaped rod on the upper edge of the cup a rectangular recess, in which the tooth of the cubital hemispherical can be positioned. The elbow prosthesis according to the invention has the following advantages: • It has a simple construction, easy to perform; • It consists of two components that are implanted separately easily; • The destruction of bone for implantation is small; • Intra-capsular implantation is performed, which provides greater stability elbow prosthesis after implantation; • The two components are coupled without using other devices.*
State of development: Patent, prototype
Contact: daniela.tarnita@edu.ucv.ro
Presentation link: https://www.ucv.ro/en/

44.

Title: MODULAR-ADAPTIVE CENTROMDEULAR ROD USED FOR THE OSTHEOSYNTHESIS OF THE LONG BONES
Patent number: NO RO127375-A2; RO127375-B1, 2013
Authors: Tarniță Daniela, Tarniță Dănuț Nicolae, Berceanu Cosmin, Cismaru Florin
Institution/Country: University of Craiova, Faculty of Mechanics; University of Medicine and Pharmacy Craiova, Romania
Category: F

Description: *The patent's subject refers to a modular-adaptive centromedular rod (orthopaedic implant) used for the ostheosynthesis of the long bone fractures which incorporates in the structure intelligent materials like Nitinol, material with the property of shape memory.*
The orthopaedic rod is an assembly made from 9 components divided in three zones: a epiphysis zone, a diaphysis zone and a metaphysis zone.
Advantages:
1. *the rod is modular and adaptable to various long bones;*
2. *smart materials like Nitinol ensure a permanent pressure and a good cohesion between the orthopaedic rod and medular channel of the bone;*
1. *the rod doesn't allow micro-movements between the bone fragments*
2. *it avoids the occurrence of important degenerative-dystrophic lesions in the contact area of the focus of the fracture.*
3. *the components used are simple in shape thus the rod is easy to manufacture;*
4. *the rod is easy to implant and to extract by the surgeon by cooling the Nitinol component.*
5. *the healing period decreases, the infections risks decrease*
6. *the downtime decreases, faster integrations in the professional and domestic activities*

State of development: Patent, prototype
Contact: *daniela.tarnita@edu.ucv.ro*
Presentation link: *https://www.ucv.ro/en/*

45.

Title: SINTER LASER MELTING
Patent/project number: dental medicine project
Author/s: Manolin Mita
Institution/Country: HD LaserDent – Deva, Romania
Category: F
Description: *Being in the field related to dental medicine with vast experience and because there was no center specialized in laser printing using Sinter Laser Melting technology in Hunedoara county, I ecided to take this step. 3D printing or additive manufacturing is a manufacturing process of solid objects tri-dimensionally adding layer after layer. Physical objects are produced using data a digital model, a 3D model or others sources such as an AMF* file. By using 3D printing they can be created products of almost any shape. Selective laser melting (SLM) is the leading metal 3D printing technology revolutionizing the additive manufacturing of metal parts. This digitized technology gives dental laboratories the opportunity to benefit from creating work of an exceptional quality, far beyond what humans can achieve with classic melting and casting technologies.*
State of development: products
Contact: *laserprintdeva@gmail.com*
Presentation link: *https://www.facebook.com/profile.php?id=100063674163614*

46.

Title: ILZSU Hair Repair Serum Product
***Author/s:* Péterné Varga (Kiskőrös)**
Institution/Country: Idea Club 13 Association, Hódmezővásárhely, Hungary
Category: F
Description: *Hair grower, cholesterol cleaner and cell stimulator. Face creams: argan oil, hyaluronic acid and silicone, the latter is recommended for people over 40 years old.*
State of development: product
Contact: *otletclub.idea@freemail.hu*
Presentation link: *https://otletclub.5mp.eu/web.php?a=otletclub*

47.

Title: PROHEP-LCT- PARALLEL ROBOT FOR LAPAROSCOPIC TREATMENT OF HEPATIC TUMORS
Patent/project number: Patent OSIM no.: RO134189- B1/30.10.2024
Author/s: Plitea Nicolae, Pîslă Doina Liana, Vaida Liviu Călin, Gherman Bogdan George, Tucan Paul George Mihai
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: F
Description: *The invention relates to a parallel robot for laparoscopic treatment of unresectable liver tumors. According to the invention, the robot consists of two robotic modules: the intra-operatory ultrasound (I-US) guiding module is designed for guiding a hepatic ultrasound probe in the operating field; the needle guiding module is designed for guiding and inserting brachytherapy needles in hepatic tumors (which are localized using I-US). Each robotic module has five degrees of freedom and are placed on a common frame which is fixed on the patient's bed. Furthermore, both parallel robotic modules consist of two parallel mechanisms, one with three degrees of freedom and is used for positioning an automated medical instrument (to manipulate a hepatic ultrasound probe, or for brachytherapy needle insertion), and the second mechanism with two degrees of freedom for the automated instrument orientation.*
State of development: patent, scientific paper, research project
Contact: *Liliana.Pop@staff.utcluj.ro*
Presentation link: *https://www.utcluj.ro/en/*

48.

Title: AUTOMATED MEDICAL INSTRUMENT FOR INSERTING MULTIPLE NEEDLES ON LINEAR AND PARALLEL TRAJECTORIES IN INTERSTITIAL BRACHYTHERAPY CANCER TREATMENT
Patent/project number: Patent OSIM no.: RO134941- B1/ 30.10.2024
Author/s: Gherman Bogdan George, Bîrlescu Iosif, Burz Alin, Pîslă Doina Liana
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: F
Description: *The present innovation is a medical robotic instrument designed to insert percutaneously multiple needles on a straight trajectory in brachytherapy procedures for liver cancer treatment. The instrument has 3 degrees of freedom, having a serial kinematic chain of type PPP and a specially designed gripper. It uses Gantry architecture to position the brachytherapy needle in the XOY plane. The brachytherapy procedure usually requires the precise placement of up to 6 brachytherapy straight needles inside the tumor in a matrix form, at a distance of 10mm from each other (both on OX and OY axes). The needles are taken from the needles rack, which is attached to the robotic instrument, one by one using the needle gripper. The first needle is placed in the middle of the tumor, followed by the others, using the pre-planned trajectories.*
State of development: patent, scientific paper, research project
Contact: *Liliana.Pop@staff.utcluj.ro*
Presentation link: *https://www.utcluj.ro/en/*

49.

Title: PARALLEL ROBOT FOR RECOVERY OF LOWER LIMB JOINTS IN TWO PLANES
Patent/project number: Patent application OSIM no.: A/00116/20.03.2024 & Portuguese Institute of Industrial Property (INPI) no.: 20252006789500
Author/s: Pîslă Doina Liana, Bîrlescu Iosif, Vaida Liviu-Călin, Tucan Paul- George-Mihai, Gherman Bogdan George, Machado Jose
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: F
Description: *The invention relates to a parallel robot for the medical recovery of patients with neuromotor disorders of the lower limb which consists of two parallel robotic modules enabling the neuromotor rehabilitation of the lower limb in two planes. The first module is designed for the hip and knee neuromotor rehabilitation allowing the motions of flexion/extension of the hip and knee joints, and the abduction/adduction of the hip joint, and contains one guiding kinematic chain (where the lower limb is placed), and three input kinematic chains which provide the required motions for the neuromotor rehabilitation. The second module is designed for the ankle neuromotor rehabilitation allowing the motions of plantar flexion/extension and inversion/eversion, and contains one guiding kinematic chains (where the foot is placed), and two input kinematic chains that provide the required motions for the ankle rehabilitation.*
State of development: patent application in two coutries, scientific paper, research project
Contact: *Liliana.Pop@staff.utcluj.ro*

Presentation link: *https://www.utcluj.ro/en/*

50.

Title: ***AUTOMATED SURGICAL INSTRUMENT FOR ROBOTIC-ASSISTED MINIMALLY INVASIVE SURGERY***
Patent/project number: Patent application OSIM no.: A/00142/29.03.2024 & French Patent and Trademark Office (INPI-Institut national de la propriété industrielle) no.: FR2414038
Author/s: Pîslă Doina Liana, Chablat Damien, Bîrlescu Iosif, Vaida Liviu-Călin, Puşcă Alexandru-Vasile, Tucan Paul-George-Mihai, Gherman Bogdan George
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: F
Description: *The automated surgical instrument has 5 Degrees of Freedom (DoFs) for the active head (end-effector) of the surgical instrument (e.g., clips, scissors, dissector, etc.) to ensure high dexterity and easy access in difficult areas of the operating field. High dexterity is ensured by integrating a rotation in the distal area, at the level of the active head and easy access to the operator field is ensured by the controlled curvature of the instrument rod in the distal portion. The flexible segment of the instrument rod is manufactured using 3D printing and elastic materials with special geometry. Moreover, the surgical instrument within the present invention has decoupled motions which leads to increased rigidity, necessary for the manipulation of tissues in the operating field and the conduct of the surgical procedure.*
State of development: patent application in two coutries, scientific paper, research project
Contact: *Liliana.Pop@staff.utcluj.ro*
Presentation link: *https://www.utcluj.ro/en/*

51.

Title: PARALLEL ROBOTIC SYSTEM FOR MINIMALLY INVASIVE PANCREATIC SURGERY
Patent/project number: Patent application OSIM no.: A/00522/11.09.2024 & French Patent and Trademark Office (INPI-Institut national de la propriété industrielle) no.: FR2414265
Author/s: Vaida Liviu-Călin, Gherman Bogdan George, Tucan Paul- George-Mihai, Bîrlescu Iosif, Chablat Damien, Pîslă Doina Liana
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: F
Description: *The robotic system is designed to assist the main surgeon in various pancreatic MIS tasks such as manipulating active surgical instruments (staplers, scissors), manipulating the laparoscopic camera, and manipulating retractors. The robotic system consists of three modules, namely: (1) an innovative parallel robot with 3 Degrees of Freedom (DOFs) that manipulates a surgical instrument; (2) a spherical parallel mechanism which constraints the surgical instrument in a Remote Center of Motion (RCM) type of motion (where the surgical instrument has three orientations with respect to the insertion point in the surgical field and one translation fir the instrument insertion/retraction); (3) the surgical*

instrument which is manipulated by the parallel robot (1) and constrained at the insertion point by the spherical mechanism (2) to avoid trauma.
State of development: patent application in two countries, scientific paper, research project
Contact: *Liliana.Pop@staff.utcluj.ro*
Presentation link: *https://www.utcluj.ro/en/*

52.

Title: A VISION-GUIDED ROBOTIC SYSTEM FOR SAFE DENTAL IMPLANT SURGERY
Patent/project number: Patent application OSIM no.: A/00581/30.09.2024
Author/s: Doina-Liana Pîslă(UTCN), Cristian Mihail Dinu (UMFCJ), Paul-George-Mihai Tucan (UTCN), Rareş-Cristian Mocan (UMFCJ), Călin Liviu Vaida (UTCN), Vasile-Nicolae Bulbucan (UTCN), Daria Pîsla (UMFCJ), Mihaela-Carmen Hedesiu (UMFCJ)
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: F
Description: *Recent advancements in dental implantology have improved success rates, but challenges remain in precise implant positioning, especially for patients with complex anatomy. Our study introduces an innovative robotic system for implant surgery that integrates a collaborative robot with an end-effector-mounted 3D navigation camera designed to autonomously perform implant site drilling. The system builds upon traditional manual procedures, introducing a new medical protocol that includes a preplanning phase to optimize the surgery through CBCT scans. A personalized marker holder, created from the latter ensures accurate patient-robot calibration through the continuous visual feedback during surgery, assisting in precise implant placement.*
State of development: joint patent application, scientific paper, research project
Contact: *Liliana.Pop@staff.utcluj.ro*
Presentation link: *https://www.utcluj.ro/en/*

53.

Title: METHOD FOR MAKING CUSTOMIZED IMPLANTS FROM TITANIUM-GRAPHENE COMPOSITE WITH CONTROLLABLE MECHANICAL CHARACTERISTICS VIA SELECTIVE LASER MELTING PROCESS
Patent/project number: Patent application OSIM no.: A/00109/18.03.2024
Author/s: Cosma Sorin Cosmin, Bâlc Nicolae Octavian, Berce Petru
Institution/Country: Technical University of Cluj-Napoca, Romania
Category: F
Description: *The present invention relates to a direct method of obtaining personalized medical implants used for bone reconstruction made of composite material developed from pure titanium (Ti) and graphene oxide (GO) powder. The implant developed with this method will have controllable mechanical characteristics, antibacterial and anticancer properties, and it will be fabricated using the selective laser melting (SLM) process. The method allows modifying the elastic modulus and flexural strength of Ti-*

1%GO implants according to the patient's needs, following the logic diagram shown in Figure 1. This method involves defining the mechanical characteristics and constraints on the SLM process parameters, and using the mathematical equations (1) and (2), they will generate the optimal solution for implant manufacturing. Thus, Ti-1%GO implants can be obtained with a specific elastic modulus, 25-50% lower than that obtained from pure Ti and/or an increased flexural strength (over 900 MPa). The method allows the estimation of the mechanical properties that can be obtained depending on SLM parameters and can improve productivity by generating an optimal solution, considering an increased laser scanning speed. This new method has the following advantages: ►The elasticity modulus of implants made from this composite can be controlled and reduced, diminishing the stress shielding effect between the implant and host bone; ►The mechanical strength of implants can be improved (3 times higher than pure Ti) and the weight of them can be reduced via design optimization procedure, respecting also the medical requirements; ►The proposed method does not have a negative impact on environment.

State of development: patent application, scientific paper, research project

Contact: *Liliana.Pop@staff.utcluj.ro*

Presentation link: *https://www.utcluj.ro/en/*

54.

Title: CERVICAL BIORESONANT BELT

Patent number: RO132423A2/WO2018037379

Authors: Velcea Marian, Mandrea Lucian, Moldovan Ion Corneliu,Plotog Ioan, Hideg Catalin, Curta Ioan, Mihailescu Bogdan, Caracas Eugen, Chetan Mihai, Ene Ciprian

Category: F

Description: *The device consists of a medical support dedicated to the cervical area on which patented device Qi-Polino / Doctor Tech passive resonant devices (EMCOPAD) have been assembled in the positions corresponding to the C7 vertebra and acupuncture points BL-10, VB-20, VG-15 and VG- 16. These points are activated independently or simultaneously in groups formed by the therapist, depending on the patient's condition and his immediate needs. The interaction at the energy level takes place through the acupuncture points placed in electromagnetic contact with the Qi-Polino device, which transmits impulses with a harmonic frequency of the note LA, located in the radio band. This interaction is only possible during the period when paired acupuncture points are in relative imbalance (one to the other), characterized by the presence of a local electric potential, with an effect on the power supply of the electronic circuit; once the energetic balancing of the corresponding points is achieved, the electronic device cuts off its power supply for the entire period of balance, resuming the operating cycle when a new imbalance between the corresponding acupuncture points occurs.*

State of development: production for market based on patent application

Contact: *DoctorTech2000@yahoo.com*

Presentation link: *www.DoctorTech.ro*
https://www.youtube.com/watch?v=QCHGoHhTyqQ&t=220s
https://www.youtube.com/watch?v=56dZFVn4PdA
https://www.youtube.com/watch?v=WlxEjaQizJQ&t=160s

https://youtu.be/bVLU_1cYJCw?si=-xaGdkVdP1ExZfLG
https://youtu.be/2YpFIk9Gx5Q

55.

Title: SURVIVAL THERAPY KIT – Kit for the treatment of ailments, through therapies based on TCM – Traditional Chinese Therapy, applied with patented passive resonant devices "EMCOPAD Doctor Tech" - Qi-Polino
Based on Patent number: RO132423A2 / WO2018037379
Authors: Velcea Marian, Moldovan Ion Corneliu,Plotog Ioan, Hideg Catalin, Curta Ioan, Mihailescu Bogdan, Caracas Eugen, Chetan Mihai, Ene Ciprian, Mandrea Lucian
Category: F
Description: *The "Survival Therapy Kit" contains a "Practical Guide" for recommending therapeutic procedures (organized alphabetically for more than 100 common conditions), a set of 200 pieces of QI-Polino,EMCOPAD-Dostor Tech devices (Doctor Tech passive resonant electromagnetic patches) and adhesive rolls for attaching the devices to the body of the treated person. The devices are applied periodically on the acupuncture points recommended in the therapy of the diagnosed condition. The application period is 21 days and is followed by a 10-day break. The procedure is repeated, if necessary, twice more. QI-Polino EMCOPAD Doctor Tech devices are used indefinitely. It is recommended to disinfect them with alcohol before each use. The advice of a Medical Doctor or Acupuncturist is recommended.*
(TCM is officially approved by the WHO)
State of development: Large series products for market, based on patent application
Contact: *DoctorTech2000@yahoo.com*
Presentation link: *www.DoctorTech.ro*
https://www.youtube.com/watch?v=QCHGoHhTyqQ&t=220s
https://www.youtube.com/watch?v=56dZFVn4PdA
https://www.youtube.com/watch?v=WlxEjaQizJQ&t=160s
https://youtu.be/bVLU_1cYJCw?si=-xaGdkVdP1ExZfLG
https://youtu.be/2YpFIk9Gx5Q

56.

Title: MEDICAL EARINGS FOR STRESS REDUCTION AND ENERGETIC EQUILIBRIUM
Patent/project number: RO132423A2 / WO2018037379
Author/s: Velcea Marian, Mandrea Lucian, Moldovan Ion Corneliu, Plotog Ioan, Hideg Catalin, Curta Ioan, Mihailescu Bogdan, Caracas Eugen, Chetan Mihai, Ene Ciprian
Institution/Country: Asociatia Justin Capra- Doctor Tech SRL, Romania
Category: F

Description: *Medical earrings are electronic devices that combine the principles of oriental alternative medicine (acupuncture) with the principles of magnetic bioresonance. They are devices that contain bio-chip-type electromagnetic patches (PEM), characterized by specific resonance frequencies. They are fixed by screwing above the active electrodermal points on the earlobe and act as an intelligent acupuncture needle. The device is activated according to the biorhythm of each organism that tests it, when the energy imbalance appears and lasts exactly as long as it exists. It does not require another electrical power source (battery or accumulator). When the balance is achieved, the device loses its power source and turns off. All you have to do is wear these earrings! Nothing simpler and easier for: your health to improve ; your energy balance to be restored ;your relaxation and concentration to reach maximum levels.*
Dimensions: 10 mm diameter; 0.5 mm thickness. Medical earrings are silver screw earrings on which the EMCOPAD Doctor Tech (Qi-Polino) bio-chips are mounted. They have the role of restoring the energy balance of the body, disturbed by the disturbances of the surrounding electromagnetic field.
The earrings are placed on the earlobe, a surface rich in energy points. The body responds instantly, and after approximately 2 hours of using the earrings equipped with the bio-chip device, a complete rebalancing of the human body's energy is observed.. For considerable results, the wearing period is 3 weeks. This way the body has enough time to stabilize its reactions. For effective balancing, earrings are placed simultaneously on both ears. Eastern and functional, these medical devices in the form of earrings: eliminate stress; energize the eyes and improve vision; increase the body's energy level and strengthen the immune system.
State of development: industrial production.
Contact: production for market based on patent application
Presentation link: *www.DoctorTech.ro*
https://www.youtube.com/watch?v=QCHGoHhTyqQ&t=220s
https://www.youtube.com/watch?v=56dZFVn4PdA
https://www.youtube.com/watch?v=WlxEjaQizJQ&t=160s
https://youtu.be/bVLU_1cYJCw?si=-xaGdkVdP1ExZfLG

57.

Title: BIORESONANT KNEEPAD FOR FUNCTIONAL RECOVERY
Patent/project number: RO132423A2 / WO2018037379
Author/s: Velcea Marian, Mandrea Lucian, Moldovan Ion Corneliu, Plotog Ioan, Hideg Catalin, Curta Ioan, Mihailescu Bogdan, Caracas Eugen, Chetan Mihai, Ene Ciprian
Institution/Country: Asociatia Justin Capra- Doctor Tech SRL, Romania
Category: F
Description: *The bioresonant kneepad is a device designed for the functional recovery of the knee consisting of an elastic support that surrounds the knee, on which two groups of bioresonant devices EMCOPAD Doctor Tech are assembled. The first group of four devices is positioned on the inside of the elastic support for front contact with the ball joint – on its contour, both at the intersection with the axis of symmetry*

(vertical) up/down, and at the intersection with the horizontal drawn through the centre of the ball joint, outside/inside. The second group of devices is located in the popliteal fossa, also on the axis of symmetry. Regular use of the device in a supervised recovery procedure ensures a faster return to previous performance. Energy measurements performed with specialized equipment confirm the improvement of the state of the knee after the use of bioresonant knee.

State of development: industrial production.

Contact: *DoctorTech2000@yahoo.com* *Marian.nicolae.velcea@gmail.com*

Presentation link: *www.DoctorTech.ro*

https://www.youtube.com/watch?v=QCHGoHhTyqQ&t=220s

https://www.youtube.com/watch?v=56dZFVn4PdA

https://www.youtube.com/watch?v=WlxEjaQizJQ&t=160s

58.

Title: BIORESONANT WRIST BRACE for Functional Recovery

Patent/project number: RO132423A2 / WO2018037379

Author/s: Velcea Marian, Mandrea Lucian, Moldovan Ion Corneliu, Plotog Ioan, Hideg Catalin, Curta Ioan, Caracas Eugen, Chetan Mihai, Ene Ciprian, Anca Aliz

Institution/Country: Asociatia Justin Capra- Doctor Tech SRL, Romania

Category: F

Description: *BIORESONANT WRIST Brace for Functional Recovery is a medical device designed to protect the radiocarpal joint through an outer shell for functional recovery. It provides the following functions: stabilization and support of the radiocarpal joint, reduction of pain and inflammation; prevention of excessive or sudden movements, protection during physical activities or following an injury. The bioresonant wrist brace is a flexible model for light physical support, intended for functional recovery of the wrist joint and consists of an elastic support surrounding the radiocarpal joint, on which a group of EMCOPAD Doctor Tech bioresonant devices is linearly assembled. The group of electronic devices consists of ten devices that are positioned inside the elastic support for direct contact with the wrist joint – along its entire contour, exposing it to a harmonic and polarized electromagnetic field. Regular use of the device as part of a supervised recovery procedure ensures a faster return to previous performance. Energy measurements performed with specialized equipment confirm the improvement of the condition of the wrist joint and the patient's general condition, through the use of the bioresonant wrist orthosis.*

Contact: production for market based on patent application

Presentation link: *www.DoctorTech.ro*

https://www.youtube.com/watch?v=QCHGoHhTyqQ&t=220s

https://www.youtube.com/watch?v=56dZFVn4PdA

https://www.youtube.com/watch?v=WlxEjaQizJQ&t=160s

https://youtu.be/bVLU_1cYJCw?si=-xaGdkVdP1ExZfLG

59.

Title: TRAVEL PILLOW WITH ENERGY REBALANCING EFFECT
Patent/project number: ***RO132423A2 / WO2018037379***
Author/s: Velcea Marian, Mandrea Lucian, Moldovan Ion Corneliu, Plotog Ioan, Hideg Catalin, Curta Ioan, Mihailescu Bogdan, Caracas Eugen, Chetan Mihai, Ene Ciprian
Institution/Country: Asociatia Justin Capra- Doctor Tech SRL, Romania
Category: F
Description: *A set of EMCOPAD Doctor Tech - Qi-Polino, (passive electronic electro-magnetic patch devices Doctor Tech) is used for energy re-balancing so much needed during tedious journeys. The classic travel cushion that is placed around the neck is equipped with bio-chip devices placed either on the symmetry axis. The acupuncture points in the cervical area come into contact with the devices attached to the travel cushion and produce activation of the electronic devices. There is a local interaction similar to acupuncture treatment, the effect of which is an energy rebalancing and an improvement of the general state by increasing the tone and decreasing the level of stress. The operating cycle is periodically restarted when devices notice an energy imbalance. This Smarty Travel Pillow turns a tiring journey into a fun trip.*
State of development: industrial production based on patent appplication
Contact: *marian.nicolae.velcea@gmail.com* *DoctorTech2000@yahoo.com*
Presentation link: *www.DoctorTech.ro*
https://www.youtube.com/watch?v=QCHGoHhTyqQ&t=220s

https://www.youtube.com/watch?v=56dZFVn4PdA

https://www.youtube.com/watch?v=WlxEjaQizJQ&t=160s

https://youtu.be/bVLU_1cYJCw?si=-xaGdkVdP1ExZfLG

60.

Title: E-LITE NUTRITIA TONIC RANGE
Patent: Natural therapies
Author/s: Adriana Vlad
Institution: S.c. E Lite Nutritia S.r.l.
Category: F
Description: *E-lite Nutriția, the most recognized manufacturer in the field of apiphytotherapy, offers you unique preparations, with original recipes, created by Prof. Dr. Adriana Vlad – nutritionist, specialist in natural therapies. The range of nutritional supplements includes tonics in bee honey and herbal extracts for all conditions: Gynecological tonic "E-lite", Glandular tonic "E-lite", Gastro tonic "E-lite", Sedative tonic "Sorina", Renal tonic "E-lite", Antitumor tonic "E-lite", and others, Superforte Ovulin, natural gynecological ovules for the treatment and prevention of gynecological conditions, Superforte Supozin, natural suppositories for the treatment and prevention of conditions of the colon, prostate, urinary tract and genital system.*

State of development: 100% natural products
Contact: *elite.nutritia@yahoo.com* ***+40726 761 557***
Presentation link: *https://elitenutritia.ro/categorie-produs/tonice/*

61.

Title: SUPERFORTE SUPOZIN & SUPERFORTE APICOPLANT
Patent: Natural therapies
Author/s: Adriana Vlad
Institution: S.c. E Lite Nutritia S.r.l.
Category: F
Description: *Superforte Ovulin - Solid Cream it is a 100% natural product that helps alleviate the manifestations of prostate, colon, and female genital dysfunction. It has a strong anti-inflammatory, cicatrizing, antirheumatic, antiseptic, antitumor, antihemorrhagic action. It prevents and acts beneficially on the early symptoms of colon and prostate damage, has positive effects in cases of tumors in the colon and the female genital area. The product is beneficial in prostate disorders, cystitis, nephritis, urethritis, internal and/or external hemorrhoids, inflammation, wounds, eczema and tumors on the colon, rheumatic diseases, but also in gynecological diseases, administered together with "Superforte Ovulin - Solid Cream". Ingredients: honey, propolis, pollen, royal jelly, mummy, clay, cocoa butter, sea buckthorn oil extract, chamomile, thyme, St. John's wort, marigold, marigold, juniper essential oil, sage, pine, fennel, geranium, lavender.*
SUPERFORTE APICOPLANT it is a natural product that acts beneficially in conditions of the colon, rectum and intestine. Action: colon detoxifier, decongestant, alkalizing, antimicrobial, regulates digestion (diarrhea, constipation), antitumor, regenerates the digestive mucosa and intestine, antihemorrhoidal (in combination with Superforte Supozin), intestinal soothing (indigestion, gas, irritable colon, biliary colic etc.), slimming cures. In chronic conditions, a natural and homeopathic treatment is recommended - internally for a period of 3-6 months for greater treatment efficiency. Ingredients: Argilla (clay), Theobroma cacao (cocoa butter), Melem (honey), Cera (wax) Carbo (coal), Argentum colloidal (colloidal silver), Probiotic, Calamus aromaticus (obligean), Mentha essential oils), Feaniculi (fennel), Camelia sinensis (tea tree), Caryophyllis (clove), nipagin, nipasol.
State of development: 100% natural products
Contact: *elite.nutritia@yahoo.com* ***+40726 761 557***
Presentation link: *https://elitenutritia.ro/categorie-produs/creme/*

62.

Title: PROPORTIONAL EXTRAPOLATION OF THE DATA ON THE SMOKERS NUMBER IN THE STUDY OF THE RADON X SMOKING INTERACTION AS A TRIGGER FACTOR IN THE ONSET OF BRONCHOPULMONARY CANCER IN THE REPUBLIC OF MOLDOVA

Patent/project number: Certificate of registration of the object of copyright or related rights Serial OŞ no. 7836 of 20.03.2024 issued by State Agency for Intellectual Property of the Republic of Moldova
Author/s: COREȚCHI Liuba, OVERCENCO Ala, ABABII Aurelia
Institution/Country: National Agency for Public Health, Republic of Moldova
Category: F
Description: *Residential radon exposure and tobacco smoking are the two most important risk factors for lung cancer, the second most common cancer in the Republic of Moldova. The number of smokers in the radon x smoking x lung cancer study is necessary, but difficult due to the different scale of the initial data and therefore requires the use of a special method of bringing them to values suitable for the study. The number of tobacco smokers of the National Population Study STEPS 2021 (4097 interviewees, age 18-69 y.o., both genders, urban/rural residence) and population data of the National Bureau of Statistics were used. Because of the STEPS 2021 data on number of smokers is available only for the whole country in order to fit these data with radon measurement data and the lung cancer morbidity rates a mathematical tool of proportional extrapolation of initial data on tobacco smokers has been developed. The mathematical ratio (proportion) between the total population number in each age group, gender and place of residence with the number of the population in the same categories by regions has been calculated, using the population data of the National Bureau of Statistics during 2021. Based on these links (rates), the number of smokers by region of the country has also been calculated. The data obtained by extrapolation by regions allowed us to develop a spatial distribution of tobacco smokers, to asses them by statistical sense as well as to use them in radon x smoking x lung cancer study.*
State of development: Registered as the object of copyright or related rights (scientific work)
Contact: *liuba.koretski@ansp.gov.md*
Presentation link: *https://ansp.md/control_radon/*

63.

Title: POPULATION EXPOSURE TO INDOOR RADON IN BUILDINGS (HOUSES, WORKPLACES), SOIL AND WATER
Patent/project number: Certificate of registration of the object of copyright or related rights Serial OŞ no. 2922 of 23.01.2025 issued by State Agency for Intellectual Property of the Republic of Moldova.
Authors: CORETCHI, L., ABABII, A., APOSTOL, I., BAHNAREL, I., BOGDAN, M., ŞARGU, V., CAPAȚÎNA, A., RĂDULESCU, I., CALIN, R., LINCA, B., BORSOS, A.
Institution/Country: National Agency for Public Health, Republic of Moldova
Category: F
Description: *The paper is intended for laboratories that monitor radon in indoor air (homes and workplaces), water and soil. Methods and equipment for detecting radon concentrations in indoor air (homes and workplaces), water and soil are presented. The methodology for rapid detection of the named*

radioactive gas is proposed, as well as modern technologies for reducing the population's exposure to the health risk caused by radon.

State of development: The work was carried out with the support of the Ministry of Education and Research of the Republic of Moldova within the project „MONITORING OF EXPOSURE TO IONIZING RADIATION OF PROFESSIONALLY EXPOSED PERSONNEL AND THE PUBLIC WITH THE DEVELOPMENT OF RADIOPROTECTION MEASURES", and the bilateral project RO MD „INCREASING THE DIGITAL CAPACITY OF THE DATA FLOW BETWEEN ROMANIA AND THE REPUBLIC OF MOLDOVA REGARDING MONITORING OF SOIL RADIOACTIVITY AND RADON" 21ROMD / 20/05/2024, Project code: PN-IV-P8-8.3-ROMD-2023-0241.

Contact: *liuba.koretski@ansp.gov.md*

Presentation link: *https://ansp.md/control_radon/*

64.

Title: ULTRASOUND ACTIVATION DEVICE FOR FLOWING OR LIMITED VOLUME LIQUID MEDIA

Patent/project number: A/00456/01.08.2024, OSIM Bucharest, Romania

Author/s: Nicuşor-Alin Sîrbu

Institution/Country: National Research and Development Institute for Welding and Material Testing – ISIM Timisoara, Romania

Category: F

Description: *The device for ultrasonic activation of continuously flowing or limited-volume liquid media according to the invention is a simple functional constructional assembly which is attached either to containers of limited volume containing the liquid to be activated or to a plant to which the device according to the invention is inserted along the path of a continuous flow pipe for the liquid, as a subassembly adjacent to the plant. It is also possible to connect the device to a plurality of containers containing liquids which are required to be mixed and activated together so that the mixture is then collected in a single container. The device according to the invention provides an efficient and rapid activation of liquids by the simultaneous superposition of the ultrasonic activation effect, the mechanical activation effect and the heating effect. The field of the invention is that of the activation of liquids or mixtures flowing or stored in limited volume in various processing techniques used in particular in the agri-food industry, the chemical industry, the pharmaceutical industry, the textile and leather industry.*

State of development: concept

Contact: ISIM Timisoara *isim@isim.ro* ***+40256491831***

Presentation link: *www.isim.ro*

65.

Title: MANGICARE
Patent/project number: 0015/2025
Author/s: Nutvarit Manorotchaturong, Yujun Sung
Institution/Country: Ruamrudee International school, Thailand
Category: F
***Description**: MangiCare is a revolutionary hydrogel-based bandage infused with encapsulated mangiferin extracts derived from mango leaves, offering a sustainable and cost-effective solution for diabetic foot ulcer (DFU) treatment.*
Designed to provide superior wound care, MangiCare's flexible hydrogel adapts to the wound's unique shape, ensuring full coverage and optimal healing conditions. Unlike conventional diabetic wound bandages that rely on burst-release mechanisms, MangiCare utilizes a chitosan-based hydrogel that delivers mangiferin's powerful antioxidant, antibacterial, and anti-inflammatory properties through a sustained-release mechanism. This controlled drug delivery system minimizes the risk of underdosing or overdosing, accelerates healing, reduces infection risk, and eliminates the need for frequent dressing changes, decreasing patient discomfort and healthcare costs.
Additionally, MangiCare leverages discarded mango leaves, addressing both a critical medical need and an environmental challenge by reducing agricultural waste and carbon emissions. With its innovative, science-backed approach, MangiCare presents a breakthrough in DFU treatment, making quality wound care accessible to underserved communities while promoting sustainability in healthcare.
State of development: Prototype / In Development
***Contact:** nutvarit.m@gmail.com*
Presentation link:
https://docs.google.com/presentation/d/1J_sEbPrMIIOspAxCo50Od4ruZrVoqDE22u756GrT21E/edit?usp=sharing

66.

Title: MEDICAL DEVICE AND METHOD OF MAKING SAME
Patent/number: US 11,799,465 - B1/October 10, 2023
Author/s: Ruxandra Vidu, Augustin Semenescu, Ileana Mariana Mates, Cristian Dragos Vidu
Institution/Country: National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
Category: F
***Description:** The present invention describes a biocompatible medical device that include two supported meshes for providing mechanical strength and osseointegration properties of implant, and a multilayer porous material in between them loaded with antibacterial compound to promote controlled release of pharmaceutical agents at the site of surgical intervention. The composition gradient in the multilayer porous material is attained by loading successive layers of porous material with different amounts of*

bioactive materials and then stacking them to create a gradient of composition across the porous material. The present invention describes method(s) to place and fasten the medical device to the bone structure.
State of development: Applied
***Contact: Augustin SEMENESCU** augustin.semenescu@upb.ro*
***Presentation link:** https://upb.ro/en/*

67.

Title: METHOD OF MAKING THE TREATMENT OF ONCOLOGICAL DISEASES MORE EFFICIENT USING THE LATEST GENERATION MODERN TECHNOLOGIES (METODA DE EFICIENTIZARE A TRATAMENTULUI BOLII ONCOLOGICE UTILIZAND TEHNOLOGII MODERNE DE ULTIMA GENERATIE)
Patent/project number: Innovative research project with patent perspectives
Author/s: Ştefan ŢÎŢU, Lucian MOCAN, Teodora MOCAN, Alexandru IRIMIE
Institutions/Country: The Oncology Institute "Prof. Dr. Ion Chiricuță" Cluj-Napoca, "Iuliu Haţieganu"; University of Medicine and Pharmacy Cluj-Napoca, Regional Institute of Gastroenterology and Hepatology „Prof. Dr. O. Fodor"Cluj-Napoca / ROMANIA
Category: F
***Description:** The innovative scientific research project develops a specific application of great relevance in the treatment of oncological disease and proposes a viable solution for the future, with the possibility of patenting under the conditions stipulated by the legislation in force in the European Union.*
***Contact: Dr. Ştefan ŢÎŢU, The Oncology Institute "Prof. Dr. Ion Chiricuță" Cluj-Napoca, Phone 0040 745 599 600, E-mail** stefan.titu@ymail.com*
***Presentation link:** https://umfcluj.ro/en/*

68.

Title: FOODSTUFF AS ADJUVANT IN PREVENTION/TREATMENT OF NON-ALCOHOLIC HEPATIC STEATOSIS
Patent/project number: 2024000412
Author/s: Irina Matran, Claudia Bănescu, Rodica Talmaci
Institution/Country: George Emil Palade University of Medicine, Pharmacy, Science and Technology of Targu Mures, Romania
Category: F
***Description:** An adjuvant food has been developed in the prevention and/or treatment of non-alcoholic fatty liver disease. The new food is prebiotic, with high protein content and low glycemic index. It does not contain dyes, preservatives, gluten or lactose. It prevents non-alcoholic fatty liver disease by decreasing liver enzymes: aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase, total cholesterol and blood sugar. The new food can be consumed in the car, office, subway, or traditionally, in the family. The evaluation of the efficacy of the new innovative food was verified preclinically, on male and female Sprague-Dawley rats, of the same age. All approvals were obtained according to national and European legislative regulations. Both the ingredients and the packaging of this food contribute to the achievement of*

the Sustainable Development Goals (SDGs), respectively the transition of innovations/intellectual property to sustainability.
State of development: Patent pending
Contact: Irina Matran, irina.matran@umfst.ro
Presentation link: https://umfst.ro/en/

69.

Title: VENEER-RETAINED FIXED PARTIAL DENTURE WITH AXIAL GRIP EXTENSIONS
Patent/project number: RO137145 (A0) — 2022-12-30
Author/s: Sinescu Cosmin, Serban Christa, Novac Andreea Codruta, Neagu Carina Sonia, Zaharia Cristian, Jivanescu Anca, Leretter Marius Traian, Borcan Florin, Levai Codrina, Rominu Mihai, Negrutiu Meda Lavinia
Institution/Country: Faculty of Dental Medicine, "Victor Babes" University of Medicine and Pharmacy Timisoara, Romania
Category: F
Description: *This invention patent presents an innovative method for fixed partial prosthetic restoration (FPPF) using dental veneers with axial extensions in the form of parapulpal pins. The solution is designed for the treatment of reduced edentulism in the anterior region through a minimally invasive approach aimed at enhancing the aesthetics and retention of restorations. Fixed partial prosthetic restorations (FPPF) are used to replace missing teeth, being supported by adjacent teeth or implants. In the context of minimally invasive dentistry, Maryland bridges are a commonly used option, relying on adhesive palatal bonding of restorations. In cases where adjacent teeth require aesthetic rehabilitation, this concept can be extended to the use of dental veneers for improved retention. This invention introduces an innovative element: axial extensions in the form of parapulpal pins, which increase the retention and stability of the restoration. These extensions are inspired by the use of parapulpal pins in amalgam restorations, serving to enhance the strength of prosthetic restorations without affecting the pulp chamber. The advantages of this type of restoration include:* ***enhanced aesthetics****, due to the integration of dental veneers into the prosthetic design;* ***increased retention****, ensured by the axial extensions in the form of parapulpal pins;* ***pulp protection****, avoiding its exposure through careful planning of extension placement with CBCT imaging. This technique is suitable for patients with reduced anterior edentulism and requires minimally invasive preparation of the abutment teeth. A guiding splint is used for drilling the parapulpal pins, ensuring precise positioning. The final restoration is obtained through pressing techniques and aesthetic customization. This innovative method optimizes FPPF retention, providing a viable solution for patients with reduced anterior missing teeth while maintaining superior aesthetics.*
State of development: Patent Application
Contact: sinescu.cosmin@umft.ro
Presentation link: http://www.umft.eu/

70.

Title: ASSESSMENT OF HESPERIDIN AND SILIBININ – NATURAL COMPOUNDS WITH POTENTIAL IN THE TREATMENT OF CUTANEOUS MELANOMA
Patent/project number: SIL-NANO-SIST (21.583/ 18.09.2023)
Author/s: Andreea Smeu, Florin Borcan, Cristina Adriana Dehelean
Institution/Country: Faculty of Pharmacy (Research Center for Pharmaco-Toxicological Evaluations), "Victor Babes" University of Medicine and Pharmacy Timisoara, Romania
Category: F
Description: *Cutaneous melanoma is a public health problem, which in recent decades sparked a high interest of researchers to find new treatment options considering the fact that conventional therapies, especially chemotherapy, produce a multitude of adverse effects and there are also situations in which the tumors become resistant to treatment. Recently, phytochemicals have gained interest as promising candidates in the fight against cancer due to their versatility and multiple health benefits. Hesperidin (HES) and silibinin (SIL) are two botanical compounds belonging to the flavonoid class, widely distributed in many fruits and vegetables. It is also recognized that flavonoids are promising compounds regarding anti-melanoma therapy due to their effects in inhibiting proliferation, invasion and inducing apoptosis. The present study is aimed to evaluate HES and SIL, as well as the association between the two compounds on the 2D cutaneous melanoma cell line - A375. The results obtained after 24-hour treatment of the cells indicated that cell viability decreases in a dose-dependent manner for each compound individually as well as in the case of their association. The morphological analysis of A375 cells showed that HES does not induce significant changes on the cell shape, SIL produces dose-dependent dysmorphologies characterized by cell rounding and confluence decrease, while for the association between the two compounds it can be observed that at the highest concentration the most frequent changes are present as the presence of debris, confluence decrease, cell rounding and detachment from the plate. Evaluation of cell nuclei by the Hoechst method indicated that HES does not cause changes in nuclear shape, SIL causes a low degree of condensed nuclei, and the combination of HES + SIL produces condensed nuclei with a reduced size compared to control (untreated) cells.*
State of development: PhD student project
Contact: *andreea.geamantan@umft.ro*
Presentation link: *http://www.umft.eu/*

71.

Title: CARDIOVASCULAR DISEASES IN THE CONTEXT OF DRUG INTERACTIONS. IMPLICATIONS RELATED TO DENTAL PRACTICE
Patent/project number: CARDIO-TOX (21840 / 13.09.2024)
Author/s: Sarbu Diana-Cristina, Popovici Ramona-Amina
Institution/Country: Faculty of Dental Medicine, "Victor Babes" University of Medicine and Pharmacy Timisoara, Romania
Category: F
Description: *Cardiovascular diseases represent a significant health burden with increasing prevalence, despite advancements in healthcare over the past decade. They remain the leading causes of morbidity and mortality worldwide. The utilization of medicinal plants continues to serve as an alternative treatment*

approach for various diseases, including cardiovascular disorders. Presently, there exists an unprecedented impetus for the incorporation of herbal preparations in modern medicinal systems. However, the purported safety of herbal preparations remains to be rigorously tested and evaluated. Over the years, experimental data have elucidated the therapeutic potential of medicinal plants in cardiovascular diseases, as they can modulate several of their risk factors. The present project proposes: (a) rigorous analysis of risk factors and selection of medicinal plants/bioactive compounds with a role in mitigating them; (b) preclinical study through tests to evaluate the pharmaco-toxicological profile of select plants from the local flora, employing in vitro and in vivo studies, with particular emphasis on their efficacy, safety, and toxicity; (c) association between herbal supplements and cardiovascular diseases - meta-analysis.
State of development: PhD student project
Contact: *dianasarbu33@yahoo.com*
Presentation link: *http://www.umft.eu/*

72.

Title: A HEALTHIER LIFESTYLE IN 2025
Patent/project number: Pull Empower Project
Author/s: Herdiana Dewi Nurfika
Institution/Country: Bliss Education Center, Indonesia
Category: F
Description: *I'm Herdiana Dewi Nurfika, Founder & CEO of Bliss Education Center, Brancy Firm, HDN STUFF and besides that I'm certified NLP Master Practitioner, ACT & REBT Therapist and Mental Health Advocate. As mental health advocate she become the best mental health advocate in 2023 by MHI Network and got media coverage over a hundred news in UK & US. I also had a community called "Pull Empower" that she provides on social media to empower well-being. SWOT analysis is a structured planning method used to evaluate the Strengths, Weaknesses, Opportunities, and Threats related to a specific goal or project. For health and lifestyle, it helps identify personal factors and external influences that can impact your journey towards wellness.*
SMART Goals Framework
Goal for Better Nutrition
Specific*: Clearly define what you want to achieve (e.g., "I want to eat healthier" → "I want to eat 3 servings of vegetables daily").*
Measurable*: Quantify progress (e.g., track water intake to ensure you drink 2 liters/day).*
Achievable*: Set realistic goals considering your current circumstances (e.g., starting with a 15-minute walk daily).*
Relevant*: Align goals with your health priorities (e.g., improve energy or lose weight).*
Time-bound*: Set a deadline to maintain motivation (e.g., achieve the goal in 3 months).*
Conclusion
Your Health in 2025*: Starts with small, consistent actions today.*
Take Ownership*: Use tools like SWOT analysis and SMART goals to personalize your journey.*

***Stay Committed**: Build a support system and celebrate milestones.*
State of development: Mental Health
***Contact:** herdianadewinurfika@gmail.com +6289692272737*
***Presentation link:** https://www.facebook.com/blisseducationcenter/?locale=ro_RO*

G - Agriculture, Veterinary medicine

1.

Title: THE LOCAL CULTIVAR 'MIHAI' OF JERUSALEM ARTICHOKE, HELIANTHUS TUBEROSUS L.
Patent / project number: MD 0024/2024.11.19
Author/s: Dr. Victor ȚÎȚEI
Institution/Country: "Alexandru Ciubotaru" National Botanical Garden (Institute) of Moldova State University, Applied Plant Resources Laboratory, Republic of Moldova
Category: G
Description: *The local cultivar 'MIHAI' of Jerusalem artichoke, Helianthus tuberosus L. can be used as green mass forage and silage from aerial parts, tubers as food, forage and raw material for circular economy, extraction of inulin and other biologically active substances. The forage productivity of the local cultivar 'MIHAI' is 68-70 t/ha green mass with 18-24% dry matter and 35-40% leaves content. The tubers productivity varied from 35 to 39 t/ha fresh mass. The biochemical composition and the nutritive value of green mass 10.8-13.5% CP, 9.9-12.1% ash, 33.2-37.7%ADF, 45.4-52.2 % NDF, 5.0-5.5%ADL, 28.2-32.0%Cel, 12.2-14.5 %HC, 595-629 g/kg DDM, RFV=106-122, 11.78-12.39 MJ/kg DE, 9.67-10.18 MJ/kg ME and 5.69-6.21 MJ/kg NEl. The harvested dry stems harvested in winter period had 18.5 MJ/kg gross calorific value, and 2.1% ash and can be processed into briquettes and pellets as renewable energy.*
State of development: Scientific Product. Financial support from Ministry of Education and Research, subprogram no. 01.01.02 "Identification of valuable forms of plant resources with multiple uses for the circular economy".
Contact: *vic.titei@gmail.com*
Presentation link: *https://gbni.usm.md*

2.

Title: „THE LOCAL CULTIVAR 'GIGANT' OF GIANT KNOTWEED POLYGONUM SACHALINENSE F. SCHMIDT"
Patent / project number: MD 207/ 2016.05.31
Author/s: Dr. Victor ȚÎȚEI
Institution/Country: "Alexandru Ciubotaru" National Botanical Garden (Institute) of Moldova State University, Applied Plant Resources Laboratory, Republic of Moldova
Category: G
Description: *The local cultivar 'GIGANT' of Giant knotweed Polygonum sachalinense F. Schmidt ex Maxim, family Polygonaceae was created based on the activities of identification and mobilization of new*

giant knotweed taxa, individual selection and breeding of introduced plant taxa, registered in the Catalogue of Plant Varieties (no. 2492625/2012). For the founding of the plantation are necessary 20-28 thousand plants/ha; the established plantations are maintained for 15-20 years. The green mass yield after cutting the plants 2-3 times is 124-148 t/ha, may be use as forage for husbandry animals (natural fodder, silage, vitaminized flour), the potential fodder production – 14-18 t/ ha nutritive units and 1800-2000 kg/ha digestible protein. Silage quality: pH= 3.80-4.10, 80-85 % lactic acid, butyric acid not identified, 13.5-18.0 % CP, 2.3–2.6 % EE, 8.9-14 % ash, 54-58 % NDF, 34-45% ADF, 5.0-7.8 % ADL, 4.7-5.5 g/kg Ca and 2.3-2.5 g/kg P. The green mass and silage may be used as feedstock in biogas plants with biomethane potential 4050-4300 m3/ha/year.

State of development: Scientific Product. Financial support from Ministry of Education and Research, subprogram no. 01.01.02 "Identification of valuable forms of plant resources with multiple uses for the circular economy".

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Presentation link: *https://gbni.usm.md*

3.

Title: „THE INNOVATIVE TECHNOLOGY FOR CULTIVATION AND USE OF SOME NON-TRADITIONAL FORAGE CROPS"

Patent / project number: MD 400 / 2023.02.28; MD 344 / 2020.04.30; MD 0013 / 2022.05.05

Author/s: Dr. Victor ȚÎȚEI

Institution/Country: "Alexandru Ciubotaru" National Botanical Garden (Institute) of Moldova State University, Applied Plant Resources Laboratory, Republic of Moldova

Category: G

Description: *Revitalization and development of the national livestock sector requires diversification and increased production of local vegetal feed, balanced in terms of quantity and quality throughout the year, according to the physiological needs of animals and their productivity indices. The foundation of plantations and the production of fresh and persevered feed (hay, silage, haylage) using cultivars of new and non-traditional forage plants created in the National Botanical Garden (Institute) of Moldova State University and registered in the Catalogue of Plant Varieties: 'SOFIA' of fodder galega Galega orientalis Lam. (no.0475063/2024), 'ARGENTINA' of perennial sorghum Sorghum almum Parodi (no. 2584624/2021), 'VIGOR' of milkvetch Astragalus galegiformis L. (no. 2574504 /2021) will ensure an annual productivity of 9-22 t/ha nutritive units and 970-2800 kg/ha digestible protein, during 8-15 years. The obtained persevered fermented fodder, according to organoleptic characteristics (smell, colour and consistency), biochemical indices (pH, content of organic acids and their correlation, nutrient composition) and nutritive value (matter digestibility, metabolizable energy and net energy for lactation) meets the standards and can be used as feedstuff. The implementation of these innovative technology will help maintain the animal welfare, ensure national food security and sustainability in terms of reducing the import of food, improving the environmental situation, making use of degraded and eroded soils and unused land in traditional agriculture.*

State of development: Scientific Product. Financial support from Ministry of Education and Research, subprogram no. 01.01.02 "Identification of valuable forms of plant resources with

multiple uses for the circular economy".
Contact: *vic.titei@gmail.com*
Presentation link: *https://gbni.usm.md*

4.

Title: „THE TECHNOLOGY FOR FOUNDING BIOMASS ENERGY PLANTATIONS"
Patent / project number: MD 402 / 2023.02.28; MD 348 / 2020.04.30; MD 0014 / 2022.05.05.
Author/s: Dr. Victor ȚÎȚEI
Institution/Country: "Alexandru Ciubotaru" National Botanical Garden (Institute) of Moldova State University, Applied Plant Resources Laboratory, Republic of Moldova
Category: G
Description: *The local cultivars of new and non-traditional crops created in the National Botanical Garden (Institute) of Moldova State University and registered in the Catalogue of Plant Varieties: 'MARIA' of Jerusalem artichoke, Helianthus tuberosus (no. 0734840/2023); 'TITAN' of giant miscanthus, Miscanthus × giganteus (no. 0394505/2021) and 'MIHAELA' of plume poppy Macleaya cordata (no.0745066/3024), are intended for the foundation of biomass energy plantations and the restoration of degraded, eroded and polluted lands that cannot be profitably cultivated with traditional crops. The local cultivars 'MARIA' and 'TITAN' achieved annual productivity 60-100 t/ha of green mass with biomethane potential 260 -355 l/kg organic dry matter or estimated biomethane production varied from 4100 to 7000 m3/ha/ year. The yield of stem biomass harvested in winter period of cultivars 'MARIA', 'MIHAELA' and 'TITAN' varied from 13.0 to 28.0 t/ha dry matter with gross calorific value 18.8-19.9 MJ/kg and 1.5-2.5% ash, can be processed into solid biofuels (bales, biomass chips, pellets and briquettes), as well as utilized as a substrate to obtain cellulosic ethanol with a potential of 533-610 l/t organic matter. The implementation of these innovative technology will ensure the production of energy biomass for obtaining different types of biofuels, reducing illegal logging and preserving forests, creating new job opportunities in the rural area and ensuring the country's energy security.*
State of development: Scientific Product. Financial support from Ministry of Education and Research, subprogram no. 01.01.02 "Identification of valuable forms of plant resources with multiple uses for the circular economy".
Contact: *vic.titei@gmail.com*
Presentation link: *https://gbni.usm.md*

5.

Title: POTATO VARIETY AMURAL
Patent/project number: Hot. nr. 500/30.01.2025 (ISTIS)
Author/s: Hermeziu Radu
Institution/Country: National Institute of Research and Development for Potato and Sugar Beet, NIRDPSB Brasov, Romania
Category: G
Description: *Medium early potato variety obtained by sexual hybridization between varieties Sarpo Mira x Charlotte, with medium resistance to leaf roll viruses (PLRV) and potato Y virus(PVY), relatively*

resistant to late blight (Phytophthora infestans) on foliage and tubers and resistant to wart disease (Synchytrium endobioticum). Tubers with red skin and light yellow flesh, skilled for autumn - winter consumption, for salads and various dishes culinary, industrial processing (chips, French fries) and high yield capacity (50 t/ha), ecological plasticity and production stability.

Plant description:

The plant is tall, with up-right habit and high number of stems.
The leaf is small-sized, green in color, and has a medium number of leaflets.
The flowers have a large corolla opening, are purple red in color, and bloom is low.
The tubers are oval in shape, with a medium depth of eyes. The skin is medium red, while the flesh is light yellow.

Resistance to diseases and pests:

Medium resistant to potato Y virus (PVY) and to potato leaf roll virus (PLRV)
Relatively resistant to late blight (Phytophthora infestans) on leaves and tubers
Resistant to wart disease (Synchitrium endobioticum), biotype 1

State of development: product

Contact: *www.potato.ro* *icpc@potato.ro* ***+40746164185***

Presentation link:

https://potato.ro/_publicatii_files/Ziua%20Verde/2023/Brosura_soiuri_institut_2023.pdf

6.

Title: POTATO VARIETY ERVANT
Patent/project number: 00535/ 28.02.2019
Author/s: Hermeziu Radu
Institution/Country: National Institute of Research and Development for Potato and Sugar Beet, NIRDPSB Brasov, Romania
Category: G

Description: *Medium early potato variety obtained by sexual hybridization between varieties Bellarosa x Laura, with resistance to leaf roll viruses (PLRV) and potato Y virus(PVY), medium resistant to late blight (Phytophthora infestans) on foliage and relatively resistant on tubers and resistant to wart disease (Synchytrium endobioticum). Tubers with yellow skin and cream-colored flesh, suitable for a whole range of uses, including chips and French fries and high yield capacity (60 t/ha), ecological plasticity and production stability.*

Plant description:

The plant has a medium height, leaf type and a semi-upright habit.
The leaf is medium-sized, green in color, and has a moderate number of leaflets.
The flowers have a large corolla opening, are light pink in color, and bloom is low.
The sprouts grown in light are small, ovoid in shape, with a medium intensity of anthocyanin coloration at the base and strong pubescence.
The tubers are short-oval in shape, with shallow eyes. The skin is yellow, while the flesh is cream-colored.

Resistance to diseases and pests:

Resistant to potato Y virus (PVY) and resistant to potato leaf roll virus (PLRV)

Moderately resistant to late blight (Phytophthora infestans) on leaves and relatively resistant to late blight on tubers
Resistant to wart disease (Synchitrium endobioticum), biotype 1
State of development: product
Contact: *www.potato.ro* *icpc@potato.ro* ***+40746164185***
Presentation link:
https://potato.ro/_publicatii_files/Ziua%20Verde/2023/Brosura_soiuri_institut_2023.pdf

7.

Title: BIOCOMPOSITE BASED ON AMINOCIDS FROM KERATINOUS PROTEIN MATERIALS AND THE PROCESS FOR ITS PRODUCTION
Patent / project number: National Patent Application No. A-00754 / 2024
Author/s: FODOREAN Teodor Gabriel, NAGY Elena Mihaela, BOERU Adrian Iosif, LUCA Leontina, MARICA Mircea
Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania
Category: G
Description*: The invention refers to a process for the preparation of keratinous protein materials through alkaline hydrolysis, in order to obtain amino acids, intended for agriculture use as plant biostimulants. From various industries, especially the food industry (slaughterhouses, butchers), protein waste or manufacturing by-products that cannot be used in human or animal nutrition result, products with great economic potential, determined by the high content of amino acids. The valorization of these wastes and by-products is very topical both from an economic point of view and through the negative impact on the environment that derives from their storage. These wastes and by-products, in the form of hydrolysates, consisting of free amino acids, peptides and oligopeptides, soluble in water, are widely used in agriculture as fertilizers and biostimulants for plants.*
In addition to the nutritional role that they play in the development of plants, protein hydrolysates fulfill an important physiological role by the fact that they quickly enter the metabolic processes that take place both in the soil and especially in plants. The amino acids in the composition of the hydrolyzates facilitate the absorption and integration of macro and microelements, thus stimulating the metabolic processes in plants.
The main sources of amino acids, peptides and oligopeptides of the hydrolysates intended for agriculture are both plant-based: residues of protein materials from soy, peas, sunflower, rapeseed, corn, etc. but also of animal origin: residues of wool, hair, hooves, feathers, residues from fish processing.
The objective of this invention refers to the development of a process for the manufacture of protein hydrolyzates from feathers from the slaughter of broiler chickens. Feathers represent a keratinous protein macromolecular complex with a high protein content (85-95%), complex insoluble in water and with great chemical stability.

The difficulties of the alkaline hydrolysis processes of keratinous protein materials derive from the high content of cystine (8-12%) which leads to a large number of disulfide groups that give a high chemical stability to the protein material.
The disadvantages of the existing processes of alkaline hydrolysis of keratinous protein materials are removed in this process by the fact that the hydrolysis process is carried out with a basic solution with a reducing character and complex composition containing a hard base soluble in water, KOH/NaOH or their mixture, with a concentration of 2.5 - 7% at pH = 10.5 - 11.5 with or without additions of alkaline earth metal bases Ca(OH)2/Mg(OH)2 or/and Zn(OH)2, their proportion in the reaction mass being 0.1 - 2.5%.
State of development: Experimental Model
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Presentation link: www.inma.ro

8.

Title: EQUIPMENT FOR OPTIMIZING THE PROCESSING OF LOW-MOISTURE AGRICULTURAL LANDS
Patent / project number: National Patent Application No. A-00632 / 2024
Author/s: VLĂDUȚ Valentin, MATACHE Mihai, OLAN Mihai, VOICEA Iulian, GĂGEANU Iuliana, PERSU Cătălin, CUJBESCU Dan, NENCIU Florin
Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania
Category: G
Description: *The invention presents an innovative high-performance solution of a piece of equipment, called a scarifier, which is used to optimize the processing of agricultural land with low humidity. The scarifier is used for deep loosening of the soil up to a depth of 65 centimeters, obtaining a very well loosened soil structure that allows easy movement of air, water and nutrients. Tillage using a scarifier can replace standard ploughing, with lower towing requirements, lower fuel consumption and higher yield. Deep tillage with scarifiers must be supplemented with soil fertilization. Through a single pass of the equipment, the layer under the plowing is scarified, plant residues are incorporated into the plowing, simultaneously applying biofertilizers. Currently, in the global market, there is a growing demand for microbial inoculants, which can be used as biofertilizers or biostimulants in crop production. Bioinoculants contain one or more PGPM (bacteria, algae or fungi) embedded in a carrier liquid. Carrier fluid refers to the delivery "vehicle" in which the biofertilizer is enclosed to be transferred to the plant's rhizosphere. The carrier liquid must provide an optimal microenvironment (Ph, water and carbon content) for microorganisms, maintain a longer shelf life and microbial viability, without the need for a special storage facility. Also, the carrier liquid must be cost-effective, readily available, environmentally friendly, accept nutritional supplements and not be harmful to the user.*
The disadvantages *of these solutions consist in the fact that they represent specific technical solutions for the intended purpose and are not suitable for a research equipment to perform the scarification operation with low energy consumption.*

The technical problem *that the proposed solution solves, according to the invention, consists in the design of a technical equipment that optimizes the processing of agricultural land with low humidity through the differentiated action of some active elements in the composition of the equipment, depending on the level of effort, measured with the help of a strain sensor, having as characteristic values zero strain, when the equipment is above the ground, medium stress, in the situation where the active elements are in nominal working mode and, respectively, in the situation of maximum stress, when meeting a rigid obstacle that makes necessary to take appropriate measures to protect the active elements.*

State of development: Experimental Model - ACKNOWLEDGEMENT: This project was supported by the Ministry of Agriculture and Rural Development through the ADER Project 25.1.2 / 2023: "INNOVATIVE TECHNOLOGY OF MINIMUM AGRICULTURAL LAND PROCESSING ADAPTED TO CURRENT CLIMATE CHANGES"

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Presentation link: www.inma.ro

9.

Title: MOBILE ROBOT FOR TOMATO LEAF PRUNING

Patent / project number: National Patent Application No. A-00627 / 2024

Author/s: MATACHE Mihai, CRISTEA Robert, CHIRIȚESCU Marian, GHEORGHE Gabriel, VOICEA Iulian, CUJBESCU Dan, GĂGEANU Iuliana, PERSU Cătălin

Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania

Category: G

Description: *The invention refers to a mobile robot intended for the shaping and maintenance of tomato crops, being composed of a robotic arm equipped with a specialized gripper for cutting leaves and a mobile platform on rails for moving between rows of tomatoes. The gripper has an advanced mechanism to retain the tail of the leaves so that they are efficiently collected in a container. Leaf pruning, also known as defoliation, is an essential agricultural process for optimizing tomato plant growth and maximizing the production of high-quality fruit. This practice is crucial at several stages of plant development and brings numerous benefits to crop health and productivity.*

The main reasons why leaf shaping is necessary for tomatoes:

- ***Improves air circulation:*** *By removing lower leaves and excess vegetation, shaping helps improve air circulation around the plant. This reduces the risk of fungal diseases, such as mold and mildew, which develop in high humidity conditions.*
- ***Increased exposure to light:*** *Shaping allows better exposure of the upper leaves and fruit to sunlight. Sunlight is essential for photosynthesis, a process that contributes to fruit development. By cutting off the excess leaves, the uniform and rapid ripening of the tomatoes is stimulated.*
- ***Redirecting energy to fruit:*** *By removing useless or diseased leaves, the plant can redirect resources and energy to fruit development instead of consuming them to maintain the vegetation. Thus, shaping contributes to increasing the size and quality of the fruit, favoring a richer harvest.*
- ***Disease and pest prevention:*** *Dense foliage can create an environment conducive to pest and disease development. Periodic removal of leaves reduces the places where they can shelter and reproduce, thus preventing infestations and plant health problems.*

- ***Facilitation of maintenance works:*** *By shaping the leaves, access to the base of the plant is facilitated for other maintenance works, such as irrigation, fertilization or the application of phytosanitary treatments. A well-shaped plant is easier to manage, reducing the time and effort required in crop maintenance.*
- ***Improving the quality of production:*** *Correct shaping of the leaves helps to increase the quantity and quality of tomato production. The fruits receive more light and air, which improves their taste, color and uniform ripening.*
- ***Extending the life of the plant:*** *By cutting off diseased or damaged leaves, the plant is protected from stress caused by infection, which helps to extend its life and achieve a constant production throughout the growing season.*

State of development: Experimental Model - ACKNOWLEDGEMENT: This project was supported by the Ministry of Agriculture and Rural Development through the ADER Project no. 25.1.1 / 2023: "ROBOTIZED HARVESTING TECHNOLOGY OF VEGETABLES FROM THE SOLANACEAE FAMILY IN GREENHOUSES AND SOLARIUMS, USING ARTIFICIAL INTELLIGENCE".
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10.

Title: MECHANISM FOR INTENSIVE MIXING OF COMPOUNDS IN DENSE AND VISCOUS MEDIA IN BIOREACTORS FOR BIOFERTILIZER PRODUCTION
Patent / project number: National Patent Application No. A-00625 / 2024
Author/s: NENCIU Florin, MIRCEA Costin, MATACHE Mihai, VOICEA Iulian, MATACHE Andreea, CONSTANTINESCU Mihai
Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania
Category: G
Description: *The invention refers to a mixing mechanism designed for aerobic and anaerobic biofertilizer production facilities, offering high performance and versatile operation. Its optimized design enhances agitation inside the bioreactor, and the structure allows flexible adjustments of the configuration of the component subassemblies.*
The main disadvantage *of known mechanisms for mixing biofertilizer solutions during processing in bioreactors is that they do not have a versatile construction that allows customizing the design according to specific operating conditions. This rigidity in design leads to inefficiency, especially in media with variable viscosity. Also, in bioreactors where the process materials have different viscosities, standard mechanisms cannot adjust the mixing parameters to ensure optimal mixing. This leads to the formation of clumps of material, where the compounds are not mixed effectively.*
The technical problem that the invention solves *consists in realizing a mechanism for intensive mixing of compounds in dense and viscous media in bioreactors for the production of aerobic and anaerobic biofertilizers. This mechanism optimizes mixing in difficult media (dense and viscous), ensuring a uniform distribution of materials and preventing the formation of dead zones or deposits. The adjustable paddle*

design allows for better circulation of oxygen and nutrients, increasing the efficiency of the fermentation process.

State of development: Experimental Model - ACKNOWLEDGEMENT: This project was supported by the Ministry of Research, Innovation and Digitization through Nucleus Project no. 9N / 01.01.2023: "Multidisciplinary research in the field of digital agriculture for economic competitiveness and sustainable development, in the context of climate change SUSTAIN-DIGI-AGRI", Project PN 23 04 02 01: "Innovative technology for the production of biofertilizers in order to restore soil biodiversity and reduce the effects of drought on agricultural land".

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Presentation link: www.inma.ro

11.

Title: MOBILE STATION FOR PRODUCING BIOFERTILIZERS THROUGH PYROLYSIS

Patent / project number: National Patent Application No. A-00575 / 2024

Author/s: ȘTEFAN Vasilica, POPA Lucreția, CIUPERCĂ Radu, ZAICA Ana, CONSTANTINESCU Mihai

Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania

Category: G

Description: *The invention refers to a mobile station for obtaining biofertilizers by pyrolysis intended for the processing of poultry droppings by pyrolysis (burning in the absence of oxygen) in order to obtain biofertilizers with a high phosphorus content. Poultry waste can be managed through a variety of methods aimed at minimizing environmental impact and maximizing economic efficiency. It can be subjected to pyrolysis or gasification, processes that transform materials by heating in the absence or limited presence of oxygen. These techniques reduce the volume of waste and generate new products, such as biofertilizers and synthesis gas, which can be used in agriculture or industry. Worldwide, there are a number of patented equipment and methods used to obtain biofertilizers through pyrolysis. However, the disadvantages of these inventions are that the equipment developed to date has much more complex systems for discharging the fertilizer material obtained from pyrolysis and which require the existence of other additional technical equipment (cranes, pulleys, screws, etc.) leading to an increased cost price. For small capacity installations, technological lines with several component equipment are not justified. The technical problem that the invention aims to solve consists in creating a mobile station for obtaining biofertilizers through pyrolysis, which ensures - in addition to obtaining biofertilizers - a safe and low-effort unloading of the obtained material.*

State of development: Experimental Model - ACKNOWLEDGEMENT: This project was supported by the Ministry of Agriculture and Rural Development through ADER Project no. 25.3.1 / 2023: "Technology for valorization of poultry manure by obtaining phosphorus-rich biofertilizers"

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Presentation link: www.inma.ro

12.

Title: ***ACTIVE SOLAR DRYER FOR FRUITS AND VEGETABLES, INTELLIGENTLY CONTROLLED***
Patent / project number: National Patent Application No. A-00447 / 2024
Author/s: VLĂDUȚ Nicolae-Valentin, CIOCA Lucian-Ionel, IVAȘCU Victoria-Larisa, MATACHE Mihai-Gabriel, OLAN Mihai, CUCIUREANU Dumitru, VOICEA Iulian Florin, CONSTANTINESCU Mihai, BĂBUȚANU Corina-Alice
Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania
Category: G
Description: *The invention presents a high-performance, ecological, energy-independent solution of a special quality for dry products (vegetables, fruits, pasta), treated against microbial load, ensuring sanitary security. The product uses solar energy for drying and is intended for use by small-medium producers of vegetables and fruits, with a productivity of approximately 20-30 kg per batch. Drying food increases the storage and consumption period of fruit and vegetable crops, leads to their higher value, increases the share of fruit and vegetable consumption in cold periods, with obvious effects on consumer health. The product is intended for use by small-medium producers of vegetables and fruits, with a productivity of approximately 20-30 kg per batch. For energy and economic efficiency, solar energy, ecological and free, is used for drying. The main source of thermal energy is a flat solar thermal panel. As a secondary source of thermal energy, in cases with low insolation and to power electrical drive and automation equipment, a solar photovoltaic system with batteries is used.*
The disadvantages *of the existing equipment in the state of the art consist of specific technical solutions for the topic described in these patents but which are not suitable for an equipment on which experimental research for drying fruits and vegetables can be carried out, which would subsequently lead to the creation of competitive equipment.*
The technical problem solved by the proposed invention *consists in creating an active solar dryer with intelligent control, powered primarily by a flat thermal solar panel, efficient even during periods of low insolation, thanks to the possibility of recovering and storing thermal energy. Additionally, a solar photovoltaic system with storage supports the operation of the automation, offering an ecological and economical drying solution. In addition, the proposed solution combines efficient drying based on solar energy with decontamination treatment based on ultraviolet rays - hereinafter abbreviated as UV - in a single equipment, thus reducing costs and energy consumption.*
State of development: Experimental Model
Contact: +40-21-269.32.55 ***icsit@inma.ro***
Presentation link: ***www.inma.ro***

13.

Title: ***VERTICAL FARM WITH INTEGRATED AQUAPONIC SYSTEM***
Patent / project number: National Patent Application No. A-00421 / 2024
Author/s: VOICEA Iulian, VLĂDUȚ Valentin, MATACHE Mihai, PERSU Cătălin, CUJBESCU Dan, OLAN Mihai

Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania
Category: G
Description: *The invention refers to a vertical farm with integrated aquaponic system, which performs the automatic regulation and control of the working parameters - water flow and the duration of time during which the water supply and discharge takes place, the whole process being automated and controlled by a technological process computer. Aquaponics combines hydroponics and elements of recirculating aquaculture. Conventional hydroponics requires mineral fertilizers to provide plants with the necessary nutrients, but aquaponics systems use the available water from the fish, rich in fish waste, as nutrients for plant growth. Another advantage of this combination is that excess nutrients do not have to be removed by periodically exchanging fish-enriched water with fresh water, as is practiced in aquaculture systems. The system results in a symbiosis between fish, microorganisms and plants and encourages the sustainable use of water and nutrients, including their recycling. Aquaponics systems are not dependent on the environment or climate, they are located in temperature-controlled spaces and are independent of soil.*
The great benefit of aquaponic farms is that the production of vegetables can be up to 8 times higher than the amount of organic vegetables produced on the same surface, but on land (conventional agriculture) and their vegetables have a wonderful taste: they are sweet, tasty and full of aromas.
The disadvantages *of the solutions currently on the market are that they represent specific technical solutions for the intended purpose and are not suitable for an equipment on which experimental research for the cultivation of various types of vegetables can be carried out.*
The technical problem that the proposed solution solves *consists in designing an equipment that allows the adjustment of the working parameters for the cultivation of vegetables in an aquaponic system and the control of these parameters, which can be done either manually (**variant 35A**) or with the help of a process computer (**variant 35B**). It was decided to present **variant 35B.***
State of development: Experimental Model - ACKNOWLEDGEMENT: This work was supported by the Ministry of Agriculture and Rural Development of Romania, through the Financing Contract no.: ADER 25.2.2 / 18.07.2023: "Vertical aquaponic farm adapted to current climate change"
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Presentation link: ***www.inma.ro***

14.

Title: VERTICAL ROBOTIC ARM FOR UNDERWATER DRONES
Patent / project number: National Patent Application No. A-00420 / 2024
Author/s: CUJBESCU Dan, VOICEA Iulian, OLAN Mihai, PERSU Cătălin, VLĂDUȚ Valentin, MATACHE Mihai
Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania
Category: G
Description: *The invention presents an innovative high-performance solution used for researching the environment for the development of aquatic resources and carrying out operations such as taking samples from the bottom of the water or removing toxic waste.* ***The disadvantages*** *of the equipment available on the market are that they offer specific technical solutions for the intended purpose but are not suitable for*

equipment that can be used for experimental research on the development environment of aquaculture bioresources. ***The technical problem*** *that the proposed solution solves consists in the design of a robotic arm with high clamping force that is simple to construct but effective in various underwater activities, consisting of a mechanical construction that is mounted on the lower part of an underwater drone and has two clamping arms that are actuated by an electromagnet for the clamping phase and by a helical spring so that they are permanently unfastened.*

State of development: Experimental Model - ACKNOWLEDGEMENT: This project was supported by the Ministry of Research, Innovation and Digitalization, through the NUCLEU 2023-2026 Funding Program, PN 23 04 01 03 "Intelligent underwater system (robot) for the protection of life, health and the development environment", Contract no.: 9N/01.01.2023

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Presentation link: www.inma.ro

15.

Title: EQUIPMENT AND METHOD FOR SOIL TILLAGE AND GRASS SEEDING

Patent / project number: National Patent Application No. A-00313 / 2024

Author/s: MARIN Eugen, ANGHELACHE Dragoș, DUMITRU Dragoș, MANEA Dragoș, PRISACARIU Elisabeta, HARABAGIU Alin

Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania

Category: G

Description: *The invention relates to an equipment and method for tilling the soil and sowing herbs, intended for fertilizing the intervals between rows in orchards, vineyards, nurseries and hop plantations in a single pass, or successive passes, depending on the agrotechnical requirements and the conditions pedoclimatic. The weeding of the intervals between rows in orchards, vineyards, nurseries and hop plantations contributes to the conservation and enhancement of the biodiversity of plantations and the surrounding environment, as well as to the protection and reconstruction of habitats or species, the increase of water reserves in the soil, including the maintenance and creation of characteristics of the landscape or non-productive areas, in the context of climate change.*

The known methods for weeding the intervals between rows in orchards, vineyards, nurseries and hop plantations and the equipment for their implementation are as follows:

- ***the plough-sow system through several operations****: first, the main soil work with the plow (ploughing) is carried out, then the pre-sowing cycle with disc harrows / seed bed preparation combines (surface levelling, cultivation, discus and soil compaction) and finally, sown in dense rows with commercial seeders;*
- ***the system with minimum works****: it is executed in two operations: the main work of the soil with the plow (plowing) is executed separately, and the preparation of the germinal bed and sowing in thin rows are done with complex aggregates;*
- ***the plowing-sowing system in one operation****: it is executed with an aggregate composed of organs for processing the soil, devices for sowing in thin rows that can also be equipped with devices for compacting the soil on the sown row.*

***The disadvantages of the equipment and methods existing in the state of the art**, consist in the fact that they are characterized by the low efficiency of the quality of soil processing, the inability to achieve the sowing of grass seeds over the entire working width, followed by a lower coverage and a weaker contact of seeds with soil, which affects growth, development and reduces crop yield.*
***The technical problem that the proposed solution solves**, consists in the creation of an equipment and a method of its use, which combines tillage, the transverse distribution of seeds along the entire working width, the uniform spreading of seeds close to the ground on the width work, incorporating the seeds into the soil, compacting and rolling the soil particles over the seeds for better contact between the soil and the seeds during germination, in order to improve the quality of the work of interrow spacing in orchards, vineyards, nurseries and plantations hop.*
State of development: Experimental Model - ACKNOWLEDGEMENT: This work was supported by the Romanian Ministry of Research Innovation and Digitalization, through the Funding Contract: No. 9N/01.01.2023 (no. 451623 / 30.12.2022) Object of the Core Program "Multidisciplinary research in the field of digital agriculture for economic competitiveness and sustainable development, in the context of climate change". (SUSTAIN-DIGI-AGRI code PN 23 04). Project #: PN 23 04 02 03: "Innovative technology to fertilize the interval between rows of vines and fruit trees to avoid soil structure degradation"
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***Presentation link:** www.inma.ro*

16.

Title: INNOVATIVE EQUIPMENT FOR CUTTING TREE ROOTS
Patent / project number: National Patent Application No. A-00251 / 2024
Author/s: Zaica Ana, Ciupercă Radu, Ştefan Vasilica
Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania
Category: G
***Description:** The invention refers to an innovative equipment for cutting the tree roots, provided with a system for monitoring and regulating the cutting resistance force. Worldwide, there are various companies manufacturing different equipment for cutting tree roots which, in general, have similar constructions, these partially or fully performing the horizontal extension, tilting of the knife, adjusting the working depth of the cutting knife device, but not having control over the cutting resistance of the roots.*
*The main **disadvantages** of these pieces of equipment are:*

- *there is no control of the cutting resistance force, which can vary within quite wide limits due to the inhomogeneity of the terrain and the stage of development of the tree roots, with major implications for the failure of the tractor + equipment system within the limits of the tractor's optimal traction force work and the admissible resistance to damage of the equipment;*
- *if the equipment blade encounters areas of terrain with high cutting resistance, uncontrolled use may result in bending or breaking of the blade or other equipment components;*
- *as a result of the previously mentioned disadvantages, the work of cutting tree roots is not always carried out at optimal energy indices, fuel consumption and financial expenses can often be unreasonably high.*

The technical problem that the proposed solution solves *consists in creating an innovative equipment for cutting the roots of trees provided with a system for monitoring and regulating the force of resistance to cutting the roots.*
State of development: Experimental Model - ACKNOWLEDGEMENT: This work was financed by the Ministry of Research, Innovation and Digitalization, Financing Contract of Nucleu Program #9N/01.01.2023 (#451623/30.12.2022) "Multidisciplinary research in digital agriculture for economic competitiveness and sustainable development in the context of climate change". (SUSTAIN-DIGI-AGRI code PN 23 04) – Project #: PN 23 04 01 05 -"INNOVATIVE TECHNOLOGY FOR THE MAINTENANCE OF FRUIT PLANTATIONS"
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Presentation link: *www.inma.ro*

17.

Title: PLANT GROWTH SIMULATION SYSTEM
Patent / project number: National Patent Application No. A-00252 / 2024
Author/s: GĂGEANU Iuliana, PERSU Cătălin, CUJBESCU Dan, GHEORGHE Gabriel, IONESCU Alexandru, TĂBĂRAȘU Ana-Maria
Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania
Category: G
Description: *The invention relates to a plant growth simulation system, intended to simulate the growth of crop plants (vegetables, leafy plants, bulbous vegetables) under different conditions, from optimal to extreme, in order to open up new ways of crop management and growth of plants in the current and predicted climate conditions for the near future, taking into account the increase in the resilience of agriculture to climate change. The plant growth simulation process involves creating and maintaining/modifying set growth conditions and monitoring and evaluating plant germination and development under the given conditions.*
Worldwide, there is a series of patented equipment and methods used to simulate plant growth. However, a ***major disadvantage of the existing equipment*** *on the market is both their lack of versatility to be used to simulate complex environmental conditions, as well as the lack of adequate control of all the factors that affect the growth of crop plants.*
Another major disadvantage *of the presented equipment/methods is that they do not offer the possibility of supervision throughout the simulation process, and in the simulation and control systems there is no total control over the entire process, from germination to maturity plants.*
The technical problem*, solved by the invention, consists in creating a system for simulating the growth of plants through which to simulate and vary the climatic conditions at predetermined values, under the conditions of an adequate control of the growth parameters and a continuous monitoring and supervision of the entire process - of at sowing / planting, germination, development and until maturity of the plants.*
The growth simulation system is divided into ***3 distinct sections (chambers)*** *as follows: the* ***aerial parts chamber,*** *where the plants develop, the* ***root chamber,*** *where the growth vessels are placed which are filled with growth substrate and where the plant roots develop connected to the aerial parts chamber through the plant development openings and the* ***collection chamber,*** *where the water / mixture of water and nutrients*

/ plant protection that is not consumed by the plant is collected and washed from the soil into the collection tray under which the control part is located and system control, tanks and irrigation pump.
State of development: Experimental Model - ACKNOWLEDGEMENT: This project was supported by the Romanian Ministry of Research Innovation and Digitalization, through the project: "Intelligent plant growth systems under controlled environmental conditions" – PN 23 04 01 04– Ctr. 9N/01.01.2023 and through Program 1 - Development of the national research-development system, Subprogram 1.2 - Institutional performance - Projects for financing excellence in RDI, Contract no. 1PFE/30.12.2021
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18.

Title: INTELLIGENT SYSTEM FOR HIGH PRECISION APPLICATION OF LIQUID PLANT PROTECTION PRODUCTS
Patent / project number: National Patent Application No. A-00212 / 2024
Author/s: GHEORGHE Gabriel, GĂGEANU Iuliana, PERSU Cătălin, TĂBĂRAȘU Ana-Maria
Institution/Country: National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest, Romania
Category: G
Description: *The invention refers to a system for the high-precision application of plant protection liquid products, mounted on an agricultural drone for carrying out phytosanitary treatments in field crops, in order to precisely apply them and reduce the amount of phytosanitary substances applied. Currently, in the case of classic drones, the application of the treatment is done continuously, regardless of whether there are problems in the crop or not, regardless of the nature of the phytosanitary product to be applied to the plant or the fact that it must be applied in a row, between plants, or between rows, thus wasting large quantities of substances on the soil or on the cultivated plants.*
The main disadvantage *of current equipment is that this equipment does not have an integrated intelligent system for detecting plants and applying liquid plant protection substances with precision, resulting in a huge waste of PPP (Plant Protection Products) and does not achieve uniform spraying of the plants below them due to the application over the entire surface and from a fairly high height above the plant because in all drones the nozzles are above the landing gear and not below.*
State of development: Experimental Model - ACKNOWLEDGEMENT: This project was supported by the Ministry of Research, Innovation and Digitalization of Romania, through the Financing Contract: No. 9N/01.01.2023 (no. 451623 / 30.12.2022). Object of the Basic Program: "Multidisciplinary research in the field of digital agriculture for economic competitiveness and sustainable development, in the context of climate change". (SUSTAIN-DIGI-AGRI code PN 23 04) Project: PN 23 04 02 01: "Innovative technology for the production of biofertilizers aimed at restoring soil biodiversity and mitigating the effects of drought on agricultural lands".
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19.

Title: METHOD FOR POND FARMING OF FISH PRODUCERS OF CYPRINIDS
Patent number: MD 1646 / 2022.10.31
Authors: Elena ZUBCOV, Natalia ZUBCOV, Laurenția UNGUREANU, Nina BAGRIN, Liviu-Dan MIRON, Denis BULAT, Petru CIORBA, Lucia BILEȚCHI, Nadejda ANDREEV
Institution/Country: Moldova State University, Republic of Moldova
Category: G
Description: *The invention refers to the application of trace elements in pond fish farming aiming to stimulate the development of brooders (producers) of cyprinids (common carp, Asian phytophagous cyprinids). Method consists in the addition of cobalt (II) chloride (CoCl2 ·6H2O) in the nutrition of brooders during autumn and spring, in a concentration of cobalt of 15-25 µg/kg of fish food. The outcome is a more synchronized development of brooder gonads, increased rate of hatching and obtained viable larvae, number and weight of viable fry. It is a simple procedure with minimal expenses, which can be applied in both small private fish farms and enterprises with complex cycle including fish breeding at the industrial level.*
The technical result of the invention consists in increasing the fish product (viable and healthy fry) by 25%, what can ultimately lead to the improvement of fish farm profitability.
State of development: patented and implemented.
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Presentation link: *https://usm.md/?lang=en*

20.

Title: METHOD FOR ASSESSING THE SENSITIVITY OF CERVIDS TO STRESS FACTORS
Patent number: MD 1667 Y / 2023.01.31
Author/s: Ştefan RUSU, Dumitru ERHAN, Anatol SAVIN, Ion TODERAŞ, Maria ZAMORNEA, Oleg CHIHAI, Viorelia RUSU, Ion GOLOGAN
Institution/Country: Moldova State University, Institute of Zoology, Republic of Moldova
Category: G
Description: *The invention "Method for assessing the sensitivity of cervids to stress factors" deals with the protection of hunting fauna, especially deer populations, and relates to a method for assessing the sensitivity of cervids to stress factors.*
The method, according to the invention, consists in sedation of the animal using a pneumatic weapon intramuscular injection of a 1% solution of suxamethonium iodide in a dose of 0.06 mg/kg, blood sampling from the jugular vein using a syringe with a needle lumen diameter of at least 0.9 mm, mixing blood with a 0.1% solution of adrenaline hydrochloride at a temperature of 37.5-39.5C for at least one minute on a watch glass heated to the same temperature, placing the mixture in a pipette of an instrument for determining the erythrocyte sedimentation rate placed at an angle of 45°, maintaining for 30 min, determining the erythrocyte sedimentation rate and comparing it with the erythrocyte sedimentation rate of a control sample.
At the same time, if the erythrocyte sedimentation rate in the studied blood sample is at least 10 mm higher compared to that in the control sample, an increased sensitivity of cervids to stress factors is established.

State of development: The method for assessing the sensitivity of cervids to stress factors is defined and implemented: Implementation Acts no. 05 of May 30, 2023, No. 05 from October 23, 2024
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Presentation link: https://usm.md/?lang=en

21.

Title: COMPOSITION AND PROCEDURE FOR DEHELMINTIZATION AND ADDITIONAL FEEDING OF COMMON CARP
Patent number: MD 1590 Y / 2022.01.31
Author/s: Ion TODERAŞ, Ion GOLOGAN, Ştefan RUSU, Dumitru ERHAN, Dumitru BULAT, Denis BULAT, Oleg CHIHAI, Maria ZAMORNEA, Elena GHERASIM, Viorelia RUSU
Institution/Country: Moldova State University, Institute of Zoology, Republic of Moldova
Category: G
Description: *The invention involves administering a specialized composition to common carp during April-May, when water temperatures range between 16°C and 22°C. The composition is provided at a dosage equivalent to 35% of the fish's body weight, administered daily in well-lit feeding areas. The dose is divided into 5-6 portions, with intervals of 1-2 hours between feedings, and the regimen is continued for a period of 10 days. The invention ensures an effective and comprehensive dehelmintization process, coupled with supplemental feeding through the use of nutrient-dense briquettes enriched with vitamins, trace elements, and easily assimilable minerals. This approach reduces helminth infestation rates in common carp of varying ages by 75-80%, while also stimulating reproduction, enhancing weight gain, improving overall viability, and increasing resistance to environmental stressors and predators.*
State of development: The method is being successfully applied in fish farming by the Scientific Reserve „Codrii'' from the Republic of Moldova (Act of Implementation nr.01 01.09.2019) and SRL „VIGI'' (Act of implementation nr.05 23.03.2023)
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Presentation link: https://usm.md/?lang=en

22.

Title: METHOD FOR TREATING OF SEED POTATOES AGAINST THE NEMATODE Ditylenchus destructor L.
Patent/project number: MD 1658 (13) Y / 2023.08.31
Author/s: Maria MELNIC, Dumitru ERHAN, Olesea GLIGA, Ştefan RUSU, Ludmila BALAN, Valerina SLANINA, Leonid ONOFRAŞ, Vasile TODIRAŞ
Institution/Country: Institute of Zoology, Moldova State University, Republic of Moldova
Category: G
Description: *The invention relates to parasitology, in particular to a method for biological control of seed potato nematode Ditylenchus destructor and can be used in agriculture. The method for treating seed potatoes against the nematode Ditylenchus destructor comprises soaking potato seeds before planting in a*

solution containing a liquid culture of bacterial strain Bacillus cereus var. fluorescens CNMN-BB-07 and water, taken in a ratio of 1:400, for 16 hours.
State of development: Patent.
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Presentation link: *https://usm.md/?lang=en*

23.

Title: NEW TOMATO CULTIVAR – PETRAMAK
Patent: MD 424 / 2024.03.31
Author: Milania MAKOVEI
Institution/Country: Moldova State University - Institute of Genetics, Physiology and Plant Protection, Republic of Moldova
Category: G
Description: *PETRAMAK - Cultivar of determinant type of growth (sp). Growing period from sprouting to the beginning of ripening – 114...117 days.*

Simple inflorescence of 5...7 flowers. The first inflorescence appears after the 7th-8th node, the following ones after 2...1...1. Pedicel of fruit, without geniculate joint.

The fruits are large, round, smooth, pink-intensive. Fruit weigh is of 120...150 g. Fruits have high taste properties due to high dry substance content – 5.4...6.1%; sugar – 4.9...5.3%; vitamin C – 33.1...34.8 mg/%. The presence of the rin gene in the genome of cultivar ensures high fruit density and their persistence on the bushes at the biological stage of maturity without signs of softening for 20...25 days. Total yielding capacity is of 58.6...62.7 t/ha, with fruit vendibility 92.4...96.7%.
State of development: Homologated in 2022 and grown on farmers and in private plots cultivation.
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Presentation link: *https://usm.md/?lang=en*

24.

Title: NATURAL PLANT GROWTH REGULATOR, METHOD OF APPLICATION THEREOF
Patent application number: MD s 2023 0055 / 2023.07.09
Authors: Dina ELISOVETCAIA, Raisa IVANOVA, Elena LUTCAN
Institution/Country: Moldova State University - Institute of Genetics, Physiology and Plant Protection, Republic of Moldova
Category: G
Description: The invention relates to preparations with the action of a natural plant growth regulator, namely to a preparation based on an extract of Juniperus sabina L., and can be used in agriculture and forestry. The stimulating effect of the Juniperus sabina preparation was demonstrated on seed germination and seedlings growth of the beech Fagus silvatica and was repeatedly obtained by researching it for four years (2021-2024). The germination index of seeds treated with J. sabina was 1.5-2.0 times higher than in control seeds and seeds treated with gibberellic acid. The positive effect of the treatment is also maintained on the development of beech seedlings.

State of development: Product, greenhouse and field testing.
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Presentation link: https://usm.md/?lang=en

25.

Title: FAVOARE A NEW VARIETY OF Lavandula angustifolia Mill. (Lavender)
Patent: MD 426 / 2024.03.31
Authors: Maria GONCEARIUC, Violeta BUTNARAS, Svetlana MASCOVTEVA, Pantelimon BOTNARENCO, Ludmila COTELEA, Zinaida BALMUS
Institution/Country: Moldova State University - Institute of Genetics, Physiology and Plant Protection, Republic of Moldova
Category: G
Description: *Lavender variety Favoare is a first-generation hybrid (F1), with a high heterosis effect on a number important quantitative characters, vegetative multiplied with average vegetation period. The Favoare is a variety resistant to frost and winter, to diseases and drought resistant. Plant height is 68 cm. At the density of 12.5-20 thousand plants per hectare is forms up to 835-1450 floral stems per plant. The productivity of the variety is 7.4 t/ha of inflorescences containing 2.077 % (60 % humidity) and 5.157% (dry. matter) of essential oil. The productions of essential oil constitute 155.2 kg/ha. The yields of the variety are 20.7 kg/t (of essential oil from the of fresh inflorescences).*
State of development: Homologated in 2024.
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Presentation link: https://usm.md/?lang=en

26.

Title: PANACEA – NEW VARIETY OF Origanum vulgare ssp. vulgare
Patent: MD 431 / 2024.04.30
Authors: Maria GONCEARIUC, Violeta BUTNARAS, Pantelimon BOTNARENCO, Zinaida BALMUS, Ludmila COTELEA
Institution/Country: Moldova State University - Institute of Genetics, Physiology and Plant Protection, Republic of Moldova
Category: G
Description: *Panacea variety is distinctive by: Physiological properties: It has very good winter hardiness; high drought resistance; high diseases resistance. Quality features: Essential oil content in the raw material (humidity, 60%): 0.107% and 0.267% (dry substance); Major components in essential oil: Germacrene D, 31.13%; β– Caryophyllene, 15.785%; a– Farnesene – 11.41%. Advantages: Production capacity: Fresh material production. 7.8 t/ha; Pharmaceutical herba production, humidity 13%, 1.51 t/ha; Essential oil production – 8.35 kg/ha; Yield – 1.1 kg/t. High productivity, high quality. Resistance to biotic and abiotic factors.*
State of development: Homologated in 2024
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Presentation link: https://usm.md/?lang=en

27.

Title: NEW TOMATO VARIETIES Solanum lycopersicum L. CERIDANI
Patent: MD 239 / 2017.08.31
Authors: Iulia SIROMEATNICOV, Vasile BOTNARI, Anatolie JACOTA, Nicolae BALAUR, Eugenia COTENCO, Renata CIOBANU, Eleonora CHIRILOV
Institution/Country: Moldova State University - Institute of Genetics, Physiology and Plant Protection, Republic of Moldova
Category: G
Description: *Tomato variety CeriDani was obtained as a result of hybridization between the Solanum lycopersicum Solearis x (s. Prizior x s. Nota). The vegetation period is 85-90 days, it is the early variety. The fruit is round and flat with the weigh 25-60 g, without the wrinkled peduncle, with fleshy pericarp and interior pulp. Fruits with high taste qualities, the dry matter content of the fruits 6.64 – 7.03 %, sugars 4.4-5.7 %, ascorbic acid 27.5-39.5 mg/%, titratable acidity 0.32-0.42mg/%. The total harvest of tomato is 38.6-42.0 t/ha and commodities – 36.5-40.0 t/ha. The share of commodities is 95.6%. The variety is productive, resistant to drought. It is recommended for fresh consumption and processing.*
State of development: Homologated in 2017.
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Presentation link: *https://usm.md/?lang=en*

28.

Title: "Sarmis" - RHIZOGENIC INTERSPECIFIC VARIETY (V. vinifera L. x M. rotundifolia Michx.)
Patent: MD 436 / 2024.06.30
Authors: Eugeniu ALEXANDROV, Vasile BOTNARI, Boris GAINA
Institution/Country: Moldova State University - Institute of Genetics, Physiology and Plant Protection, Republic of Moldova
Category: G
Description: *As a result of the development of the methodology for creating interspecific rhizogenic grapevine genotypes, using the species Vitis vinifera L. and Muscadinia rotundifolia Michx. Finally, rhizogenic interspecific grapevine genotypes were obtained and selected in BC3, with valuable characters, which allows to expand the grapevine cultivation area to the northern limit, on own roots and reduce the number of chemical treatments."Sarmis" - genotype with strong growth vigor. Berry ripening period – medium. Grapes – medium, uniaxial, compact. Berry – medium, globose, covered with a purine layer, uniform yellow-green (bronze) color, with 1-2 seeds, pulp with a crispy texture, difficult to separate from the pedicel. Skin – thick, muscat aroma. Grape weight – 400-500 g. Sum of sugars – 22-26 %. Acidity – 2.7 g/l H2SO4. Relative fertility coefficient – 1.72. Absolute fertility coefficient – 1.8. Relative productivity index – 0.68-0.86 kg and absolute productivity index – 0.72-0.9 kg. Productivity of one plant, depending on the cultivation technology – 6-7 kg, and the possible harvest – 12-14 t/ha.*
State of development: Homologated in 2024.
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Presentation link: *https://usm.md/?lang=en*

29.

Title: NEW TOMATO VARIETIES Solanum lycopersicum L. Desteptarea
Patent: MD 279 / 2018.11.30
Authors: Nadejda MIHNEA, Maria GRATI, Galina LUPASCU, Vasile BOTNARI, Sofia GRIGORCEA
Institution/Country: Moldova State University, Institute of Genetics, Physiology and Plant Protection, Republic of Moldova
Category: G
Description: *New variety of tomato, created by intraspecific hybridization. The fruits of the variety Deșteptarea are of large size weighing – 110-130 g. The fruits contain 5.9-6.2% of dry matter, 5.3...5.9% – sugars, 22.0...26.0 mg/% – vitamin C, 0.45...0.55% – acidity. The variety is medium ripening, vegetation period is 114 days. In the transplant culture, the variety ensures a yield of 56.0...62.0 t/ha, while the standard fruit yield is high (93.0%). Advantages: The variety Desteptarea harmoniously combines high productivity, good tasting qualities with the resistance to heat and Alternaria alternata fungus. The productivity is high at cultivation through both seeds and seedling transplants.*
State of development: Approved in the Republic of Moldova in 2017.
Contact: *nadejda.mihnea@sti.usm.md*
Presentation link: *https://usm.md/?lang=en*

30.

Title: A STIMULATOR OF THE TOTAL ANTIOXIDANT STATUS OF THE HEMOLYMPH OF BEES
Patent number: WO 2022/018009 A1 / 2022.01.27; MD 4905 / 2024.10.31
Author/s: Aurelian GULEA, Ion TODERAȘ, Olga GARBUZ, Victor ȚAPCOV, Vasilii GRAUR, Sebastien FLOQUET, Arcadie FUIOR, Diana CEBOTARI
Institution/Country: MOLDOVA STATE UNIVERSITY; UNIVERSITÉ DE VERSAILLES SAINT-QUENTIN-EN-YVELINES
Category: G
Description: *The invention pertains to chemistry and apiculture, specifically to a biologically active cobalt coordination compound which stimulates the total antioxidant status of the hemolymphe of Apis mellifera bees and their larvae to enhance their resistance to diseases. Addition of this substance at the first feeding after wintering enhances the total antioxidant status of the bee's hemolymph and bee larval hemolymph by 5.4-7.9 times in comparison to control, and up to 5.3 times in comparison with prototype.*
State of development: Laboratory.
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Presentation link: *https://usm.md/?lang=en*

31.

Title: A NEW VARIETY OF ORNAMENTAL PLANTS: HEMEROCALLIS X HYBRIDA HORT. 'COSÂNZEANA'
Patent application number: v 2024 0017 / 2024 08.19

Author/s: Svetlana MANOLE, Tatiana SÎRBU, Doina ŞABAROV
Institution/Country: "Al. Ciubotaru" National Botanical Garden (Institute) of Moldova State University, Republic of Moldova
Category: G-Agriculture.
Description: *A NEW VARIETY OF ORNAMENTAL PLANTS: Hemerocallis x hybrida. 'COSÂNZEANA' (Day Lily)*
Description of the variety: The variety was obtained in the "Al. Ciubotaru" National Botanical Garden (Institute) by hybridizing the varieties ♀Chiper Chery x ♂ Ciombe.
Rhizome perennial plant with abundant radical foliage: linear, light green, lines leaves about 50 cm. They grow about 80-100 cm tall in the flowering stage. It has simple funnel-shaped flowers, wide open, acuminate petal lobes. The diameter of the flower is about 14-17 cm. Internal tepals are intensely pink-reddish with cherry red spots at the base (173 CD; 178 BCD) and golden in the center (14 ABC). The external tepals are light brick-brown, tinged with burgundy (168 CD; 172 CD). The colors vary depending on the phase of flower development and light intensity. The inflorescence has 3-6 branches, each with 6-8 flowers. 5-7 year old plants form 12-18 flower stalks. The fragrant flowers. The flowering stage extends from June to July, sometimes into early August. It lasts about 60 days.
The variety can grow in sunny and half-shaded areas. It is undemanding towards soil, but prefers rich, well-irrigated substrate. The plants are very resistant to pathogens and pests.
Universal variety with multiple uses: for cut flowers in various floral decorations, in landscape planning: flower beds, mixed flower beds, solitary groups, on the banks of water basins; can be promoted as a container plant.
State of development: at the laboratory level
Contact: *tatianaonica17@gmail.com*
Presentation link: *https://usm.md/?lang=en*

32.

Title: WOLFBERRY Lycium barbarum L.'LICURICI'
Patent/project number: MD 408 / 2023.12.31, v 2017 0006 / 2017.02.17
Author/s: Nina CIORCHINĂ, Maria TABĂRA, Mariana TROFIM
Institution/Country: "Al. Ciubotaru" National Botanical Garden (Institute) of Moldova State University/ Republic of Moldova
Category: G
Description: *Wolfberry Lycium barbarum L.'LICURICI' - IS A NEW LOCAL VARIETY. It was registered at the State Agency on Intellectual Property of the Republic of Moldova, in order to be patented: MD MTG/13/1(27-03-2018) No. 476 / 2023.02.14. Description of the variety: Shrub up to 2,0 m tall. Inflorescences solitary or grouped 3-7. Duration of the vegetation period April-November 230-240 days. The time of the beginning of flowering II decade of May.*
The color of the coral red fruit. The average diameter of the fruit is 0,5-0,7 cm, the oblong shape with medium firmness. The seed of the fruit varies 0,02-0,03 cm small in spherical shape. Prefers sunny places, prefers sandy, clayey or loamy soils, well drained. On rich soils the plants are more vigorous and more productive. Resistant to pests, pathogens and adverse environmental conditions. Recommended as a fruit, honey, medicinal or decorative plant for landscape art.

State of development: At the laboratory level.
Contact: *maria.tabara@gb.usm.md*
Presentation link: *https://usm.md/?lang=en*

33.

Title: A NEW VARIETY OF ORNAMENTAL PLANTS: Chrysanthemum indicum L. 'Gingăşie'
Patent number: MD 443 / 2024.09.30, v 2021 0013 / 2021.12.21
Author/s: Ina VOINEAC, Vitalie MÎŢU, Olesea PUGACEOVA
Institution/Country: "Al. Ciubotaru" National Botanical Garden (Institute) of Moldova State University, Republic of Moldova
Category: G
Description: *Chrysanthemum indicium L. "GINGĂŞIE" - IS A NEW LOCAL VARIETY.*
It was registered at the State Agency on Intellectual Property of the Republic of Moldova, in order to be patented: nr.6/2024 BOPI 2024.06.30. Description of the variety: "Gingăşie"- belongs to the small-flowered chrysanthemum group. The bush is hemispherical, 30 to 55 cm high, densely foliated. The leaves are bright green, slightly pubescent, small, 2-5 cm long and 1-3 cm wide. The leaf blade is cut by 1/3, the edge is slightly pointed, the upper leaflets have an almost whole blade. The stem is thin, green with a reddish tint. On one bush there are 5-9 flower-bearing shoots, which in the upper part branch out into even smaller ones, bearing a large number of inflorescences. The inflorescences are located along the entire perimeter of the crown. On each flowering shoot there are from 5 to 12 half-terry inflorescences, 3-5 cm in diameter. The ligulate flowers are arranged in 3 rows around a disk with tubular flowers. At the beginning of blooming they are lilac-pink with a terracotta tint, and by the end of flowering they are noticeably lighter. The lower row of petals is larger than the upper one. The petals are elongated, much bifurcated at the ends, and lighter on the inside. The center (ligulate flowers) is bright yellow with a greenish protrusion, clearly defined and has a diameter of 0.5-0.7 cm. The variety is early flowering, flowering begins in the first ten days of October and continues for 45-50 days, depending on the air temperature. It is recommended for group plantings, mixborders, cut flowers, and container culture.
State of development: At the laboratory level.
Contact: *inna0566@mail.ru*
Presentation link: *https://usm.md/?lang=en*

34.

Title: ROMANIAN POTATO VARIETY: COVASEC
Patent / project number: 00752 / 12.11.2024
Author/s: Anca – Mihaela BACIU, Luiza MIKE
Institution/Country: RESEARCH AND DEVELOPMENT STATION FOR POTATO TARGU SECUIESC, Romania
Category: G
Description: *Potato variety obtained by sexual hybridization between Collete x Laura, followed by individual clonal selection. The plant is tall, with intermediate foliage structure and semi-erect habit. Leaf color is medium green. The presence of secondary leaflets is strong. The inflorescence is small in size. The*

flower corolla is medium in size and shows absent or low intensity of anthocyanin coloration on the inner surface. The tubercle is oval-elongate in shape with medium eye depth. The skin color is light beige and the flesh color is light yellow. The tubercle has medium pulp gloss and the eye base color is white. Physiological characteristics. The Covasec potato variety belongs to the group of semi-mature varieties. Quality characteristics. The culinary quality of the variety is good, falling into quality group B. Production capacity. The Covasec variety has a good production capacity, yielding on average 36.0 t/ha during the test period. The Covasec variety can be cultivated in favorable potato-growing areas throughout the country.
State of development: Product
Contact: Anca Baciu / +40751045873
Presentation link: *https://www.scdctargusecuiesc.ro/*

35.

Title: ROMANIAN POTATO VARIETY: TRANSEC
Patent / project number: 00753 / 12.11.2024
Author/s: Anca – Mihaela BACIU, Luiza MIKE
Institution/Country: RESEARCH AND DEVELOPMENT STATION FOR POTATO TARGU SECUIESC, Romania
Category: G
Description: *Potato variety obtained by sexual hybridization between ALMERA x Laura, followed by individual clonal selection. The plant has medium height, intermediate foliage structure and erect habit. Leaf color is light green. The presence of secondary leaflets is medium. The inflorescence is small in size. The flower corolla is small in size and shows a faint intensity of anthocyanin coloration on the inner surface. The tubercle has an oval shape and shallow eye depth. The skin color is yellow and the flesh color is cream. The tubercle has a smooth pulp gloss and the eye base color is yellow. Physiological characteristics. The Transec potato variety is classified in the group of semi-hardy varieties. Quality characteristics. The eating quality of the variety is good, falling into quality group B. Production capacity. The Transec variety has a good yield capacity, averaging 42.51 t/ha during the test period. The Transec variety can be grown in favorable potato growing areas throughout the country.*
State of development: Product
Contact: Anca Baciu / +40751045873
Presentation link: *https://www.scdctargusecuiesc.ro/*

36.

Title: PRACTICAL LABORATORY – DIGITAL TECHNOLOGIES IN FRUIT CULTURE: SMARTREE
Project number: CNFIS-FDI-2020-0580
Author/s: Pecingină Irina, Grofu Florin, Călinoiu Ion, Cosmin Zah, Gîlcă Gheorge
Institution: University „Constantin Brâncuşi" from Târgu-Jiu, Romania
Category: G
Description: *Ensure the monitoring and optimization of the plant growth and development process by: getting real-time data on climate change and how it directly affects the horticultural sector, early warning*

about the conditions that favor the occurrence of diseases in plants, real-time measurement of the degree of development of trees, leaves and fruits and alerting if the parameters expected at various development thresholds are not compliant.
The use of the measurement and analysis capabilities of the practical laboratory in the field of intelligent agriculture in fruit growing - the implementation of didactic activities, research activities, internships in the field, specialty and for the development of students' diploma projects, within the undergraduate study program Engineering and Management in Public Food and Agritourism increasing UCB's capacity for research, innovation and technology transfer, as well as expanding the partnership with relevant economic operator.
State of development: Prototype
Contact: +40728028116 +40767108585 constanta.radulescu@e-ucb.ro pecingina2016@gmail.com luminita.popescu69@gmail.com ctt.ucb@gmail.com
Presentation link: https://icdi.utgjiu.ro/centrul-de-transfer-tehnologic/

37.

Title: HAND SEEDER FOR SOWING PELLETED SEEDS
Patent/project number: MP 0006/2025
Author/s: Vojin Cvijanović, Marija Bajagić
Institution/Country: Institute for Science Application in Agriculture, Serbia
Category: G
Description: *A manual seeder for pelleted seeds enables precise seed application without hand contact in containers designed for sowing. The use of this seeding tool reduces the risk of potential disease transmission during sowing while ensuring faster, more efficient, safe and precise sowing in containers. This facilitates good, uniform, and high-quality germination of vegetable crops. State of development: The device has been validated in an operational environment, such as agricultural farms, nurseries, experimental plots, and other relevant settings. The material for manufacturing the manual seeder for sowing pelleted seeds is available on our market and can be produced and processed using existing machining techniques, as its production is simple. The manual seeder for pelleted seeds comprises a reservoir with a funnel on one side for easy seed pouring, featuring a closure for controlled dispensing. The funnel is designed to enhance ease of use and operation. Inside the reservoir, an opening accommodates the seed ejection mechanism. The lower part of the reservoir includes a tapered extension that narrows upward, ending in an opening to maintain the mechanism's functionality. On the opposite end of the reservoir, a button is connected to the mechanism, enabling seed release.*
Contact: *cvija91@yahoo.com*
Presentation link: *https://www.ipn.bg.ac.rs/118-2/*

38.

Title: AGRICULTURAL BIOTECHNOLOGIES BASED ON COORDINATION COMPOUNDS OF BIOMETALS
Patent number: MD BSD 510, 511, 813
Author/s: COROPCEANU Eduard, ŞTEFÂRŢĂ Anastasia, BULHAC Ion

Institution/Country: "Ion Creanga" State Pedagogical University of Chisinau, Republic of Moldova
Category: G
Description: *Coordination compounds of some transition metals present complex molecules, combining both organic and mineral components, which cumulatively can produce superior effects compared to simple molecules.*
The use of biometals and organic molecules with biological activity (vitamins, amino acids, etc.) for the assembly of coordination compounds allows the assembly of macromolecules with various useful properties. The synthesis of the compound [Co(DH)2(PP)2][BF4]·2H2O, where PP – vitamin B3, allowed the development of a technology for cultivating sugar beet plants with an increase in sugar production by 18.4%.
The essence of the invention consists in treating seeds before sowing and sugar beet plants during vegetation with a solution of synthesized coordinative compound. When treating beetroot plants, cv. Egyptian flat, with a 0.0001% solution of the compound [Co(DH)2(PP)2]NO3, the seed germination yield increased by 38.1%.
State of development: Patent
Contact: +37379443973
Presentation link: *https://upsc.md/universitate/*

39.

Title: ASSESSMENT OF SOME TRADITIONAL APPLE (Malus domestica Borkh.) VARIETIES TO ENCOURAGE THEIR INTRODUCTION INTO CULTIVATION
Patent/project number: study and preserving the local germoplasm
Author/s: Tamara Edina Gal, Ionuț Dascălu, Olimpia Alina Iordănescu
Institution/Country: University of Life Sciences „King Mihai I", Timișoara
Category: G
Description: *The value of old apple varieties is given by their remarkable taste, productivity, longevity and resistance to extreme environmental circumstances. Although these varieties come with a series of deficiencies many researchers believe that these deficiencies can be mitigated and, for this reason, the existing apple germplasm deserves increased attention and detailed study.*
With the purpose of studying and preserving the local germoplasm, a small apple orchard was established at Pohalma Nursery in Lugoj, Timiș county, in 2017. Following the observations and analyses,'Botu Oii de Caraș', 'Pătul de Vârciorova','Parmen auriu' and 'Măr dulce amar' varieties stood out by production capacity. The biggest fruits were produced by 'Curcubătoase', 'Caslere', 'Jonathan' and 'Pătul' varieties. The highest sugar content was registered in case of 'Măr Domnesc', 'Parmen auriu' and 'Viţate' varieties and the most acidic fruits were obtained in case of 'Măr Ţigănesc' variety. Further studies are ongoing in order to be able to strongly recommend a few varieties that have the maximum commercial potential, besides the well-used cosmopolitan varieties.
State of development: Project
Contact: *Tamara-Edina.Gal.FITA@usvt.ro*
Presentation link: *https://www.usab-tm.ro/en*

40.

Title: ANTIFUNGAL GEL BASED ON COLLAGEN, CLAY AND ESSENTIAL OIL AND ITS PRODUCTION PROCESS
Patent: A/00776/2024
Author/s: MEDERLE NARCISA, ALBU KAYA MĂDĂLINA GEORGIANA, KAYA DURMUŞ ALPASLAN, MEDERLE OVIDIU ALEXANDRU, MORARIU SORIN, MARIN ANA-MARIA, RADBEA OANA RALUCA, HANGANU (MÎRZA) MIHAELA
Institution/Country: University of Life Sciences "King Mihai I" from Timisoara, Romania
Category: G
Description: *The gel based on methylcellulose, collagen hydrolyzate, yellow clay and essential oil with antifungal properties was created as a treatment for bovine trichophytosis, a contagious skin condition caused by dermatophyte fungi. The gel has adequate rheological properties for easy application to the affected area due to its controlled viscosity; also the essential oil with antifungal properties released from the yellow clay has the property to destroy the pathogenic fungus Trichophyton verrucosum, and the collagen to regenerate damaged skin and is recommended for veterinary use.*
State of development: patent
Contact: +40 752818869
Presentation link: *https://www.usab-tm.ro/en*

41.

Title: RESEARCH ON THE IDENTIFICATION OF INTESTINAL HELMINTHS IN JACKALS (CANIS AUREUS) AND FOXES (VULPES VULPES) IN TIMIS COUNTY
Patent/project number: research project
Author/s: Moraru Maria Monica Florina, Marin Ana-Maria, Popovici Dan Cornel, Dobrotă Radu Sebastian, Hanganu (Mîrza) Mihaela, Novac Maria Parmena, Robu Mihai, Mederle Narcisa
Institution/Country: University of Life Sciences "King Mihai I" from Timisoara, Romania
Category: G
Description: *The Golden Jackal (Canis aureus) and the Red Fox (Vulpes vulpes) are widespread throughout the world, and in Central Europe, they are the most representative wild species of the family Canidae. The epidemiological importance attributed to these species is relevant as C. aureus and V. vulpes play a definitive host role for intestinal parasites, including zoonotic helminths. C. aureus and V. vulpes cestode infections have been recorded throughout the distribution range of these canid species, with a relatively high species diversity. The present project aimed to identify the parasitic fauna of C. aureus and V. vulpes in the hunting grounds of Timis County. In this project, 41 intestines of C. aureus and 47 intestines of V. vulpes were analyzed. The results of necropsy examination of the intestines of C. aureus showed the presence of Taenia spp. - 1/30 (3.33%), Ancylostoma/ Uncinaria - 18/30 (60%), tapeworms and roundworms - 2/30 (6.66%), tapeworms and Ancylostoma/ Uncinaria - 7/30 (23.33%), tapeworms, roundworms and Trichocephalus spp - 2/30 (6.66%), and in V. vulpes showed the presence of Taenia spp - 4/35 (11,42 %), roundworms - 4/35 (11,42 %), Ancylostoma/ Uncinaria - 3/35 (8,57 %), tapeworms and roundworms - 5/35 (14,28 %), roundworms and Trichocephalus spp. 4/35 (11,42 %), tapeworms and Ancylostoma/ Uncinaria - 5/35 (14,28 %), roundworms and Ancylostoma/ Uncinaria -10/35 (28,57 %).*

The co-infections of cestodes with that of roundworms and other nematodes highlight the complexity of parasitic infections in these animals. This study provides new information on the intestinal parasitic fauna of C. aureus and V. vulpes in Timis County and warns of the risk of human contamination with zoonotic species.

State of development: research project
Contact: +40 740 836 785
Presentation link: https://www.usab-tm.ro/en

42.

Title: LIPOSOMAL CARRIER ENCAPSULATING LAVANDULA ANGUSTIFOLIA OIL AND EUGENOL FOR ANTIFUNGAL, ANTIBIOFILM, AND ANTI-INFLAMMATORY ACTIVITY AGAINST CANDIDA ALBICANS
Patent/project number: LAV-EUG-LIPO-24-01
Author/s: OBIȘTIOIU MONICA DIANA, HULEA ANCA SOFIANA, BREZOVAN DIANA, FLOAREȘ (OARGA) DORIS, POPESCU IULIANA, IMBREA ILINCA MERIMA, HULEA CĂLIN, POPESCU COSMIN ALIN, IMBREA FLORIN
Institution/Country: University of Life Sciences "King Michael I" from Timisoara/Timis
Category: G
Description: *This research project focuses on developing a liposomal delivery system incorporating Lavandula angustifolia (La*
vender) essential oil and eugenol as a natural antifungal, antibiofilm and anti-inflammatory formulation. The study aims to assess the efficacy of liposome-encapsulated bioactives against Candida albicans biofilm, particularly in the oral cavity, and its potential for reducing inflammation associated with fungal infections. Liposomes as drug carriers enhance stability, bioavailability, and control the release of active compounds.
Their role is also to improve penetration in fungal biofilms, increasing antifungal efficiency. Lavandula angustifolia essential oil, also obtained in our laboratory, contains linalool and linalyl acetate, which are known for their antifungal, anti-inflammatory, and soothing properties. The presence in the liposome system, besides the antifungal effect, helps reduce irritation and discomfort caused by fungal infections. Eugenol as a standard bioactive component) is a potent antifungal compound disrupting Candida albicans cell membranes.
The bioactive standard synergises with lavender oil to enhance antifungal and anti-inflammatory activity. The system ensures controlled release, improved penetration, and prolonged antifungal activity. The Lipid Phase (Phospholipid Membrane) included 1% Lavandula augustifolia essential oil and 0.5% bioactive standard.
Considering the enhanced efficacy observed with liposomal encapsulation, the MIC ranging from 125 µg/mL to 250 µg/mL proved to be lower than the MIC demonstrated by the free components (Eugenol 800 µg/mL and Lavandula essential oil at 380 µg/mL).
State of development: TRL 6
Contact: dianaobistioiu@usvt.ro
Presentation link: https://www.usab-tm.ro/en

43.

Title: ***SUPERVISED AND UNSUPERVISED CLASSIFICATION BASED ON REMOTE SENSING FOR STUDY OF AN AREA***
Patent/project number: ARTICLE
Author/s: Cosmin Alin Popescu, Adina Horablaga, Mihai Valentin Herbei, Radu Bertici, Daniel Dicu, Florin Sala
Institution/Country: UNIVERSITY OF LIFE SCIENCES "KING MIHAI I" FROM TIMISOARA, ROMANIA
Category: G
Description: *Supervised and unsupervised classification, based on remote sensing, was used to study a territorial perimeter. NDWI, NDVI and NDBI indices were calculated based on satellite imagery. The NDVI variation relative to NDWI was described by a polynomial equation of degree 2, in statistical safety conditions (R2 = 0.910, p <0.001). Unsupervised classification (U-class), based on the Iso Cluster algorithm (iterative process, which assigns each cell to a cluster based on Euclidean distances) and supervised classification (S-class), based on the Maximum likelihood algorithm (allocate each pixel to a class based on of maximum probability), led to the detection of three categories in the studied territory, with close values; water, vegetation, constructions (p <0.001 (95%). Remote sensing provides useful spectral information for the analysis of an area, and the operator can decide on one method or another of classification in relation to the additional information held in the territory under consideration*
State of development: ARTICLE
Contact: *cosmin_popescu@usvt.ro*
Presentation link: *https://www.usab-tm.ro/en*

44.

Title: ***MANUFACTURING PROCESS AND ROOTING PRODUCT BASED ON WILLOW EXTRACT (GENUS SALIX)***
Patent/project number: Patent Nr. RO131178(B1)-2019-01-30
Author/s: Poşta Daniela Sabina, Hădărugă Nicoleta Gabriela, Peț Elena, Poşta Gheorghe Marinel, Peț Ioan, Camen Dumitru, Hădărugă Daniel Ioan
Institution/Country: University of Life Sciences „King Mihai I", Timişoara
Category: G
Description: *The invention relates to a rooting product used in biostimulation of plant root system development and to a process for preparing the same. According to the invention, the product is an aqueous extract from genus Salix, obtained by extraction in combination with entrainment-separation of residual volatile compounds. The process, as claimed by the invention, consists in harvesting willow sprouts at the beginning of vegetation, peeling and chopping the same, followed by mixing them with water in a ratio of 20...60%, in a vessel connected to a condensation-cooling coil in which separation takes place at a temperature of 50...100 degrees C, a pressure of 0.14...1 atm, the resulting mixture being subjected to extraction while being entrained with water vapour for 12...24 h, after which the distillate is collected into a separating vessel permitting separation and removal of volatile oil. The aqueous extract within the vessel,*

after filtration and analysis, is optimized from the viewpoint of the concentration of bioactive compounds - salicylates and auxins, by dilution/concentration.
State of development: Invention
Contact: *danielaposta@usvt.ro*
Presentation link: *https://www.usab-tm.ro/en*

45.

Title: MINERAL PREMIX USED FOR LAYING HENS REARED IN ECOLOGICAL SYSTEM
Patent/project number: RO 132411 B1/29.01.2021
Author/s: Ştef Lavinia, Julean Călin, Simiz Eliza, Peţ Ioan
Institution/Country: University of Life Sciences "King Mihai I" from Timisoara, Romania
Category: G
Description: *The invention refers to design and verification of a mineral premix structure intended for laying hens maintained in an ecological system, whose eggs are used for human consumption.*
The formulation of structure of mineral premix specific for laying hens is based on:
-establishing through laboratory analyzes the intake of microelements of main feeds used in the feed of laying hens maintained in an ecological system. The micromineral intake values of the basic feed were established at 60 ppm Fe, 20 ppm Mn, 28 ppm Zn, 7 ppm Cu, 0.12 ppm Co, 0.06 ppm I and 0.26 ppm Se, which indicates a satisfaction of the mineral requirements in a proportion of 70-100% and the need to supplement them through premixes.
-through direct experiments, a mathematical equation was established with a high coefficient of multiple determination for each of the 7 microelements studied, resulting in the following values of micromineral supplementation: 10 ppm Fe, 20 ppm Mn, 20 ppm Zn, 1.5 ppm Cu, 0.125 ppm Co, 0.2 ppm I and 0.10 ppm Se.
-the structure of the specific mineral premix for laying hens maintained in an ecological system was developed, consisting of: 22.398% iron carbonate, 44.795% manganese carbonate, 26.451% zinc oxide heptahydrate, 5.567% basic copper carbonate, monohydrate 0.235% basic cobalt carbonate, monohydrate, 0.331% calcium iodate, anhydrous and 0.224% sodium selenate which is incorporated into a calcium carbonate support. The premix is introduced in a proportion of 0.5% in the structure of the concentrate mixture that is administered to this category of poultry.
State of development: Invention
Contact: *laviniastef@usvt.ro calinjulean@usvt.ro*
Presentation link: *https://www.usab-tm.ro/en*

46.

Title: TECHNOLOGY FOR IDENTIFYING BIOTYPES OF LYCIUM CHINENSE RESISTANT TO THE ATTACK OF THE GALL MITE ON GOJI PLANTS
Patent/project number: 138158 A2
Author/s: Roxana Ciceoi, Oana Venat, Cătălina Nicolae, Mihaela Iordăchescu, Minodora Gutue, Adrian Asanică, Florin Stănică, Ana Butcaru, Vasilica Luchian, Mala-Maria Stavrescu-Bedivan, Dan Popescu

Institution/Country: University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania
Category: G
Description*: This invention presents an advanced molecular-assisted selection procedure aimed at identifying resistant biotypes of goji (Lycium chinense) against the gall mite (Aceria kuko). The methodology integrates molecular marker analysis into breeding programs, providing a precise and efficient tool for selecting resistant plants.*
The process is applied to in vitro-derived plant tissues obtained from seeds following hybridization or selection processes, facilitating the development of new and valuable goji biotypes.
In its final phase, the procedure employs ISSR and SSR molecular markers, enabling direct testing of planting materials and existing plantations to confirm resistance traits, thus enhancing the resilience and productivity of goji cultivation.
State of development: financed research project (1268/30.07.2021)
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Presentation link: *www.usamv.ro*

47.

Title: NEW ROMANIAN KIWIBERRY CULTIVARS - ARIANA AND ANDROS
Patent/project number: 6407/31.07.2023; 6408/31.07.2023
Author/s: Lavinia Mihaela UDREA (ILIESCU), Giuseppe ZUCCHERELLI, Constantin PĂUN, Marian Nicolae VELCEA, Liliana Aurelia BĂDULESCU, Florin STĂNICĂ
Institution/Country: Faculty of Horticulture, University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania
Category: G
Description: *Kiwiberry plants (Actinidia arguta) can be cultivated with very good results in all Romanian fruit growing favorable area, including plum zone. After more than 25 years of research, the Faculty of Horticulture in Bucharest registered two new Actinidia arguta cultivars – Ariana and Andros.*
Ariana is a unisex cultivar (female) with medium blooming period; medium-large fruit, with 12-14 g weight, 40 mm length and 60.97 mm diameter; 13.71% soluble solids and 70.15 mg ascorbic acid/100 gfw fruit composition at consumption maturity; 2-3 months storage capacity, in controlled atmosphere. Their excellent fruit quality remained constant through the years, becoming a better alternative to the import varieties found in the market.
Andros is a unisex cultivar (male) with abundant flowering; good pollen viability and germinability; long flowering period, which coincides with the female selections.
State of development: products (cultivars)
Contact: *iliescu_lavinia@yahoo.com* *flstanica@yahoo.co.uk* ***ctt-agrobiolife@usamv.ro;***
Presentation link:
https://istis.ro/image/data/download/APIA/2023/E%20-%20Soiuri%20inregistrate%20in%20Catalogul%20oficial%202023/2%20-%20Soiuri%20noi%20autohtone%20admise%20in%20anul%202023%20pentru%20inregistrare%20in%20Catalogul%20oficial.pdf

48.

Title: *CLIMATE CONTROL ENERGY SYSTEM IN ORDER TO REDUCE ENERGY CONSUMPTION IN GREENHOUSES*
Patent: *UTILITY MODEL APPLICATION U/00006 13.02.2025*
Author/s: *Jerca Ionuț Ovidiu[1], Bădulescu Liliana Aurelia[1], Cîmpeanu Sorin Mihai[1], Teodorescu Răzvan Ionuț[1], Postamentel Mariana[1], Sannan Sigurd[2], Gether Harald[3]*
Institution/Country: *1- UNIVERSITY OF AGRONOMIC SCIENCES AND VETERINARY MEDICINE OF BUCHAREST – BUCHAREST; 2- SINTEF Energy Research, Trondheim, Norway; 3- Gether AS, Stavern, Norway*
Category: *G*
Description: *The energy system for controlling climatic factors in order to reduce energy consumption in greenhouses is intended to ensure superior energy efficiency of continuous tomato production in controlled spaces located in the temperate-continental climate zone, characterized by excessive heat in the summer.*
The system is based on the energy supplied by 3 water-water heat pumps that exchange heat with a ground-water heat exchanger consisting of 30 100 m deep wells and a water-air dry cooler.
This heating/cooling heat supply unit allows energy modulation depending on the required needs according to an experimentation plan. The cooling capacity can have any value in the range of 25-150 kW. The dry cooler is connected to the heat pump condenser and releases heat to the ambient space. The heat agent used is water with glycol additives.
The cooling/heating agent produced by the heat pumps is transported through insulated pipes in each of the greenhouse compartments to the local distribution units - 2 in each compartment, consisting of water-to-air air heaters. These units distribute the air evenly through tubes located under the culture troughs and at the same time dehumidify the air in the greenhouse compartments.
A suitable microclimate for plant growth requires an additional supply of CO2; this is ensured by a dedicated circuit supplied from cylinders.
State of development: *IMPLEMENTED -* ***ACKNOWLEDGMENTS: „The researchleading to these results has received fundingfrom the NO Grants 2014-2021, under Project contractno. 40/2021"***
Contact: *+40756136304*
Presentation link: *https://www.climagreen.eu/*

49.

Title: *ENERGY INPUT FOR THE PERSONAL WALIPINI SMART GREENHOUS DIY*
Project number: *DIY*
Author/s: *Members of Justin Capra & SOS Rasaritul Tarii Fagarasului Ass.*
Institution/Country: *Asociatia Justin Capra & SOS Rasaritul Tarii Fagarasului, Romania*
Category: *B*
Description: *Introduction: The Walipini (underground or pit greenhouse) in this personal project is designed specifically for the area of Romania. However, the principles explained in the project make it possible to build the Walipini in a wide variety of other geographic and climatic conditions. The word "Walipini" comes from the Aymara Indian language of this area of the world and means "place of warmth". The Walipini utilizes nature's resources to provide a warm, stable, well-lit environment for year-round*

vegetable production. Locating the growing area 1,5- 2,0 m underground and capturing and storing daytime solar radiation are the most important principles in building a successful Walipini.
State of development: prototypproduction.
Contact: Vasile Grecu, SOS Tara Fagarasului
Presentation link: *https://sostarafagarasului.ro/home-2/*

50.

Title: INNOVATIVE SOLAR (SOLAR INOVATIV)
Patent/project number: Student Research Inovative Project
Author/s: Daniel GOGOLOȘ, Ștefan NICORESCU, Nicoleta LUPU, Ilariana SPINCIU;
Coordonator: Profesor Aurel Mihail ȚÎȚU
Institution/Country: Lucian Blaga University of Sibiu / ROMANIA
Category: G
Description: *An innovative solar is an advanced agricultural structure designed to optimize plant growth through the use of modern technologies. It integrates smart solutions such as climate automation, efficient irrigation, solar panels and sustainable materials to ensure higher yields and reduced resource consumption. An essential element of such a solar is automated microclimate control. Smart sensors monitor temperature, humidity and light levels, automatically adjusting ventilation, shading systems and heating to maintain optimal growing conditions. For example, if the temperature rises too high, the system automatically opens windows or activates forced ventilation. Precision irrigation also reduces water consumption through methods such as drip or fine misting, giving plants exactly the amount they need without waste. Some solar are equipped with rainwater harvesting systems, further reducing environmental impact. Another important feature is the use of solar panels to supply electricity to automated systems. In this way, an innovative solar can become energy self-sufficient, reducing operational costs and dependence on traditional grids. In addition, modern materials such as UV-treated films or smart glass help improve photosynthesis efficiency and protect crops from extreme conditions. Some solar houses even include vertical growing or hydroponic technologies, increasing productivity on small areas. By combining these technologies, an innovative solar garden provides a sustainable, efficient and productive growing environment, contributing to modern agriculture and reducing environmental impact.*
Contact: Professor Aurel Mihail ȚÎȚU, Lucian Blaga University of Sibiu, Director of PATLIB Centre of Sibiu, President of the Romanian Association of Alternative Technologies Sibiu, 4 Emil Cioran Street, Room IM 101, Phone 0040 744 390 290, E-mail *mihail.titu@ulbsibiu.ro*
Presentation link: *https://www.ulbsibiu.ro/en/*

51.

Title: PROCESS FOR RAISING YOUNG QUAILS
Patent/project number: Patent application s2024 0093
Author/s: Caraman Mariana, Chiseliță Natalia, Chiseliță Oleg
Institution/Country: Technical University of Moldova, Republic of Moldova
Category: G

Description: *The invention relates to animal husbandry, in particular to the process for raising young quails for decrease morbidity rate, mortality and increase body mass by using the complex biologically active microbial preparation, obtained from yeast biomass from winemaking waste and biomass of spirulina in the proportion of 0.5 kg per 100 kg of feed (0.5%) as the part of the daily ration of quails during the period 1-30 days. The procedure ensures 100% chick viability in the experimental group compared to 91% in the control group, a decrease of specific feed consumption in the experimental group by 10.13%, a decrease in the titer of conditionally pathogenic bacteria E. coli by 8.64% and Clostridium spp. by 3.08%, an increase in the titer of beneficial microorganisms Lactobacillus spp. by 9.07%, Bifidobacterium spp. by 5.83% and Bacillus spp. by 3.86% in the gastrointestinal tract of the chicks, an increase in the body mass of the chicks by 13.46% compared to the control and obtaining an additional profit of 4.34 lei/quail.*
State of development: research study of the project 24.80012.5107.SE „Diversification of feed aditives in poultry farming"
Contact: *oleg.chiselita@imb.utm.md* ***+373 68019120***
Presentation link: *https://utm.md/en/*

52.

Title: QUAILS RAISING PROCESS
Patent/project number: Patent application s2024 0092
Author/s: Chiseliţa Natalia, Chiseliţa Oleg, Caraman Mariana
Institution/Country: Technical University of Moldova, Republic of Moldova
Category: G
Description: *The invention relates to animal husbandry, in particular to the process of raising quails for increase productivity and meat quality by using the complex biologically active microbial preparation, obtained from yeast biomass from winemaking waste and spirulina biomass, as the part of the daily ration of quails, in the ratio of 0.5% of the ration during the period of 1-44 days and 0.25% during the period of 45-60 days. The process ensures the viability of chickens of 98% in the experimental group compared to 83% in the control group, the decrease of the titer of conditionally pathogenic bacteria E. coli by 4.96%, the increase of the titer of beneficial microorganisms Lactobacillus spp. by 18.40%, Bifidobacterium spp. by 11.61% and Bacillus spp. by 4.56% in the gastrointestinal tract of the chickens, increasing the body mass of the chickens by 13.46% compared to the control, obtaining quail meat with the higher protein content by 3.92% and lower fat content by 3.02% compared to the control group and obtaining economic efficiency of 4.47 lei/quail.*
State of development: research study of the project 24.80012.5107.SE „Diversification of feed aditives in poultry farming"
Contact: *oleg.chiselita@imb.utm.md* ***+373 68019120***
Presentation link: *https://utm.md/en/*

53.

Title: PROCESS FOR INCREASING OF EGG PRODUCTIVITY OF QUAILS
Patent/project number: Patent application s2024 0094
Author/s: Chiseliţa Oleg, Caraman Mariana, Chiseliţa Natalia

Institution/Country: Technical University of Moldova, Republic of Moldova
Category: G
Description: *The invention relates to biotechnologies in animal husbandry, in particular to the process for increasing of egg productivity of quails by using the complex biologically active microbial preparation, obtained from yeast biomass from winemaking waste and spirulina biomass, in the composition of the daily ration of quails, in the ratio of 0.5% of the ration during the period of 1-44 days and 0.25% of the ration during the period of 45-60 days and the distribution of one month old quails of 30 heads in batteries, of which 22 females and 8 males. The process contributes to increasing the egg laying intensity of quails at the age of 60 days by 29.54%, increasing the weight, longitudinal and transverse diameter of eggs by 25.79%, 21.84% and 14.38% respectively, and obtaining of daily income of 0.53 lei/head of laying quail from egg production.*
State of development: research study of the project 24.80012.5107.SE „Diversification of feed aditives in poultry farming"
Contact: *oleg.chiselita@imb.utm.md* ***+373 68019120***
Presentation link: *https://utm.md/en/*

H - Foods, Drinks, Restaurants, Hotels & Spa

1.

Title: La BISCUTERIE
Patent/project number: Desserts & Pastries project
Author/s: Ani MOCANU, Razvan POPA
Institution/Country: SC Inodelisia SRL, Romania
Category: H
Description: *Passion - We, the La Biscuterie team, have managed to weave imagination, seasoned with passion for colorful innovations. Our story begins with the essence of nature, thus, through its rich gifts, it challenged our inventiveness to skillfully combine natural ingredients without processing nature, thus creating products that bring more harmony and inner joy. The delicious snacks are designed and made to improve the lifestyle, using syrups and wholemeal flours, ennobled with flavors inspired by the bouquet of the four generous seasons.*
Skills - We co-opted into our team nutritionists who helped us to balance our healthy delights; we procure basic ingredients only from producers who put full passion into what they offer us and rigorously respect the principle of natural ingredients not industrially processed.
State of development: Products
Contact: +40 761 66 73 73
Presentation link: *https://labiscuiterie.ro/*

2.

Title: LINDEN HOUSE / CASA TEI
Project number: Accommodation & Tourist Project
Author/s: Ioana Adina SCHWACHHOFER
Institution/Country: Sibiu, Romania
Category: H
Description: *From the desire to do more, we created the original innovative concept Linden House / Casa Tei that combines the specific local tradition of the Sibiu area with the modern comfort of today's times. We are located in a residential area characterized by the original architecture of German houses with lots of greenery around and quiet near the Sibiu International Airport. Linden House / Casa Tei is ideal for a holiday or business stay and you can quickly reach any part of our wonderful city of Sibiu by car or public transport.*

State of development: Cozy B&B services in Hermannstadt / Sibiu offering three rooms and an apartment with courtyard parking
Contact: +40770599717 casatei97@gmail.com
Presentation link: https://www.instagram.com/casa_tei?igsh=N215ZXNpMXRlaHQ3

3.

Title: NEXUS TRAVEL
Patent/project number: Travel agency
Author/s: Zenaida MOSNEAG & Team
Institution/Country: S.C. NEXUS 2000 S.R.L, Romania
Category: H
Description: *Nexus Travel was founded in 1998 out of a desire to build our own vacations and make others enjoy them too! Over time, we have proven that we know how to respect our tourists, who remain loyal to us and become our friends.*
We offer all tourism-related services with high professionalism, promptness and responsibility:
- holidays in the country and abroad;
– booking plane tickets for all airlines and all destinations;
– medical insurance for trips abroad.
We like to think that any holiday dream can come true with us. Nexus Travel is a member of ANAT.
"The best trip is always the next one" Live with us new unique experiences! We are waiting for you to put us to the test!
State of development: Tourism services
Contact: turism@nexustravel.ro zenaida@nexustravel.ro +40744 636 446
Presentation link: https://www.nexustravel.ro/

4.

Title: THEREFRESH CONCEPT
Project number: 30308550
Author/s: Florin Pirus & Team
Institution/Country: S.C. COFFEE&BEVERAGE S.R.L, Romania
Category: H
Description: *Ou company has been on the market for more than 12 years and we are continuously expanding. Our activity is in the HoReCa field, we own 7 coffees hops, a coffee roaster and a restaurant. In our cafes we offer our own brand of specialty coffee, hot chocolate, smoothie bar, catering and delivery services, in addition we are expanded with an online store where we offer our customers a varied range of products and accessories for serving and preparing tea and coffee.*
Vision
TheRefresh is more than a company or even a cafe. TheRefresh is a complex concept, which is based on the strong idea of refreshing, stimulating and educating the senses, to facilitate reaching the optimal level of energy and well-being.

TheRefresh is a concept aimed at offering customers a substitute for a healthy and balanced meal in the form of smoothies, teas and coffee.
TheRefresh is the place where the team is educated to serve all products in their finished form at the highest quality, honoring cultural factors and professional preparation methods. TheRefresh is more than a company or even a cafe. TheRefresh is a complex concept, which is based on the strong idea of refreshing, stimulating and educating the senses, to facilitate reaching the optimal level of energy and well-being.
TheRefresh is a concept aimed at offering customers a substitute for a healthy and balanced meal in the form of smoothies, teas and coffee.
TheRefresh is the place where the team is educated to serve all products in their finished form at the highest quality, honoring cultural factors and professional preparation methods.
TheRefresh is the place where you can really taste well-being!
State of development: products & hospitality culture
Contact: *florin@therefresh.ro* ***+40 721 726 116*** *www.therefresh.ro*
Presentation link: *https://therefresh.ro/alege-cadoul-perfect-pentru-persoanele-dragi/*

5.

Title: Kuca za odmor Oblutak
Patent number: Tourist project
Authors: Dragan PUDA
Institution/Country: Serbia
Category: H
Description: *Do you want to explore the country area, enjoy nature, peace, take walks in the forest and experience the hospitality and food specific to Serbia and spend a a wonderful holiday with your loved ones? We cordially invite you to* ***Kuca za odmor Oblutak!*** *Holiday home Kuca za odmor Oblutak is located in Koruska-Duga Meda, Serbia, near Susek on the other side of the Danube river in a quiet area away from the hustle and bustle of the city, offering relaxation and refreshment for visitors.*
State of development: Holiday home
Contact: *kucazaodmoroblutak@gmail.com*
Presentation link:
https://www.instagram.com/kucazaodmoroblutak?igsh=MW9qZ2J5eHg1eGhnYQ
Presentation link: *https://www.facebook.com/profile.php?id=61551637361349*

6.

Title: LA LIBRARIE
Patent/project number: Beverage Company
Author/s: Sergiu STANESCU & LA LIBRĂRIA Team
Institution/Country: La Librarie, Romania
Category: H
Description: *La Librarie is a wine, liquor and coffee shop that's offering a wide range of imported or niche Romanian products. Either to serve on site, in a chill-out atmosphere, or to take away, we are here to offer*

some piece of advice in order to help you choose what mostly suits your gourmet appetite. You can have a cigar too, and if in a lucky day, you may enjoy an evening of wine tasting.
State of development: Products
Contact: +40749 063 833
Presentation link: *https://www.facebook.com/profile.php?id=100063611648428*

7.

Title: BoRD13 Gastro & Pub
Patent/project number: Bar and Restaurant
Author/s: Mirela STANCU & Team
Institution: SC Bliss Events Delux SRL
Category: H
Description: *BoRD13 it is one of a kind concept that brings closer the art of high-quality restaurant cuisine, with a new scenery. Enjoy a different culinary experience, where you will be impeccably served, with the most refined dishes, so that you and your loved ones can spend beautiful moments together. International Cuisine: Spain, Greece, Italy, France, luckily they are not so far away. Romanian Cuisine: The finest tastes of Romanian cuisine are defined at BORD13. Wines: with the help of the most famous wineries and wine houses in Romania, we have the most select wines for our customers.*
A place created with soul, a unique BoRD13 concept!
State of development: Services and products
Contact: *http://www.bord13.ro/index.html* *office@bord13.ro* ***+40786709709***
Presentation link: *https://www.facebook.com/bord13deva/?locale=ro_RO*

8.

Title: STAR CLOSED DONER
Project number: Food Project
Author/s: Irimia Marius Ionut & Team
Institution: Star Doner & Pizza
Category: H
Description: *At Star Doner & Pizza, creativity is at its highest, so through continuous innovation we create new products for our customers. Through a unique Star brand process, we have developed a hot, juicy, crispy and full of surprises Closed Doner that amazes all your senses. We created the STAR Taste World just for you. STAR Doner & Pizza, a new, original concept based on quality and diversity adapted to any situation, with a portfolio of over 70 products. The service is provided directly from our locations or based on the order with home delivery.*
Be different, choose STAR!
State of development: products
Contact: +40731 588 801
Presentation link: *https://www.facebook.com/people/Star-Doner-Pizza-Deva/100088256882595/*

9.

Title: PIZZA SPEED
Patent/project number: Delivery & takeaway
Author/s: Nicolae Florin PURCEL & Team
Institution: S.C. Speed Yasmina S.R.L.
Category: I
Description: *PIZZA SPEED DEVA is a concept based on quality, promptitude and perseverance! our team makes sure that all our customers remain satisfied with the quality of our products and that they intent to return with love anytime!*
State of development: Pizza
Contact: +40744 88 99 66 ***contact@pizzaspeed.ro***
Presentation link: https://pizzaspeed.ro/shop/

10.

Title: ABC ANAEROBIC BOTTLING CLOSURE
Patent/project number: EP24183909.1
Author/s: Bruno Alexander Gantenbrink, Vitalie Popa
Institution/Country: Auric Barrels d.o.o., Croatia
Category: H
Description*: The ABC Anaerobic Bottling Closure is the first-ever reusable solution for anaerobic and aseptic filling. It allows filling and sample extraction through the closure without removal, maintaining an anaerobic environment with inert gases like argon, nitrogen, or CO2. It is ideal for beverage bottling and has potential applications in the pharmaceutical industry.*
Key Features:

- ***Reusable Design:*** *Sustainable and efficient, significantly reducing waste and enhancing cost-effectiveness over time.*
- ***Anaerobic Environment Control:*** *This process utilizes inert gases (such as nitrogen or CO2) to maintain a controlled anaerobic atmosphere during filling, ensuring product quality.*
- ***Versatility:*** *Ideal for beverage bottling and pharmaceutical applications, with capabilities for aseptic conditions.*
- ***Sample Extraction:*** *This method facilitates sample collection without removing the closure, preserving the anaerobic environment throughout the process.*

State of development: Prototype
Contact: ***vpopa@auric-oak.com*** ***www.auric-infinity.com*** ***+385916067656***
Presentation link: https://auric-infinity.com/#standard

11.

Title: AURIC INFINITY HYBRID BIOREACTOR / BIOFERMENTOR
Patent/project number: EP24174365.7

Author/s: Bruno Alexander Gantenbrink, Vitalie Popa
Institution/Country: Auric Barrels d.o.o., Croatia
Category: H
Description: *Auric Infinity HYBRID represents the pioneering fusion of wooden and stainless-steel pressure vessels in a single bioreactor/bio fermenter. This innovative design accelerates still and sparkling wines' fermentation and aging processes without adding additives or preservatives. Its versatile application spans multiple industries, including winemaking, brewing, spirit ageing, biofuel production, pharmaceutical manufacturing, and other fields where fermentation is integral.*
Versatility: auric infinity HYBRID is highly adaptable and designed to support various fermentation applications. It functions effectively in aerobic and anaerobic conditions, with or without pressure, making it ideal for diverse industries such as winemaking, brewing, spirit ageing, biofuel production, pharmaceutical manufacturing, and more. This flexibility allows the system to accommodate various fermentation needs across multiple sectors.
Pure Fermentation: auric Infinity HYBRID exclusively relies on yeast and bacteria for fermentation, guaranteeing a natural process without added additives and preservatives. The system offers complete control over oxidation, contamination, and evaporation during primary and secondary fermentation and ageing stages, ensuring a consistent and pure outcome.
State of development: Product wooden / stainless steel
Contact: *vpopa@auric-oak.com* *www.auric-infinity.com* ***+385916067656***
Presentation link: *https://auric-infinity.com/#standard*

12.

Title: RAPID SCREENING METHOD OF IMAZALIL AND THIABENDAZOLE FROM CITRUS
Patent/project number: RO 2024 / 000282
Author/s: Cristiana RADULESCU, Radu Lucian OLTEANU, Ioana Daniela DULAMA, Ioan Alin BUCURICA, Toma GALAON, Raluca Maria STIRBESCU, Andreea Laura BANICA, Bogdan Bradut MINEA
Institution/Country: Valahia University of Targoviste, National University of Science and Technology Politehnica Bucharest, Romania
Category: H
Description: *The invention relates to the development of rapid screening of imazalil and thiabendazole from citrus with applicability in the field of food safety. The method uses high-performance liquid chromatography (HPLC) coupled with ultraviolet-visible DAD (diode array detector) and FLD (fluorescence detector) detectors for the simultaneous detection of imazalil and thiabendazole residues on the surface of citrus fruits (lemons, mandarines, grapefruits, oranges, limes).*
The main advantage of the invention is the fact that it finds practical use in the food industry (complex analysis laboratories, quality control of raw materials, the consumer information department/National Authority for Consumer Protection), with the role of warning about the risk of contamination with residues of imazalil and thiabendazole and implicitly on the risk to human health, but also the role of warning and awareness of suppliers and processors.
All these considerations are the basis of the concept of this invention which considers the need to determine the concentration of pesticide residue (i.e., imazalil and thiabendazole) on the surface of citrus fruits, fruits

whose peel is used for human consumption. The developed method is based on a rapid sample preparation/extraction step (20 minutes) and presents a high sensitivity considering the detection and quantification limits, especially for determining thiabendazole. Also, the analytical results indicate a very good degree of repeatability.
State of development: Patent application, RO 138394 A0 /30.09.2024
Contact: *radulescucristiana@yahoo.com cristiana.radulescu@valahia.ro ingbradut@yahoo.com*
Presentation link: *https://www.osim.ro/images/Publicatii/Inventii/2024/bopi_inv_09_2024.pdf*

13.

Title: INNOVATIVE SWEETS BY MIHAELA
Project number: sweet & salty
Author/s: Mihaela SOLOMON
Institution: Mihaela's sweet & salty
Category: H
Description: *My passion for sweets is based on native creativity and conceptual innovation in continuous development. In order to make the my innovative sweets, I use the best high quality ingredients such as flour, butter, sugar, cream, fruit, cocoa from the organic range and only natural flavors and food colorings. I create recipes that bear my personal mark in terms of quantity/quality and the unique manufacturing process.*
My range of sweets includes simple but also sophisticated products with a special taste, such as: cakes, macarons, roulades, cakes in multiple layers, muffins, Pavlova, creme brulee, homemade chocolate fudge, ice cream, entremets and many others. ***Nothing compares to Mihaela's sweets!***
State of development: products
Contact: *ella1511@yahoo.com*
Presentation link: *https://www.facebook.com/mihaela.solomon2*

14.

Title: ADRIANA's HONEY
Project number: producer manufacturer number HD 0231502
Author/s: Ignat-Matei Adriana, Ignat-Matei Adriana Daniela, Ignat-Matei Alexandra Roxana
Institution: Adriana's Honey Manufacturer
Category: H
Description: *Bee products intended for a healthy diet. In order to produce organic honey, bees are relocated to pollution-free areas as far away as possible from inhabited areas such as mountains, plains, and hills. Adriana's types of honey: polyflora, cherries, lime, chestnut, fir, sunflower, scallops. In addition to honey, we also produce pollen, propolis, wax and a series of ENERGIN-like mixed products.*
Capaceala is a beekeeping product that people don't really know, but it has great health benefits. As everyone understands, this is the cover of the honeycomb, with which the bees "seal" the honey deposited in each cell of the honeycombs. In the mixture, honey with sea buckthorn fruits represents a complete cure with numerous healing properties for the body. In honey with sea buckthorn we find Vitamin A, the complex of

B vitamins (B1, B2, B6, B9), Vitamins E, K, P and F, beta-carotene (more concentrated than in carrots) and other microelements such as calcium, magnesium, phosphorus, iron, potassium and volatile oils.
State of development: products
Contact: +40720575824 ***danielaign9@yahoo.com***
Presentation link: ***https://www.facebook.com/adriana.ignat.313***

15.

Title: SALTY BAKERY
Project number: sweet & salty
Author/s: Mihaela SOLOMON
Institution: Mihaela's sweet & salty
Category: H
Description: *The action of kneading the dough requires passion, patience, time and love to obtain wonderful products. Plastering salted dough for bread, pretzels, salted sticks, tarts and salted biscuits is an art.*
I try to rediscover old traditional Romanian recipes and more to reinterpret them in the current context. I also approach certain recipes from the international cuisine, especially the French one, from which I make Quiche Lorraine, Tarte Flambee, Baguette. But I also want to realize various types of traditional Pida from Turkey.
State of development: products
Contact: ***ella1511@yahoo.com***
Presentation link: ***https://www.facebook.com/mihaela.solomon2***

16.

Title: PROCESS FOR OBTAINING THE RED DYE BETACYANIN FROM THE FRUITS OF American pokeweed (Phytolacca americana L.)
Patent: MD 1817 / 2025.01.31; Patent application number s 2024 0046 / 2024.04.30
Authors: Raisa IVANOVA, Igor CASIAN, Ana CASIAN
Institution/Country: Moldova State University, Institute of Genetics, Physiology and Plant Protection, Republic of Moldova
Category: H.
Description: *The invention relates to the food industry, namely to a process for obtaining the red dye betacyanin from the fruits of the Phytolacca americana L., at the same time, the dye obtained can be applied in agriculture, in the pharmaceutical and cosmetic industries. T*
he process includes crushing the fruits, adding the yeast Saccharomyces cerevisiae, fermentation, filtering the juice, freezing it and obtaining the concentrated juice, precipitating the dye in two stages by mixing with ethyl alcohol, separating the supernatant, after which the red precipitate obtained is purified with ethyl alcohol, dried and ground to powder.
State of development: Product, laboratory research.
Contact: ***raisa.ivanova@sti.usm.md***
Presentation link: ***https://usm.md/?lang=en***

17.

Title: ARTISANAL BISCUITS WITH THE ORGANIC ROSEHIP POWDER ADDITION
Patent/project number: Product
Author/s: Alina - Mihaela Moroi, Nicoleta Vartolomei*, Tănasă Simina, Ana-Maria Rosu, Diana-Carmen Mirila, Claudia Tomozei, Mirela Lehadus-Panainte
Institution/Country: "Vasile Alecsandri" University of Bacau; Technological High School of Targu Ocna, Romania
Category: H
Description: *The purpose of this work was to study the influence of the organic rosehip powder addition on the artisanal biscuits quality. In order to estimate the physico-chemical and sensory characteristics of complex products with the addition of vegetable powder, it was proposed to obtain artisanal biscuits with rosehip powder in a ratio of 0.5%, 1.0%, 1.5%, 2% and 2.5%. The use of domestic raw materials represents a particular advantage to considerably reduce production prices, so that the market price of the finished product is also affordable. Rosehip fruits (Rosa canina L.) are used in food due to their rich content in bioactive compounds such as polyphenols, essential fatty acids, galactolipids, folates, antioxidants, vitamins and minerals, especially for vitamin C (ascorbic acid), rosehips being recognized as plant source rich in vitamin C. The increased antioxidant potential of plant powder from native plant sources was argued theoretically and experimentally through the analysis of quality indicators, antioxidant activity and CIELab color parameters. For the sensory analysis, 5 basic parameters were evaluated, namely: colour, taste, conscious, appearance, smell. The evaluation of each index was appreciated with a score scale of 1-5 points. Following the estimation of the organoleptic indices, it was established that the artisanal biscuits with the addition of 1.5% rosehip powder have a pleasant color and smell and favorably influenced the organoleptic indices of the obtained samples and can be proposed for consumption by potential consumers on the market.*
State of development: Product
Contact: 0040748992827 *vartolomeinicoleta28@yahoo.com*
Presentation link: *https://liceultehnologictgocna.ro/*

18.

Title: VBUNG® Technology
Patent/project number: AU 2018203047 / EP 3564354A1
Author/s: Vitalie POPA & Team
Institution/Country: Vbung & Vdoor, Australia
Category: H
Description: *VBUNG is a sustainable stainless steel bung that seals the custom wooden barrel while maintaining control over oxidation, contamination and evaporation during aerobic and /or anaerobic maceration, fermentation, malolactic fermentation and aging under continuous safe positive and /or negative pressure inside the custom wooden barrel.*
VBUNG ® Technology : No Added Additives and Preservatives Aerobic and/or Anaerobic Maceration, Fermentation, Malolactic Fermentation and Aging under Continuous Positive and/or Negative Pressure with Sunlight in Custom Wooden Barrel

Advantages:

1. *Sustainable Technology and Equipment without the use of Additives and Preservatives*
2. *Sustainable Mobile Winery in the vineyard with solar panels, sensors, and mobile data*
3. *Accelerated Winemaking and Aging technological process*
4. *Equipment Control over Oxidation, Contamination, and Evaporation*
5. *New or Old Wooden barrels can be used once custom modifications are done*
6. *Whole bunch, Juice, or Berries can be used*
7. *No Juice clarification is needed (No flotation, cold settling, or centrifugation)*
8. *No temperature or humidity control is required (Fermentation at high temperatures for white winemaking is not a problem)*
9. *Direct Sunlight for the whole technological process*
10. *No need for topping the barrels*
11. *Taking out wine samples for laboratory or tasting without oxidation, contamination, evaporation*
12. *Barrel regeneration with compressed O2 or Air before vintage*
13. *Extended lifetime for wooden barrels due to custom construction*
14. *Can be applied to making and aging Wine, Beer, Cider, Vinegar, and aging Spirits.*
15. *Reduced labor, time, and cost.*

State of development: Product
Contact: *vitalie.popa@vbungvdoor.com* *https://www.vbungvdoor.com/*
Presentation link: *https://youtu.be/plhgINNTYW0*

19.

Title: NEW ORGANIC DIGESTIVE BISCUITS WITH RARE BLACK MULBERRY ADDITION AND DELIGHTFUL JELLY
Patent/project number: "Simulated Enterprises in Food Industry at the "Vasile Alecsandri" University of Bacau", 11183/18.07.2024
Author/s: Ana-Maria Georgescu, Gabriela Muntianu, Ana-Maria Rosu, Diana-Carmen Mirila*, Alina Mihaela Moroi, Nicoleta Vartolomei, Ileana-Denisa Nistor, Mirela Lehadus-Panainte
Institution/Country: "Vasile Alecsandri" University of Bacau, Romania
Category: H
Description: *Organic digestive biscuits with addition of black mulberry (Morus nigra L.) powder are obtained using ecological ingredients in accordance with current standards and certifications, which involve adhering to sustainable agricultural and production practices. Choosing organic digestive biscuits can be a healthy and responsible option for those interested in a healthy lifestyle. The aim of the research was to obtain an innovative functional food product in the form of organic digestive biscuits with the addition of black mulberry powder. The novelty of this food product is the addition of black mulberry powder (in different additions: 1%, 2.5%, and 5%) obtained by drying and grinding the mulberry into a fine powder. This powder can be used in various ways in the food industry due to its distinctive taste and numerous health benefits. Also, due to the high content of antioxidants, vitamins and minerals, the addition in any form (syrup, powder or fruit itself) gives food products a functional character, often used in traditional medicine too for various ailments and symptoms. The biscuits obtained under laboratory conditions were subjected to sensory and physico-chemical analyses. In addition, this innovative food*

product is the first of its kind on the market, as there are no longer any biscuits that feature this new black mulberry addition.
State of development: Products
Contact: 0040742491076
Presentation link: *https://www.ub.ro/stiri-si-evenimente/expozitie-de-produse-si-competitie-de-planuri-de-afaceri-la-universitatea-vasile-alecsandri-din-bacau*

20.

Title: POMACES VALORIZATION FOR OBTAINING ENRICHED DEHYDRATED FRUIT ROLLS
Patent/project number: Research project
Authors: Luminița GROSU, Oana-Irina PATRICIU, Irina-Claudia ALEXA
Institution/Country: "Vasile Alecsandri" University of Bacău, Faculty of Engineering, Department of Chemical and Food Engineering, Romania
Category: H
Description: *Interest in investigations concerning the reuse of by-products and waste of agro-food origin is increasing, with the aim of finding innovative solutions to valorize them in different areas. The alcoholic and non-alcoholic beverage industries produce large amounts of by-products.*
Pomace is a solid residue comprised of skins, seeds and any other solid remaining after pressing from juice or wine manufacturing. An important quantity of bioactive compounds remains in the solid matter of pomace; therefore, it is rich in polyphenols, organic acids, and minerals, and having thus remarkable antioxidant capacity.
The development of foods that provide additional health benefits beyond basic nutrients is a current and growing trend in the food industry. Research and development aim recovering the pomace resulting from wine and juice industries and valorized it as lyophilized powder to add value to the foods. The most common functions associated with pomace-based products in the food industry are their use as antioxidants, followed by their use as fortifying, coloring and antimicrobial agents.
In this view, the research consists in formulating of dehydrated fruit rolls enriched with adequate proportion of lyophilized pomace powder.
The dehydrated fruit rolls were prepared using: apples, bananas, honey, lemon juice and grape pomace or sea buckthorn pomace powders. The drying parameters are important, allowing the preservation of most nutrients.
The innovation consists in adding lyophilized pomace powder to the fruits puree before drying process, which, to the best of our knowledge, has not been reported so far.
Following sensory analysis, the dehydrated fruit rolls with grape or sea buckthorn pomaces powders were well accepted by the participating panelists. In addition, almost 80 % of them agreed that these products valorize some by-products.
State of development: Product
Contact: *irinaalexa@ub.ro* ***+4 0745480292***
Presentation link: *https://studyinromania.gov.ro/program/2849*

21.

Title: FREEZE-DRIED POMACE POWDER WITH ACACIA HONEY
Patent/project number: Student project
Authors: Students: Mihnea-Ştefan POPA, Ionela-Petronela TĂNASĂ, Alexandra-Lavinia PITIC, Adnana-Ana MITREA; Mentors: Elena-Mirela SUCEVEANU, Luminița GROSU, Oana-Irina PATRICIU, Irina-Claudia ALEXA
Institution/Country: "Vasile Alecsandri" University of Bacău, Faculty of Engineering, Department of Chemical and Food Engineering, Romania
Category: H
Description: *The development of foods that provide additional health benefits beyond basic nutrients is actually a trend in the food processing industry. Our project approach is reusing pomaces, either by obtaining new functional food products, through the pomace powder's incorporation. For the present project, innovative products based on acacia honey and different freeze-dried pomaces powders were formulated. The addition of pomaces powders may impact the sensory characteristics of products, such as flavor, color, and texture. From this point of view, it was essential to find the adequate proportion of pomace powder added to honey for good consumer acceptability, knowing that incorporating a higher level of pomace powder (> 15%) may lead to consumer rejection due to the darker color, possible bitterness, astringency, etc.*
Following the formulation and sensory analysis of all products, the appropriate proportion of pomace powder was established based on the best consumer acceptability.
The obtained products provides both energy and a series of health benefits in terms of nutrients, being easily assimilate. Due to the freeze-dried pomaces powders, our innovative products contain flavones, anthocyanins, tannins, vitamin C, etc., biomolecules possessing antioxidant and radical scavenging capacities.
State of development: Product
Contact: *irinaalexa@ub.ro* ***+40745480292***
Presentation link: *https://studyinromania.gov.ro/program/2849*

22.

Title: YOGURT WITH THE ORGANIC ROSEHIP POWDER ADDITION
Patent/project number: Product
Author/s: Nicoleta Vartolomei, Alisa Vasilica Arus*, Tănasă Simina; Nicoleta Platon, Ana Maria Georgescu, Gabriela Muntianu, Ileana Denisa Nistor, Maria Turtoi
Institution/Country: "Vasile Alecsandri" University of Bacau, Technological High School of Targu Ocna, Romania
Category: H
Description: *Yogurt largely reflects the nutritional value of milk, the raw material from which it is obtained. To make up for its deficiencies or to compensate for some of its bioactive properties, yogurt is often fortified by adding other ingredients, the most common being grains and fruits. Although fruit has been added to yogurt for a long time, recently studies have been reported that investigated the influence of addition fresh cut fruit and dried fruit in pieces or powder form on the physicochemical, sensory, and*

functional properties of yogurt. The fruits of rosehip (Rosa canina L.) are used in food due to their content rich in antioxidant bioactive compounds, vitamins and minerals, especially for vitamin C (ascorbic acid), rosehip being recognized as a vegetable source rich in vitamin C. The purpose of this work is to determine the influence of the organic rosehip powder addition on the yogurt quality. Sensory analysis was performed with the 20-point test. Yoghurt with the organic addition rosehip powder has good sensory properties, appreciated when tasting. The most valued sensory attributes were appearance, smell and taste. Yogurts with organic rosehip powder scored higher than the control, which means they were accepted by the tasters.
State of development: Product
Contact: 0040745076789 *morarescua@ub.ro* *vartolomeinicoleta28@yahoo.com*
Presentation link: *https://liceultehnologictgocna.ro/*

23.

Title: BIOFUNCTIONAL PREMIXES (PMXBF) BASED ON SPELT WHEAT WITH APPLICATION IN THE FLOUR FOOD INDUSTRY
Patent/project number: A 00408/27.07.2023
Author/s: Alexa Ersilia, Radulov Isidora, Popecu Cosmin Alin, Raba Diana Nicoleta, Poiana Mariana-Atena, Cocan Ileana, Negrea Monica, Misca Corina, Obiştioiu Diana, Dragomir Christine, Dossa Sylvestre, Suster Gabriel
Institution/Country: UNIVERSITY OF LIFE SCIENCES "KING MIHAI I", Timisoara, ROMANIA
Category: H
Description *The present invention concerns to the development of premixes based on Triticum spelta wheat flour (PMXBF) with applications in the flour based food industry (bread, pasta, biscuits, pastry), with 5....25% meal ratio added flour from fruits of sea buckthorn (Hippophaë Rhamnoides L.), and/or lingonberries (Vaccinium vitis-idaea L.) and/or pomace resulting as a by-product of winemaking. The results obtained on the nutritional properties, phytonutrient content of premixes, as well as the rheological suitability of the dough, highlighted the possibility of implementing the technologies to obtain PMXBF-based products in the farinaceous food industry.*
State of development: industrially applied invention - ACKNOWLEDGEMENTS -This study was financed by West Regional Development Agency, Romania, through the Project "Achieving technology transfer to obtain innovative functional foods enriched in bioactive compounds—CTTU 2020", SMIS Code: 140030, submitted in the competition Regional Operational Program 2014–2020, Priority Axis 1: Promoting technology transfer.
Contact: *ersiliaalexa@usvt.ro*
Presentation link: *https://www.usab-tm.ro/en*

24.

Title: HOMOGENEOUS POLYOXYPROPYLENE SOAPS AND PROCESS FOR OBTAINING THEM
Patent/project number: RO134446

Author/s: Jianu I.C.; Jianu A.M.; Ilie A.C.; Radulescu M.; Berceanu V.D.; Rusu L.C.; Ardelean L C; Stanga L.C.; Velimirovici D.E.; Suciu O.; Stana L.G.; Stancu G.S.; Folescu R.
Institution/Country: UNIVERSITY OF LIFE SCIENCES "KING MIHAI I" Timisoara, Romania
Category: H
Description: *Preparation of polyoxypropylene soap, involves synthesis under phase transfer and/or micellar catalytic conditions, resulting in soaps of homogeneous beta -nonylphenylpolyoxy- alpha -methylpropionates of alkaline type and/or ethanol ammonium type, with nonionic-anionic structure.*
Novelty *Preparation of polyoxypropylene soap, involves synthesis under phase transfer and/or micellar catalytic conditions, resulting in soaps of homogeneous beta -nonylphenylpolyoxy- alpha -methylpropionates of alkaline type and/or ethanol ammonium type, with nonionic-anionic structure. Fields of potential application of the present patent. The potential application areas of the invention are: food processing, cosmetics, pharmaceuticals, textile post-processing or "preparative organic chemistry". The concept that suggested the diversification of these nonionic-ionic architectures represents a new synergistic cumulation of homogeneous non-ionic colloidal competencies with anionic (carboxylate) competencies specific to traditional soaps. Original "niche" compounds not reported in the literature of the surfactant field have surfactant characteristics distributed over a wide HLB range.*
State of development: process for obtaining soaps
Contact: *calinjianu@usvt.ro*
Presentation link:
https://0e10qza29-y-https-www-webofscience-com.z.e-nformation.ro/wos/diidw/full-record/DIIDW:2020972723

25.

Title: DIETARY SUPPLEMENTS BASED ON BEE PRODUCTS AND OILS ESSENTIAL OILS, WITH OR WITHOUT ADDED HERBS AND PROCESS FOR THEIR PREPARATION
Patent/project number: Patent application Nr. A00406/27.07.2023
Author/s: Raba Diana Nicoleta, Dumbrava Delia Gabriela, Alexa Ersilia Calina, Poiana Mariana Atena, Cocan Ileana, Obistioiu Diana Monica, Iancu Tiberiu, Ciucur Radu Ioan, Stoia Sorin, Popa Viorica-Mirela, Moldovan Camelia
Institution/Country: University of Life Sciences „King Mihai I", Timişoara
Category: H
Description: *The present invention relates to a range of natural dietary supplements with high sanogenic potential and superior nutritional, antioxidant and sensory characteristics as well as to the process for obtaining them. The process according to the invention consists of the steps: mixing 91-93 parts by weight (w.w.) honey and 7-9 w.w. pollen granules, homogenizing in a blender, keeping the mixture for 10 days in the dark under thermostated conditions at a temperature of 25°C, adding to 85-94 w.w. pollen granules to the mixture. g. of this mixture to 2-3 p.g. soft propolis extract, 2-6 p.g. raw royal jelly, 0.05-2 p.g. various essential oils and 0-5.55 p.g. various herbal powders according to each recipe, homogenising the mixture well after each addition. To obtain the soft propolis extract, mix 1 part finely ground propolis with 2 parts 96° ethyl alcohol, shake well, leave to stand for 12 days at 25°C and then filter through Whatman grade 1 filter paper. The extract thus obtained is concentrated under vacuum (rotary evaporator) at 35°C to half its original volume. The dried herbs are finely ground and then the powders are passed through a sieve with*

1.5 mm holes. The food supplements obtained are distinguished by a high content of bioactive compounds with very good antioxidant activity, high nutritional value and very good sensory scores
State of development: Invention
Contact: *diana.raba@usvt.ro*
Presentation link: *https://www.usab-tm.ro/en*

26.

Title: MARINE CULINARY TEMPTATIONS BY AKADEMIKA FOOD
Patent/project number: TRADEMARK M2021/002405
Author/s: Raba Diana Nicoleta, Misca Corina-Dana, Bordean Despina Maria, Dumbrava Delia-Gabriela, Moldovan Camelia, Popa Viorica Mirela, Mariana-Atena Poiana, Pirvulescu Luminita, Radulov Isidora
Institution/Country: University of Life Sciences „King Mihai I", Timişoara
Category: H
Description: *Marine culinary temptations include products from the category of meatballs and rolls, innovative by the facts that are prepared from seafood meat in varying proportions depending on the manufacturing recipe. The seafood used is: squid, mussels, shrimp, which can be used individually or combined. The products are both tasty and valuable from a nutritional point of view by the fact that they benefit both from the proteins with high biological value of seafood and from the vitamins, minerals and fiber from the vegetables used in the recipe: parsley leaves, peppers (only in rolls), green onions, green garlic and spices (salt, pepper, chili), both in rools and meatballs. The products are suitable for all categories of consumers over 3 years of age except those allergic to seafood.*
State of development: prototype
Contact: *diana.raba@usvt.ro*
Presentation link: *https://www.usab-tm.ro/en*

27.

Title: OBTAINING ACTIVE WINE YEAST BIOMASS OF SACCHAROMYCES CEREVISIAE
Patent CBI: A00470/08.08.2024
Author/s: Teodorescu Razvan Ionut, Barbulescu Iuliana Diana, Begea Mihaela, Frincu Mihai, Diguță Filofteia Camelia, Marculescu Simona Ioana, Dumitrache Corina, Cîrîc Alexandru Ionuț
Institution/Country: University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania
Category: H
Description: *The invention refers to the production of an active yeast biomass of S. cerevisiae NCAIM (P) Y 001534 to be used in the winemaking of white wines. Saccharomyces strain was isolated from Cabernet Sauvignon grape must from Pietroasa Research and Development Station and identified by applying molecular methods.*
This product represents a first step in exploiting the oenological potential of indigenous yeasts to produce wines of superior quality, with a characteristic sensory typicity.

State of development: Patent demand
Contact: *razvan.teodorescu@gmail.com barbulescudia@yahoo.com*
Presentation link: *https://www.pietroasaveche.ro/ https://www.ica-rd.ro/studii-si-documentatii/*

28.

Title: RITUAL ACADEMY - cooking workshops for children and adults
Patent/project number: culinary workshops
Author/s: Ioana Octavia BOGDAN
Institution/Country: SC Giovis Delivery SRL, Romania
Category: H
Description: *Ritual Academy is more than just a cooking school – it is a space of discovery, creativity and education, where children and adults learn to cook healthily, understand the principles of nutrition and discover the joy of preparing and enjoying delicious dishes. Our courses are taught by Chef Ioana Bogdan, winner of the Young Chef trophy in 2018, with extensive experience in gastronomy and a special passion for culinary education. She is the creator of the Ritual and Sufertas brands. The cooking workshops were created out of the desire to transform every meal into a ritual of self-care, to educate future generations about the importance of a balanced diet and to inspire people to rediscover their passion for gastronomy. In our cooking workshops for children, we teach children to cook healthy and tasty food, focusing on natural ingredients and balanced recipes. Through play and practice, children develop their creativity, patience and autonomy in the kitchen.*
State of development: Courses include food safety, basic nutrition, and the importance of a balanced diet.
Contact: *ioanacismasiu@gmail.com*
Presentation link:
https://www.facebook.com/p/Ritual-by-Ioana-Bogdan-100063771347226/?locale=ro_RO

29.

Title: RESTAURANT CAPONE
Patent/project number: Traditional restaurant
Author/s: Capone TEAM
Institution/Country: SC COMAN SRL, Romania
Category: H
Description: *Traditional restaurant in the landscape of the city of Deva, offers you in a special atmosphere: traditional Romanian food, from its own kitchen. Organizing weddings, baptisms, name days, festive days, private parties, as well as memorials, funerals, etc., with a capacity of up to 200 seats.*
Daily menu 11:00 – 16:00
Themed dance evenings on Friday and Saturday.
State of development: Restaurant
Contact: *restaurantcapone@yahoo.com*
Presentation link: *https://www.facebook.com/restaurantcapone/?locale=ro_RO*

30.

Title: PĂDURENEŞTI PIES
Patent/project number: 1008905 / 15.05.2020 OSIM Trademark
Author/s: Tămaş Adelina Bianca & Team
Institution/Country: SC Ade Traditional SRL, Romania
Category: H
Description: *Pădureneşti pies are a traditional specialty from the Pădureni Land, Hunedoara County. These are thin pies, with a simple dough of flour, water and salt, kneaded well and rolled out into very thin sheets. The filling varies, but the most popular ones are with cheese and herbs, sauerkraut or potatoes. They are baked directly on a hot pan, with oil, which gives them a slightly crispy crust and an authentic taste. They are served hot, plain or spread with butter, and are appreciated for their rustic flavor. In the past, they were prepared especially on holidays or at important community events. Today, Pădureneşti pies are a symbol of traditional Hunedoara cuisine, preserving the authentic taste of old recipes.*
State of development: traditional pies specialty from the Pădureni Land
Contact: *adelina.bia18@gmail.com*
Presentation link:
https://www.facebook.com/StirileAntena3Deva/videos/placintele-padurenesti-de-la-feregi-au-devenit-marca-inregistrata/258269192054636/

I - Textiles, Clothing, Fashion, Handmade

1.

Title: RERAT HELVETIA - EUROPEAN MANUFACTURER of LASHING & LIFTING SLINGS
Patent/project number:
Author/s: Larisa RERAT & Team
Institution/Country: Rerat Helvetia Company, Switzerland
Category: I
Description: *At Rerat Helvetia, we are pioneers in the manufacturing of lashing and webbing slings, committed to delivering unparalleled quality, innovation, and safety. With a legacy that spans 10 years, we have become a trusted name in the industry, synonymous with precision, durability, and advanced technology. Our products adhere to the highest international quality standards. Rigorous testing procedures ensure the reliability and strength of every lashing and webbing sling. We continuously push the boundaries of innovation, introducing cutting-edge designs and features. Pioneering advancements in safety technology to meet and exceed industry requirements. Rerat Helvetia's lashing and webbing slings find applications across diverse industries. From construction sites to logistics operations, our products cater to a wide range of needs. With a strong international presence, we serve clients worldwide. Our commitment to excellence transcends borders, making Rerat Helvetia a global leader in the field. Safety is at the forefront of our mission. Our products are equipped with features that prioritize accident prevention and workplace safety. We embrace sustainable manufacturing practices, minimizing our environmental footprint. Rerat Helvetia is committed to contributing to a greener, more eco-conscious industry. Compliance with global safety standards underscores our dedication to creating secure solutions. Our success is intertwined with the success of our clients. We offer personalized solutions tailored to meet specific industry and project requirements. Customer satisfaction is not just a goal; it's the driving force behind everything we do. Rerat Helvetia proudly holds industry certifications that reflect our unwavering commitment to quality, safety, and excellence. Our products comply with global standards, ensuring reliability and peace of mind for our clients. At Rerat Helvetia, we are not just manufacturers; we are architects of safety and reliability. Our lashing and webbing slings represent a commitment to excellence that has stood the test of time. Join us in a journey where innovation meets reliability, and safety takes center stage.*
State of development: Products
Contact: *office@rerathelvetia.ch* ***0040 749 090 725*** *www.rerathelvetia.ch* *https://rerat.eu/*
Presentation link: *https://youtu.be/2jNSjwjWyTI*

2.

Title: LEMNĂRIA LUI RADU
Patent/project number: Woodcraft
Author/s: Fachin Radu Luigi
Institution/Country: Lemnăria lui Radu, Romania
Category: I
Description: *I am a passionate woodworker, a dedicated artisan with 8 years of experience in the field of woodworking, and eager to learn new techniques and skills. My work reflects a passion for craftsmanship and meticulous attention to detail. The Art of Wood Personalization - Creations with Soul. One of my specialties and significant challenges in every project is crafting personalized items for clients. Over time, I've honed my skills to create miniature houses, faithful replicas of grandparents' homes, meticulously crafted based on photos. These mini houses bring a piece of history and emotion into our clients' living rooms. Recycled Wood for a Sustainable Future. I am a staunch advocate for the use of recycled wood. In my workshop, wood becomes more than just raw material; it's a valuable resource we handle responsibly, contributing to environmental preservation. Transforming Wood into Art and Utility. Wood is my favorite material for crafting captivating games, charming decorative items, and personalized toolkits for businesses and trades. Each piece of wood is carefully and passionately transformed, adding utility and turning it into a unique work of art. I look forward to contributing my creativity and extensive experience in the art of woodworking to future projects. Handcrafted wooden items are more than mere objects; they bring stories and emotions into the homes and lives of our clients. Thank you.*
State of development: Products
Contact: +40735966509
Presentation link: *https://www.lemnarialuiradu.ro/category/despre-mine/*
Website: *https://www.lemnarialuiradu.ro/*
Instagram: *https://www.instagram.com/lemnarialuiradu/*
Facebook: *https://www.facebook.com/lemnarialuiradu/*

3.

Title: PATRICIA'S HANDMADE
Patent/project number: Handmade creations
Author/s: Patricia NELEGA
Institution/Country: SC MOFT STUDIO SRL, Romania
Category: I
Description: *Patricia's Handmade is a concept based on creativity, sensitivity, passion for everything that art means. The products, unique, are designed for an avant-garde look. Diversity is the strong point of Patricia's Handmade creations from brooches, earrings, decorations to projects for special events: weddings, christenings, anniversaries etc. All products are customized according to by the preferences of those for whom they are created.*
State of development: products
Contact: +40721 603 933
Presentation link: *https://www.facebook.com/moftstudio/*

4.

Title: *MIHAELA's WONDERFUL BEADS*
Patent/project number: *Bead Embroidery Project*
Author/s: *Mihaela MARARU*
Institution/Country: *MIHAELA's WONDERFUL BEADS, Romania*
Category: *I*
Description: *Bead embroidery has been my passion for more than 20 years, at first I embroidered simple things like bracelets, then I perfected my technique and made accessories for clothing items. Over time, I sewed icons, paintings, purses, bags, backpacks. The most spectacular creations of mine are the clothes sewn with embroidered beads, in some cases I used over 80,000 beads. The bead can be attached by a simple stitch of material, but a smaller bead can also be used to obtain a small column, for a more voluminous column, a column of two or more beads can be sewn. The beads of different colours and sizes, sewn separately next to each other, look very nice, they can be placed inside a metallic outline, in the middle of an outline sewn with contrast beads or they can be scattered chaotically on the canvas, creating bright spots on the embroidery.*
State of development: *products*
Contact/Presentation link: *https://www.facebook.com/profile.php?id=100063499954796*

5.

Title: *HACKTEX - Innovative smart textiles & entrepreneurship*
Patent/project number: *2021-1-RO01-KA220-HED-000027527*
Author/s: *Luminita Ciobanu, Savin Dorin Ionesi, Lidia Alexa*
Institution: *Gheorghe Asachi Technical University of Iaşi*
Category: *I*
Description: *Smart textiles represent a large group of advanced textiles with new functions obtained using high-performance raw materials and specialized treatments. The HACKTEX project develops the tools necessary for skills enhancement targeted to higher education in relation to innovation in order to obtain its objectives: support higher education students to acquire skills in transdisciplinary innovation based on smart textiles; foster student cooperation multidisciplinary approach in hands-on projects; provide knowledge, skills and competences using virtual learning methodologies and tools; promote the application of good practices for the enhancement of innovative skills; strengthen collaboration between universities with the advanced textiles industry.*
State of development: *Research project - This is an EU-funded project, HACKTEX - Innovative smart textiles & entrepreneurship, no. 2021-1-RO01-KA220-HED-000027527. All information on the results of the project reflects the contributions of all partners – TUIASI - Romania, AEI Textils - Spain, CRE.THI.DEV. - Greece, CIAPE – Italy, Universitat Politecnica de Catalunya - Spain, University of West Attica - Greece, University of Borås - Sweden, TITERA - Germany.*
Contact: *luminita.ciobanu@academic.tuiasi.ro*
Presentation link: *https://drive.google.com/drive/folders/163e_q8pBi-36ERD0ip4c4gIhMWHsqU_q*

6.

Title: ECOCROMA: Sustainable Fashion Inspired by Nature
Patent/project number: Innovative Fashion Collection
Author/s: Nicoleta SOFRONOVICI
Institution/Country: Fashion designer, Chișinău, Republic of Moldova
Category: I
Description: *"In nature lies the secret of preserving the ecological world." – Henry David Thoreau. Throughout history, fashion has proven to be a controversial and fleeting phenomenon, exerting a significant impact on culture, society, and the environment. Today, the fashion industry is increasingly scrutinized as a major contributor to global environmental issues, ranking as the second-largest polluter in the world. This is largely due to the rise of fast fashion, which involves the widespread use and release of chemicals, dyes, and finishing agents at various stages of a garment's life cycle. As a result, sustainability and the reduction of fashion's negative impact on the environment have become dominant themes in the industry, with nature serving as the most suitable source of inspiration, offering numerous beneficial alternatives. One of the most effective solutions to mitigate and eliminate the harmful consequences of textile dyeing is the replacement of chemical dyes with natural pigments extracted from plants, fruits, and roots, along with the implementation of the eco-print technique in clothing collections. Eco-printing is an innovative artisanal method of decorating fabric surfaces, adding a unique and personalized touch to each design. The developed collection aims to educate and promote a conscious and responsible lifestyle that aligns with ecological principles, fostering harmony and balance with nature. It embraces the growing eco-trend by integrating eco-printing and natural fabric dyeing techniques, as well as advocating for slow and sustainable design. Extensive research has been conducted on the extraction of natural dyes, mordanting, eco-printing, and other innovative textile dyeing techniques. The fashion industry is increasingly experimenting with eco-friendly and sustainable fashion, a necessary step toward protecting both the environment and the society in which we live. The name "Ecocroma" is a combination of: "Eco", referring to ecology, nature, and sustainability. "Croma", derived from the Greek χρῶμα (chrṓma), meaning "color". Ecocroma can be interpreted as "ecological color" or "natural printing", perfectly aligning with the concept of eco-print clothing, where pigments are extracted from plants, leaves, and other natural materials.*
State of development: Ready for Production
Contact: *sofronovicinicoleta@gmail.com* ***+373069489315***
Presentation link:
https://drive.google.com/file/d/1XopsRg-pWB5MS2kn4WWZavBU8mke8SBe/view?usp=sharing
https://drive.google.com/file/d/1lCMyRrUJvRwocdBrn1itpQNY5k0zFOAX/view?usp=sharing

7.

Title: STRUCTURED BIOEMULSIONS BASED ON A MIXTURE OF SURFACTANTS-VEGETABLE EXTRACTS CONCENTRATED THROUGH MEMBRANES AND PROCESS FOR OBTAINING THEM
Patent/project number: A/00293 from 04.06.2024/ Core Program TEX-PEL-CHALLENGE 2026, Project number PN 23 26 01 04, acronym Tex4Age
Author/s: Simion D., Ene A.-G., Popescu A., Gaidău C., Chirilă L., Lite M.C.

Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Category: I
Description: *The structured bioemulsions were made through a process based on a mixture of surfactants Lauryl glucoside & Tween 20 & Tween 80 and one of plant extracts from: sage & geranium & lemon (or separate). The structured bioemulsions based on a mixture of surfactants-membrane concentrated plant extracts can be successfully used as new additives, non-polluting, non-toxic auxiliaries in the textile and leather industry, to improve antibacterial, antifungal, self-cleaning, color fastness properties. Structured bioemulsions obtained for treating textile or leather surfaces are made up of surfactants in a proportion of 15% and plant extracts concentrated by membrane technology, from the mixture: sage & geranium & lemon of 6%, which contain 0.6-0.9% vitamin C, preferably 0.7-0.81%; conditioned in liquid form, in plastic containers. The solubilization (encapsulation) method of mixture from three plant extracts, concentrated by membrane technology in structured bioemulsions was compared. A mechanism for solubilization of plant extracts in a mixture of: sage, geranium, lemon, concentrated by membrane technology, in surfactant micelles: Tween 80, Tween 20 and Lauryl glucoside was proposed. The plant extracts in the mixture and concentrated by membrane technology are hydrophilic and attach to the hydrophilic groups of the surfactant chains.*
State of development: Application patent; Experimental Model
Contact: *demetra.simion@incdtp.ro*
Presentation link: *https://incdtp.ro/nucleu.html*

8.

Title: PROCEDURE FOR OBTAINING LAYERED DRESSINGS, USABLE FOR ASSISTING MEDICAL INTERVENTIONS PERFORMED IN EMERGENCIES
Patent/project number: A/00612/06.10.2022/ PN-III-P2-2.1-PED-2019, Project number 496 PED/2020, acronym CELLMATRIX
Author/s: Visileanu Emilia, Ene Alexandra Gabriela, Popescu Diana Mihaela, Maier Stelian Sergiu, Tihauan Bianca Maria, Marinas Ioana Cristina
Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Category: I
Description: *The invention refers to a process for obtaining layered dressings, usable for assisting medical interventions carried out in emergencies, characterized by the fact that they provide microorganism-free compresses or bandages, with temporary application, for the management of non-infected wounds, as well as minor burns, with thermal and chemical origin, and low and medium severity, occurring at the level of the integuments.*
Technological stages:

- *preliminary decontamination of previously functionalised textile materials;*
- *cutting out the landmarks from textile materials according to the*

sort-type-dimensional requirements of the dressings or compresses to be manufactured;

- *dimensional stabilisation and conditioning of textile materials;*

- *cutting out landmarks from loosely cross-linked polyurethane hydrogel, previously manufactured in the form of a flat layer;*
- *post-processing of the landmarks of the polyurethane hydrogel layer to load them with pharmacologically active compounds;*

State of development: Application patent; Experimental model
Contact: *e.visileanu@incdtp.ro*
Presentation link: *https://incdtp.ro/index_en.html*

9.

Title: ASSEMBLY PROCESS OF NARROW TEXTILE MATERIALS FROM THE COMPONENT OF THE ANCHORING SYSTEM OF THE MULTI-ROLE COLLAPSIBLE MODULE FOR PEDOLOGICAL DROUGHT
Patent/project number: A/00504/ 02.09.2024/ Core Program TEX-PEL-CHALLENGE 2026, Project number PN 23 26 02 01, acronym THORR
Author/s: Grosu Cristina, Săliştean Adrian, Popescu Adriana Iuliana
Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Category: I
Description: *The invention refers to a process for assembling narrow textile materials, an integral part of the anchoring system, on the upper part of the hexahedron with square faces, by sewing technology with: additional reinforcement elements on the upper part (with 100% PES reinforcement tape, 30 mm wide and 3.5 mm thick, 100% PES, with special surface treatment (filming)) and straps (in number of 12), for the assembly of suspension-attachment-detachment from the hook of the helicopter's transport system (100% PES, width 25 mm, thickness 2 mm, length 1500 mm), so that the multi-role collapsible aerian module for pedological drought ensures the following operational requirements: long technical resource (min. 4 years), resistance to abrasion in the joint area (min. 10,000 cycles) and the working load of the entire modular system (min. 3500 daN.)*
State of development: Application patent; Experimental model
Contact: *cristina.grosu@incdtp.ro*
Presentation link: *https://incdtp.ro/THORR/*

10.

Title: CRAFTING FREEDOM
Patent/project number: 003/2025
Author/s: Phoonseeraah Tieanworn, Jeerasak Jitrotjanarak, Chutiparn Lertvachirapaiboon
Institution/Country: Choate Rosemary Hall, Connecticut, USA
Category: I
Description: *Ada's project empowers migrant women by providing training in crafting souvenirs, decorations, and jewelry using local materials like shells, marble, and stone. To enhance product value, her*

team supplies materials and knowledge to functionalize items with mosquito-repellent, antibacterial, and aromatherapy properties. The women assemble these products, which are then marketed and sold under the brand Ada through tourism networks and an online platform. This initiative not only offers sustainable income but also helps prevent vulnerable women from falling into human trafficking and illegal activities, giving them a path to independence and dignity.
State of development: Commercialized
Contact: *j_jerasak@hotmail.com*
Presentation link: *https://www.choate.edu/about*

11.

Title: CRYSTAL PICTURE
Patent/project number: Tapestry
Author/s: Katalin Leléné Czeglédi (Hódmezővásárhely)
Institution/Country: Idea Club 13 Association, Hódmezővásárhely, Hungary
Category: J
Description: *In the collection consisting of several pictures, you can fill drawings of different unicorns with cheerful beads. Glue the template carefully, then choose which colors you will use to create the picture. After that, you just have to sprinkle the beads in the appropriate places. After the glue dries, your wonderful crystal picture is ready.*
State of development: product
Contact: *otletclub.idea@freemail.hu*
Presentation link: *https://otletclub.5mp.eu/web.php?a=otletclub*

12.

Title: PATCHWORK
Patent/project number: Tapestry
Author/s: Katalin Leléné Czeglédi (Hódmezővásárhely)
Institution/Country: Idea Club 13 Association, Hódmezővásárhely, Hungary
Category: J
Description: *Patchwork was originally a type of needlework made by American farm women, mainly from the usable parts of worn-out clothing. It is a more modern version of this, adapted for use today.*
State of development: product
Contact: *otletclub.idea@freemail.hu*
Presentation link: *https://otletclub.5mp.eu/web.php?a=otletclub*

13.

Title: FLORET FASHION COLLECTION
Patent/project number: Fashion Project
Author/s: Nicoleta SOFRONOVICI
Institution/Country: Floret Fashion, Republic of Moldova

Category: I
Description: *The women's fashion collection is based on a contemporary theme, presented through formal and decorative means with a message carrying activist undertones and advocating peaceful protest regarding the awareness and accountability of the population towards the disappearance of biodiversity and the plant world. Materials used include denim, knitwear, combinations of textures, and decorative-structural and plastic expressions to outline straight, oval, rectangular, and trapezoidal silhouettes. The color palette revolves around shades of mint green and grays, with closure systems featuring slits, buttons, and snaps. The clothing pieces include pinafores, pants, blouses, dresses, and ponchos.*
State of development: Fashion Collection Project
Contact: Nicoleta Sofronovici; sofronovicinicoleta@gmail.com +373 69489315
Presentation link: https://www.youtube.com/watch?v=X2ndDo0WOdw

14.

Title: PERLET FASHION COLLECTION
Patent/project number: Trademark
Author/s: Mădălina Bianca BISTRIAN
Institution: Perlet by Madalina Bianca
Category: I
Description: *Industrial sewing machines are designed to provide fast, smooth, vibration-free sewing at any speed. The newest machines are completly sealed to eliminate oil stains from the materials. They have simplified control panels that allow the user to adjust the sewing speed to suit their experience level. They come equipped with an integrated Direct-Drive servo motor. The servomotor is coupled to the machine head by its own coaxial shaft that reduces vibrations and noise; this allows the user to stitch at any speed powerful enough to sew from thin to thick materials. The passion to keep up with technology helped me to succeed in creating the most spectacular dresses in my own PERLET workshop.*
State of development: Products
Contact: bismadalinabianca@gmail.com +40735299651
Presentation link: https://www.facebook.com/perletbymadalinabianca/?locale=ro_RO

15.

Title: THE TRANSFORMATION OF WASTE INTO UNIQUE ACCESSORIES
Patent/project number: MD Nr.1978
Author/s: Malcoci Marina, Malcoci Maria-Eudochia, Corolevschi Marcela
Institution/Country: Public Institution Center of Excellence in Light Industry from Chisinau, Republic of Moldova
Category: I
Description: *Nowadays, sustainability is becoming increasingly important, and the reuse of materials plays an essential role in reducing waste and protecting the environment. The products in the work are handmade from the waste left after the natural leather cutting process. Instead of being thrown away, some pieces of leather have been transformed into unique accessories, demonstrating that traditional*

craftsmanship can go hand in hand with ecological practices. Nine products are decorated with fine embroidery in the traditional style. The embroidery not only beautifies the accessories, but also capitalizes on each piece of material, demonstrating special attention to preserving traditional elements. And 15 products are made of unembroidered leather, characterized by simple lines and natural colors.
The minimalist style of these accessories suggests a contemporary approach, while preserving traditional hand-processing techniques.

The creation of these products not only reduces the impact on the environment, but also gives new life to waste. This sustainable approach demonstrates that there can be harmony between tradition and innovation, inspiring new ways of capitalizing on available resources.

State of development: Products
Contact: *marina.malcoci@gmail.com* ***+37369062399***
Presentation link: *https://www.facebook.com/ceiuchisinau*

16.

Title: SILK THREADS BLENDING MACHINE
Patent/project number:
Author/s: Venkatesh Penumarthi
Institution/Country: Andhra University, Andhra Pradesh, INDIA
Category: D
Description: *The tradition of handloom in Andhra Pradesh is so ingrained in its culture that it serves as the state's identity. There are several villages in Andhra Pradesh, each of which has its own distinctive method of weaving and pattern .Very often the handloom is given the same name as that of the village where it is weaved. Dharmavaram town located in Sri Satya Sai district is the silk hub of the Andhra Pradesh state. Here thousands of people are making a living by weaving silk cloths especially sarees. The process of weaving is quite a strenuous job. It is causing severe health hazards to weavers in the long run. Our project is to reduce the problems faced by weavers in our region. Usually when a saree is completely woven, new silk threads are blended onto the old ones in a frame just like shown here. This is done manually by specialist weavers using hands and gum. It is a tedious process. So, we are designing a simple blending for weavers to mould threads onto the weaving frame.*
State of development: Method
Contact: +917386185111 *penumarthivenkatesh05@gmail.com*
Presentation link:
https://docs.google.com/presentation/d/1BmQJUeWermUA2KBdiBetMLyiiTYTG1qS/edit?usp=sharing&ouid=117405513031899406361&rtpof=true&sd=true

17.

Title: REVITALIZED CHAIR by Loredana TOMA
Patent/project number:
Author/s: Loredana TOMA
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara; CITT Politehnica 2020, Romania

Category: D
Description: *This chair, once destined for the scrap heap, has been reborn through the creative ingenuity of Loredana Toma. With its bottom destroyed by the harsh rays of the sun, it seemed beyond repair. But Loredana, a passionate advocate for recycling and reusing, saw potential where others saw only waste. Using her keen eye for repurposing materials, Loredana replaced the chair's worn-out plastic bottom with sturdy inner tubes from tractors. With meticulous care, she cut and wove the tubes into a new seat, transforming the chair into a comfortable and functional piece of furniture. Now, this revitalized chair proudly bears the mark of Loredana's commitment to sustainability. It serves as a tangible reminder of her dedication to minimizing waste and maximizing potential. Each time you sit in this chair, you not only experience comfort but also become part of a larger story of resourcefulness and environmental stewardship.*
State of development: Method
Contact: *lory12nicoleta@yahoo.com*
Presentation link:
https://arp.avon.com/prp/RO/ro/NICARA2005SRLTOMALOREDANANICOLETA

18.

Title: WOOD ART AND TRADITIONS
Patent/project number: Teacher of traditions
Author/s: Mircea LAC
Institution/Country: Artă Tradiţională Deva, Romania
Category: D
Description: *He is a complete teacher in a way that is increasingly rare – a man of character, an encyclopedia of peasant art, and a craftsman who transforms the crude into collectibles. Now, Professor Mircea Lac is officially named by* ***UNESCO a Living Human Treasure****. He was called the "teacher of traditions" and dozens of articles and even books have been written about him. Anyone who knows Mircea Lac has the blessing of heaven to step well-guided into the fantastic world of peasant art. Once he opens the door of his workshop, the smell of refinished wood surrounds you. Thousands of pieces steal your soul and you don't know which one to admire first. The teacher smiles gently, a sign that he is used to such reactions. And it's no wonder: Mircea Lac has been harnessing talent in students since the year I was born. Children follow him, and artists marvel at his collection of pieces laboriously crafted by him or his students over the years. "Since 1975. Since then, I've had 30, even 40 students every year. I don't know the exact number. What matters more is how talented they are. Almost everyone seeks me out, even those who have gone abroad. They come to talk, to see their work, to smell the wood and dust. I have many students who have continued what I did here. In this, I have great spiritual satisfaction that many of my students went to Sibiu, to the restoration." Mircea LAC*
The youth cares - the values of the past are the foundation of our future!
State of development: Traditional sculpture technique
Contact: *artatraditionaladeva@gmail.com*
Presentation link: *https://www.facebook.com/share/r/1MxVinjdUw/*

J - Kids Corner, Games, Toys, Outdoor activities

1.

Title: ***CLUB EVOLUȚII cu Alexandra Marcu***
Patent/project number: Outdoor project
Author/s: Alexandra Marcu & Team
Institution/Country: Deva, Romania
Category: J
Description: *Club Evolutii is an organisation from Romania, providing personal development activities based on mountain and traveling education.*
We organize mountain hikes, expeditions, camps and educational courses for children who want to become explorers and enjoy many experiences and adventures.
Why do we love the mountain?! Because it's an escape between the blocks, an opportunity to socialize and although it often challenges us to get out of our comfort zone, it seems at the same time it gives us the feeling of well-being and safety!

Club Evolutions - Personal development through mountain education!

Did you know that skiing offers a series of very important advantages?!

1. More calories burned

Skiing is an excellent cardiovascular exercise, which can help you burn serious calories and shed extra pounds.

The number of calories you burn per hour is based on your weight and fitness level, but according to the Harvard Medical School, a person who weighs 85 kg will burn 266 calories in 30 minutes of downhill skiing.

Beginners can get extra calories burned by going up the slope, instead of using the ski lift. As for advanced skiers, the steeper the slope, the more calories they will burn, because the body has to work harder to maintain its balance.

2. Strengthens the muscles of the lower body area

This winter, take the training from the gym directly to the game!

Skiing naturally keeps the body in a squatting position, which strengthens the quadriceps, hamstrings, calves and glutes.

Because you will be distracted by the beauty of the surrounding area or too focused on going down the slope, you will not notice how much your legs burn, but you will definitely feel the results the next day!

3. Improve flexibility
The very art of balancing and tensing the trunk and key muscle groups while skiing makes the body more flexible!

As in any sport, it is recommended that you have a stretching routine before going on the track. It is also welcome to do some stretching afterwards to avoid injuries. A regular stretching routine, which focuses on the basic muscle groups, will strengthen the abdominal muscles, obliques and hips, groups that you use in alpine skiing.

4. Improves mood

Movement in the open air promotes an increased production of endorphins, which leads to a feeling of liberation and happiness.

In addition, winter sports offer families time together in nature, extremely important moments in winter, when the days are shorter and the time spent with the family is reduced.

Regardless of the duration and frequency with which you do this activity, skiing is extremely beneficial not only for your physical health, but also for your mental health.

State of development: traveling education
Contact: *alexandraflaviamarcu@gmail.com* ***+4 0723 219 655***
Presentation link: *https://www.youtube.com/@ExploradoresVlog/featured*

2.

Title: AIRSOFT BY WOLVES SPORTS CLUB
Patent/project number: Airsoft
Author/s: Florin TOPOR & Team
Institution/Country: Deva Wolves Sports Club, Romania
Category: I
Description: *The Deva Wolves Sports Club through the taekwon-do, archery and airsoft sections promotes movement and competitive spirit by participating and organizing games and competitions of these sports disciplines. The Deva Wolves Sports Club organizes various demonstration events in which participants and visitors have the opportunity to witness a presentation of the combat tactics used in airsoft, of the equipment, but also of replicas of real military weapons and devices. Those who love this sport could sign up for the target shooting session in a controlled environment and in complete safety. Airsoft is a sport that helps develop team spirit and fair play, building character.*
State of development: Airsoft
Contact: *axe_design@yahoo.com*
Presentation link: *https://youtu.be/QYdjh3YGD4g?si=4zfVpus7tgjgvbWG*

3.

Title: DISCOVER ZANZIBAR with MUDI
Project number: Travel Guide
Author/s: Muhammed Suleiman Yussuf
Institution/Country: ZANZIBAR
Category: H

Description: *I'm Mudi and I am a tour guide here in Zanzibar. I only learned Romanian on the internet and on youtube, and now I have a school where I also teach other friends of mine.*
If you choose to spend your holiday here you will have the opportunity to discover Zanzibar and its beauty with me.
This is my website and the place where I can be with you, my whole story in one place, along with information for tourists about Zanzibar.
Zanzibar is an archipelago located off the east coast of Africa and consists of the main island of the same name, Zanzibar or Unguja as the locals call it, and Pemba.
The word Zanzibar comes from the Persian language and translates as "coast of black people" and Pemba translates as "green island". Zanzibar is located approximately 6000 kilometers from Romania, the islands being sought after both for the wonderful beaches and reefs, and for the exotic destination.
State of development: Travel Guide
Contact: *https://www.facebook.com/ghidturisticdespre.zanzibar*
tshabalalajunior17@gmail.com ***+255 783 396 944***
Presentation link: *https://www.youtube.com/@descoperazanzibarcumudi3671*

4.

Title: My hobby BALLET
Patent/project number: Kid Project
Author/s: Alessia Marie SALA
Institution/Country: Kita Dreirad Regensburg, Germany
Category: J
Description: *My name is Alessia Marie SALA, I'm five years old and one of my passions is dancing, that's why I'm taking the ballet class. I like to do pirouettes and different positions together with my colleagues under the careful guidance of the ballet teacher.*
For five months I have been attending the ballet classes organized by the Regensburg ballet circle.
State of development: ballet class

5.

Title: My hobby FOOTBALL
Patent/project number: Kid project
Author/s: Christian SALA
Institution/Country: Kita Dreirad Regensburg, Germany
Category: C
Description: *My name is Christian SALA, I am five years old and football is my passion. I like this sport a lot and after kindergarten I play football with my friends in the park near our house. I am registered at the Football Club of the locality where I live.*
We practice twice a week and on weekends we have matches with teams from other towns.
State of development: football

6.

Title: DELIA's LEGO CREATIONS
Patent/project number: Kid Project
Author/s: Delia Ioana CINDEA
Institution/Country: "Matei Corvin" Technical College, Romania
Category: J
Description*: My name is Delia, I am 9 years old and I am a student at the "Matei Corvin" Technical College in Hunedoara, in the second grade, following the Step by Step program. One of my biggest passions is building LEGO models. I like this activity because it stimulates my imagination, creativity and patience. Through LEGO construction, I can create various structures and objects, explore new ideas and develop practical skills. It's a great way to learn and relax at the same time. Each piece I add to the build helps me focus and enter a state of calm and relaxation. This activity gives me the opportunity to explore creativity, solve problems and see my ideas take shape.*
LEGO teaches me to be patient and attentive to details, and the joy of completing a project gives me a special satisfaction.
State of development: LEGO construction
Contact: *welcome_anna14@yahoo.com*
Presentation link: *https://youtu.be/t3lgIYj74w0*

7.

Title: LEGO - My passion for building car
Patent/project number: Kid Project
Author/s: Denis Stefan PENA
Institution/Country: "Iuliu Maniu" High School with classes I-VIII, Vintu de Jos, Romania
Category: J
Description: *Building LEGO cars is a passion that inspires and challenges me. By now, I have built 40 LEGO car models, and 5 of them are much more complex than my age level. Each project gave me a new challenge and helped me learn more about mechanics and design. For this project, I created a remote-controlled car prototype, equipped with:*

- ✓*2 powerful motors for traction*
- ✓*4x6 transmission for better stability and control*
- ✓*Remote control for distance operation*
- ✓*Steering control module*

In addition, I included Roby the robot in my project. I assembled and programmed it myself. It is controlled through a mobile app, giving it interactive and autonomous functions.
Building LEGO cars is not just fun, but a true passion.
State of development: Lego construction
Contact: *penamadalina@gmail.com*
Presentation link: *https://youtu.be/sFunVV0JyGY?feature=shared*

8.

Title: MY UNIVERSE
Patent/project number: ART Project
Author/s: Maria Nectaria MOCANU
Institution/Country: "Sigismund Toduță" Secondary School, "Anghel Saligny" Railway Transport Technological High School - Simeria, Romania
Category: K
Description: *Maria Nectaria Mocanu is a student in the 4th grade of the "Sigismund Toduță" Secondary School, a structure belonging to the "Anghel Saligny" Railway Technological High School in Simeria. Each element has a clear and distinct message, each painting is a balanced puzzle of color and words. My works are deeply expressive and full of symbolism, demonstrating a special artistic sensibility. Each painting conveys an inner story and strong emotion, highlighted by vibrant colors and symbolic elements. Despite her young age, Maria demonstrates a mature artistic understanding and her works are full of substance and sensitivity. Through these creations, the little artist manages to share with us her own universe, full of emotion and depth.*
State of development: Paint
Contact: *cosminaprata151080@gmail.com*
Presentation link: *https://www.liceulsaligny.ro/despre-noi/*

9.

Title: ALEX'S LEGO CREATIONS
Patent/project number: Kid project
Author/s: Alexandru ROTEA
Institution/Country: Schillerschule Dettingen an der Erms, 1C class, Germany
Category: J
Description: *I'm Alexandru passionate about Lego, I'm in the 1st grade at school Schillerschule Dettingen an der Erms. I really like to build models from Lego pieces, and after class and after doing my homework, my main activity is Lego construction. In this project I present 3 of my creations based on Lego cubes and inspired by the Lego world. My project is made for creative and fun play. A Monster Truck built on a partial technic lego – the part below and custom lego pieces - the top part, that it is composed of a truck cab and a big cheeseburger. Cheeseburger is one of my favourite foods. I made a disco with Dj on wheels, in this way the Dj can move where someone wants to have a party with music in the open air. The 3rd creation is part of the new generation of campers, this model involves an electric camper with solar panels on it. During the summer vacation the camper will always have the battery charged to be able to venture to places without battery charging stations.*
State of development: Lego project
Contact: *deliiulia@gmail.com*
Presentation link: *https://www.corneliugroup.ro/educatie.html*

10.

Title: SEBASTIAN'S MODIFIED LEGO CARS
Patent/project number: Kid project
Author/s: Sebastian ROTEA
Institution/Country: "Schillerschule" Dettingen an der Erms, 7C Class, Germany
Category: J
Description: *I am Sebastian, a 7th grade student at school "Schillerschule" Dettingen an der Erms I like mathematics and after completing the courses and homework, I relax by building Legos, especially cars. My project features Custom Lego Cars, this means creating a new car model from an existing Lego Auto set using the same parts. This year I have the pleasure to present you the next models:*
- the first car is a Nissan Silvia with a modified engine with a supercharging group;
- the second car is Ford Mustang darkhorse customized to be a Time Attack car;
- the third car is a was a Nissan Skyline R34 from Fast 2 Furious. I modified it into a Nissan Stagea;
State of development: Lego project
Contact: *deliiulia@gmail.com*
Presentation link: *https://www.corneliugroup.ro/educatie.html*

11.

Title: STONE BLADE TRAILER OF VIDEO GAME
Patent/project number: Student Project
Author/s: Pavle Trišović
Institution: Faculty of Contemporary Arts, Belgrade, Serbia
Category: J
Description: *SMASH into Stone Blade is an epic action-adventure game, where you'll fight monstrous enemies, befriend strange and otherworldly travelers, journey through a brilliant and ancient world, and discover it's secrets - all in a hand drawn pixel art-style. You play as a Stone Warrior, once acting as sword and shield for the Five Kings - now seeking vengeance against them for sacrificing his kin to win their war. To succeed in his quest the Stone Warrior must absorb the powers of his enemies and use them as his own. The dash is a power up that is a valuable resource for the player. They can use it to cross a level quickly or get out of enemy fire. It is upgraded version, the Wolf Cloak dash, allows the player to avoid all damage while dashing. Wall jumping is essential in order to cross any level or discover hidden areas. It's upgrade - the Beast Claws - allows the player to stick to a wall. The double jump will be obtained from the Grasshopper Legs - you gain the power of the elegant grasshopper.*
State of development: video game graphic design
Contact: Pavle Trišović, +381631033990, Email: *pavle.trisovic@fsu.edu.rs*
Presentation link: *https://youtu.be/UIvM_BmZzMw*

12.

Title: Epu-KAMi
Patent/project number: 2912

Author/s: Bordan Kamelia; Mentor Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: E
Description: *Epu-KAMi The innovative product, for bunnies made of natural fabric. Our family has a tradition of raising white bunnies, our grandparents inherited this business. Innovative is the slim, comfortable tank top.*
State of development: innovative product
Contact: *silvia.scortescu@yahoo.com*
Presentation link: *https://jamoldova.org.md/index.php/en/*

13.

Title: KAPI-TANi
Patent/project number: 2908
Author/s: Eşanu Tatiana; Mentor Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: E
Description: *KAPI-TANi children's pijamas based on storage and made of eco-friendly cloth, on the outside is with a pocket where the Kapibara toy sits in the pocket, in the toy is attached a medicinal magnet that treats blood pressure and headaches.*
State of development: innovative product
Contact: *silvia.scortescu@yahoo.com*
Presentation link: *https://jamoldova.org.md/index.php/en/*

14.

Title: TOUCHA: EXPLORING PERSONAL BOUNDARIES AND SAFETY WITH FUN
Patent/project number: 000825060
Author/s: Khansaa Mariska Dalis, Ladija Syifa Ichizuna, Hanahumaira Zafrani Hanan, Janita Lituhayu Rustono, and Indah Vintia Carissa
Institution/Country: SMP Thursina IIBS Malang, Indonesia
Category: J
Description: *TouchA is an inclusive wooden memory game that teaches personal boundaries and safety to children aged 4-8. Through interactive activities with peg dolls, question cards, and colorful tokens, kids learn about safe vs. unsafe touch, personal space, and trusted adults in a fun and engaging way. Designed with multisensory learning, TouchA helps children develop essential life skills while playing. Developed using the ADDIE model, TouchA encourages children to explore safe and unsafe touch, personal space, consent, and trusted adults through hands-on play and structured discussions. The game is particularly beneficial for children, including those with Autism Spectrum Disorder (ASD), as it leverages tactile and visual learning to support comprehension and social interaction. With a balance scale and reward system, TouchA reinforces positive learning behaviors while making education an enjoyable and meaningful experience. By combining playful learning with essential life skills, TouchA aims to empower children with*

knowledge and confidence to navigate social interactions safely. Simple, effective, and interactive – TouchA makes learning safety easy and enjoyable!
State of development: Product
Contact: *youngscientist.iysa@gmail.com* ***+62 882 1324 8890***
Presentation link: *https://bit.ly/hi.toucha.vid*

15.

Title: DEE DOUGH
Patent/project number: 0011/2025
Author/s: Pornprapat Jirapojaporn, Napisa Laipanya, Jeerasak Jitrotjanarak
Institution/Country: Ruamrudee International School, Thailand
Category: J
Description: *DeeDough is a unique, science-inspired modeling dough infused with benzalkonium chloride, making it both safe and innovative for creative play. The embedded benzalkonium chloride provides natural antimicrobial properties, helping to keep the playdough cleaner by reducing bacteria growth, making it a hygienic option for kids and adults alike. Despite this infusion, the dough remains soft, malleable, and easy to shape, allowing for endless imaginative possibilities. Its antimicrobial nature also makes it ideal for educational activities, promoting a cleaner and safer play experience. Non-toxic, non-staining, and packaged for long-lasting freshness, Deedough is a perfect blend of creativity and safety, bringing a modern twist to a classic hands-on activity.*
State of development: Prototype / Development Stage
Contact: *manie.napisa777@gmail.com pornprapatj@gmail.com*
Presentation link: *https://satitm.chula.ac.th/*

16.

Title: CLAIREVI BEE: PERSONALIZED MODULAR LIPSTICK FOR BEAUTY ON THE GO
Patent/project number: 0013/2025
Author/s: Avieka Khlaisang, Patsarun Rawangban, Jeerasak Jitrotjanarak
Institution/Country: Chulalongkorn University Demonstration Elementary School, Thailand
Category: J
Description: *Clairevi Bee: Personalized Modular Lipstick for Beauty on the Go*
A smart modular lipstick system inspired by the beehive concept, designed for beauty lovers on the go. It enhances beauty organization, meets travel-friendly cosmetic needs, and reduces waste with interchangeable and refillable packaging. Expanding to eyeshadows and blushes, it promotes convenience, creativity, eco-friendly. and sustainability in modern beauty routines.
The Problem: Lipstick is an essential part of many women's beauty routines, boosting confidence and self-expression. Studies show that 70% of women wear lipstick daily, and 65% feel more confident at work when wearing it. The global lipstick market is growing, expected to reach $11 billion by 2025, proving its strong demand. However, keeping up with multiple shades and styles for different occasions often leads to messy makeup bags, extra spending, and waste. With busy schedules and frequent travel, women need a smarter, more organized, and sustainable way to manage their beauty essentials.

Solution: Clairevi Bee is a smart, modular lipstick system designed for beauty lovers on the go. Inspired by the beehive concept, it allows users to mix, match, and refill shades effortlessly. With eco-friendly packaging and future expansion to eyeshadows and blushes, Clairevi Bee makes beauty personalized, convenient, and sustainable.
Future Potentials: Clairevi Bee expands into refillable eyeshadows, blushes, and foundations, offering customization through limited-edition palettes and influencer collaborations. It features an upcycling program and AI-powered shade matching while promoting eco-friendly, travel-friendly, and sustainable beauty (SDG 12), clean beauty, women empowerment, and innovation (SDG 3, 5, 9).
To further enhance product lifespan and quality, Clairevi Bee will integrate temperature and moisture control within the packaging, ensuring lipstick stays fresh, maintains its texture, and delivers optimal performance in various climates, making it a reliable, long-lasting beauty solution for on-the-go users.
State of development: Prototype
Contact: *scis.cud@gmail.com*
Presentation link: *bit.ly/clairevi_bee*

17.

Title: PASSION THROUGH COLOR
Patent/project number: Kid Project
Author/s: Aleksandar MILOICOV
Institution/Country: Nikolaus Lenau Theoretical High School Timisoara, Romania Timisoara
Category: J
Description: *I am a first-grade student at the "Nikolaus Lenau" Theoretical High School in Timisoara, I express my creativity and imagination through drawing, transforming each work into a visual story full of emotion and color.*
My passion for art was shaped under the guidance of the renowned master of caricature and graphic art, Professor/Mentor: Ştefan Popa Popa's, who inspires his love for detail and expressiveness.
❗ Talent, passion and vision - these are the words that define my artistic journey and imagination has no limits!
Techniques used:
• doodle-art/graffiti with thick outlines and intense colors. The techniques involve markers, watercolors or digital illustration with vibrant chromatic palettes.
• black and white sketches, made in a minimalist style, with a fine-tipped pen or black ink. The composition plays on the idea of distorting shapes, inspiring surrealism and conceptual drawing.
• markers or watercolors, using thick outline lines and bright colors, with a strong contrast between the background and the character.
• surreal drawing, made with a fine liner or black ink pen. The unusual perspective suggests a conceptual game between reality and imagination.
• made with markers and black ink, the thick outlines and the overlapping of elements creating an intense visual effect.
• Illustration made with watercolors or markers, with a naive style and clearly delimited chromatically, probably symbolizing relaxation and nature.

State of development: Illustration
Contact: baceano@gmail.com
Presentation link: https://nlenau.ro/

18.

Title: HOME REPAIRS
Patent/project number: Kid Project
Author/s: Sebastian Andrei ANGHELONI
Institution/Country: Otelu Rosu Extended Day Kindergarten, Romania
Category: I
Description: *Sebastian Andrei is a little boy who just turned two years old! From an early age, his parents discovered his immense passion for cars and the tools needed to repair them. We can see in the following photos his interest in everything that has four wheels. He stands next to his father when he repairs cars. We, his parents, already know the field we will train him to follow.*
State of development: Kid Project
Contact: corneliugroup@gmail.com
Presentation link: https://www.youtube.com/channel/UCbu68vZcYRP8CkCOnvlILjA

19.

Title: ECDO - Exploration and Clean up in the Deep Ocean
Patent/project number: Student Project
Author/s: Jacob Drew Cortez, Gabriel Lupe Garcia, Rangel Amber Untalan, Louise Dominique Borabon, Eulice Layne Anis, Dave Lucas Rivera
Institution/Country: St. Patrick School of Quezon City - Philippines
Category: J
Description: *Develop specialized submarines designed to collect ocean debris such as plastics, fishing nets and related. Explore the deep ocean environments to gather essential data on deep-sea ecosystems. Launch a comprehensive campaign to make the public aware of the detrimental effects of pollution and proactively addressing the issues.*
Team Solution
- Submarine for Trash Collection Develop specialized submarines designed to collect ocean debris. These advanced submarines will be equipped with sensors to detect various types of pollutants, such as plastics, fishing nets, and other debris, and will utilize innovative mechanisms to safely retrieve them from the ocean.
- Submarine for Ocean Exploration Design submarines capable of exploring deep ocean environments, with a particular focus on the abyssal zone. These submarines will be built to withstand extreme pressure and darkness while gathering essential data on deep-sea ecosystems and the impact of pollution in these remote areas.
- Public Awareness and Engagement Launch a comprehensive outreach campaign to raise public awareness about ocean conservation, the detrimental effects of pollution, and the proactive steps our project is taking

to address these issues. This campaign will aim to educate and engage individuals on how they can help protect the ocean and support global conservation efforts.

State of development: Prototype

Contact: Dr. Dary E. Dacanay *raymundcarl@gmail.com*

Presentation link: *https://drive.google.com/drive/folders/1_6q0FKV3u7-X-Qu5HmO-PuEEssqXGBUH?fbclid=IwY2xjawIQC35leHRuA2FlbQIxMAABHVfzEujSLWp84RKqjCrTb49rCcWYE2JGXPraKfT3e9OdzAv1LszUll6c1g_aem_gSykGYumPenHjvp5Omjsjg*

Presentation link: *https://youtu.be/nwe8iqIJSN0?si=gE1dEY4N-Yt4dtfU*

20.

Title: CARIE THE MARINE PATROLLER - A Solar-Powered, Autonomous Marine Tracker

Patent/project number: Student Project

Author/s: SPS - Cares Robotics Elite Team of St. Patrick School of Quezon City, Cristina Gabrielle R. Cacho, Maridette Drannel M. Baylon, Kyoshiro B. Mata, Jin Kyle B. Ventura

Institution/Country: St. Patrick School of Quezon City, Philippines

Category: J

Description: *The ocean is one of the most prominent sources of transport, trade, food, and energy, but fast growth in human activities has caused massive stress in the marine ecosystems, resulting in overexploitation of biodiversity. In order to face up to this challenge, the Solar Powered Submarine Championing Advocacies to Reinvent the Seas (SPS - CARES), named Carie, offers a sustainable solution to several oceanic issues. Carie uses LEGO Spike Prime parts to portray how she will detect and respond to marine pollution, coral degradation, and even discover endangered and new species.*

Carie the Patroller is a multi-purpose submarine that aims to help the ocean bounce-back by reducing its stressors through advanced technology. Carie is equipped with LEGO Spike Prime color sensors that help show how she can adapt and respond to her environment with actual Artificial Intelligence.

The study highlighted that CARIE the Patroller has great potential to improve marine conservation through sustainability, stewardship, resilience and innovation. By using CARIE in environmental education, students become more engaged and develop a sense of sustainability.

Oil Vacuum *is a vac that sucks in oil spills. Carie's Oil Vacuum operates without releasing any absorbent material externally. Instead, it internally uses hair nets to absorb the oil spill as it is suctioned in.*

Coral Frames Carie *has the ability to release coral frames; artificial structures in marine environments to support coral fragments for growth. They should be constructed from materials like metal or PVC, to ensure these frames provide a stable platform for the corals.*

The Sea Net *is made of beams attached to one another. Four beams were used to hold the Nylon net in place. The Sea Net functions as a waste collector; especially plastic waste. After the utilization of the Sea Net, the waste will go to the sorting facility. The waste will be sorted and delivered to organizations that will put them into better use.*

In demonstration for the sorting facility, we used LEGO parts and color sensors to present the detection and segregation of various types of waste. Each category of waste is associated with a specific color, and the robot is programmed to recognize these colors and sort the waste accordingly.

State of development: Experimental Design

Contact: *angelmatasps@gmail.com*
Presentation link:
https://drive.google.com/file/d/1IDcrmtYkYNNL8823er1ydw_l2qlwqdb4/view?usp=drive_link

21.

Title: *RECYCLING OF POLYPROPILENE PIPES AND NEW TECHNOLOGIES*
Patent/project number: *Student project*
Author/s: *Damian Covali, Neamtu Lilian; Mentor: physics teacher Ciuvaga Victor*
Institution/Country: *Petru Rares Theoretical High School, Soroca, Republic of Moldova*
Category: *J*
Description: *The project aims to create a bicycle and a smart lamp made from polypropylene (PVC) pipes. This material is durable and environmentally friendly. The goal is to improve cyclist safety and reduce electricity consumption using Arduino technology. Due to the high number of cycling accidents, the bicycle will feature 360° sensors and a smart lighting system for better visibility. The smart lamp will adjust its light intensity automatically, optimizing energy use and offering a sustainable solution.*
Pipe welding machine: To join the PVC pipes securely. Arduino circuit system: For controlling the sensors and smart lighting system. CO2 CNC laser: For precise cutting of plywood boxes and other components.
State of development: *Electrical engineering*
Contact: *damiancovali0@gmail.com* ***+37362010528***
Presentation link: *https://www.facebook.com/groups/156413631608281/*

22.

Title: *AUTOMATIC PILL DISPENSER WITH MODULAR TIME-TRIGGER SYSTEM*
Patent/project number: *0014 / 2025*
Author/s: *Varanpat Chuaysuk, Parinton Jangtawee, Kaewkan Yambangyang, Jeerasak Jitrotjanarak*
Institution/Country: *Prasarnmit Demonstration School (Elementary), Thailand*
Category: *J*
Description: *This project introduces an automatic pill dispenser designed for elderly users, featuring a simple mechanical clock that triggers at set times. Users set the schedule by placing three pins on the clock, eliminating complex programming. At the scheduled time, a color-coded pill ball, representing a specific meal, is ejected for easy access. The modular design allows the clock to control other automated tasks, such as plant watering or pet feeding. This system enhances medication adherence while maintaining simplicity and adaptability for various time-based activities.*
State of development: *Prototype*
Contact: *j_jerasak@hotmail.com*
Presentation link: *https://satitm.chula.ac.th/*

23.

Title: SIGNALING KIT FOR THE POSITION OF A LOST OR DISTRESSED PERSON IN NATURE
Patent/project number: A/00455/01.08.2024, OSIM Bucharest, Romania
Author/s: Nicuşor-Alin Sîrbu, Aurelia-Ioana Biholar
Institution/Country: National Research and Development Institute for Welding and Material Testing – ISIM Timisoara, Romania
Category: J
Description: *The invention belongs to the field of products for satisfying the safety needs of people who travel and do outdoor activities in remote and more difficult to reach areas.*
The invention relates to a portable kit attached to the belt or to the shoulder strap of a rucksack, useful to a person who is lost or in difficulty due to exhaustion, disorientation or injury (in the mountains, in valleys, in difficult-to-access ravines, in the delta, in bush areas) and who has to signal his position in order to be helped. The kit is of simple, lightweight, versatile, inexpensive construction and includes means of visual signalling with an inflatable balloon, smoke visual, loud audible, repetitive audible and light at night. The means of signalling with an inflatable balloon is based on an expandable cartridge which can be inflated and raised by a simple push.
State of development: concept
Contact: ISIM Timisoara *isim@isim.ro* ***+40256491831***
Presentation link: *www.isim.ro*

24.

Title: MODELSHIPS
Patent/project number: Students Project
Author/s: Calugar Sebastian, Calugar Damian, Popa Albert, Popa Robert; Mentor: Coach Popa George
Institution/Country: GEMAR MODELSHIPS, Romania
Category: J
Description: *Modelships made from scratch, fully functional, remote controlled. This sport raise juniors tehnique abilities and skills by transposing into tehnical practice what they are learn ing during classes. In 2023 the newly born section has brought very good results. Two of the juniors has won the National Champion titles in NS and C calsses and one bronze medal at World Championship, clsss C at Jablonec, Czech Republic. The modelboats presented by them are remote controlled and they were built either from scratch or by using assebly kits.*
State of development: Modelships
Contact: +40722284042
Presentation link: *https://www.facebook.com/geo.popa.754*

25.

Title: ADAM's COLORS
Patent/project number: Kid Project
Author/s: BARTOK ADAM ZOLTAN
Institution/Country: Class 2 A, Economic College "Emanuil Gojdu" Hunedoara
Category: J
Description: *Adam is a 7 year old child who loves to draw. He draws almost anything that arouses his interest, but he prefers to draw movie or cartoon characters. Some of the drawings are made after a model seated in front of him and others are made from his imagination. He prefers to work mostly with colored pencils and he spends at least 2 or 3 hours drawing every day.*
State of development: Drawings
Contact: *iulia.bartok@gmail.com* ***+40733083553***
Presentation link: *https://www.facebook.com/share/p/wYJYxaZquVh8JyXr/*

26.

Title: ON THE WINGS OF MUSIC
Patent/project number: Kid Project
Author/s: Mihai FODOR
Institution/Country: "Decebal" National College, Deva, Romania
Category: J
Description: *My name is Mihai Fodor, I am 8 years old and I am a student at the "Decebal" National College in Deva. I really like dancing and singing. I consider music to be a way of expression, but also of relaxation. Although I spend a lot of time training, because I always try to be better, everything is a pleasure for me. Music brings me joy every time. I feel like a real artist on stage and I want to learn as much as possible about dance and music.*
State of development: dance
Contact: *cristianfodor7@gmail.com*
Presentation link: *https://www.youtube.com/watch?v=Cj6cabNmdIk* ***(min. 31.35)***

27.

Title: IN DANCE STEPS
Patent/project number: Kid Project
Author/s: Maria FODOR
Institution/Country: "Decebal" National College, Deva, Romania
Category: J
Description: *My name is Maria Fodor and I am 10 years old. I am a student at the "Decebal" National College in Deva and I am very passionate about dancing. I discovered the charm of dancing at the age of 5. With a lot of work and passion, I have evolved and I like to always improve myself. Alone or with other friends, on the dance floor I am always happy. I wish I could convey the same joy to those who watch me when I am on stage.*

State of development: dance
Contact: *cristianfodor7@gmail.com*
Presentation link: *https://www.youtube.com/watch?v=Cj6cabNmdIk* ***(min. 31.35)***

28.

Title: MAURA-PU
Patent/project number: 2911
Author/s: Colun Maura; Mentor Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: J
Description: *MAURA-PU coat duvet is a sleeping in the shape of a chick with wings in which we store sleeping pillows, the purpose of the innovative product is to create conditions for children at night when traveling with their parents. The product is of interest to both children and teenagers.*
State of development: innovative product
Contact: *silvia.scortescu@yahoo.com*
Presentation link: *https://jamoldova.org.md/index.php/en/*

29.

Title: ALEXMEOW SHOES
Patent/project number: 2914
Author/s: Moroz Alexandru; Mentor Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: J
Description: *Alexmeow shoes for dogs & cats. The innovative product offers comfort to the owners so that the quadruped is clean and well-groomed during walks. The clip from which it is made is a water-resistant one, it is very easy to use, it is practical, it is fixed to the legs so that it does not fall off easily during walks.*
State of development: innovative product
Contact: *silvia.scortescu@yahoo.com*
Presentation link: *https://jamoldova.org.md/index.php/en/*

30.

Title: ADY-DOOK PUPPY OUTFIT
Patent/project number: 2914
Author/s: Miron Adelina; Mentor Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: J
Description: *Ady-dook puppy outfit, the clothing is unique in its own way, it represents an outfit only for holidays, the purpose of this outfit is the unique special one with a hat and a bag. I have a purebred puppy that is always cared for and loved and I wanted a unique product so that it would not be copied. The outfit with the bag as the author is innovative.*

State of development: innovative product
Contact: silvia.scortescu@yahoo.com
Presentation link: https://jamoldova.org.md/index.php/en/

31.

Title: SPAT-LERA
Patent/project number: 3001
Author/s: Gorincioi Laura; Mentor Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: J
Description: *Spat-Lera is a project that involves treating and relieving back pain, including preventing and relieving the incipient condition of scoliosis. The invented tool helps in practicing light sports and applying exercise.*
State of development: innovative light sport
Contact: silvia.scortescu@yahoo.com
Presentation link: https://jamoldova.org.md/index.php/en/

32.

Title: SABRI-LUP
Patent/project number: 3002
Author/s: Lungu Sabrina; Mentor Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: J
Description: *Sabri-lup hosting pillow-duvet, aims to treat migraines because it has a magnet inside, including the duvet can serve as a cover, the pillow is made in the shape of a wolf's head, it is my favorite animal, it is unique and copyrighted.*
State of development: innovative product
Contact: silvia.scortescu@yahoo.com
Presentation link: https://jamoldova.org.md/index.php/en/

33.

Title: MOLD-LENN
Patent/project number: 3003
Author/s: Gonța Elena; Mentor Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: J
Description: *MOLD-LENN this deep study project of our traditions and customs, aims to demonstrate the growth of the economy through hospitality and tourism. A new TOOM-Tourism is invented, timely, modern custom, invented term will assume the modern year 2025 in the activity of hosting and tourism regarding the growth of the state's economy of Moldova.*

State of development: innovative product
Contact: *silvia.scortescu@yahoo.com*
Presentation link: *https://jamoldova.org.md/index.php/en/*

34.

Title: COBM
Patent/project number: 3004
Author/s: Cozac Olivia; Mentor Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: J
Description: *CObm- is a project that aims to research the science of mathematics in the economy, we study numbers, the logic of their application in the management of the economy. EBCC-quantitative and qualitative economics of money. Every person saves and then spends in a few seconds money, saved for 5-10 – 15-20 years. So we will demonstrate the logic of small 5-10-15-20 lei spending always this money just to keep all those valued up.*
State of development: innovative product
Contact: *silvia.scortescu@yahoo.com*
Presentation link: *https://jamoldova.org.md/index.php/en/*

35.

Title: ANIMEX-MODULEX
Patent/project number: 3005
Author/s: Ţîu Emilia; Mentor Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: J
Description: *Animex-modulex It's a new method for 7-10 years children , who try to explain those homework by cartoon. The goal it's the easiest. I capture children by audio-video , I invented this method to be attractive.****State of development: innovative product***
Contact: *silvia.scortescu@yahoo.com*
Presentation link: *https://jamoldova.org.md/index.php/en/*

36.

Title: MODELLING-HI-NOVA
Patent/project number: 3006
Author/s: Ochişor Dionis; Mentor Silvia SCORTESCU
Institution/Country: Junior Achievement Moldova, Republic of Moldova
Category: J
Description: *MODELLING-HI-NOVA its new blouse It is a new style for young people 10-14 years who love the mix of colors, especially neon colors. This blouse is aimed at self-opening and attracting attention in the surrounding, this colors capture attention on social environment.*

State of development: innovative product
Contact: *silvia.scortescu@yahoo.com*
Presentation link: *https://jamoldova.org.md/index.php/en/*

37.

Title: LEGO by ROBOMOON
Patent/project number: Lego Team
Author/s: ROBOMOON Team; Mentors: Sîrba Corina Larisa, Tripa Andrea şi Miklos Cristina
Institution/Country: "Traian Lalescu" Theoretical High School, Hunedoara, Romania
Category: J
Description: *The ROBOMOON Team is the FIRST LEGO LEAGUE Team from the "Traian Lalescu" Theoretical High School in Hunedoara and is aimed at children aged 9 to 14. It was founded in 2019 and promotes learning through play. Children come into contact with the world of science through play... The ROBOMOON robotics club promotes collaboration, team spirit, performance, learning through play, all because these children are the passionate young people of tomorrow! Our motto is "Only the sky is the limit!"... we play and we learn.*
State of development: innovative Lego
Contact: *larisahd2004@gmail.com*
Presentation link: *https://www.facebook.com/people/Robomoon-Hunedoara/100057210319548/*

38.

Title: STORY SHEETS
Patent/project number: Alternative tourism project
Author/s: Damiean Cristian
Institution/Country: Association "ȚINUTUL HUNEDOARA – FILE DE POVESTE", Romania
Category: J
Description: *Association "ȚINUTUL HUNEDOARA - FILE DE POVESTE" The purpose of the Association is to promote and develop tourism activities, especially alternative tourism, while encouraging the conservation of natural, cultural, historical heritage and the harmonious interaction between the tourism sector and social and environmental factors, activities to protect traditions and customs, their support, their support.*
By alternative tourism we understand any form of tourism that leads to harmonious cohabitation between the local population and their guests, protecting and enhancing the identity, cultural, historical and natural heritage of the host community.
State of development: tourism activities
Contact: *tinutulhunedoara@gmail.com*
Presentation link: *https://www.facebook.com/profile.php?id=61556709704327*

K - Innovative ART, Music, Video, Photography, Publicity

1.

Title: EM Art Gallery-Deva
Patent/project number: PhotoArt
Author/s: Mircea POPITIU
Institution/Country: "POPITIU" Cultural Association, Romania
Category: K
Description: *EM Art Gallery-Deva was born from the desire to promote contemporary visual artists, on December 5, 2018. From the beginning to the present, more than 50 contemporary professional artists have been exhibited, the gallery registering as the first private gallery in Hunedoara County! Out of the desire to do more, we have created a magazine of visual arts and cultural support entitled EM Art. Artists from the main cities in Romania and artists from France, the USA and the Republic of Moldova exhibited on the EM Art Gallery!*
State of development: Gallery
Contact: +40723355939 *popitiuart@yahoo.com*
Presentation link: *https://www.facebook.com/profile.php?id=100064689549014*

2.

Title: JOKES AND CHEERS / GLUME ŞI VOIE BUNĂ
Patent/project number: Stand up comedy
Author/s: Adrian Alin BOLDI
Institution/Country: Bolbi's Comedy, Romania
Category: K
Description: *I have always had a sense of humor and I am passionate about jokes, so I started making these pamphlets during the pandemic. Because many people were scared by those unpleasant moments and I thought it would be good to laugh a little more and forget about the less unpleasant things. In my view, humor should not be neglected at all. It is the thing that keeps us alive, unites us and strengthens our relationships!*
State of development: Pamphlets Project
Contact: *alin.boldi@yahoo.com*
Presentation link: *https://www.facebook.com/boldi.alin/about*
https://www.instagram.com/boldialin?igsh=MTIybWs3OGs3eXJubg

3.

Title: PIPERS OF TRANSYLVANIA ROCK
Patent/project number: Music Project
Author/s: Mircea Goian, Gerhard Stempel, Alin Bălescu, Stefan Milutinovici, Peter Moynahan
Institution/Country: Corvinorum Ordo Association, Romania
Category: K
Description: *The first and only band in Romania that plays ROCK music with medieval instruments. The group was founded in 2008, by Mircea Goian together with Cornel Jitariu and approaches medieval and traditional music, in an original way, in a way designed especially for the performances that take place in the city squares or in the open spaces next to fortresses or castles.*
The oldest songs in the repertoire are in Gaulish (Celtic language) most of the songs from the medieval period, in languages with limited circulation or extinct languages (Galeo-Portuguese, Breton, Sephardic, Tatar, Occitan, Latin) but also in living languages (Romanian, English, German, Polish).
In addition to the authenticity of the musical pieces, the group uses copies of historical instruments such as: bagpipes, hurdy gurdy, rauschpfeife, fidula, medieval drums, tapan, blockflöte, archaic percussion instruments - bolla.
The costume is made taking into account specific elements from that period. Since the summer of 2019, the band has undergone several changes and presents itself in a new formula, with a richer, more dynamic "sound", a refreshed repertoire and new sets. In 2020 a new project appears: Pipers of Transylvania Rock. The "Minnesang" was released in August 2021 along with an impressive collection of promotional materials / souvenirs "merchandise".
Medieval instruments used to play rock music reproduce sounds specific to the medieval period on melodic rock lines, thus showing that the music is universal and timeless. We are thus witnessing a project that unites the medieval culture of the VI - XV centuries with that of the XX - XXI centuries.
State of development: Band - Playing ROCK music with medieval instruments
Contact: *goianmircea@yahoo.com*
Presentation link: *https://youtu.be/-xwlunQNH7Q*

4.

Title: ARTIFICIAL INTELLIGENCE (AI) IN PHOTO AND VIDEO
Patent/project number: Innovative Art Project
Authors: Mădălina MIHOC, Mihai MIHOC
Institution/Country: Mihoc Studio, Romania
Category: K
Description: *Mihoc Studio is a company offering photo-video services for various events, both public and private. Due to today's technology, clients' desires to improve their photos have increased. In order to do everything in the shortest possible time, we use the help of artificial intelligence in various dedicated editing programs.*
Artificial intelligence (AI) can be an extremely useful tool in improving photos, with a variety of features and applications that facilitate the editing process.

Due to today's technology, clients' desires to improve their photos have increased. In order to do everything in the shortest possible time, we use the help of artificial intelligence in various dedicated editing programs. Artificial intelligence (AI) in the photo field has many advantages namely increased efficiency, AI can process and edit images and videos much faster than a human can.
State of development: Photo-video services
Contact: *www.mihocstudio.ro* *madalina@mihocstudio.eu* ***+40767333661***
Presentation link: *https://www.youtube.com/@MihocStudio*
https://mihocstudio.ro/
https://www.facebook.com/MihocStudio

5.

Title: FLOART DECOR
Patent/project number: ArtDeco Project
Author/s: Florentina Livia SPANIOL
Institution/Country: PFA Spaniol Florentina Livia, Romania
Description: *FloArt Decor passion for decoration! The FloArt Deco company makes floral decorations, birthday decorations from balloons for the most beautiful events in everyone's life, if you have scheduled a coming of age, baptism, wedding or you want to inaugurate a store with a decoration from balloons, I can help you.*
Your story can be a special one with the most unique designs from flowers and balloons.
State of development: Services ArtDeco Design Business
Contact: *spaniolflo23@yahoo.com*
Presentation link: *https://www.facebook.com/share/157jspGfpP/*

6.

Title: FACE PAINTING BY ANDREEA, A GLAMOROUS STORY
Patent/project number: face painting project
Author/s: Andreea Elena DRUTA
Institution/Country: Face Painting by Andreea, a Glamorous story, Romania
Category: K
Description: *I'm Andreea and at the age of 22 I'm talented at drawing and painting, I've had this passion since childhood, and I've turned it into a job full of color and magic. It all started when I do face painting as a volunteer at events such as the Light Festival and Children's Day.*
My talent and dedication were quickly noticed and the referrals were not slow in coming. I am part of the wonderful Glamorous Story team, with whom we bring smiles and joy to events in Timişoara.
What inspires me the most is the reaction of the children, the excitement and happiness on their faces when they see their paintings transformed into works of art.
State of development: Face Painting by Andreea, a Glamorous story
Contact: *andreeaaaelenaa@gmail.com*
Presentation link: *https://www.facebook.com/share/17zzNVmZJN/*

7.

Title: ART ESCAPE IN AUTHENTIC
Patent/project number: Innovative art
Author/s: Violeta COPROS
Institution/Country: VioletaArt, Romania
Category: K
Description: *Art is, in essence, the deepest expression of human creativity. My passion for painting, above all else, means peace and relaxation. I was born with a love of art and I love it in all its manifestations. Although I work in medicine, my passion for painting, which came later, turned out to be very intertwined good with medicine, it being also an art, that of healing people. Great art is the outward expression of an inner life of the artist, and this inner life will lead to his personal worldview.*
State of development: painting project
Contact: *foltutvioleta71@gmail.com*
Presentation link: *https://www.facebook.com/share/1AGfpH8Xc4/*

8.

Title: THE INTROSPECTION OF RECOVERY
Patent/project number: Innovative art
Author/s: Mariana MAGLAS
Institution/Country: MarianaArt, Romania
Category: K
Description: *A sensitive and emotional nature, I have been attracted to art since childhood, in its many forms: drawing, music, literature and theater. After a very long period of break and time dedicated to family and other aspects of life, I had a moment of introspection, an acute need to find myself, to know who I really am, what I most want to undertake, on short, what makes my soul vibrate. That's how I found painting and contemporary art, with which I fell irreparably in love.*
State of development: painting project
Contact: *maglasmariana@gmail.com*
Presentation link: *https://www.facebook.com/share/1A23VCK5vC/*

9.

Title: FLORAL EMBRACE
Patent/project number: photography project
Author/s: Adrian STOICA
Institution/Country: Adrian Stoica PhotoArt, Romania
Category: K
Description: *"Floral Embrace" captures the delicacy and elegance of femininity in a timeless artistic composition. The model, with a soft gaze and half-closed eyes lowered, gently embraces a few calla lilies – symbols of purity, refinement, and inner transformation. Set against an abstract background in warm brown tones, the subtle lighting delicately sculpts her features, creating a harmonious interplay of light*

and shadow that enhances the fragility of the moment. The atmosphere is contemplative, almost dreamlike, inviting the viewer to immerse themselves in a state of deep serenity and to appreciate a beauty that is both fragile and full of inner strength. A vision of grace, emotion, and balance, transforming the ephemeral into an eternal visual expression.
State of development: Photography
Contact: *adistoica21@gmail.com*
Presentation link: *https://www.facebook.com/AdrianStoicaPhotoArt www.adistoica.ro*

10.

Title: imPerfection
Patent/project number: Innovative art
Authors: Diana Miruna Armioni
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: K
Description: *"imPerfection" is a photographic exploration that challenges conventional notions of beauty by celebrating the imperfect, the fragile, and the vulnerable. It seeks to find elegance in the cracks, the weathered, and the transient, inviting viewers to reconsider their perspectives and appreciate the unique character and authenticity that imperfection brings.*
Through a curated collection of images, "imPerfection" delves into the profound beauty that resides within the fleeting nature of existence, the interplay of light and shadow, and the resilience of life. Inspired by the delicate details of a withering flower and the dramatic contrast of a blossom illuminated in darkness, the project aims to capture the hidden beauty that lies beneath the surface, inviting viewers to look beyond the obvious and appreciate the strength to find hope in the face of adversity. By embracing vulnerability and recognizing the beauty in decay, "imPerfection" seeks to inspire a deeper appreciation for the unique and imperfect moments that make life truly meaningful.
State of development: photography project
Contact: *armionimiruna@yahoo.com*
Presentation link: Art by Miruna

11.

Title: HANDMADE CONCEPT
Patent/project number:
Author/s: Epure Oana-Roxana and Chereches Alexandra
Institution: Goodvibeshandmade
Category: K
Description: *We transform the walls of your spaces into living works of art. From abstract landscapes to personalized illustrations, each wall becomes a story of its own. Our canvas artworks tell stories and evoke emotions. You can choose from our collection or we can create personalized paintings tailored to your tastes and dreams. We provide personalized fashion options. From hand-painted jackets and sneakers to original*

print t-shirts and delicate embroideries, your wardrobe will become an authentic expression of your personality.
State of development: concept
Contact: +40769075797 oanaroxanaepure@gmail.com
Presentation link: https://www.facebook.com/goodvibeshandmade

12.

Title: TELEVISION NEWS DISCOURSE: COMMUNICATION AND SOCIAL
Patent/project number: The bachelor's thesis
Author/s: Maria-Magdalena IZIUMOV
Institution/Country: Faculty of Letters, "Vasile Alecsandri" University of Bacau, Romania
Category: K
***Description**: The bachelor's thesis is the result of research and was written by the author at the Faculty of Letters, "Vasile Alecsandri" University of Bacau, Romania, in 2023. The thesis has never been presented, either partially or in full, at any other higher education institution in Romania or abroad. The thesis contains information and analysis on communication and social influence, news discourse, including news as information and communication, radio and television news, case studies, and more. Television news discourse represents a form of mass communication with a significant impact on society. This thesis outlines how television news discourse affects communication and social influence. Television news consistently constructs and promotes a social image of events, groups, or individuals. This can lead to stereotyping, discrimination, or even exaggeration of certain aspects. Thus, the influence of television news discourse can contribute to the polarization and division of society, especially in the current digital era and the rise of media consumption. It is essential to educate ourselves and be aware of the power and responsibility of the media in shaping human perceptions and behavior. By promoting responsible communication and through the active involvement of citizens, we can contribute to more balanced development and more truthful information in television news discourse. In an era where information sources are numerous and access to information is easy, it is important to develop critical skills and be aware of media influence. It is necessary to be able to assess information, recognize manipulation, and form our own perspective on events and societal issues.*
State of development: student project
Contact: maria11111133@gmail.com +40771173153
Presentation link:
https://drive.google.com/file/d/1FTGqfoa8Kfw4inLDljji_m-CmqMD3c7n/view?usp=sharing

13.

Title: ALL IS GAMING
Project number: Game Project
Author/s: Paul BRADEAN
Institution/Country: Bradean's Channel, Romania
Category: E

Description: *The channel has as its basic idea the mobile game Call of Duty and presents to the followers the head-to-head matches of the players from the clan, (Team Chaos), trying to remind the gamers that the games are made for fun and to take into account fair play. At the same time, it will be gradually introduced (Etiquette Lesson) where we will present restaurant etiquette from both points of view, both of the employee and of the Horeca customers.*
State of development: Game presentation & Etiquette Lesson
Contact: *bradean_paul@yahoo.com* ***TikTok paulbradean1***
Presentation link: *https://www.youtube.com/watch?v=RSiAxsAp67Q*

14.

Title: DANSANDRA DANCE STUDIO
Patent/project number: Dance Classes
Author/s: Andreea RUSAN-MOTIU
Institution/Country: Dansandra - social and modern dance classes, Romania
Category: K
Description: *Dansandra Dance Studio dance club represents and is represented by a large dance community in Deva. Dance enthusiasts from young to seniors, Dansandra Dance Studio offers everyone who wants to learn and practice one or more dance styles a multitude of options in modern or ballroom dance! Since 2011, we started on this path, always learning and perfecting ourselves, so that today our dance studio has prizes won at local and national dance competitions as well as participation in various events! We are enthusiastically preparing two major annual events, each already in its fourth edition, namely: "Viennese Waltz Ball" and "Annual Christmas Show". There are two events for which we prepare several months a year and for which we make every effort to celebrate dance, health, friendship! Types of classes: Dance classes for adults; Salsa Bachata Kizomba Waltz Dance on heels; Dance classes for children; Street dance Thematic dances Society dances; Dance of the bride and groom, customized choreography.*
State of development: Dance Studio
Contact: +40 744 953 427 *andreea.florentina@gmail.com*
Presentation link: *https://www.facebook.com/share/1CrjaMQAV6/*

15.

Title: MASHUPS by DJ RobyX
Patent/project number: student project
Author/s: Robert SĂCUIU
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: K
Description: *One of my passions, which is music, started when I discovered the radio. In general, I mix the commercial music that has become popular with us because I am otherwise tired of those songs compared to some underground (non-commercial) songs, because I grew up with them and because there are more people who listen and because otherwise you are more attracted. I generally mix tracks from the 90s to today and from the following other non-commercial genres in parts: Electro House, Future House, Big Room*

Techno, etc. At the moment I'm doing mixes for some shows on some radio stations that I post on Hearthis.at.
State of development: music project
Contact: *robisacuiu@gmail.com*
Presentation link: *https://www.youtube.com/@djrobyx*

16.

Title: ART & PAINTING OF COLORS
Patent/project number: Art & Painting
Author/s: BARTOK IULIA RAMONA
Institution/Country: Bartok Iulia Ramona PFA, Romania
Category: K
Description: *Painting is my passion and I do it with great enthusiasm and seriousness. Through painting I can express my imaginative and creative side which offers me the chance to delight people's eyes. Most of my paintings are personalized and made according to clients requirements, representing: favorite activities, pets, portraits, favorite locations, flowers, favorite music. I paint on textiles, ceramics, glass and leather using proper and quality materials.*
State of development: unique and personalized products
Contact: *iulia.bartok@gmail.com* ***+40733083553***
Presentation link: *https://www.instagram.com/p/CqFUYRgKV_j/?igsh=bnBhbHdkeHpzOWVh*

17.

Title: MOMENTS CRAFT ART
Patent/project number: Craft Art & Handmade
Author/s: Bartok Iulia Ramona
Institution/Country: Bartok Iulia Ramona PFA, Romania
Category: I
Description: *This passion for making decorative products it started for me 10 years ago, from the desire to express my creativity and my abilities. Most of my inspiration comes from nature. In a world dominated by mass products, often made quickly and soullessly, handmade items are coming back to the fore as an authentic and valuable alternative. Handcrafts bring a personal touch, dedication and craftsmanship that cannot be replicated by machines or industrial processes. Each product created by an artisan carries a story, a piece of the soul of the person who made it, turning it into a true work of art. To create the products I use different work techniques: decoupage technique, painting and handcrafting. Some of the materials used to make handmade and handcraft products are: textiles, paper, rise paper, foam sheets, acrylic paints, varnishes, wood, candles and dried plants.*
State of development: unique and personalized products
Contact: *iulia.bartok@gmail.com* ***+40733083553***
Presentation link: *https://www.instagram.com/p/Cq5MqoeqnEA/?igsh=bHo2N2g5bThycTVk*

18.

Title: ANGELES MADE FROM ORGANIC MATERIALS
Patent/project number: Handmade project
Author/s: Maria Liliana ZAGREAN
Institution/Country: Caretta's Art, Romania
Category: K
Description: *Mărţişor is Romanian tradition that marks the beginning of spring, celebrated on March 1st. Its origins are linked to ancient customs, associated with symbols of fertility and renewal. It believed that the mărţişor, a red and white string, brings luck and health. In the past, people would give mărţişoare to their loved ones as a sing of apreciation and to wish them a joiful spring. With greate love and attention, we have handcrafted these mărţişoare in the shape of angels, each made from organic hemps. Each angel features a small tricolor flag, simbolizing our country's pride. The string is olso handcrafted from organic coton, adding an extra touch of autenticity and naturalness. Inspierd by the beauty of spring, these mărţişoare reflect the rebirth and joy that this season brings. We hope that each mărţişor wil bring happiness and remind us of our connections to nature and our traditions.*
State of development: Mărţişor
Contact: *caretta.foita@gmail.com*
Presentation link: *https://www.facebook.com/zagrean.marialiliana.3*

19.

Title: LAMPSHADES WITH SOUL
Patent/project number: Handmade project
Author/s: Maria Liliana ZAGREAN
Institution/Country: Caretta's Art, Romania
Category: K
Description: *I restore old lampshades and also create new ones, drawing inspiration from the beauty of our planet. During my walks in nature, I am captivated by the trees and diverse vegetation of the forest. Sunlight timidly filters through the dense woods, and the colors of the flowers are a soothing balm for the soul. Wanting to bring the sunlight and the moon's shadow in to people's homes during quiet evenings and early mornings, I have created these small works of art. I hand-sew them using organic textile materials and handmade lace that is over 100 years old. These pieces not only provide light but also transform the space into an atmosphere full of mystery. ,,Forest magic" is a lampshades inspired by the natural beauty of forest. With an elegant design and warm colors, it brings a touch of nature in to any room. Its delicate details evoke images of tall trees and light filtering through green leaves, creating a relaxing and mysterious atmosphere. The ,,Marine Reflexions" lampshade brings a touch of the ocean in to any room. Inspired by the beauty and mystery of the deep sea, this lampshade combines shades of blue and green, evoking the waves and the light dancing on the water's surface. Its elegant design fit perfectly in to any decor, providing a relaxing and inspiring atmosphere.*
State of development: Unique lamps
Contact: *caretta.foita@gmail.com*
Presentation link: *https://www.facebook.com/zagrean.marialiliana.3*

20.

Title: IN LOVE
Patent/project number: Innovative ART Project
Author/s: Jamina RIEDEL
Institution/Country: Jam's Art, Romania
Category: K
Description: *This is the story about two different pieces. They come together, late in their life. The black stone, beautyfull, shining, strong but broken. The plasticfilm, more than hundreds, heated and colded, pressed and bented but empty inside.*
They met on an iron base, in intimate embrace, life is created in all colours of the rainbow! Me and my love, Hannes, started 10 years ago with an experiment, in folding plastic film and then, treat with pressure and heat.
It takes nearly 4 years, to find the right way, to create a new art of sculpting of recycled plastic film. We used waterproof LED- stripes for lightening. Every sculpture is unique, it's impossible, to create these form again.
Original One - of - a - kind Artwork
State of development: Light sculpting
Contact: *jaminaa12@gmail.com*
Presentation link: *https://www.saatchiart.com/account/artworks/1104419*

21.

Title: EQUILIBRIUM by EMA
Patent/project number: ART Project
Author/s: Emanuela Paula ENACHE
Institution/Country: "Sigismund Toduță" Secondary School, "Anghel Saligny" Railway Transport Technological High School - Simeria, Romania
Category: K
Description: *I am a student in the 4th grade of the "Sigismund Toduță" Secondary School, a structure that belongs to the "Anghel Saligny" Railway Transport Technological High School in Simeria.*
This painting suggests the balance between light and dark, between day and night. Emanuela Enache explores the beauty of contrasts and the connection between two seemingly opposite but complementary realities.
The work can be interpreted as a reflection on the passage of time, the cyclicality of life or the inner duality of every human being. The painting impresses with the use of colors and the way the two parts merge, creating a strong visual effect and a harmonious composition. It is an invitation to introspection and to appreciate the beauty of every moment of the day and of life.
State of development: Paint
Contact: *cosminaprata151080@gmail.com*
Presentation link: *https://www.liceulsaligny.ro/despre-noi/*

22.

Title: DIAMOND TAPESTRY
Patent/project number: Tapestry
Author/s: Zsiros Sándorné (Monor)
Institution/Country: Idea Club 13 Association, Hódmezővásárhely, Hungary
Category: J
Description: *Diamond tapestry does not require a needle and thread. Examples include iron-on beads, pixel hobby, mosaic technique and the latest diamond puzzle. The essence of each is almost the same: the whole or parts of a picture are divided into small mosaics, and the pattern created in this way must be assembled from the small components. These novelties are modern versions of tapestry or cross-stitch embroidery.*
State of development: product
Contact: *otletclub.idea@freemail.hu*
Presentation link: *https://otletclub.5mp.eu/web.php?a=otletclub*

23.

Title: ORIGINAL PAINTING REPRODUCTION HAND-STITCHED TAPESTRY
Patent/project number: Tapestry
Author/s: Mária Zsiros-Bokros (Monor)
Institution/Country: Idea Club 13 Association, Hódmezővásárhely, Hungary
Category: J
Description: *Tapestry is a form of textile art, traditionally woven by hand on a loom. Normally it is used to create images rather than patterns. Tapestry is relatively fragile, and difficult to make, so most historical pieces are intended to hang vertically on a wall (or sometimes in tents), or sometimes horizontally over a piece of furniture such as a table or bed. Some periods made smaller pieces, often long and narrow and used as borders for other textiles. Tapestry, made with half cross stitches. Half or quarter stitches for the finest details. Made with divided embroidery thread.*
State of development: product
Contact: *otletclub.idea@freemail.hu*
Presentation link: *https://otletclub.5mp.eu/web.php?a=otletclub*

24.

Title: TRANSFIGURATION
Patent/project number: photography project
Author/s: Maria Liliana ZAGREAN
Institution/Country: Caretta's Art, Romania
Category: K
Description: *I don't create the abstract, nature create it for me, and this is reflected in my works of art. On an empty road with a shy point that easily tries to turn into lines that take on different shapes and color. Since I was a child, I was fascinated about the wonder around us. The changing colors of the seasons, they make myself live a magic dream and as intensely live dreams become reality, 14 years ago, I had the*

opportunity to purchase a professional camera. From that moment, through the eye of the lens, everything changed. Looking to the raindrop, I realized that it also has its own lens. I don't create the abstract, nature creates it for me, and this is reflected in my works of art.
State of development: photography
Contact: *caretta.foita@gmail.com*
Presentation link: *https://www.facebook.com/zagrean.marialiliana.3*

25.

Title: ROMANIAN FOLK TALES
Patent/project number: AI Generated Art
Author/s: Irina FACHIN
Institution/Country: Virtual Media Net, Romania
Category: K
Description: *"Romanian Folk Tales" unveils a digital tapestry of Romania's rich folklore through AI artistry. The exhibit features young Romanians adorned in traditional costumes, their garments rendered with striking detail against fantastical landscapes.*
Each artwork is a digital homage to the nation's heritage, blending historical motifs with contemporary art techniques. The gallery space becomes a bridge between eras, where AI interprets timeless stories in a visual format. The portraits are more than mere images; they are narratives that celebrate Romania's cultural saga, reenvisioned with a touch of modernity.
Visitors are invited to traverse this fusion of past and future, where each piece resonates with the echoes of folklore.
State of development: unique and personalized products
Contact: +40.770.212.357 *irina.motoc.devahd@gmail.com*
Presentation link: *https://www.facebook.com/reel/978046580068652*

26.

Title: CONTEMPLATION IN SHADOWS
Patent/project number: photography project
Author/s: Adrian STOICA
Institution/Country: Adrian Stoica PhotoArt, Romania
Category: K
Description: *A photograph veiled in darkness and laden with significance, "Contemplation in Shadows" brings together the essence of mystery and the delicacy of a profound gaze. Wrapped in a jute veil that shrouds her head and shoulders, she creates an aura of mystery, hinting at an untold story. In her hand, a flower becomes a symbol of fragility and the ephemeral passage of time.*
The soft light highlights the textures of the jute and her skin, creating a contrast that underscores beauty in a unique form. Gazing directly at the viewer, the woman exudes a deep sadness, and the dancing shadows on her face accentuate the contemplative expression.
It's a scene where each element seems to contribute to the whole, suggesting a search for deeper meaning and reflection on the unseen mysteries of existence. "Contemplation in Shadows" is a dialogue between

light and darkness, an introspection into human emotions, and an invitation for the viewer to unravel the hidden secrets and subtleties within the shadows of this artistic composition.
State of development: Photography
Contact: *adistoica21@gmail.com*
Presentation link: *https://www.facebook.com/AdrianStoicaPhotoArt www.adistoica.ro*

27.

Title: SPRING SYMPHONY
Patent/project number: Innovative art
Author/s: Diana Miruna Armioni
Institution/Country: Art by Miruna, Romania
Category: K
Description: *"Spring Symphony" invites you to immerse yourself in the enchanting beauty of spring blossoms captured through the lens. Explore a kaleidoscope of colors, textures, and intricate details as nature orchestrates its annual symphony of renewal and vibrancy. From delicate petals to lush landscapes, each photograph celebrates the ephemeral yet timeless grace of springtime blooms. Let these captivating images awaken your senses and inspire a deeper appreciation for the fleeting wonders of the season.*
State of development: photography project
Contact: *armionimiruna@yahoo.com*
Presentation link: *https://www.facebook.com/mirunaarmioniphoto*

28.

Title: THE POETRY OF CREATION
Patent/project number: PhotoArt
Author/s: Corina Gianina Popa (Uieț)
Institution/Country: CORINA's Art, Romania
Category: K
Description: *The miracles of everyday life in the battle against the elements. Water, sun, sky, earth, sunset, grace, the wonders of the Creator.*
State of development: Photo collection & Paintings
Contact: *popa.corina@hotmail.com*
Presentation link: *https://www.facebook.com/corina.gianina.p*

29.

Title: "ORDINARY"
Patent/project number: Student Project
Author/s: Maksimović Milica
Institution/Country: Faculty of Contemporary Arts, Belgrade
Category: K

Description: *Without capturing any important landmarks, I simply took my camera with me on a walk, taking pictures at odd angles and getting inspiration from the "ordinary" world around us. I tried taking pictures of the beautiful scenery of my hometown. What I ended up with were pictures that inspire a dream-like sense of adventure, like anything's possible. Rather than representing my hometown, it's more of a look into how I view my surroundings. Without capturing any important landmarks, I simply took my camera with me on a walk, taking pictures at odd angles and getting inspiration from the "ordinary" world around us. I made shots that were interesting to me, and I hope you can enjoy them too and find some inspiration from them.*
State of development: Photography project
Contact: +38162295510
Presentation link: *https://www.fsu.edu.rs/en/homepage/*

30.

Title: THE CONCEPT OF SUSTAINABLE SYSTEMS MARKETING AND ARTIFICIAL INTELLIGENCE (AI) IN PHOTO AND VIDEO
Patent/project number: Student Project
Authors: Mădălina MIHOC, Mihai MIHOC
Institution/Country: Mihoc Studio, Romania
Category: K
Description: *Mihoc Studio is a photo-video company that offers both digital and hard copy material. The collection of paper for recycling is poor in Romania, so that only a little more than half of this waste ends up being recovered and transformed into new products. Plasticised and contaminated paper it is harder to recycle. The equipment used is: shredder, shredder/blender, frames, mesh, paper, water pot. All these papers of different thicknesses, sizes and layouts become waste. Mihoc Studio has found the solution to recycle and use photo paper and documents that are defective or no longer used. In this way we created: scrapbook pages, letters, greeting cards, decorations that we can cut and paint as we like, bookmarks.*
State of development: products
Contact: *www.mihocstudio.ro* *madalina@mihocstudio.eu* ***+40767333661***
vaduvaiulianateodora@gmail.com ***+40724980731***
Presentation link: *https://www.youtube.com/@MihocStudio*
https://mihocstudio.ro/ *https://www.facebook.com/MihocStudio*

31.

Title: THE MIRACLE OF INTUITIVE PAINTING
Patent/project number: Innovative art
Author/s: Violeta COPROS
Institution/Country: VioletaArt, Romania
Category: K
Description: *I discovered intuitive painting recently, I wasn't necessarily looking for it, it came to me somehow naturally, being fascinated by how creative this practice can be. For me it was a new thing, and as C.G Yung said, "Creating something new is not done with the help of reason, but through the play of*

instinct, which acts from an inner necessity" I gave free rein to my imagination with the help of colors on the canvas.
State of development: painting project
Contact: *foltutvioleta71@gmail.com*
Presentation link: *https://www.facebook.com/share/1AGfpH8Xc4/*

32.

Title: MARIA'S MYSTERIES
Patent/project number: ART Project
Author/s: Maria Gabriela HOLOBUȚ
Institution/Country: "Sigismund Toduță" Art High School Deva, Romania
Category: K
Description: *I'm a student in the 9th grade of the "Sigismund Toduță" Art High School in Deva. I was born in Portugal, on September 22, 2009, and from an early age I manifested a special sensitivity towards art.*
I felt drawn to color, finding it useful to express my feelings on any material that could take on color and life. In addition to color and fine art, I like music, the guitar being an instrument in which I trained my curiosity to discover secrets, self-taught.
Ever since elementary school, painting has been a way to express my colorful universe. The pencils were coming to life and there were the mannequins wearing dresses made of colored napkins. Thus I set a dream: to become a fashion designer, and dreams are to help you live your life.
In 2019, for Christmas I came home to Romania. I was a student at Bobâlna, then at Rapoltu Mare, where the teacher of Romanian language and literature, Gabriela Tellman, opened the door for me to the Art High School in Deva, encouraging me to understand that my path must be that of the arts.
State of development: Paint
Contact: *holobutmariagabriela@gmail.com*
Presentation link: *https://www.facebook.com/media/set/?set=a.270996122932687&type=3*

33.

Title: PEACEFUL SONG
Patent/project number: Student Project
Author/s: Adrian-Emanuel IUGA
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania
Category: K
Description: *Peaceful song is a piano concert performed in the F major chromatic scale, the F major chromatic scale includes all the musical notes starting from F to the next F (12 musical notes are used, compared to the standard F major scale consisting of 7 notes).*
It is a concert that can be performed both on piano and in an orchestra composed of piano, violin and harp. For the best experience, the concert will be performed in the musical standard A432Hz, which means that

the instrument will be tuned so that the A note in the 4th octave has a frequency of 432Hz. The purpose of the concert is to give peace, healing, well-being, to refresh the soul.
State of development: piano concert
Contact: *adrian.iuga2@student.upt.ro* ***+40773862068***
Presentation link: *https://www.youtube.com/watch?v=-CD74gKUoUo&ab_channel=Emanuel*

34.

Title: *BEFORE THE PETALS SCATTER IN THE WIND*
Patent/project number: *AI Generated Anime*
Author/s: *Irina FACHIN*
Institution/Country: *Virtual Media Net, Romania*
Category: *K*
Description: *This 3:30 minute animated short film was entirely created with AI generation tools (script, images, videos, music, voice) in the style of Japanese anime. Inspired by the Japanese concepts of "mono no aware" (the awareness of the impermanence of things) and "ichi-go ichi-e" (treasuring the unrepeatable nature of a moment), this animated film follows a young Japanese girl as she contemplates deep philosophical questions about the passage of time and the beauty of life's small joys, inviting us to pause and reflect on how we can truly cherish the moments that matter most.*
VIRTUAL MEDIA NET specializes in immersive media (360 photos and videos, virtual tours) and AI generated content (images, videos, music).
State of development: ***unique and personalized products***
Contact: ***+40.770.212.357*** *irina.motoc.devahd@gmail.com*
Presentation link: *https://www.facebook.com/reel/978046580068652*

35.

Title: *AGRO BIOLOGICAL AND TECHNOLOGICAL PECULIARITIES OF ONION AND GARLIC CROPS*
Book: *ISBN 978-9975-165-35-8.*
Authors: *Vasile BOTNARI, Alexei CHILINCIUC*
Institution/Country: *Moldova State University, Institute of Genetics, Physiology and Plant Protection / Republic of Moldova*
Category: *K*
Description: *The work is intended for agricultural specialists, students, master's students, farmers and other categories of producers, as well as for all those interested in growing vegetables. The guide presents good practice information, accompanied by color illustrated images that facilitate the acquisition of knowledge regarding the agrobiological and technological peculiarities of onion and garlic crops.*
State of development: ***Published book. Chisinau, 2022***
Contact: *vasile.botnari@sti.usm.md*
Presentation link: *https://usm.md/?lang=en*

36.

Title: MUSIC WITHOUT BARRIERS
Patent/project number: 002/2025
Author/s: Phongphol Damrongrat, Kornsiripatchara Damrongrat, Kaewkan Yambangyang, Parinton Jangtawee, Jeerasak Jitrotjanarak
Institution/Country: Webb School, Claremont, California, USA
Category: K
Description: *Music Without Barriers is a social innovation that makes music accessible to everyone, including individuals with disabilities and mental health challenges. The project redesigns basic musical instruments – such as bells, xylophones, flutes, and guitars – into simplified one-note versions, making them easy to play. A color-coded system replaces traditional notation, enabling intuitive learning. The initiative includes an interactive digital platform, workshops, and community outreach programs. By combining music, technology, and inclusivity, the project fosters joy, creativity, and emotional well-being for all.*
State of development: Prototype
Contact: *j_jerasak@hotmail.com*
Presentation link: *https://1drv.ms/v/c/45fb7b773455dd83/EUtGqxLKcPNMvZu7mIM4Q8MBx-g2MD9C8a9TuyN-UivNPg?e=jrDEPw*

37.

Title: A LIFE THROUGH SONG
Patent/project number: Folk singer
Author/s: Cristian FODOR
Institution/Country: Dragan Muntean Cultural Center, Deva, Romania
Category: K
Description: *We live in times of constant change, we live in times when we need confirmation that the roots of this nation are deep. And folklore and traditions are a powerful testimony, which awakens in each of us the feeling of belonging to this nation. Transylvania has many brave men and the most beautiful patriotic songs in its history. Maybe it was not by chance that I was born here. I thank the good God for giving me this «talent» to give to people who love my voice and song.*
State of development: folklore and traditions
Contact: *evenimente@cristianfodor.ro* *https://cristianfodor.ro/*
Presentation link: *https://cristianfodor.ro/video/*

38.

Title: LIVE STREAMING PRODUCTION
Patent/project number: Student Project
Author/s: Multimedia Class LTE "Dragomir Hurmuzescu" Deva, mentor Marius DRAGOMIR
Institution/Country: Technical Energy High School, Deva, Romania
Category: K

Description: *Our Multimedia class is passionate about technology, creativity, and innovation. We specialize in digital media, video production, and live broadcasting, gaining hands-on experience in modern communication technologies. At InventCor 2025, we are proud to support innovation by providing live streaming of the event on the social media channels of Corneliu Group Association, the official organizer. Our goal is to bring the event closer to the public, ensuring that every moment of creativity and technological advancement reaches a wider audience. Join us online and witness the future of innovation in real time!*
State of development: Production
Contact: Marius Dragomir *marius.dragomir@big-fm.ro*
Presentation link: *https://www.youtube.com/@energeticdeva5587/videos*

39.

Title: MANDALE
Patent/project number: Handmade paintings
Author/s: Gabriela BERGHIAN
Institution/Country: Art by Angelique, Romania
Category: K
Description: *A mandala is a complex abstract design that is usually circular in form. In fact, "mandala" is a Sanskrit word that means "circle". Mandalas generally have one identifiable center point, from which emanates an array of symbols, shapes and forms. Mandalas can contain both geometric and organic forms. They can also contain recognizable images that carry meaning for the person who is creating it. In essence, mandalas represent the connection between our inner worlds and outer reality. Designing your own mandalas can be both inspirational and therapeutic. Mandalas, painted in the dot technique with acrylic paints. Handmade paintings on wood, glass, ceramics.*
State of development: Products
Contact: *gabrielaberghian@yahoo.com*
Presentation link: *https://www.facebook.com/angelika.dakini/*

40.

Title: APPLICATIONS OF THE FIBONACCI NUMERICAL SERIES IN THE FIELD OF MUSIC PRODUCTION
Patent/project number: Student project
Author/s: Robert-Daniel SĂCUIU, Mentor: Conf. Dr. Diana Alina BISTRIAN
Institution/Country: Politehnica University of Timisoara, Engineering Faculty of Hunedoara, Romania
Category: K
Description: *This project investigates the application of the Fibonacci number series in the field of music production, for the construction of scores using the FL Studio application. The use of the Fibonacci series in music production, especially in FL Studio, can create pleasant rhythms, melodies and harmonies in a natural way, as this mathematical sequence frequently appears in nature and art. In this project, rhythmic*

patterns and several melodic compositions were created using the golden ratio to structure phrasing, placing key notes or chords at the points of the golden ratio. By integrating the Fibonacci series-based structure into FL Studio, several compositions were created that are mathematically structured, but are musically organic. In mathematics, the Fibonacci sequence is a sequence in which each element is the sum of the two elements that precede it. Numbers that are part of the Fibonacci sequence are known as Fibonacci numbers, commonly denoted Fn. Many writers begin the sequence with 0 and 1, although some authors start it from 1 and 1 and some (as did Fibonacci) from 1 and 2. Starting from 0 and 1, the sequence begins
State of development: melodies and harmonies
Contact: *robisacuiu@gmail.com diana.bistrian@fih.upt.ro*
Presentation link: *https://www.youtube.com/watch?v=MT4I8m6fndQ*

41.

Title: 3D EXPAND PAINT PRINTING and MORE
Patent/project number: Print & customization
Author/s: Cătălin Părăoan & Eurografics Team
Institution/Country: A & K TEAM SERVICE SRL, Romania
Category: K
Description: *With every print and customization, Eurografics fulfills its mission to turn ideas into reality and bring a smile to our customers' faces. Screen printing is a printing process on smooth surfaces that consists of applying a layer of ink to the material being printed on through a stencil with cutouts covered with a fine mesh. Turn your ideas into reality!* 🎉
Have you ever wanted promotional materials that stand out and tell the story of your brand?
With us, you can bring any idea to life:
✓*Pens, lighters, stickers, umbrellas, mugs, personalized t-shirts and much more!*
✓*Unique design tailored to your needs.*
✓*Superior quality and fast delivery!*
At Eurografics, we offer professional embroidery services to personalize any type of textile. Whether you need personalized uniforms for your team, unique gifts or promotional products, we are here to help you stand out. Contact us now for a personalized quote and discover how we can add value to your brand!
State of development: Products
Contact: *eurografics@gmail.com*
Presentation link: *https://www.facebook.com/eurografics*

Power of Creative Mind Symposium

Program

Thursday 3th and Friday 4th of April 2025 at Cultural Center „Drăgan Muntean", Hall „Liviu Oros".

Day 1

14:00	**THE IMPORTANCE OF PROTECTING INDUSTRIAL PROPERTY**
14:15	*Daniela DRAGOMIR, Marina VOICULESCU*
14:15	**INNOVATIVE MECHATRONIC SYSTEMS PROPOSED FOR PATENT REGISTRATION**
14:30	*Aurel-Mihail TITU*
14:30	**INNOVATIVE TECHNOLOGY OF MINIMUM AGRICULTURAL LAND PROCESSING ADAPTED TO CURRENT CLIMATE CHANGES**
14:45	*Valentin VLĂDUȚ*
14:45	**ARTIFICIAL INTELLIGENCE (AI) IN PHOTO AND VIDEO**
15:00	*Mihoc Mădălina, Mihoc Mihai*
15:00	**FLYING ABOVE THE CLOUDS**
15:15	*Claudiu PAVEL*
15:15	*UNCONVENTIONAL METHODS OF DOWNCYCLING PLASTIC WASTE IN CONSTRUCTION AND DEVELOPMENT*
15:30	*Andreea-Ioana CIURAR*
15:30	**A CULINARY JOURNEY TOWARDS HEALTH AND PASSION**
15:45	*Ioana BOGDAN*
15:45	**THE INFLUENCE OF DANCE IN A COMMUNITY**
16:00	*Andreea RUSAN-MOTIU*

16:00 **16:30**	**Symposium coffee break**
16:30 16:45	**DIGITAL APPLICATIONS IN THE DESIGN OF COMBATANTS' SURVIVAL EQUIPMENT** *Catalin GROSU*
16:45 17:00	**NANOPARTICLES/MICROPARTICLES GENERATED IN TEXTILE INDUSTRY: CHALLENGES AND THREATS** *Emilia VISILEANU*
17:00 17:15	**EXPLOITING FUNGI POTENTIAL IN BIOFUNCTIONALIZATION OF HDPE CARRIERS USED IN MBBR WASTEWATER TREATMENT SYSTEMS** *Ovidiu IORDACHE*
17:15 17:30	**MYCO-MATERIALS: PROSPECTS FOR THE FUTURE** *Bogdan CAZAN*
17:30 17:45	**LASHING & LIFTING SLINGS by RERAT HELVETIA** *Larisa RERAT*
17:45 18:00	**THE INFLUENCE OF SOCIAL MEDIA PLATFORMS IN TOURISM MARKETING ACTIVITY** *Carla PARPUCEA*

Day 2

10:00 10:15	**THE BRILLIANCE OF TRADITION IN A NEW VISION** *Doina-Bezuțchi Angela, Malcoci Marina, Mereacre Corina, Malcoci Maria-Eudochia, Spînu Olivia, Guștiuc Livia, Sava Mădălina*
10:15 10:30	**CHALLENGES IN DUAL EDUCATION IN THE CONTEXT OF THE NEW CURRICULUM FRAMEWORKS** *Flavius BUCUR*
10:30 10:45	**MODERN METHODS USED IN PRIMARY EDUCATION** *Emilia Victoria FELCIUC*
10:45 11:00	**ELECTRIC VEHICLE CHARGING NETWORK AND ADMINISTRATION** *Mihai Dragos CIOBANU*
On Line **10:45**	**I HAVE KNOWLEDGE! I KNOW! / BA CUNOSC! BA STIU!** *Sarah LASCU HARVAT*

Power of Creative Mind Symposium
Book of abstracts

1.

Title: THE IMPORTANCE OF PROTECTING INDUSTRIAL PROPERTY
Speaker: Daniela DRAGOMIR, Marina VOICULESCU
Scientific title: IP Expert
Institution/Country: State Office for Inventions and Trademarks, Romania
Description: *Through this presentation, the OSIM specialist brings to the attention of the audience, the basic notions regarding the fields of activity of the State Office for Inventions and Trademarks: invention patents, trademarks, designs and models.*
The databases, information on taxes, as well as the validity of the protection titles, will be presented to the public, with the main objective of raising awareness of the importance of industrial property protection, so that those who own these rights obtain maximum benefits from their creative and innovative capacity.
Contact: *daniela.dragomir@osim.gov.ro*
Presentation link: *https://osim.ro/en/*

2.

Title: INNOVATIVE MECHATRONIC SYSTEMS PROPOSED FOR PATENT REGISTRATION
Speaker: Aurel-Mihail TITU
Scientific title: Prof. Eng.& Ec. Sc.D. & Ph.D., Dr. Habil.
Institution/Country: "Lucian Blaga" University of Sibiu, Romania
Description: *Today's presentation aims to highlight four high-performance mechatronic systems used in various fields. It is worth noting that these systems exhibit a strong potential for patentability.*
Contact: Professor Aurel Mihail ȚÎȚU, Lucian Blaga University of Sibiu, Director of PATLIB Centre of Sibiu, President of the Romanian Association of Alternative Technologies Sibiu, 4 Emil Cioran Street, Room IM 101, Phone 0040 744 390 290, E-mail *mihail.titu@ulbsibiu.ro*
Presentation link: *https://www.ulbsibiu.ro/en/*

3.

Title: INNOVATIVE TECHNOLOGY OF MINIMUM AGRICULTURAL LAND PROCESSING ADAPTED TO CURRENT CLIMATE CHANGES
Authors: VLĂDUȚ Valentin[1)], KISS Imre[2)], BIRTOK-BĂNEASĂ Corneliu[2)], IVAȘCU Larisa[2)], CIOCA Lucian[3)], OLAN Mihai[1)], MARIN Eugen[1)], ANGHELACHE Dragoș[1)], ȘTEFAN Dumitru[1)], MATEI Gheorghe[4)], POPA Diana[5)], BORUZ Sorin[4)]
Scientific title **Associate Professor, PhD in Engineering**
Speaker: KISS Imre

Institution/Country: *[1)]INMA Bucharest; [2)] Polytechnic University Timişoara; [3)]Lucian Blaga University of Sibiu; [4)]University of Craiova; [5)] ARDS Secuieni – Neamț, Romania*
Description: *The project aims to develop an innovative technology for minimal soil cultivation (adapted to climate change), which will be based on 3 new equipment (experimental models): deep soil cultivation equipment (scarifier), equipped with a microorganism inoculation system; seeder for direct sowing in stubble and equipment for foliar fertilization with microorganisms, respectively two recipes for soil microorganism biostimulators (granular, respectively liquid) and a liquid foliar biofertilizer.*
By using the three pieces of equipment, the two biostimulators and the biofertilizer respectively, a favourable environment will be created for the development of agricultural crops even during periods of prolonged drought, obtaining good yields (compared to the current situation when over 70-80% of crops are damaged).
Contact: ***+40-21-269.32.55*** *icsit@inma.ro* ***+40-749-283.115*** *mihai_c@inma.ro*
Presentation link: *www.inma.ro*

4.

Title: ARTIFICIAL INTELLIGENCE (AI) IN PHOTO AND VIDEO
Speaker: Mihoc Mădălina, Mihoc Mihai
Scientific title: Eng.
Institution/Country: Mihoc Studio, Romania
Description: *Artificial intelligence (AI) can be an extremely useful tool in improving photos, with a variety of features and applications that facilitate the editing process.*
Due to today's technology, clients' desires to improve their photos have increased. In order to do everything in the shortest possible time, we use the help of artificial intelligence in various dedicated editing programs.
Artificial intelligence (AI) in the photo field has many advantages namely increased efficiency, AI can process and edit images and videos much faster than a human can.
Contact: *www.mihocstudio.ro* *madalina@mihocstudio.eu* ***+40767333661***
Presentation link: *https://www.youtube.com/@MihocStudio*
https://mihocstudio.ro/
https://www.facebook.com/MihocStudio

5.

Title: FLYING ABOVE THE CLOUDS
Speaker: Claudiu PAVEL
Scientific title: Aviation technician
Institution: TERRITORIAL AEROCLUB "Constantin Manolache" DEVA
Description: *Founded in 1975, the Deva Aeroclub is located east-southeast of the municipality of Deva, at a distance of 7 km. Its entire length is between the Simeria - Deva railway and the shore of Mureș.*
At the beginning of its operation, it was called the "Dacia" Deva Aeroclub, then the name changed, becoming the "Constantin Manolache" Deva Aeroclub, and then the Deva Territorial Aeroclub. The Deva Aeroclub is located east-southeast of the city of Deva, at a distance of 7 km and spanning its entire length between the Simeria - Deva railway and the shores of the Mures River.

The Aeroclub organizes theoretical and practical courses for obtaining the licenses of parachutist, glider pilot, ultralight pilot and PPL(A) pilot. Young people aged 16-23 benefit from free courses.
Contact: *deva@aeroclubulromaniei.ro* *http://www.aeroclubulromaniei.ro/*
Presentation link: *https://www.facebook.com/AeroclubulDeva/*

6.

Title: UNCONVENTIONAL METHODS OF DOWNCYCLING PLASTIC WASTE IN CONSTRUCTION AND DEVELOPMENT
Speaker: Andreea-Ioana CIURAR
Scientific title: student
Institution/Country: Politehnica University of Timisoara, Faculty of Engineering Hunedoara, CITT Politehnica 2020, Romania
Description: *The paper explores unconventional methods of waste plastics recovery, with a focus on downcycling, transforming materials such as PET and HDPE into useful products for construction and landscaping.*
Four main research directions are presented: galvanization of plastics to obtain a chromium-plated coating, use of PET fibres for concrete reinforcement, production of RPET synthetic fibres for temporary insulation and bricks from molten plastic and sand.
Contact: *andreea.ciurar2004@gmail.com*
Presentation link: *https://www.fih.upt.ro/v6/*

7.

Title: A CULINARY JOURNEY TOWARDS HEALTH AND PASSION
Speaker: Ioana BOGBAN
Scientific title: Chef
Institution/Country: RITUAL ACADEMY, Romania
Description: *The Ritual Academy it is a space of discovery, creativity and education, where children and adults learn to cook healthily, understand the principles of nutrition and discover the joy of preparing and enjoying delicious dishes.*
Our courses are taught by Chef Ioana Bogdan, winner of the Young Chef trophy in 2018, with extensive experience in gastronomy and a special passion for culinary education. She is the creator of the Ritual and Sufertas brands.
The cooking workshops were created out of the desire to transform every meal into a ritual of self-care, to educate future generations about the importance of a balanced diet and to inspire people to rediscover their passion for gastronomy. Courses include food safety, basic nutrition, and the importance of a balanced diet.
Contact: *ioanacismasiu@gmail.com*
Presentation link:
https://www.facebook.com/p/Ritual-by-Ioana-Bogdan-100063771347226/?locale=ro_RO

8.

Title: THE INFLUENCE OF DANCE IN A COMMUNITY
Speaker: Andreea RUSAN-MOTIU
Scientific title: Dance instructor
Institution/Country: Dansandra - social and modern dance classes, Romania
Description: *I am discovering more and more connections between dance, movement, creation, show and technology. Technology helps us and will help us more and more in achieving everything we want to achieve as dancers, choreographers, set designers, whether we are talking about smart software for playing and editing music, or everything related to lights, images and mechanisms that help the dancer/choreographer to highlight their creation!*
Contact: +40 744 953 427 andreea.florentina@gmail.com
Presentation link: *https://www.facebook.com/share/1CrjaMQAV6/*

9.

Title: DIGITAL APPLICATIONS IN THE DESIGN OF COMBATANTS' SURVIVAL EQUIPMENT
Speaker: Catalin GROSU
Scientific title: PhD. Eng.
Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Description: *Ballistic protective equipment is designed and made to protect the upper part of the human body, excluding the upper and lower limbs, which remain exposed to external stress factors (gunshots, cuts, etc.) that can lead to the death of the combatant due to blood loss. The designed primary hemostasis system is based on detecting the wound through a conductive textile structure made from metallic wires in the textile material's construction. When cut, a wire will generate an electrical signal interpreted by a control unit to operate an air-pumping system that activates a pneumatic tourniquet. The equipment visualisation was done through 3D simulations, defining the requirements that the modules of the intelligent equipment must meet, namely: the undersuit assembly and the IR camouflage suit. Technological solutions (3) were developed for configuring and positioning the primary hemostasis system in the undersuit assembly.*
Contact: *catalin.grosu@incdtp.ro*
Presentation link: *https://incdtp.ro/index_en.html*

10.

Title: NANOPARTICLES/MICROPARTICLES GENERATED IN TEXTILE INDUSTRY: CHALLENGES AND THREATS
Speaker: Emilia VISILEANU
Scientific title: PhD. Eng.
Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania

Description: *This paper presents the results of determining the concentration levels of micro and nano plastics particles (MNPs) in indoor and outdoor air in textile enterprises to identify the areas with the highest concentration levels by using the MINI LAS model 11-E aerosol laser spectrometer MINI LAS model 11-E, online recording system. Particle concentration by particle size was provided in three areas: indoors, outdoors, in the vicinity of workplaces, and at three different working times.*
The next step was the collection of fibers, i.e., micro and nanoparticles of plastics in the vicinity of the workplaces of polyester, polyamide, and polypropylene fiber processing units in the textile industry in Romania, using a GILAIRPLUS pump with an airflow rate of 2l/min and three types of filters with different diameters and pore sizes. The aim was to provide complex analysis by applying SEM, FT-IR, Raman, and GS-MS analysis methods to determine the size, shape, and polymer nature. The study of the toxicity of inhaled particles inhaled in the vicinity of workplaces on the human body is studied by using samples of biological samples (blood and saliva) collected from 105 volunteers from 3 textile companies.
Preliminary samples revealed that the cell viability of the samples and the number of cells is suitable for the flow cytometry method for cytotoxicity detection. It is intended to develop a standard to correlate the concentrations of MNPs in the environment with their toxicity to human health and beyond.
Contact: *e.visileanu@incdtp.ro*
Presentation link: *https://incdtp.ro/index_en.html*

11.

Title: EXPLOITING FUNGI POTENTIAL IN BIOFUNCTIONALIZATION OF HDPE CARRIERS USED IN MBBR WASTEWATER TREATMENT SYSTEMS
Speaker: Ovidiu IORDACHE
Scientific title: PhD, researcher
Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Description: *The paper focuses on the use of filamentous fungi to enhance the biofunctionalization of High-Density Polyethylene (HDPE) carriers used in Moving Bed Biofilm Reactor (MBBR) systems.*
The study starts with DSC (Differential Scanning Calorimetry) Analysis, which helps in understanding the thermal properties and stability of the biofunctionalized carriers, followed by GC-Headspace Analysis, providing insights into the volatile compounds present, and SEM (Scanning Electron Microscopy) Analysis is used to visualize the microbial adhesion and surface modification of HDPE carriers, confirming the effectiveness of the biofunctionalization.
Contact: *iordacheovidiu.g@gmail.com*
Presentation link: *https://fluensys.ro/research/projects/?lang=en*

12.

Title: MYCO-MATERIALS: PROSPECTS FOR THE FUTURE/ MYCO-MATERIALELE: PERSPECTIVE PENTRU VIITOR
Speaker: Bogdan CAZAN
Scientific title: Scientific researcher

Institution/Country: The National Research and Development Institute for Textiles and Leather -INCDTP, Romania
Description: *Due to the rapid growth of the global population and resource depletion, humanity needs a better understanding and management of natural resources, and a new vision that aims towards discovery of novel materials.*
Contact: *bogdan.cazan@incdtp.ro*
Presentation link: *https://incdtp.ro/THORR/*

13.

Title: LASHING & LIFTING SLINGS by RERAT HELVETIA
Speaker: Larisa RERAT
Scientific title: Chief Executive Officer
Institution: Rerat Helvetia Company
Description: *Rerat Helvetia proudly holds industry certifications that reflect our unwavering commitment to quality, safety, and excellence. Our products comply with global standards, ensuring reliability and peace of mind for our clients. At Rerat Helvetia, we are not just manufacturers; we are architects of safety and reliability.*
Our lashing and webbing slings represent a commitment to excellence that has stood the test of time. Join us in a journey where innovation meets reliability, and safety takes center stage. Rerat Helvetia is committed to contributing to a greener, more eco-conscious industry. Compliance with global safety standards underscores our dedication to creating secure solutions. Our success is intertwined with the success of our clients. We offer personalized solutions tailored to meet specific industry and project requirements. Customer satisfaction is not just a goal; it's the driving force behind everything we do. Rerat Helvetia proudly holds industry certifications that reflect our unwavering commitment to quality, safety, and excellence.
Contact: *office@rerathelvetia.ch* ***0040 749 090 725*** *www.rerathelvetia.ch* *https://rerat.eu/*
Presentation link: *https://youtu.be/2jNSjwjWyTI*

14.

Title: THE INFLUENCE OF SOCIAL MEDIA PLATFORMS IN TOURISM MARKETING ACTIVITY
Speaker: Carla PARPUCEA
Scientific title: Student
Institution/Country: Economic College "Dionisie Pop Martian" Alba Iulia, Romania
Description: *This project analyzes how social media networks influence tourism marketing strategies. The study identifies the main trends in consumer behavior, the impact of digital communication on destination choice and promotional opportunities for tourism operators. Through data analysis, case studies and examples of successful campaigns, the project proposes recommendations for optimizing online presence and maximizing the efficiency of tourism marketing campaigns.*
Contact: *carlaparpucea@gmail.com*
Presentation link: *https://www.instagram.com/carla.parpucea/*

15.

Title: THE BRILLIANCE OF TRADITION IN A NEW VISION

Speaker: Doina-Bezuțchi Angela[1], Malcoci Marina[2], Mereacre Corina[3], Malcoci Maria-Eudochia[3], Spînu Olivia[3], Guștiuc Livia[3], Sava Mădălina[3]
Scientific title: 1 – plastic artist in the field of Clothing Design, Master in Decorative Arts, Higher Didactic Degree; 2 – associate professor, doctor, Higher Didactic Degree; 3 – students at the Public Institution Center of Excellence in Light Industry from Chisinau
Institution/Country: Public Institution Center of Excellence in Light Industry from Chisinau, Republic of Moldova

Description: *The work aims to interpret the traditional Romanian costume through a creative and contemporary approach to clothing design. The traditional ornament used in the elaborate collections and the finished products is inspired by traditional Romanian embroideries, especially by geometric, floral motifs specific to ii, fota and quatrains. And the predominant colors are red, black and white specific to the national costume of Moldova.*

The chosen source of inspiration went through several stages:

1. Making a faithful copy of the source of inspiration.

2. Simple stylization of the source of inspiration.

3. Complex stylization of the source of inspiration.

The newly created ornament can be applied to various products (scarves, accessories, clothing products, etc.) through various methods such as embroidery, printing, crocheting, etc. On the two manufactured products (the scarf and the multifunctional headband), the newly created ornament was applied through printing and embroidery. Both the scarf and the headband can be worn on the head or around the neck.

The clothing collections were created using the collage technique. These collections create a strong connection between the past and the present. But at the same time, they allow the highlighting of traditional ornaments by overlapping and integrating visual elements in an artistic way. Thus, ornaments continue to be an essential element in the development of contemporary fashion.

Contact: ***marina.malcoci@gmail.com*** ***+37369062399***
Presentation link: ***https://www.facebook.com/ceiuchisinau***

16.

Title: CHALLENGES IN DUAL EDUCATION IN THE CONTEXT OF THE NEW CURRICULUM FRAMEWORKS

Speaker: Flavius BUCUR
Scientific title: Professor
Institution/Country: Rail Transport Technological High School "Anghel Saligny" Simeria, Romania

Description: *Dual education represents a modern alternative for training young people in line with labor market demands, combining theoretical learning in schools with practical training in companies. The new curriculum frameworks introduce significant changes in the structure and organization of this type of education but also pose several challenges for the stakeholders involved.*

One of the main difficulties is adapting the curriculum to the real needs of companies. The curriculum frameworks must balance theoretical education with the development of practical skills, requiring effective collaboration between schools and the business sector.
Another challenge is ensuring the necessary infrastructure, both in educational institutions and in companies. Insufficient resources and a lack of modern equipment can limit the efficiency of students' practical training.
Additionally, the involvement of economic partners is crucial, but not all companies are ready to invest resources in training future employees. Some firms are reluctant to provide internship opportunities or do not offer enough placements for students.
Furthermore, attracting and motivating students to choose dual education remains a challenge. Many young people prefer theoretical education or are not well-informed about the benefits of this system, which can offer them quick employment opportunities.
In this context, revising the graduation exam model becomes necessary to ensure that the final evaluation reflects not only theoretical knowledge but also the practical skills acquired by students, thus facilitating their transition to the labor market.
In conclusion, implementing the new curriculum frameworks in dual education can lead to an improvement in professional training quality, but it requires stronger collaboration between schools, companies, and authorities to overcome the existing challenges.
Contact: *flavius_bucur@yahoo.com*
Presentation link: *https://www.liceulsaligny.ro/*

17.

Title: MODERN METHODS USED IN PRIMARY EDUCATION
Speaker: Emilia Victoria FELCIUC
Scientific title: Primary education teacher
Institution: Rail Transport Technological High School "Anghel Saligny" Simeria
Description: *Primary education is undergoing continuous modernization, integrating innovative methods aimed at actively engaging students and improving the learning process. Some of the most effective modern methods used at this level include learning through play, digital technologies, artificial intelligence (AI), project-based learning, and interactive methods.*
Learning through play helps children acquire knowledge in a fun and natural way, fostering their creativity and logical thinking. Educational games contribute to a better understanding of concepts and increase motivation for learning.
Digital technologies, such as tablets, interactive whiteboards, and online educational platforms, allow for a personalized learning approach and provide access to a variety of resources. These tools enhance interaction between students and teachers, making the educational process more engaging.
Artificial intelligence (AI) plays an increasingly important role in education, offering personalized learning solutions and adaptive assistance.
AI can analyze students' progress, suggest additional exercises, and provide individualized feedback, contributing to a more effective and tailored educational experience.

Project-based learning encourages students to work in teams to solve real-world problems, developing their collaboration, critical thinking, and decision-making skills. This method emphasizes the practical application of knowledge and stimulates curiosity.
Interactive methods, such as collaborative learning, debates, and hands-on experiments, help children express their ideas, develop social skills, and become more engaged in the educational process.
In conclusion, the use of modern methods, including AI, in primary education contributes to a more effective and adaptable learning experience, preparing students for the challenges of the future.
Contact: *emilia_felciuc@yahoo.com*
Presentation link: *https://www.liceulsaligny.ro/*

18.

Title: ELECTRIC VEHICLE CHARGING NETWORK AND ADMINISTRATION
Speaker: Ciobanu Mihai Dragos
Scientific title: CEO
Institution/Country: Smart Business & Technologies Solutions SRL, Romania
Description: *VOLTRELLI, powered by EVconnect, is a pioneering Romanian company specializing in the development and implementation of comprehensive charging solutions for electric vehicles. Established in 2014, we provide innovative and adaptable solutions in the Romanian market. Since the initial stations were installed in 2014, VOLTRELLI, powered by EVconnect, has witnessed remarkable expansion, attracting more than 50,000 users who have accessed over 20 GWh of renewable energy.*
Today, we hold a prominent position as a worldwide provider of electric charging solutions, with a strong foothold in Europe, the Middle East, and Latin America, including countries such as Romania, the United Arab Emirates, Jordan, Saudi Arabia, Montenegro, Germany, Spain, France, Hungary, Bulgaria, Slovenia, the Netherlands, and LATAM (Peru, Chile, Colombia).
We provide tailored electric charging solutions designed to meet the specific requirements of each city in Romania, ranging from rapid charging stations to options for residential complexes. This aids in fostering a cleaner and more sustainable urban setting, while also boosting the local economy.
We are expediting the shift to electric mobility in Romania, diminishing pollution, optimizing energy consumption, and constructing a greener future for our communities collectively. With vast experience, having financed over 500 projects through different European and regional programs and effectively executed in Romania, we provide a complete array of electric charging solutions tailored to address the distinct requirements of each area, fostering the advancement of a contemporary and sustainable infrastructure.
From residential to public sectors, we provide tailored charging solutions for various requirements. With more than a decade of experience, we have outfitted numerous sites, ranging from police stations to public hotspots.
Our intelligent management platform, VOLTRELLI, facilitates effective administration of charging networks, guaranteeing an excellent experience for users and administrators alike.
Contact: Ciobanu Mihai Dragos; +40754631068
Presentation link: *https://evconnect.ro/contact-en*

19.

Title: I HAVE KNOWLEDGE! I KNOW! / BA CUNOSC! BA STIU!
Speaker: Sarah LASCU HARVAT
Scientific title: Chairman
Institution: EDUROD Association for Digital and Environmental Education
Description: *I have knowledge! I know! / ,,Ba Cunosc! Ba Stiu!" aims to document as many professions from various locations as possible in order to make known to the general public their products and services, the people behind the professions, and the main activities required to carry out these professions.*
Contact: +40728772758 ***hello@edurod.org***
Presentation link: https://bacunosc.ro/meserii/

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28. MOFT STUDIO
29. Star Doner & Pizza
30. Pizza Speed
31. Universitatea Națională de Știință și Tehnologie POLITEHNICA București
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40. BSM Motors

41. Timpean Ana Maria Individual Enterprise

42. Palatul Copiilor Deva

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45. National Agency for Public Health, Republic of Moldova

46. Gheorghe Asachi Technical University of Iasi, Romania

47. COMOTI - National Research and Development Institute for Gas Turbines

48. Technical University of Civil Engineering Bucharest

49. National Institute of Research and Development for Potato and Sugar Beet, NIRDPSB Brasov, Romania

50. National Institute for Research - Development of Machines and Installations designed for Agriculture and Food Industry – INMA Bucharest

51. Idea Club 13 Association, Hungary

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62. Choate Rosemary Hall, Connecticut, USA

63. Webb School, Claremont, California, USA

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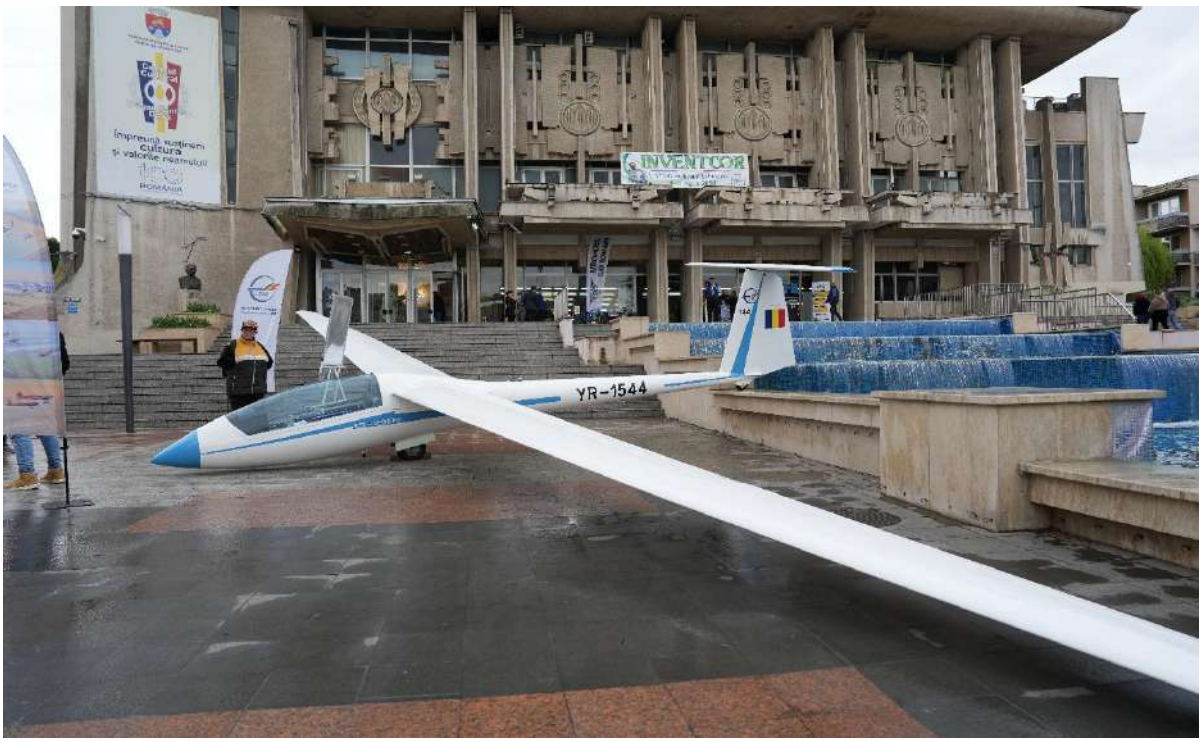
103. Al Amaan Al Mutahida Company - Bagdad, Iraq

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Augustin SEMENESCU

Profesor Doctor abilitat, M.Sc., B.Sc. (Inginerie, Matematică, Economie),
Universitatea Națională de Știință și Tehnologie POLITEHNICA din București, România, UE
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Invențiile și tehnologiile dezvoltate în baza lor au modelat civilizațiile și au transformat viața pe Pământ. De la invenția roții până la dezvoltarea roverului pentru planeta **Marte**, multe dintre aceste invenții au fost cu adevărat revoluționare, chiar dacă acest lucru nu a fost întotdeauna evident atunci.

Este cunoscut faptul ca cele mai importante invenții nu au un singur inventator, ele fiind dezvoltate separat de mulți oameni sau mulți oameni au contribuit la evoluția lor de la concepte de bază la invenții valoroase.

Trebuie precizat faptul ca invenția oțelului a fost de mare importanță - oțelul a schimbat modul în care construim multe lucruri și fiindcă suntem în județul **Hunedoara**, cea dintâi atestare referitoare la extragerea fierului în zona **Hunedoarei** aparține dramaturgului grec ***Eschyl*** care spunea: ***"Între muntele Pharnax şi Râul cel Mare şi de netrecut se întinde Patria mamă a fierului".***

Bronzul a fost primul metal forjat pentru a fi folosit de oameni. Cu toate acestea, bronzul este relativ slab. Fierul a fost probabil topit pe tot parcursul epocii bronzului, deși a fost văzut ca un metal inferior, care nu era la fel de dur sau durabil ca bronzul. Folosirea fierului a devenit mai răspândită după ce oamenii au învățat să facă oțel, un metal mult mai dur obținut prin încălzirea fierului cu carbon. În jurul anului 1.800 î.Hr., un popor de-a lungul **Mării Negre**, numit ***„Chalybes"***, a început să folosească minereu de fier pentru a crea arme robuste din fier forjat cu aproximativ 0,8% carbon. ***„Chalybes"*** a fost un termen grecesc generic pentru *„oameni de pe coasta Mării Negre care fac comerț cu fier"* sau *„un grup de metalurgiști specializați"*.

Fonta, cu aproximativ 2-4% carbon, a fost făcută pentru prima dată în **China** antică în jurul anului 500 î.Hr. Metalurgiștii chinezi au construit cuptoare mari pentru a topi minereul de fier într-un lichid și l-au turnat în forme sculptate. În jurul anului 400 î.Hr., metalurgii indieni au inventat o metodă de topire care folosea un recipient de lut numit creuzet pentru a ține metalul topit. Muncitorii au pus bare de fier forjat și bucăți de cărbune în creuzete, apoi au sigilat recipientele și le-au introdus într-un cuptor. Acest fier forjat s-a topit și a absorbit carbonul din cărbune. Când creuzetele s-au răcit, au conținut lingouri de **oțel** pur - un metal cu calități superioare fierului. Dezvoltarea ulterioară a furnalului pentru producerea fontei si invenția inginerului britanic **Henry Bessemer**, care a dezvoltat un proces prin care a suflat aer prin fonta topită au permis crearea unui **oțel** cu procent redus de carbon, în 1856 d.Hr.

Celebra invenție a procesului **Bessemer** a deschis calea producției de masă a **oțelului**, făcându-l una dintre cele mai mari industrii din lume. Oțelul a avut o influență majoră asupra vieților noastre, oțelul fiind folosit în crearea a tot ce înseamnă omul modern, de la poduri la zgârie-nori, de la trenuri de mare viteza la drone și navete spațiale, de la turnurile de electricitate - linii electrice la conducte de gaz natural, de la mașini-unelte la arme militare, iar lista este nesfârșită.

Dar inventatorii de la **INVENTCOR** au o paletă largă de expunere a ideilor lor, nu numai ce ține de metale, ci de aproape tot ce ține de omul modern: Energie, Protecția mediului, Biotehnologie; Nanotehnologie, Materiale avansate, Metalurgie, Construcții civile; Informatica, Electronica si Inginerie electrica; Automobile, Științe spațiale, Aviație, Nave, Mecanică; Metode de predare, Cărți, Istorie și Studii Culturale; Medicina, Medicina Alternativa, Farmacie, Cosmetica, Igiena; Agricultura, Medicina veterinara; Alimente, Băuturi, Restaurante, Hoteluri și Spa, Textile, îmbrăcăminte, modă; Colț pentru copii, Jocuri, Jucării, Sport, Activități în aer liber; Artă inovatoare, Muzică, Video, Fotografie, Publicitate.

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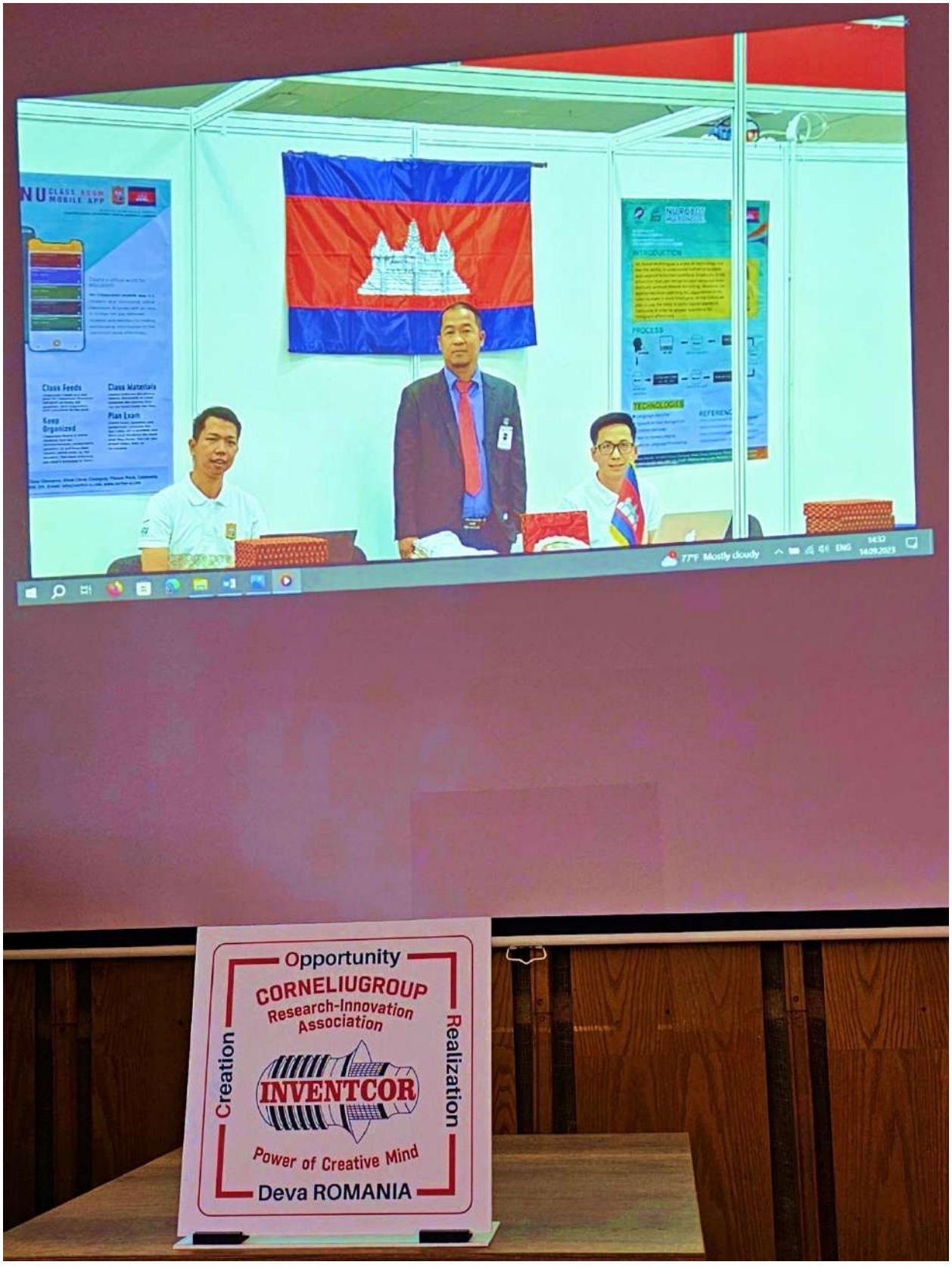

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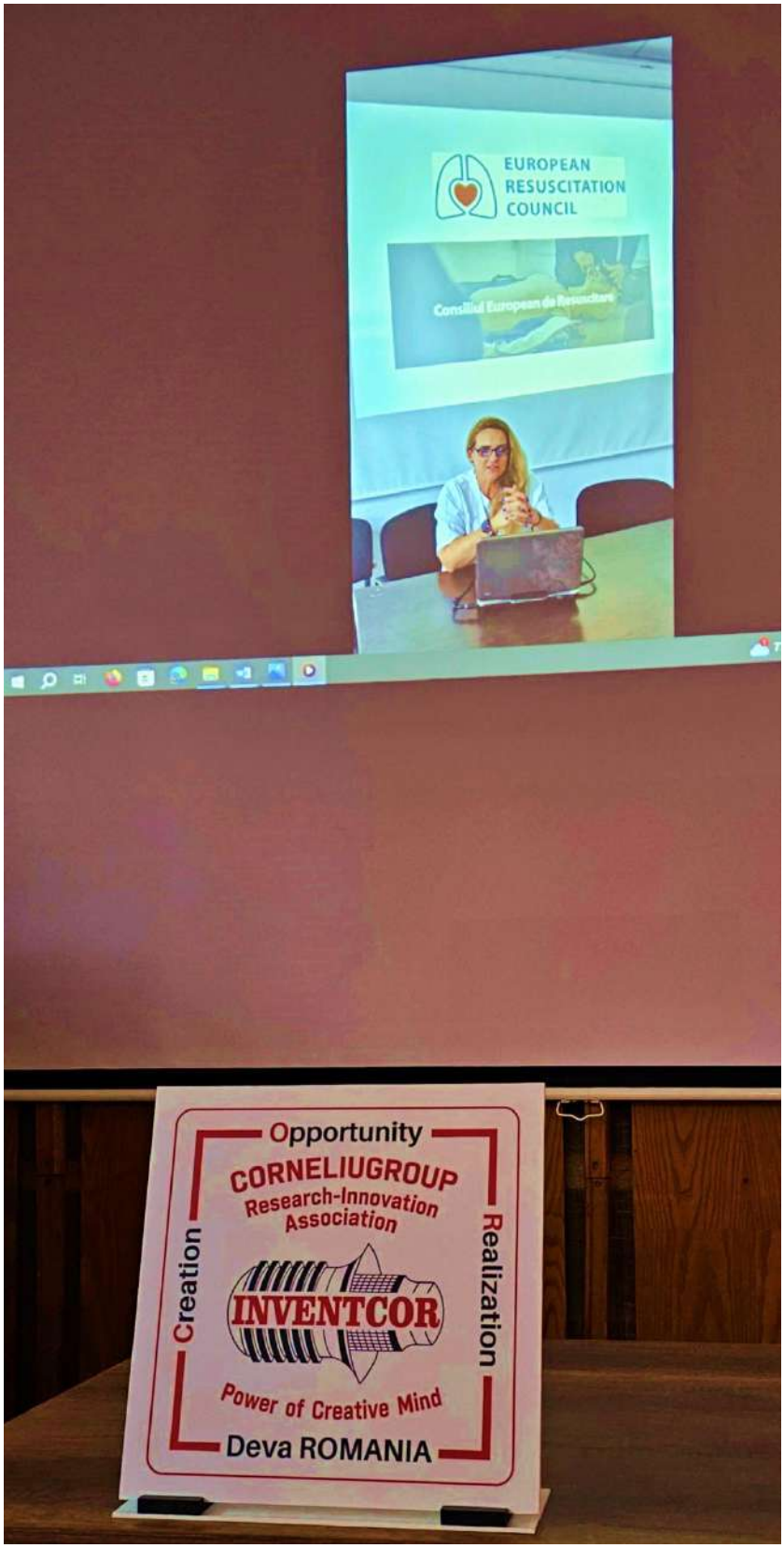

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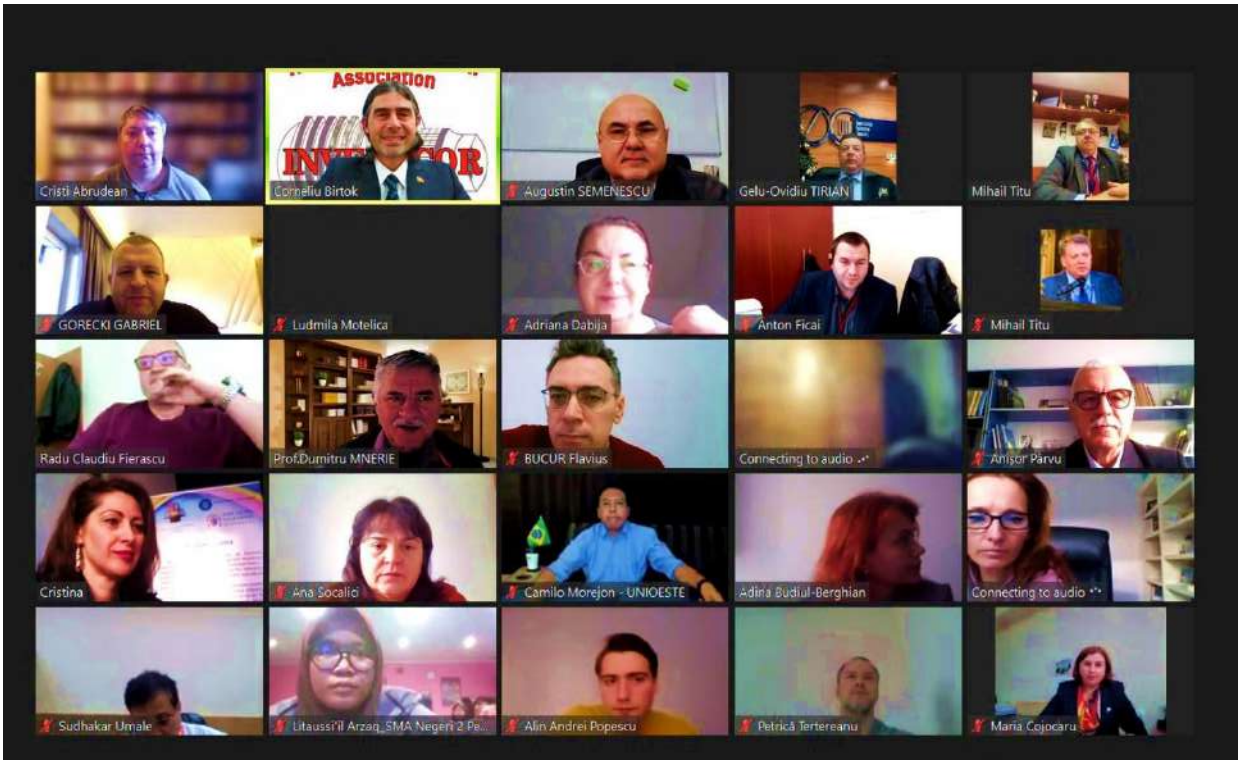





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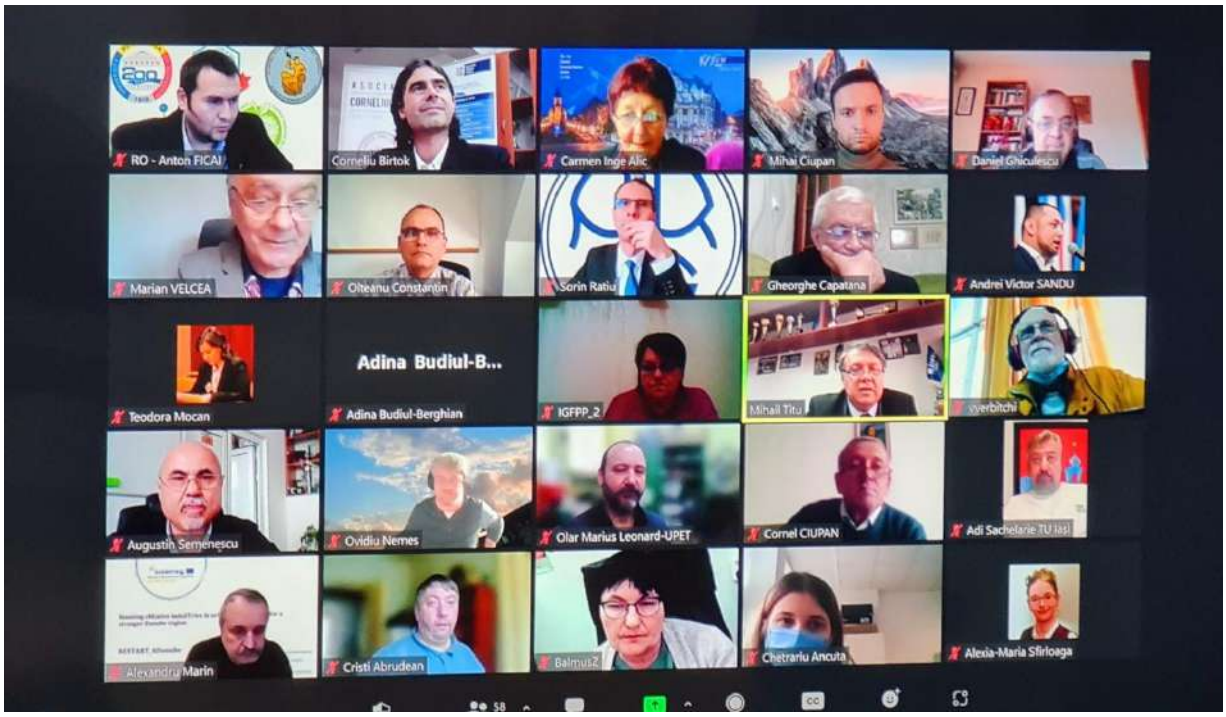
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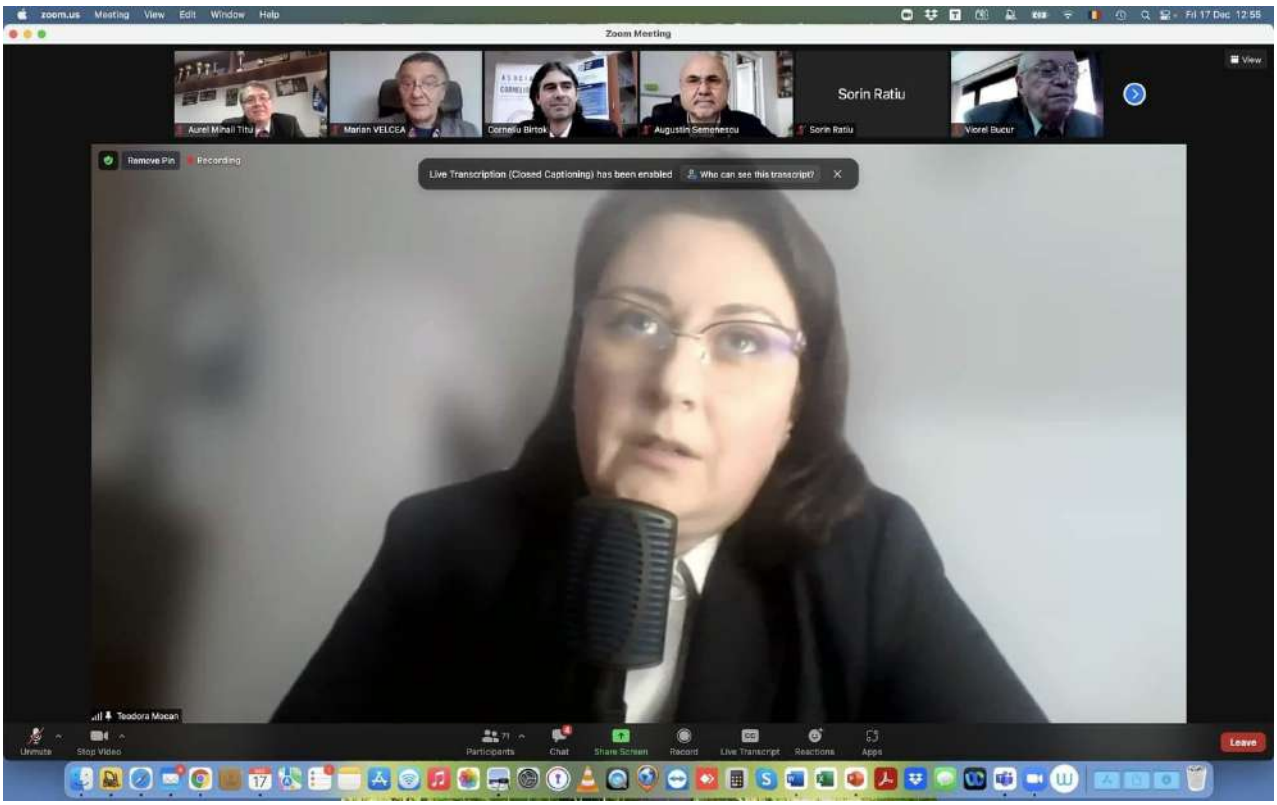





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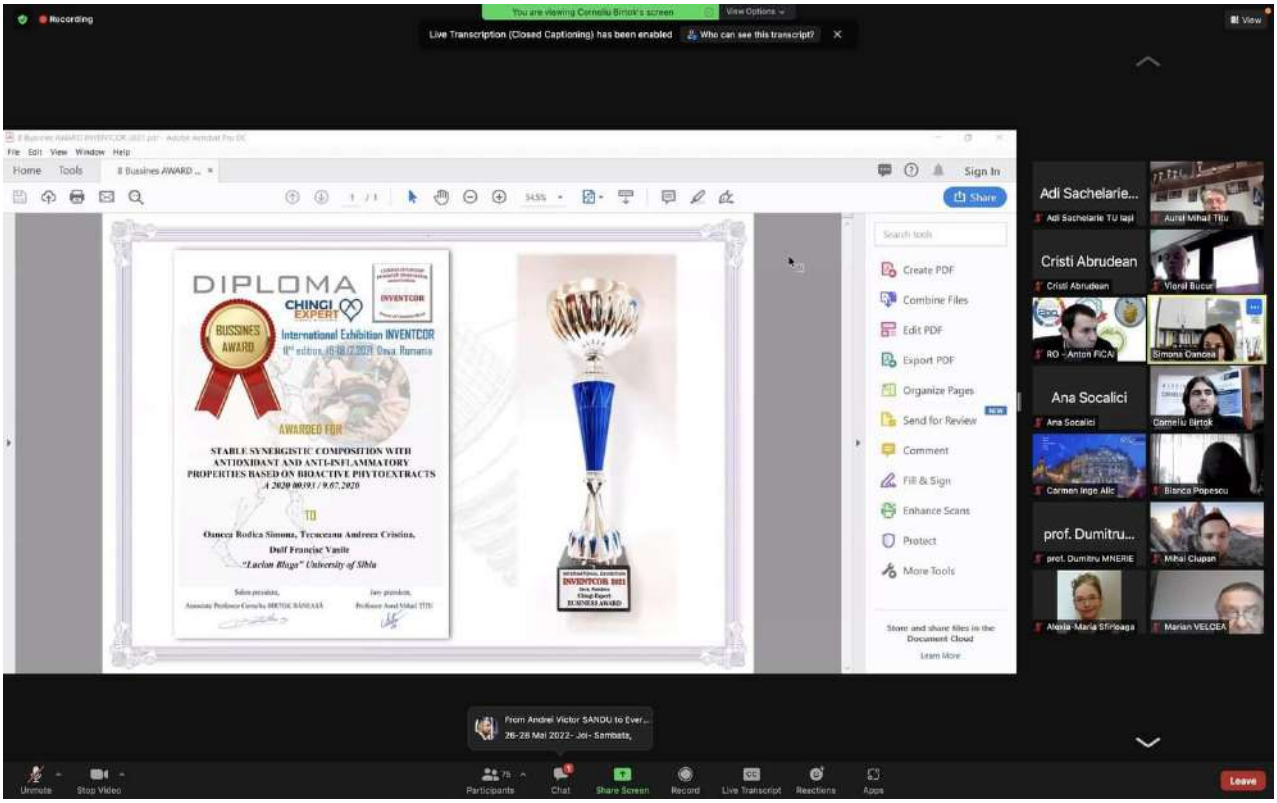

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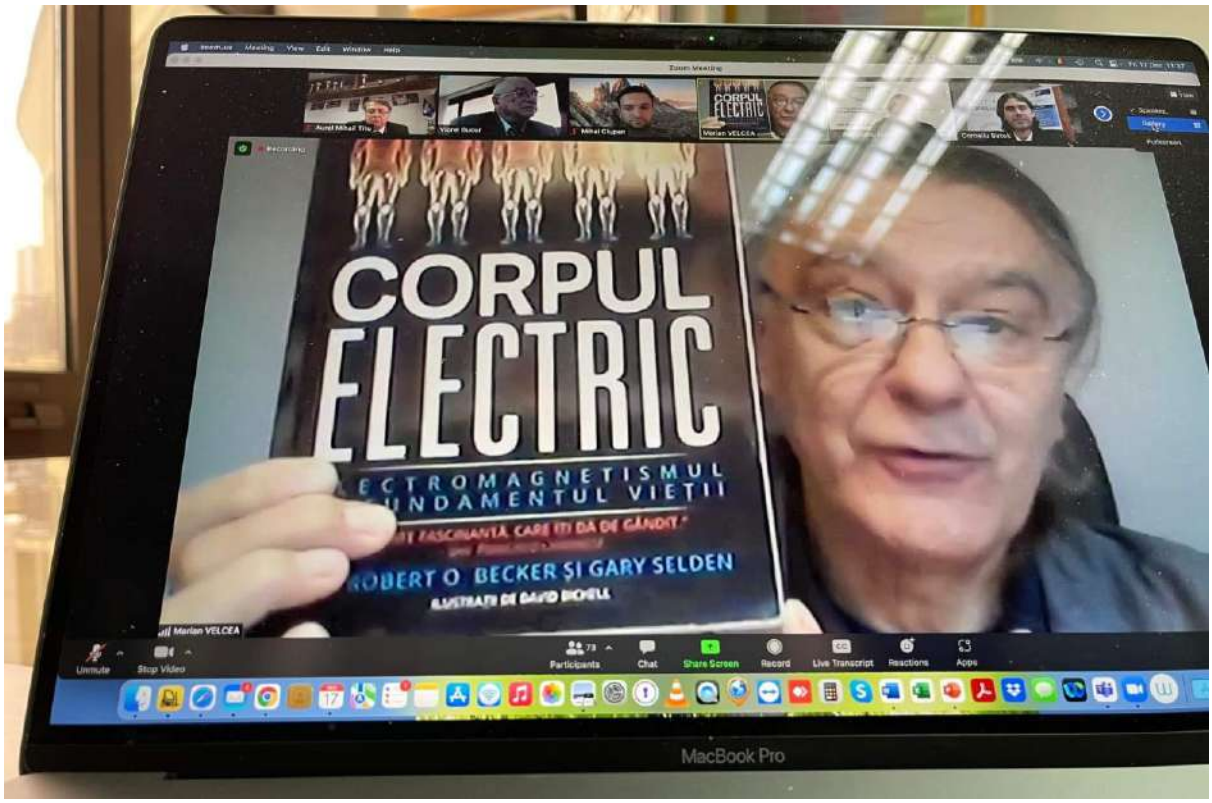

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CORPUL
ELECTRIC
ECTROMAGNETISMUL
UNDAMENTUL VIEȚII
ROBERT O BECKER ȘI GARY SELDEN
MacBook Pro

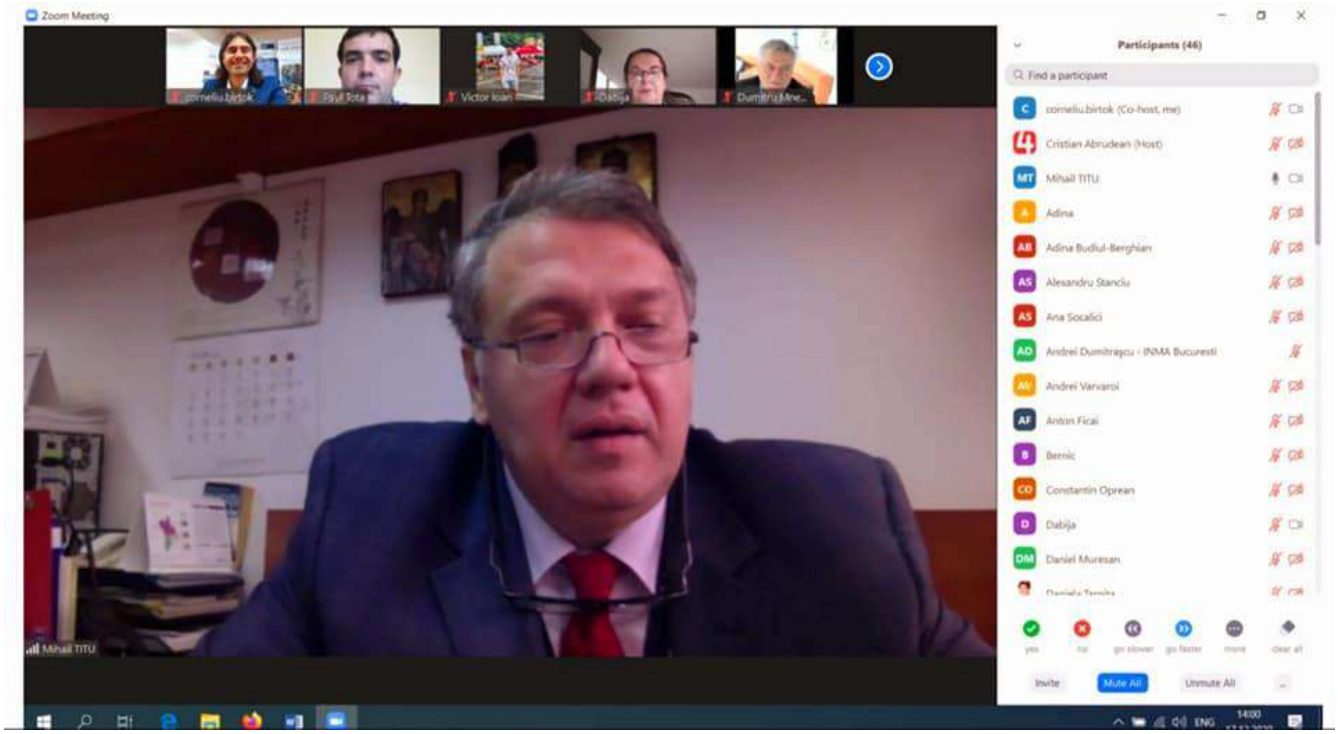


InventCor 2020

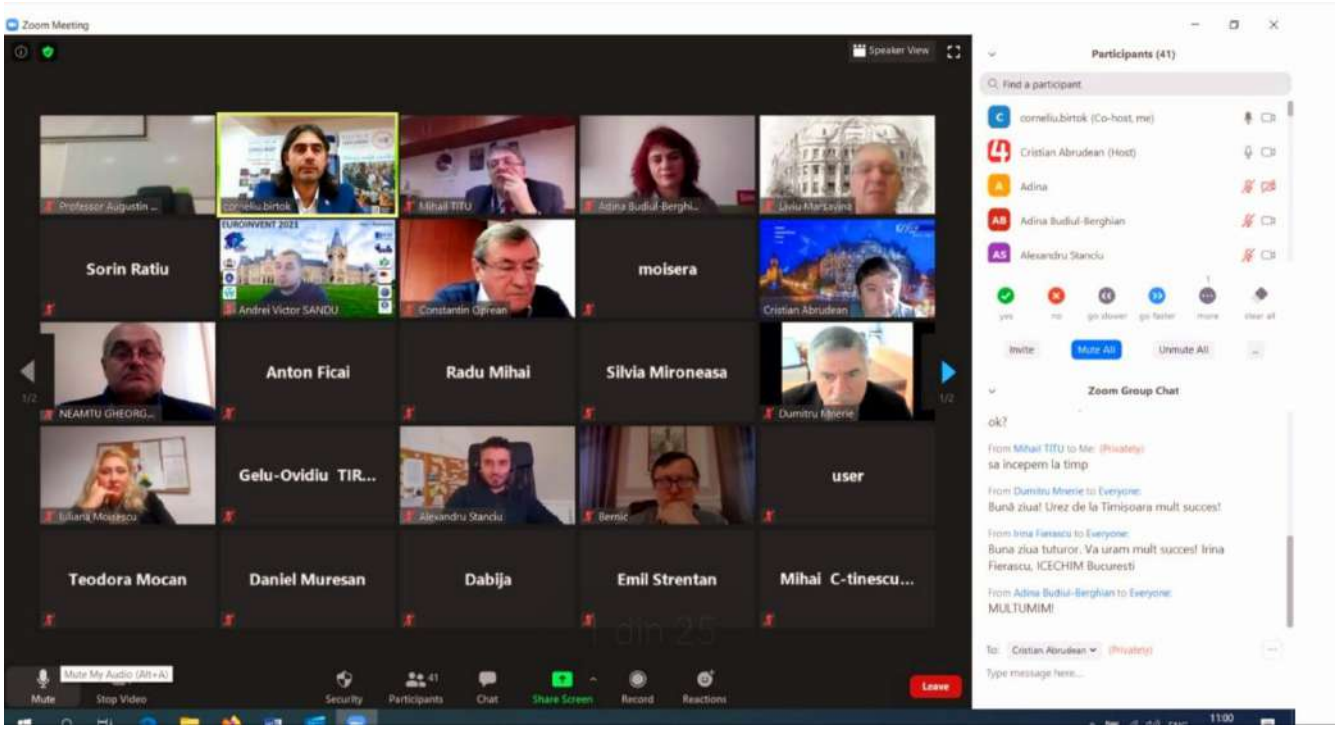
Promo: *https://youtu.be/AIC1OuFVrig*



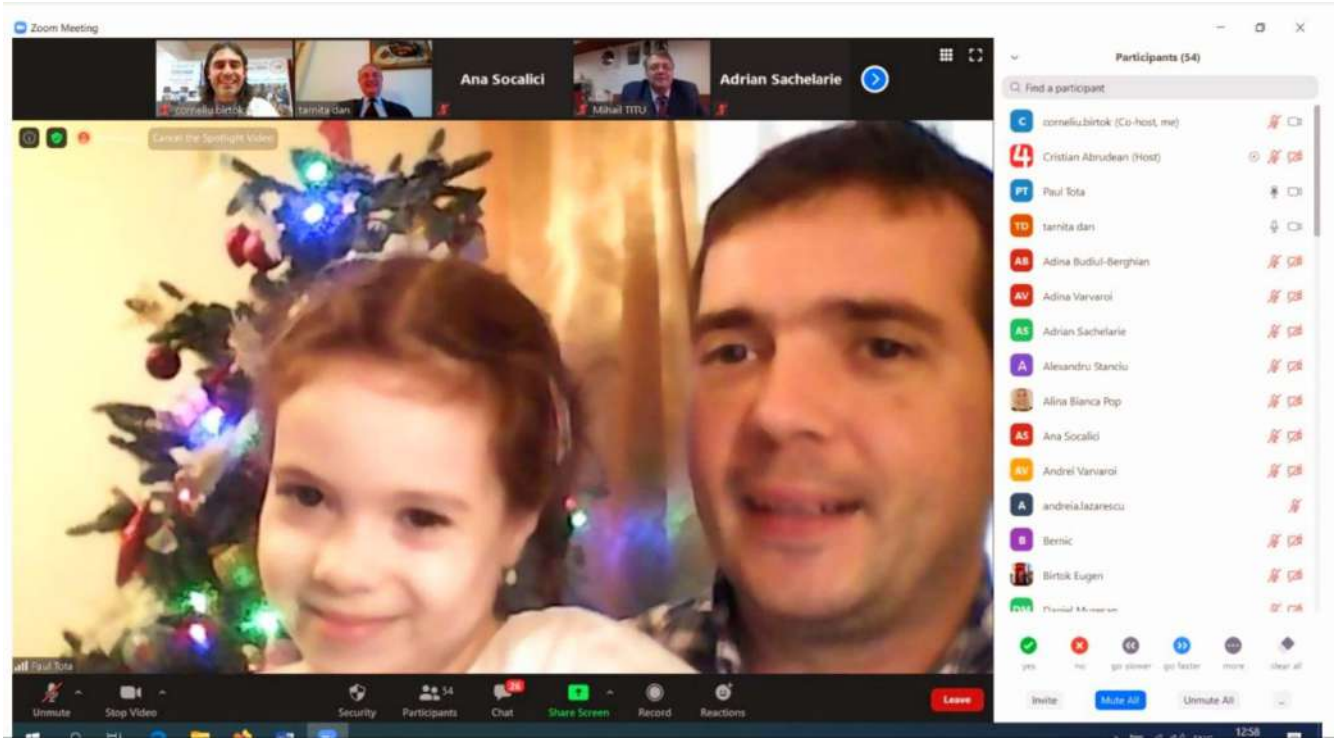



Zoom Meeting
Participants (46)
Find a participant
Mihail TITU
Invite
Mute All
Unmute All


Zoom Meeting
Participants (58)
Find a participant
Gelu-Ovidiu TIRIAN
Unmute
Stop Video
Security
Participants
Chat
Share Screen
Record
Reactions
Leave
Invite
Mute All
Unmute All

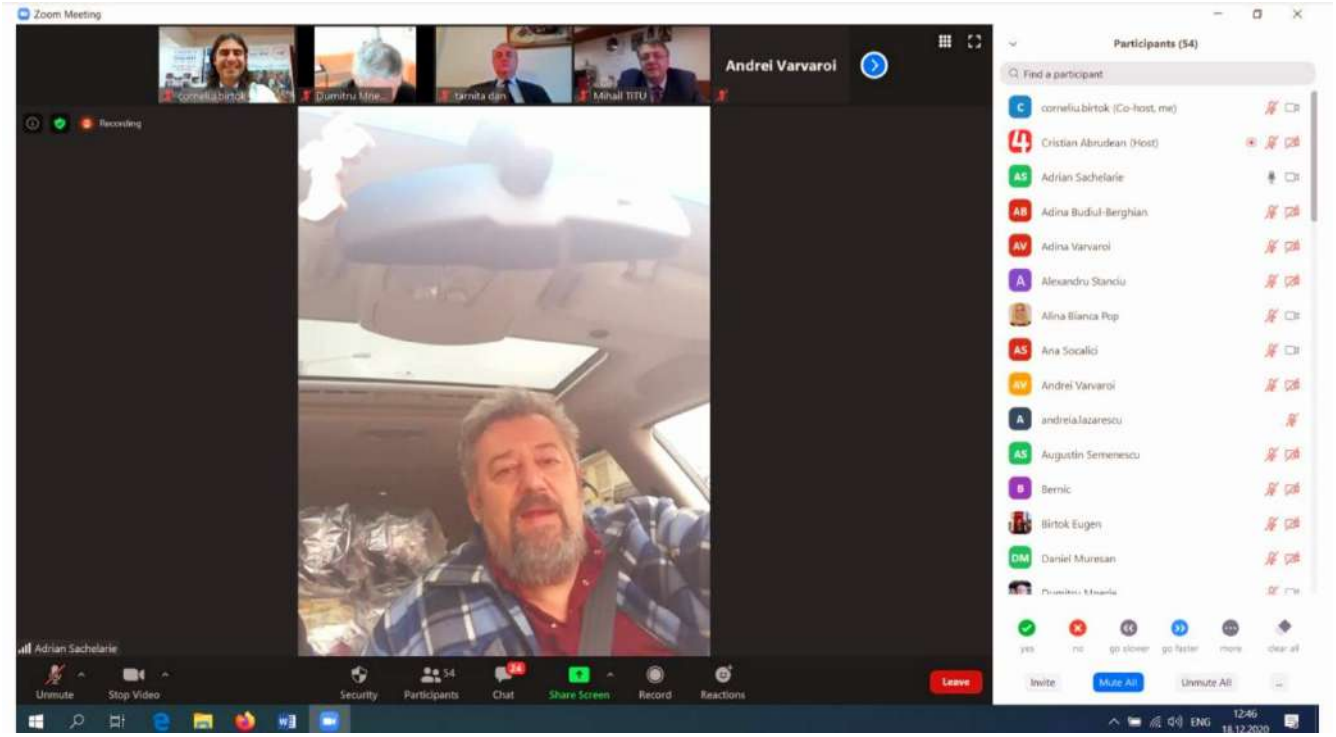

Zoom Meeting
Speaker View
Sorin Ratiu
Andrei Victor SANDU
Constantin Oprean
moisera
Cristian Abrudean
Anton Ficai
Radu Mihai
Silvia Mironeasa
Gelu-Ovidiu TIR...
user
Teodora Mocan
Daniel Muresan
Dabija
Emil Strentan
Mihai C-tinescu...
Participants (41)
Zoom Group Chat
Mute
Stop Video
Security
Participants
Chat
Share Screen
Record
Reactions
Leave


ASOCIATIA
CORNELIUGROUP
Dispersia Fluxului de Căldură
Puterea minții creative
FILTRE SUPRAASPIRANTE
ASOCIATIA CORNELIUGROUP
CERCETARE - INOVARE
INVENTCOR

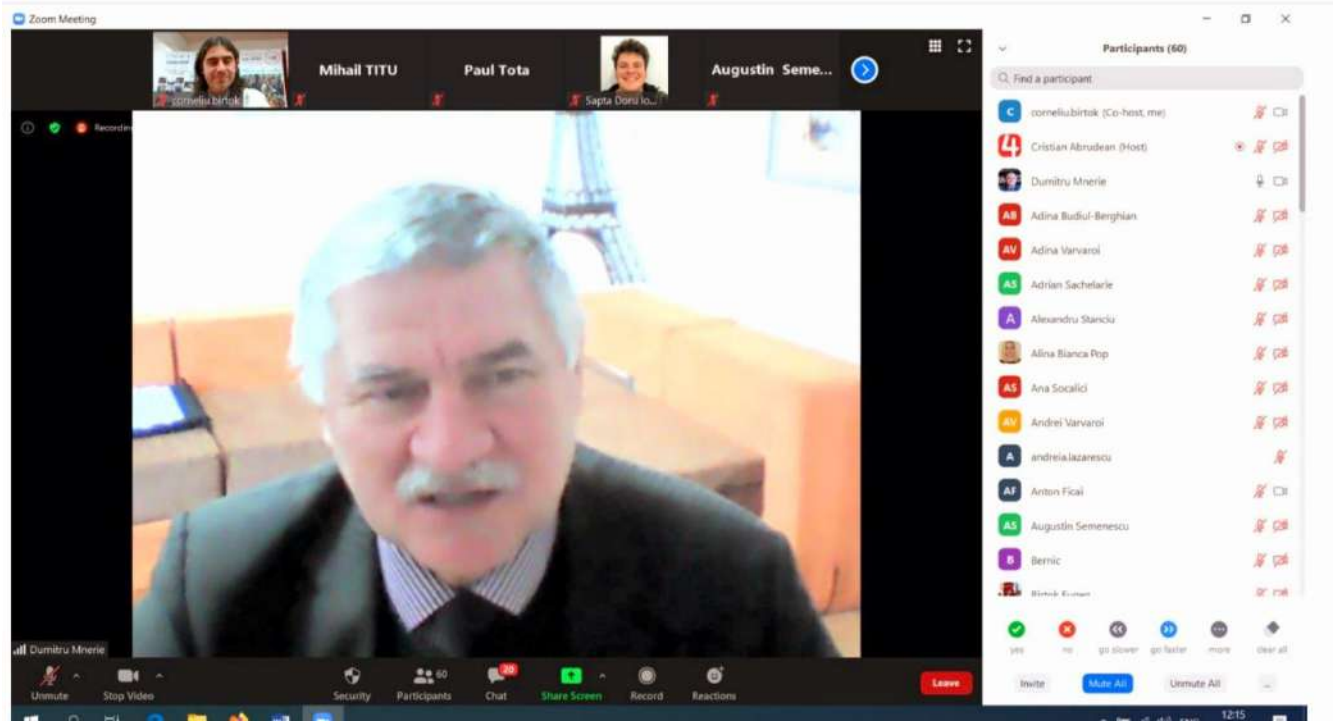

Zoom Meeting
Ana Socalici
Adrian Sachelarie
Participants (54)
Unmute
Stop Video
Security
Participants
Chat
Share Screen
Record
Reactions
Leave

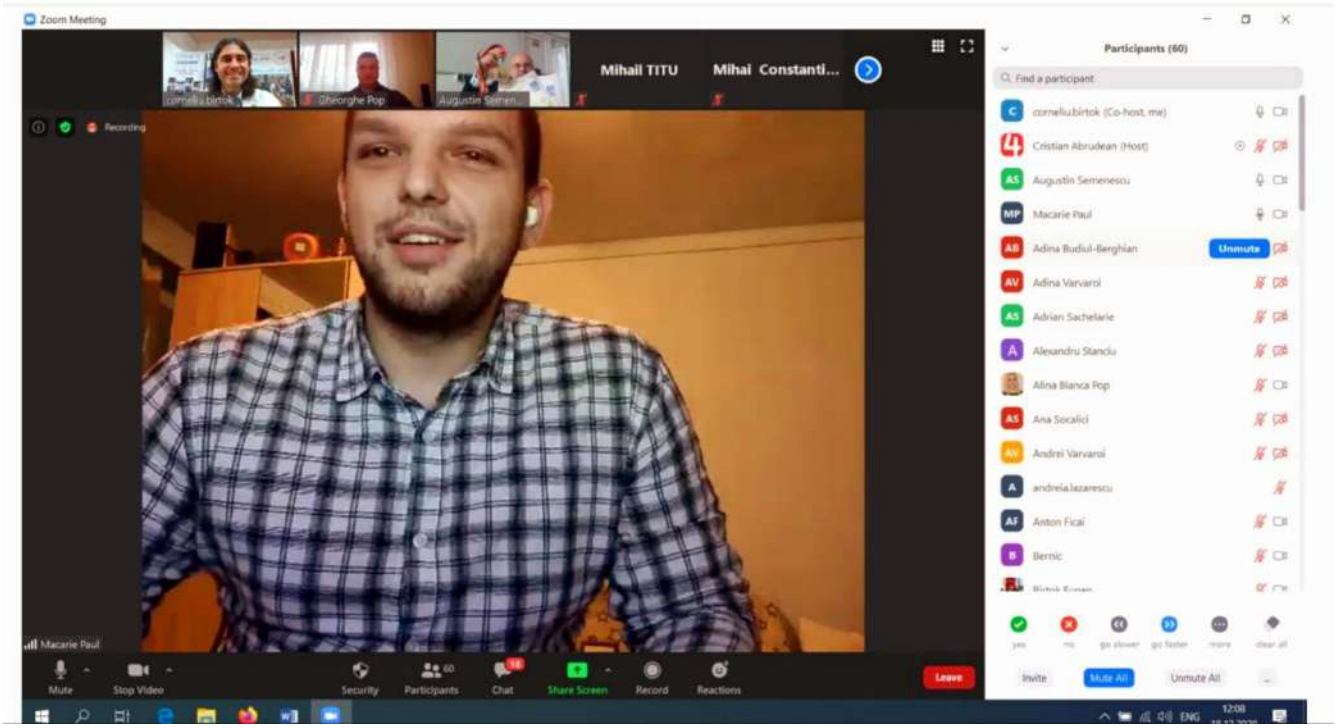

Zoom Meeting
Participants (63)
35 din 60
Unmute
Stop Video
Security
Participants
Chat
Share Screen
Record
Reactions
Leave

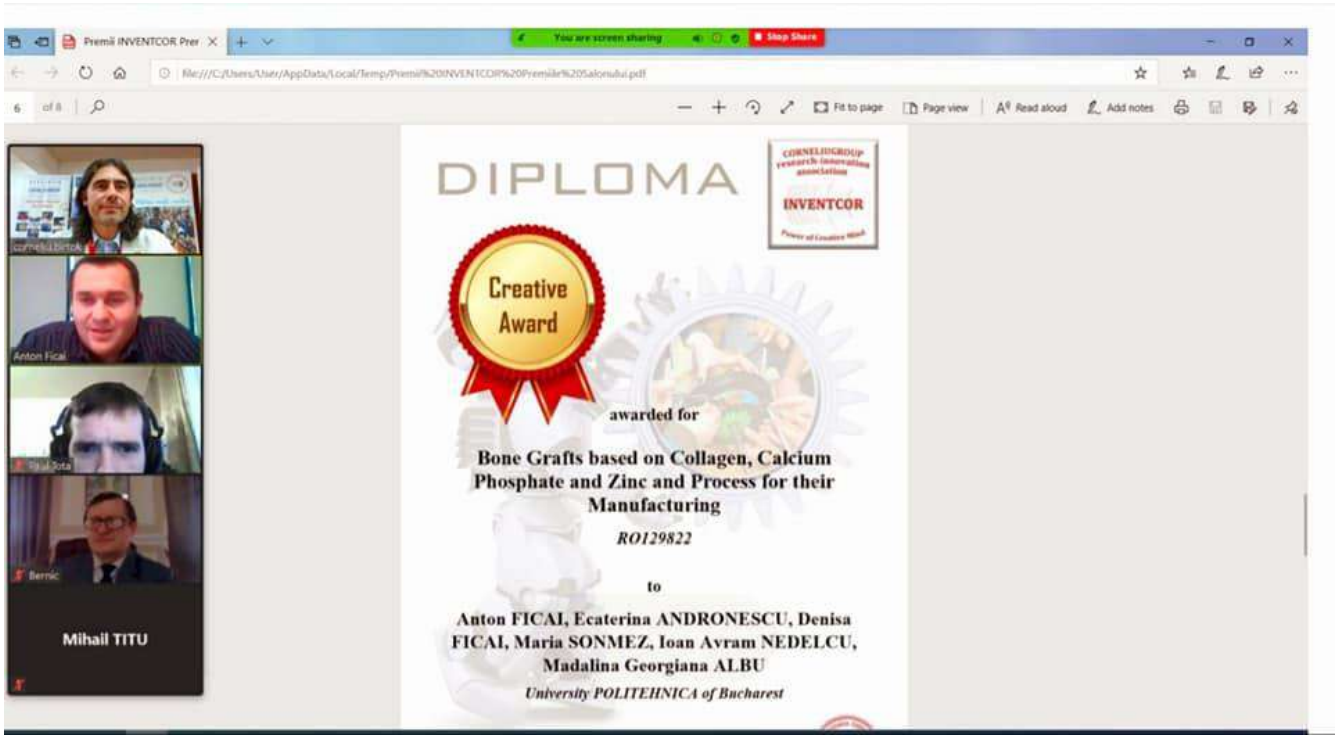

Zoom Meeting
Participants (61)
Find a participant
Sorin Ratiu
Unmute
Stop Video
Security
Participants
Chat
Share Screen
Record
Reactions
Leave

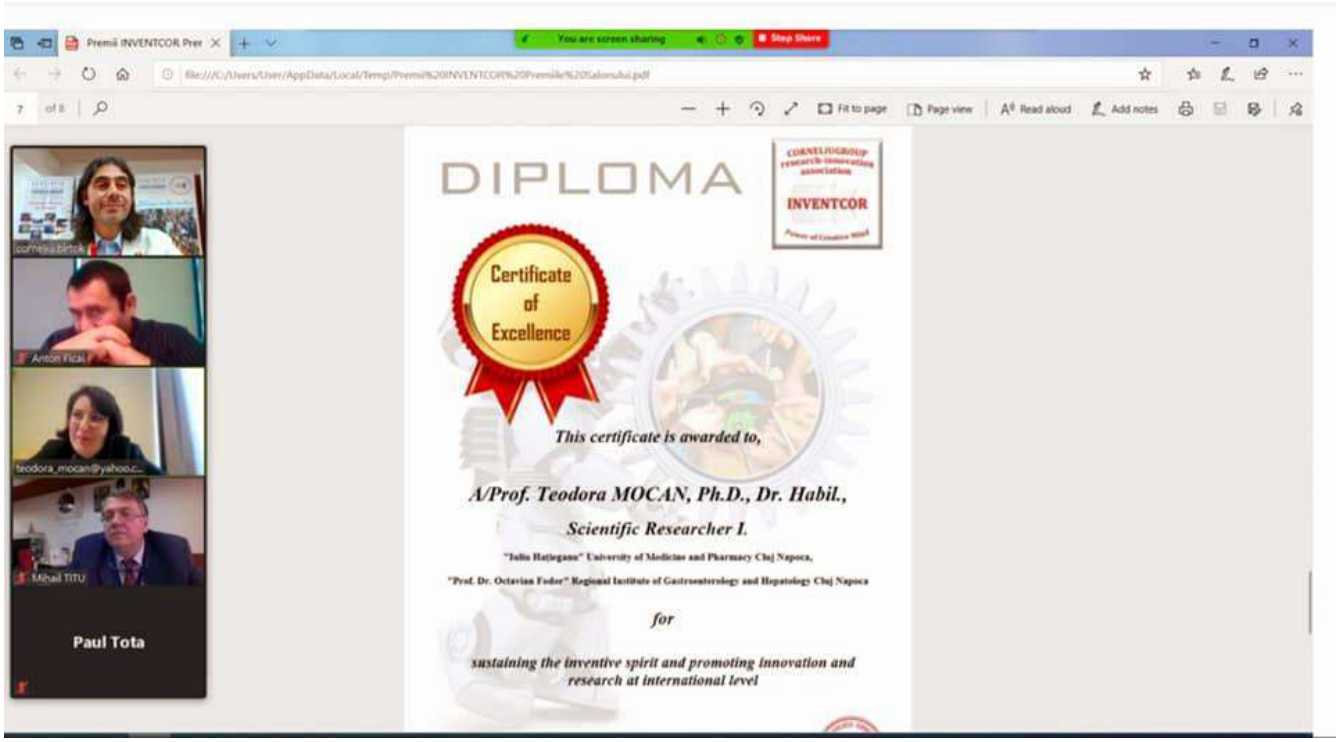

Zoom Meeting
Andrei Varvaroi
Participants (54)
Find a participant
Adrian Sachelarie
Unmute
Stop Video
Security
Participants
Chat
Share Screen
Record
Reactions
Leave

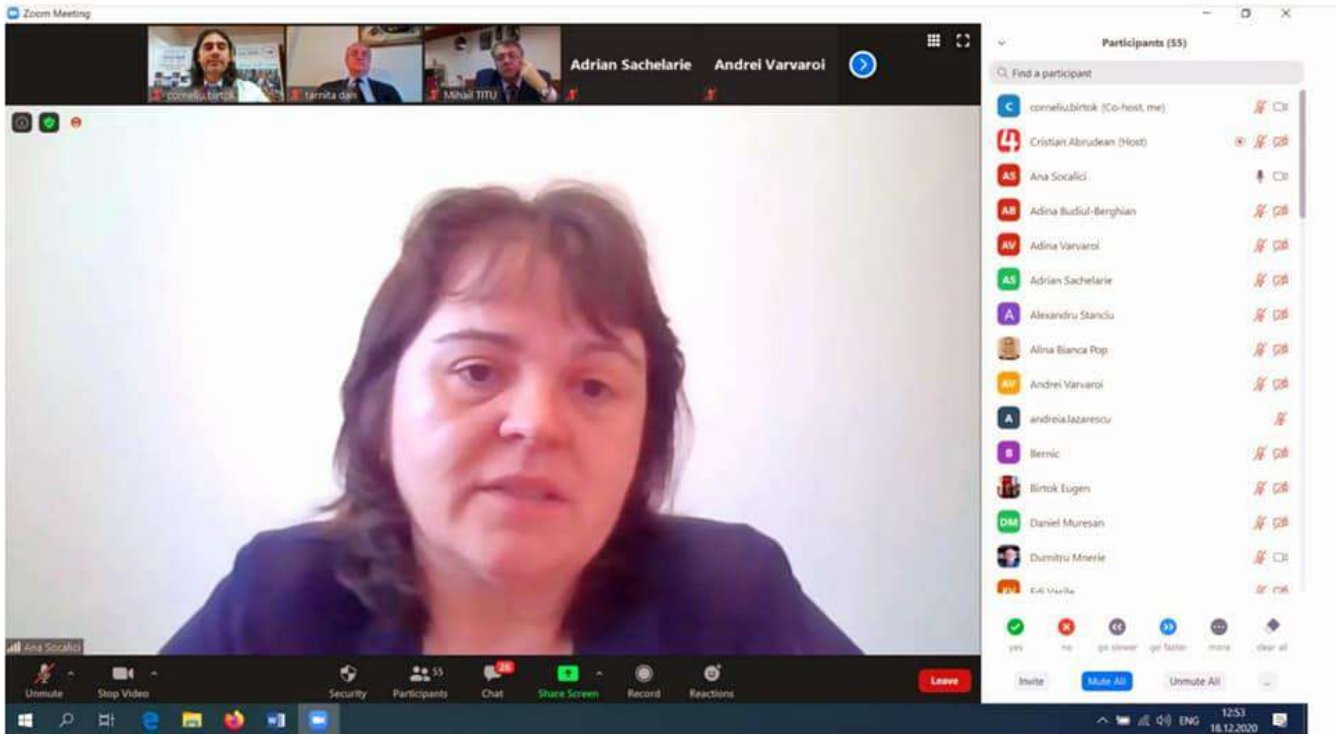

Zoom Meeting
Mihail TITU
Gelu-Ovidiu TIR...
Participants (58)
Unmute
Stop Video
Security
Participants
Chat
Share Screen
Record
Reactions
Leave


Zoom Meeting
Mihail TITU
Paul Tota
Augustin Seme...
Participants (60)
Unmute
Stop Video
Security
Participants
Chat
Share Screen
Record
Reactions
Leave


Zoom Meeting
Mihail TITU
Mihai Constanti...
Participants (60)
Mute
Stop Video
Security
Participants
Chat
Share Screen
Record
Reactions
Leave


DIPLOMA
INVENTCOR
Creative Award
awarded for
Bone Grafts based on Collagen, Calcium Phosphate and Zinc and Process for their Manufacturing
RO129822
to
Anton FICAI, Ecaterina ANDRONESCU, Denisa FICAI, Maria SONMEZ, Ioan Avram NEDELCU, Madalina Georgiana ALBU
University POLITEHNICA of Bucharest
Mihail TITU

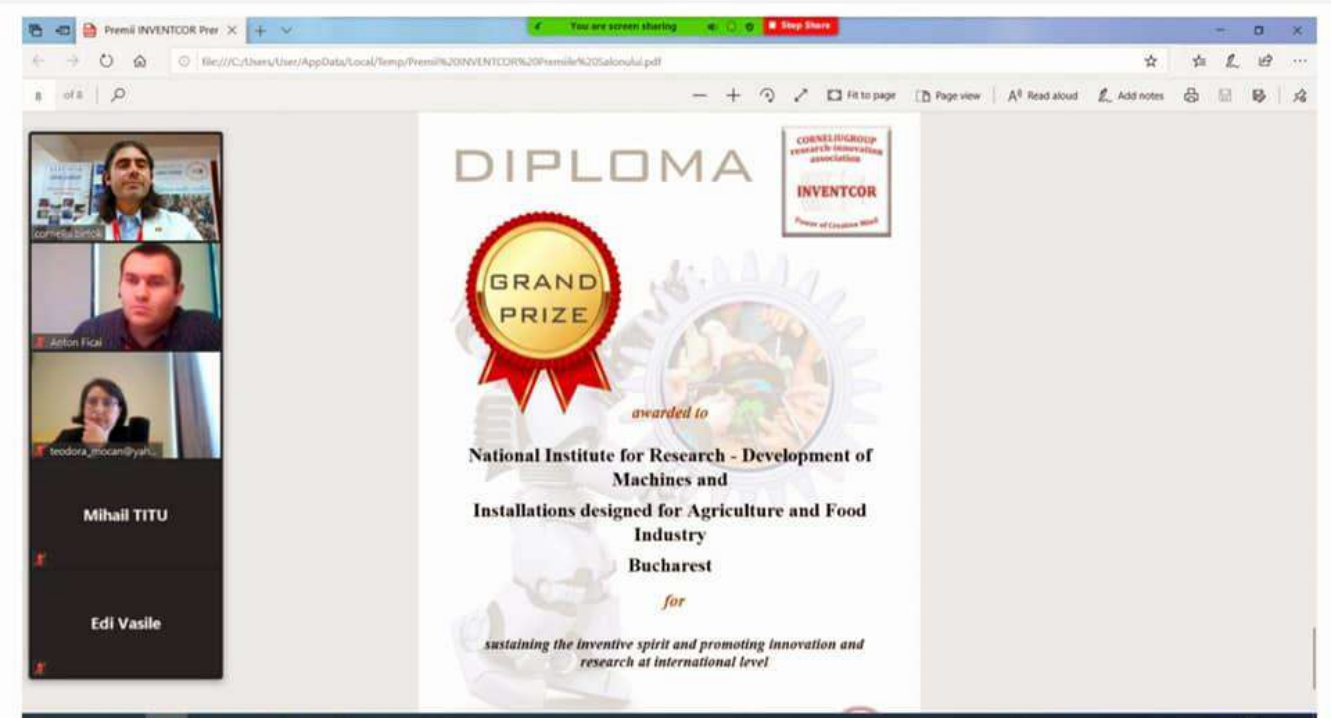

DIPLOMA
INVENTCOR
Certificate of Excellence
This certificate is awarded to,
A/Prof. Teodora MOCAN, Ph.D., Dr. Habil.,
Scientific Researcher I.
"Iuliu Haţieganu" University of Medicine and Pharmacy Cluj Napoca,
"Prof. Dr. Octavian Fodor" Regional Institute of Gastroenterology and Hepatology Cluj Napoca
for
sustaining the inventive spirit and promoting innovation and research at international level
Paul Tota


Adrian Sachelarie
Andrei Varvaroi
Participants (55)


Zoom Meeting
Adrian Sachelarie
Andrei Varvaroi
Participants (54)
Find a participant
Unmute
Stop Video
Security
Participants
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Share Screen
Record
Reactions
Leave
Invite
Mute All
Unmute All


ASOCIATIA CORNELIUGROUP
Dispersia Fluxului de Căldură
ASOCIATIA CORNELIUGROUP
Puterea minții creative
ASOCIATIA CORNELIUGROUP
CERCETARE - INOVARE


Zoom Meeting
Participants (61)
Find a participant
Unmute
Stop Video
Security
Participants
Chat
Share Screen
Record
Reactions
Leave
Invite
Mute All
Unmute All


DIPLOMA
INVENTCOR
GRAND PRIZE
awarded to
National Institute for Research - Development of Machines and
Installations designed for Agriculture and Food Industry
Bucharest
for
sustaining the inventive spirit and promoting innovation and research at international level
Mihail TITU
Edi Vasile


Continental
The Future in Motion
Local innovation on global trends
Andrei Son, Country Innovation Manager, Continental R&D Romania
Andrei Victor SANDU
Dumitru Mnerie
Mihail TITU


Deva 92,6 FM
www.bigfm.ro
Evenimente
Concursuri
INVENTCOR

Remember

Catalogue 6th International Exhibition INVENTCOR 3-5 April 2025 – Deva, Romania

Opportunity
CORNELIUGROUP Research-Innovation Association
Creation
INVENTCOR
Realization
Power of Creative Mind
Deva ROMANIA

Glimpse of 2019




air power
Puterea minții creative
1 DECEMBRIE 2019


air power
Puterea minții creative
1 DECEMBRIE 2019




Pictorea minții creative




FILTRE
SUPRAASPIRANTE
& S.O.S.A
air power
Simeria 2019
Puterea minții creative
ASOCIATIA
CORNELIUGROUP
Puterea minții creative


Producem
din 1999
DHS
Viața în mișcare!
BICICLETA CARE ÎNCARCĂ TELEFONUL
LICEUL TEHNOLOGIC
MATEI CORVIN HUNEDOARA
media

Catalogue 6th International Exhibition INVENTCOR 3-5 April 2025 – Deva, Romania






Universitatea
Politehnica
Timişoara
media










HD 11 JDO
HD 79KDT


ASOCIATIA
CORNELIUGROUP
Puterea minții creative
air power
FACULTATEA
DE INGINERIE




ASOCIATIA
CORNELIUGROUP
Puterea minții creative
HAND MADE




Paco's bikes
mereu atrage privirea
mulțimilor de oameni
Custom Bikes
facebook.com/Paco's Bikes
Simeria 2019


ASOCIATIA
CORNELIUGROUP
DHS
EMBLEMA ORIGINALITĂȚII
CENTRUL CULTURAL ȘI DE CREA
ASOCIAȚIA CORNELIU
Puterea minții creative
1 DECEMBRIE 2019
PERFECȚIUNEA CREAȚIEI
HALA JOACĂ




IMPACT
CORECTITUDINE
ȘI INTEGRITATE


fii încăpățânat
și urmează-ți
visul!
ASOCIATIA
CORNELIUGROUP


Politehnica University of Timisoara
FIH
Laboratorul lui


CLUB SPORTIV
LUPII
DEVA
ASOCIAȚIA
CLUB SPORTIV
LUPII DEVA




UNIVERSITATEA
FACULTATEA
DE INGINERIE
HUNEDOARA
Specializarea
AUTOVEHICULE
RUTIERE
din cadrul
DEPARTAMENTULUI
DE INGINERIE ŞI
MANAGEMENT



Catalogue 6th International Exhibition INVENTCOR 3-5 April 2025 – Deva, Romania






ASOCIATIA
CORNELIUGROUP
Continental



2018 First


ASOCIATIA
CORNELIUGROUP
CERCETARE - INOVARE
ASOCIATIA CORNELIUGROUP
CERCETARE - INOVARE
Puterea minții creative
Cetatea Devei 09 iunie 2018, ora 10 (parcare telecabina)
NRG
robotix
Bicicleta cu Talent
www.bicicletacutalent.ro
Classic Car Hunedoara
FTH
1970
TehnoART
Serviciul Public Administrare Cetate
DEVA
air power
by cornelu
www.corneliugroup.ro
AIR by CORNELIU
www.corneliugroup.ro
PRIMĂRIA MUNICIPIULUI DEVA






ECHIPA DE ROBOTICA
Robotics
facebook CNDRobotics


DHS
Viața în mișcare!
DB 10 SAH

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air power
by cornelbu
www.corneliugroup.ro
Asociatia CORNELIUGRO
cercetare - inovare


Piticii Creativi


HD 16 BPD
HD 01AFR





INVENTCOR

7th International Exhibition

Deva - Romania

2-4 APRIL 2026



Opportunity
CORNELIUGROUP
Research-Innovation Association
Creation
INVENTCOR
Realization
Power of Creative Mind
Deva ROMANIA

SCAN ME

www.inventcor.ro
inventcordeva@gmail.com

"The Power of the Creative Mind =

Emblem of Originality,

Design of Performance,

Perfection of Creation" BBC

Opportunity

CORNELIUGROUP

Research-Innovation Association

Creation

Realization

INVENTCOR

Power of Creative Mind

Deva ROMANIA

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