Proceedings of The 9th Edition of

EUROPEAN EXHIBITION OF CREATIVITY AND INNOVATION



2017

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Message to EUROINVENT 2017 Participants



On behalf of International Federation of Inventors' Associations (IFIA), I wish to extend my sincere appreciations on the organization of the eights annual of European Exhibition of Creativity and Innovation (EUROINVENT) to be held between May 25 and 27, 2017 in Romania.

The extensive display of over 400 inventions and projects in the previous edition which is the largest in Eastern European is a true testimony of the successful organization of the event at an international level.

IFIA has supported the organization of EUROINVENT since it aims to disseminate the culture of invention and innovation, provide a great opportunity for the people around the world to showcase their innovations and find investors, stakeholders, manufacturers, business partners and to put it shortly turn their the intellectual asset into the physical one.

EUROINVENT contributes to the mission of IFIA which is creating a better world to live by exploiting the innovative ideas and investing on the innovators as the forerunners of modern technologies.

IFIA highly encourages the worldwide members to participate in EUROINVENT, showcase the latest technologies and benefit from the outstanding opportunities provided by the organizers.

Alireza Rastegar IFIA President

www.ifia.com

Message of Mayor of lasi

Your Excellencies,



On the occasion of the 9th European Exhibition of Creativity and Innovation, I am very happy to welcome you in lasi, a modern and opened city for all cultures and people all over the world.

It is such a privilege to have such wonderful, talented and undeniable international inventors in the middle of the people in lasi, a symbol of unity, peace and

tolerance across borders.

lasi will definitely become year after year a green, modern and dynamic city to work, live and invest energy for sustainable projects for the entire community.

I am very proud that inventors in Iasi are recognized all over the world, the awards in Bruxelles, Geneva, Bangkok, Warsaw, Helsinki etc. being just a proof that our invention and research school is at the top of international scientific standards.

lasi City Hall offers you full support for your efforts towards progress and I am more than willing to work together with your prestigious community to identify the best resources in order to sustain your academic and scientific activity.

You are definitely excellent ambassadors of Romania all over the world and I hope that all of you will cherish lasi and its memories close to yours hearts forever.

I wish you full success for your exceptional event for our academic and research city profile and I am positively sure that a lot of good ideas will emerge from your diversity of thoughts and from our untapped creative power.

Once again welcome to lasi and I wish you to have always inspiration of your side, to believe in your dreams and certainly one day they will come true!





Gheorghe Asachi Technical University of Iasi

The Gheorghe Asachi Technical University of Iasi (TUIASI) has the oldest tradition in the engineering field of education in Romania. In 1813 the scholar Gheorghe Asachi established the first school for surveyors and civil engineers considered to be the nucleus of the technical higher education in Iasi. Currently, the Gheorghe Asachi Technical University of Iasi has 11 faculties and 4 departments that offer educational and doctoral programmes for more than 17000 students in 61 engineering specializations, 73 Master of Science programs and 10 doctoral schools.

Besides its educational mission, the *Gheorghe Asachi* Technical University of lasi has an important research dimension, having 21 accredited centers and laboratories for scientific research. These centers activate in different fields, within national and international research grants, research contracts with industry or governmental organizations, their activities placing our university in the Romanian top of scientific research.

The constant focus on interdisciplinary research, on innovation and knowledge transfer, as well the quality of the research staff and their commitment for excellence provided a constant dynamics of research activities and the recognition and visibility of our university. The increased trend observed in the number of research contracts, published papers in peer reviewed international journals and conference proceedings, books, international co-operation grants, as well as joint Ph.D. supervision with well-known European universities contribute to the continuous appreciation of our university as a successful research and innovation institution able to provide proactive relationships with industry and public services and a contributor to local and regional development. Only in the last academic year, our university has participated in more than 350 national and international projects as well as research contracts.

Our research profile is directed towards high-tech engineering areas, which enable our research staff to have a very innovative approach towards research problems. Innovation in our university comes as sum of experience provided by our 172 of senior researchers, PhD supervisors and the enthusiasm brought by our 1512 PhD. students. This focus on scientific research in high-tech areas and cutting-edge technologies is proven by the outstanding innovation capabilities of our staff members that have produced nearly 65% of the Romanian patents in the last 10 years, which enabled our institution to win the *Creativity Trophy* issued by the National Register of Inventions and Trademarks in 2006.



Alexandru Ioan Cuza University of Iaşi

Alexandru Ioan Cuza University of Iaşi is the oldest higher education institution in Romania. Since 1860, the university has been carrying on a tradition of excellence and innovation in the fields of education and research. With over 38.000 students and 800 academic staff, the university enjoys high prestige at national and international level and cooperates with over 250 universities world-wide. Alexandru Ioan Cuza University is a member of some of the most important university networks and associations: the Coimbra Group, EUA - European University Association, Utrecht Network, International Association of Universities, University Agency of Francophony and the Network of Francophone Universities (RUFAC). These partnerships offer us the opportunity to experience changes, to have student and teacher mobilities and joint academic, research and strategy programmes.

Alexandru Ioan Cuza University became the first student-centered university in Romania, once the Bologna Process was implemented. We believe in the power of individual choice and customized education. Thus, we became the first Romanian university to offer students the opportunity to choose both a major and a minor field of study, in a combination at their choice, that best suits their career goals.

Research at our university is top level. In 2008, for the third year in a row, Alexandru Ioan Cuza University was placed first in the national research ranking compiled on the basis of Shanghai criteria. Our teachers are involved in over 400 national and international research projects, with the logistic support of 24 research centres. Striving for excellence, the university takes unique initiatives to stimulate research quality, to encourage dynamic and creative education and to involve its best students in academic life.

Today, with its fifteen faculties, Alexandru Ioan Cuza University offers to all inquisitive young minds a large diversity of academic programmes which are aimed to open the way towards their personal fulfilment and social recognition. In a world characterized by rapid and profound changes, where knowledge is the most valuable asset, Alexandru Ioan Cuza University aims to strengthen the flexibility of learning, to create opportunities for the intellectual and professional development of its students, to assist quality research and to contribute to the society's cultural and economic growth.

ROMANIAN INVENTORS FORUM

Romanian Inventors Forum (FIR), as a professional association of dialog and representation, has the purpose to support, stimulate, develop and valorize the scientifically, technically and artistically creativity. Under the aegis of FIR, Romanian Inventors have participated at more than 50 World Invention Exhibitions, where their creations have been awarded with orders, prizes and medals. The performance of Romanian inventics is renowned in the whole world, that is the reason why FIR became member in different international clubs, associations and federations, with special contributions.



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FORUMUL INVENTATORILOR ROMÂNI

Forumul Inventatorilor Români (FIR), este o asociație profesională de dialog și reprezentare a inventicii românești în context internațional, care are drept scop sprijinirea, stimularea, dezvoltarea si valorificarea activitătilor de creatie stiintifică, tehnică și artistică. Sub egida FIR, inventatorii români au participat la peste 50 de saloane mondiale de invenții, creațiile lor fiind apreciate cu numeroase ordine, premii și medalii. Performanța inventicii românești este recunoscută în întreaga lume, motiv pentru care FIR a devenit membru a diverselor cluburi, asociații și federații internaționale de profil, unde are contribuții deosebite.

EUROPE DIRECT IAŞI

Association for Ecology and Sustainable Development is the host for Europe Direct Information Centre Iaşi. The EUROPE DIRECT Information Centre Iaşi assures the European information transfer to Romanian citizens and the feedback to the E.C., enhancing dialog between European institutions and the common citizen concerning to all European policies and the personal expectations.



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EUROPE DIRECT IAŞI

Asociația pentru Ecologie și Dezvoltare Durabilă este structura gazdă a Centrului EUROPE DIRECT Iași. Acesta asigură transferul informației către cetățenii români și feed-back-ul către Comisia Europeană, facilitând dialogul între instituțiile europene și cetățeanul de rând, referitoare la toate problemele privind politicile europene și așteptările individuale.

"GHEORGHE ASACHI" TECHNICAL UNIVERSITY OF IASI Faculty of Materials Science and Engineering

"Gheorghe Asachi" University of Iasi is an excellent choice for the highschool graduates, who wish to embrace a carrier in the attractive field of engineering. The eleven faculties of the university are well equipped and have renowned specialists.

The Faculty of Materials Science and Engineering at the "Gheorghe Asachi" Technical University of lasi has the mission to train specialists for the materials engineering, mechanical engineering and industrial engineering fields, through a 4-year programme (B.Sc.), Master Courses and Ph.D. Programmes. Also, our faculty is involved in the scientific research programmes, as well as in life-long education programmes for professionals that wish to extend their expertise. Besides the formative activity, research in various fields, focused to multidisciplinary national and international co-operation is highly valued.



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UNIVERSITATEA TEHNICĂ "GHEORGHE ASACHI" IAȘI Facultatea de Știința și Ingineria Materialelor

Universitatea Tehnica din Iasi este o alegere excelenta pentru absolventii de liceu care s-au hotarat sa imbratiseze o cariera in domeniul provocator al ingineriei. Cele unsprezece facultati ale universitatii sunt dotate cu laboratoare si echipamente de ultima ora, unde isi desfasoara activitatea specialisti recunoscuti pe plan european si international.

Facultatea de Știința și Ingineria Materialelor din cadrul Universității Tehnice "Gh. Asachi" din Iași, are ca misiune pregătirea specialiștilor pentru domeniul ingineriei materialelor, ingineriei mecanice și ingineriei industriale, prin programe de licență (4 ani), masterat și doctorat. De asemenea, facultatea este implicată în proiecte de cercetare și în programe de perfecționare pentru specialiștii. Valoarea personalul academic din cadrul facultății aduce o notă distinctivă predării ingineriei materialelor. Pe lângă activitatea de formare și de cercetare în diverse domenii de activitate, apreciabile sunt și cooperările multidisciplinare naționale și internaționale.

ALEXANDRU IOAN CUZA UNIVERSITY OF IASI

The Alexandru Ioan Cuza University of Iași is the oldest higher education institution in Romania. Since 1860, the university has been carrying on a tradition of excellence and innovation in the fields of education and research. With over 38.000 students and 800 academic staff, the university enjoys a high prestige at national and international level and cooperates with over 250 universities world-wide. The Alexandru Ioan Cuza University became the first student-centered university in Romania, once the Bologna Process was put into practice. Research at our university is top level. For the second year in a row, the University is placed first in the national research ranking. Striving for excellence, the university takes unique initiatives to stimulate research quality, to encourage dynamic and creative education and to attract the best students to academic life.



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Universitatea "Alexandru Ioan Cuza" este cea mai veche instituție de învățământ superior din România continuând, din anul 1860, o tradiție a excelenței și inovației în educație și cercetare. Cu peste 38.000 de studenți și 800 de cadre didactice, universitatea se bucură de un important prestigiu la nivel național și internațional, având colaborări cu peste 250 de universități din străinătate. Universitatea "Alexandru Ioan Cuza" este membră a unora dintre cele mai importante asociații și rețele universitare: Grupul Coimbra, EUA - Asociația Europeană a Universităților, Rețeaua Utrecht, IAU - Asociația Internațională a Universităților, AUF - Agenția Universitară a Francofoniei și RUFAC -Rețeaua Universităților Francofone. Acestea permit schimbul de experiență, mobilități ale studenților și profesorilor și realizarea în comun a unor programe academice, de cercetare sau strategice.

"GRIGORE T. POPA" UNIVERSITY OF MEDICINE AND PHARMACY OF IASI

Universitatea de Medicină și Farmacie "Grigore T. Popa" din Iași a fost fondată în 1879, fiind una dintre cele mai vechi instituții de învățământ superior din România. UMF Iași face parte din Grupul celor 12 Universități de Educație și Cercetare Avansată. Cele patru facultăti – Facultatea de Medicină, Facultatea de Medicină Dentară, Facultatea de Farmacie și Facultatea de Bioinginerie Medicală – sunt acreditate de Asociația Română de Asigurare a Calității în Învățământul Superior (ARACIS) iar managementul educațional instituțional este certificat de forul european de evaluare European University Association (EUA) și de Consiliul Internațional al Decanilor Facultăților de Medicină de Expresie Franceză (CIDMEF). Dintre cei 13.987 de studenți, masteranzi, doctoranzi și rezidenți ai săi (8.508 studenți, 321 masteranzi, 359 doctoranzi și 2.256 rezidenți), 2.534 provin din 49 de țări altele decât România, ceea ce face Universitatea de Medicină și Farmacie "Grigore T. Popa" din Iași cea mai cosmopolită instituție de învățământ superior din estul Europei. Reputația internațională de care se bucură UMF lași este întărită și faptul că putem întâlni absolvenți ai Universității în toate spitalele mari din lume și în cele mai importante centre de cercetare. Raportul de evaluare din 2016 al European University Association (EUA) -Institutional Evaluation Programme (IEP) califică Universitatea de Medicină și Farmacie "Grigore T. Popa" din Iași drept lider regional și național în domeniului învățământului superior.



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"Grigore T. Popa" University of Medicine and Pharmacy of Iasi was founded in 1879 and it is one of the oldest institutions of higher education in Romania. The University is proud to be part of the 12 Universities of Advanced Education and Research. The four faculties - Faculty of Medicine, Faculty of Dentistry, Faculty of Pharmacy and the Faculty of Medical Bioengineering - are accredited by the Romanian Association for Quality Assurance in Higher Education (ARACIS) and its institutional management is certified by the European forum for evaluation-European University Association (EUA) and by CIDMEF (Conférence Internationale des Doyens et des Facultés de Médecine d'Expression Francaise). Of the 13 987 students, master students, PhD students and its medical residents (8508 students, 321 graduates, 359 PhD students and 2,256 medical residents), 2.534 come from 49 countries other than Romania, which makes "Grigore T. Popa " University of Medicine and Pharmacy of lasi one of the most cosmopolitan institution of higher education in eastern Europe. The University's international reputation is also sustained by the fact that you can find its graduates in all major hospitals in the world and even in the most important research centers. The 2016 evaluation report of the European University Association (EUA) - Institutional Evaluation Programme (IEP) describes the "Grigore T. Popa" University of Medicine and Pharmacy as a regional and national leader in higher education.

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Organized by:

- ▲ Romanian Inventors Forum
- ▲ Faculty of Materials Science and Engineering, The "Gheorghe Asachi" Technical University of Iasi, Romania
- ▲ ARHEOINVEST Platform, Alexandru Ioan Cuza University of Iasi
- ▲ Centre of Excellence Geopolymer and Green Technology CEGeoGTech), Universiti Malaysia Perlis (UniMAP)
- ▲ Malaysian Research & Innovation Society (MyRIS)

With support of:

- ▲ School of Fundamental Science, Universiti Malaysia Terengganu
- ▲ International Federation of Inventors' Associations IFIA
- ★ World Invention Intellectual Property Associations WIIPA

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The "Gheorghe Asachi" Technical University of Iasi, Romania

Event Coordinator: Assist.Prof.Dr.Eng. Andrei Victor SANDU

Romanian Inventors Forum & The "Gheorghe Asachi" Technical University of Iasi, Romania

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EUROINVENT JOINT PROGRAM

EUROINVENT Exhibition		EUROINVENT ICIR Conference	
DAY 1 – THURSDAY MAY 25			
08.00	Stand setup for participants	9.00	Participants registration
10.30	Artistic	momen	ıt
11.00	EUROINVENT O	pening	Ceremony
		12.00	ICIR Opening Ceremony
13.00	First Jury Meeting	12.30	Keynote Speaker
13.30	Jury evaluation (I)	13.00	Keynote Speaker
	Visiting	13.30	Keynote Speaker
	Demonstrations of inventions	14.00	Lunch
16.45	End of exhibition day	15.00	Plenary Session
17.00	European Visual Art Expo	17.00	End of conference day
DAY 2 – FRIDAY MAY 26			
10.00	Exhibition start	10.00	Keynote Speaker
10.30	Jury evaluation (II)	10.30	Invited Speaker
	Welcoming Speeches	11.00	Plenary Session
12.30	First Jury Meeting	13.00	Break for lunch (individual)
15.00	Jury Final Decision	14.00	Plenary Session
16.00	Book Award Ceremony	15.00	Poster Session
17.00	Exhibition Closure	17.00	Conference End
19.00	Cocktai	l Dinner	•
DAY 3 - SATURDAY MAY 27			
10.00	Exhibition Start		
11.00	Workshop		
14.30	Artistic moment		
14.00	Euroinvent Award ceremony		
17.00	Exhibition teardown		

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AWARDS LIST

Euroinvent GRAND PRIZE

The Youngest Inventor Award The Woman Inventor Award The Oldest Inventor Award The Green Environment Award The Medicine Award The Medicine Award The Best Design Award The Exquisite Award The AgroFuture Prize The CyberLife Award The Popularity Award Special Prize



Gold Medal Silver Medal Bronze Medal

Prize of Croatia – Croatian Inventors Association Prize of Malavsia - Universiti Malavsia Perlis Prize of Turkey - TUMMIAD Prize of Poland - Eurobusiness Haller Prize of Poland – Association of Polish Inventors **Prize of Thailand - ATIP** Prize of Irag – Iragi Inventors Forum Prize of Indonesia – INNOPA Prize of Canada – TISIAS Prize of Korea Prize of Moldova - AGEPI Chisinau Prize of Moldova - Academy of Science of Moldova Prize of Moldova - Technical University of Moldova Prize of Romanian Inventors Forum Prize of Europe Direct lasi Prize of "Gheorghe Asachi" Technical University of Iasi Prize of "Alexandru Ioan Cuza" University of Iasi Prize of "Lucian Blaga" University of Sibiu Prize of POLITEHNICA University of Bucharest Prize of Stefan cel Mare University of Suceava Prize of Banat USAMV, Timisoara Prize of Technical University of Cluj-Napoca and Veterinary Medicine, Timisoara **Prize of Arheoinvest Platform Special Prizes from Participant Institutions**

EXHIBITS CLASSIFICATION

1	Environment - Pollution Control
2	Energy and sustainable development
3	Agriculture and Food Industry
4	Medicine – Health Care – Cosmetics
5	Industrial and laboratory equipments
6	Mechanical Engineering – Metallurgy
7	Buildings and Materials
8	Aviation, car industry and transportation
9	Chemical and Textile Industry
10	Information Technology and Communication
11	Printing and advertising
12	Safety, protection and rescue of people
13	Sports, Games and Leisure
14	Other
X	Innovative Research

PREAMBLE

The Inventions' exhibitions and shows, national or international ones, represent one of the exogenous determining factors, with multiple effects on the creative process. The system is one of the most encouraging, an interactive manner to disseminate inventions, a competitive background generating innovative ideas, while as an evaluative scientometric system, allow attracting the potential applicants or inventions' owners. It is the best medium for negotiating, conveying or transferring inventions, the place where the complete new results are exhibited.

The past 20 years experience, a time in which many Romanian inventors took their new releases in international exhibitions and were rewarded with numerous medals, orders, distinctions and diplomas, situated each time Romania, in unofficial statistics, on the first places. The honours list of the Romanian inventions create a paradoxal result of the two very close fields, the technological or applied research and on the other hand the fundamental or scientifically research. If the scientific output, represented by papers published in ISI Thomson acknowledged journals, situate Romania dragging behind the second league, in compensation, the patented awarded inventions turn it in one of first countries. So much more we should focus especially on the organizing of this kind of shows which offer real opportunities to many inventors to see their dreams come true by putting their results into a competitiveinteractive system of evaluation.

Interdisciplinarity of inventics as a science is approached today in a connected, integrated way (education-research-production), with both educative and research functions, carrying great attractivity for the young generation and increasing standards both for inventors and for their products. In this respect, it is necessary to pay a special attention to the inventics schools, as they have, beside the role to form characters, professions, as well as vocations and talents, the mission to stimulate the technical creativity. We should underline the fact that after 1990 we noticed a slight lowering of the Iaşi inventics school contribution in its aim to form young inventors. Meetings and workshops in the inventions exhibitions should put light on and find solutions to turn the inventics schools in institutions and to improving and harmonizing the laws regarding the intellectual propriety and the industrial one.

Another serious, upsetting and alarming aspect which I want to put light on is the fact that about 60 to 70% of the Romanian specialists with international output accepted to work abroad, where they are appreciated and stimulated according to their value. We should as well attract them and offer the opportunity to revaluate them selves at home and participate to such representative competitions.

A peculiar notice is the fact that many Romanian inventors of success, internationally acknowledged, are invited in organizing committees, in international juries and are active members or founders of associations or professional clubs. The Romanian delegations created a tradition in the international exhibitions, to organize a Romanian event, the so-called "The Romanian Inventors Day", where they present in a festive atmosphere their inventions, their contributions and offer diplomas and small gifts to the hosts and the other participants.

This eight edition of EUROINVENT sent invitations to inventors associations from many countries, as Brazil, Bulgaria, Cambodia, Canada, China, Croatia, Egypt, Greece, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Japan, Korea, Lebanon, Macedonia, Malaysia, Morocco, Moldova, Philipines, Poland, Russia, Slovenia, South Africa, Taiwan, Turkey, Ukraine, Saudi Arabia, United States of America, Vietnam. A big number of institutions and individual inventors are participating from Romania, a remarkable fact being to have here many young inventors (from schools or universities) as well as older inventors. This show is exhibiting more than 540 inventions and research projects from 37 countries.

With pleasure and gratitude, acknowledgements to all the persons, institutions and organizations who participate to EUROINVENT, to the partners, Romanian Inventors Forum, EUROPE-DIRECT Iasi, "Gheorghe Asachi" Technical University of Iaşi and "Alexandru Ioan Cuza" University of Iasi and all the partners for all their support and efforts to organize the events.

Prof. Ion SANDU – Honorary President of Romanian Inventors Forum

ORGANIZERS



Europe Direct lasi



Alexandru Ioan Cuza University of Iasi



Romanian Inventors Forum



Gheorghe Asachi Technical University of Iasi





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The National Institute for Research and Development in Environmental Protection (INCDPM) is an institution with over 60 years of experience in the environmental protection field. INCDPM, through its activities, that involve the concept of sustainable development, ensures the

development of *win-win* preventive solutions, adopted in an environmental friendly manner. The development of new monitoring and evaluation methods for various fields (environmental guality, habitats - avifauna and ichthyofauna) generates, develops and maintains the necessary knowledge for the elaboration of solutions that ensure the conservation status of nature and biodiversity. The institute also uses the most advanced techniques and research equipment, and develops partnerships with prestigious international institutions and with public and private national institutions. The research portfolio includes assessing and reducing the impact of natural and technological hazards, assessing climate change impact, numerical simulations and forecasts, renewable energies, etc. In addition, monitoring the migration routes of sturgeons generates a unique global database. The patents developed by INCDPM researchers in the fields of energy, biodiversity and waste, are highly appreciated at national and international level, obtaining more than 29 platinum, gold and silver medals at exhibition shows.

Contact

294, Splaiul Independentei, 060031, Bucharest, Romania; Phone: +40 (0)21 305 26 00; Fax: +40 (0)21 318 20 01 E-mail: incdpm@incdpm.ro; Website: www.incdpm.ro General Director: Eng. DEÁK György, PhD



Institutul Național de Cercetare și Dezvoltare pentru Protecția

Mediului (INCDPM), reprezintă o instituție cu peste 60 de ani de experiență în domeniul protecției mediului. INCDPM, prin intermediul activităților pe care le desfășoară, coroborate cu conceptul de dezvoltare



durabilă, asigură elaborarea unor soluții preventive de tip câștig*câstig*, prietenoase cu mediul. Astfel, prin dezvoltarea de metode de monitorizare și evaluare pentru diverse domenii (calitatea mediului, habitate-avifaună și ihtiofaună) se generează, dezvoltă și se mentin cunostintele necesare elaborării de soluții care să asigure starea de conservare a naturii si biodiversității. De asemenea, institutul utilizează cele mai avansate tehnici și echipamente de monitorizare, având direcții și arii de cercetare conexe, dezvoltând parteneriate cu institutii de prestigiu din străinătate si institutii nationale, din sectorul public si privat. Portofoliul de cercetare cuprinde evaluarea și reducerea impactului hazardelor naturale și tehnologice, evaluarea impactului schimbărilor climatice, simulări si prognoze numerice în domeniu, energii regenerabile etc. Pe lângă acestea, monitorizarea traseelor de migrare a sturionilor, generează o bază de date unică la nivel mondial. Brevetele elaborate de cercetătorii INCDPM, in domeniul energiei, biodiversității și deseurilor, sunt apreciate atât la nivel național cât și internațional, obținând un număr de peste 29 de medalii de platină, aur și argint la saloanele de inventică și expozitiile de profil.

Contact

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SUSȚINEM EXCELENȚA ANTRENĂM INTELIGENȚA

fundatiadanvoiculescu.ro



MISIUNE



Susținem excelența Antrenăm inteligența

În cei peste 20 de ani de activitate, Fundația Dan Voiculescu pentru Dezvoltarea României a urmat cu stăruință același obiectiv, care a reprezentat credo-ul pe care a fost clădită Fundația: susținerea și promovarea valorilor românești autentice.

Vreme de 24 de ani am fost alături de copii și tineri talentați, oferindu-le îndrumarea și resursele de care aveau nevoie pentru ași împlini talentul.

Rezultatele obținute ne-au arătat că strădania noastră și abnegația lor nu au fost în zadar. Sute de premii obținute la concursuri naționale și internaționale stau mărturie în acest sens.

"Dezvoltarea României" a reprezentat și va continua să reprezinte pe mai departe destinația acestei călătorii pe care am început-o acum 27 de ani. Acesta este și rostul prezenței acestui deziderat în denumirea Fundației. Încurajând, stimulând și ajutând talentul, munca, dăruirea, credem că ne putem îndeplini misiunea.





REALIZĂRI

27 de ani de activitate a Fundației Dan Voiculescu pentru Dezvoltarea României în cifre: ▶ peste **5.000 de tineri** cu reale performanțe au beneficiat de programele FDV;

▶numai în ultimii 6 ani, cel puțin **2.500 de copi**i, cu vârsta între 4 și 18 ani, au participat la cursurile FDV;

▶ peste **50 de programe și proiecte** pe termen mediu și lung în domeniul educațional, cultural și social, unele dintre acestea în curs de desfășurare;

▶ mai mult de **150 de spectacole**, concerte și evenimente cultural-educaționale doar în ultimii 3 ani;

▶ cel mai mare premiu individual din istoria recentă a României, în valoare de 300.000 RON decernat în 2007 inventatorului Justin Capră;

▶ recunoașterea adevăratelor valori naționale prin acordarea premiilor de excelență ale Fundației unor oameni deosebiți precum Radu Beligan, Gabriella Ficz, Grigore Leșe sau Tudor Gheorghe;

▶ premierea și susținerea actorilor tineri în cadrul evenimentului Gala Teatrului Tânăr.



Ca o recunoaștere și certificare a activității desfășurate, **Fundația Dan Voiculescu pentru Dezvoltarea României** a fost afiliată, începând din 2009, unora dintre cele mai importante organizații internaționale, cu obiective asemânătoare: **European Council for the High Ability** și **World Council for Gifted and Talented Childern**.

programe



CLUBUL DE EXCELENȚĂ AL FUNDAȚIEI DAN VOICULESCU PENTRU DEZVOLTAREA ROMÂNIEI

Clubul de Excelență al Fundației Dan Voiculescu a fost inaugurat pe data de 3 iunie 2007 și este principalul proiect al Fundației Dan Voiculescu pentru dezvoltarea României, care are ca principal obiectiv susținerea excelenței prin identificarea, dezvoltarea și promovarea copiilor și a tinerilor talentați, cu performanțe în diferite domenii de activitate, oferindu-le în acest sens și programe personalizate de pregătire.

În cadrul Clubului de Excelență, Fundația Dan Voiculescu pentru Dezvoltarea României a demarat încă din anul 2007, programul anual de cursuri gratuite pentru copii și tineri, menit să-i încurajeze să-și dezvolte abilitățile și săși atingă maximul de potențial. În total, peste **2.500 de copii** au beneficiat de programul de cursuri gratuite.





Începând din luna mai 2009, Fundația Dan Voiculescu pentru Dezvoltarea României a fost acreditată ca centru Cambridge, cursanților oferindu-li-se astfel posibilitatea de a fi testați periodic în vederea obținerii certificatelor lingvistice, de diferite grade de competență.

Pentru al saptelea an educational consecutiv, Fundatia Dan Voiculescu organizează cursuri gratuite pentru copiii cu vocație și talent, câștigători de premii nationale si internationale, cu rezultate scolare deosebite. Copiii cu vârste cuprinse între 7 si 18 ani participă, în funcție de rezultatul obținut în urma testărilor, la cursurile specifice vârstei lor. În anul educational 2016 - 2017 cursurile desfăsurate sunt: Arta fotografică, Istoria artei și pictură, Dezvoltare personală, Limba Engleză, Cursuri National Geographic Learning, Scriere creativă și ateliere creative (origami, guilling).





SENATUL ȘTIINȚIFIC

Într-o lume în care dezvoltarea, prosperitatea unei țări nu mai depinde doar de accesul la resurse, esențial de altfel, dar din ce în ce mai mult de accesul la tehnologie, de cercetare, de progresul științific, **România** și-a îngăduit, vreme bună, să risipească ceea ce reprezintă, făra doar și poate, cea mai de preț bogăție a sa: **inteligența**.



Senatul Științific al Fundației Dan Voiculescu pentru Dezvoltarea României a reprezentat și reprezintă demersul cu care ne-am simțit datori pentru a schimba, fie și cu puțin, ceva din realitatea aceasta. Am încercat să oferim inginerilor, cercetătorilor, inventatorilor români puțin din sprijinul care le lipsea, nu doar aplauze simbolice și platitudini retorice. A fost un prim pas, iar acum suntem gata să-i facem pe următorii. Împreună cu importanți parteneri, reprezentând fie instituții ale statului, fie lumea afacerilor, încercăm să dăm acestui important proiect al nostru o nouă dimensiune, un nou ritm.

Având alături, în **Senatul Științific** al FDVDR, personalități remarcabile ale științei și cercetării românești, ne dorim să oferim inventatorilor și cercetătorilor români acel sprijin care le lipsește, care îi poate face să rămână aici, iar rodul muncii lor să fie parte a ceea ce numim dezvoltarea României.





Fundația Dan Voiculescu pentru Dezvoltarea României web: www.fundatiadanvoiculescu.ro mail: office@fundatiadanvoiculescu.ro tel/fax:+40 31.425.58.85,+40 31.58.83 Str. Cronicarilor nr. 2, sector 1, București



International Federation of Inventors' Associations is an ensemble of 135 members from 95 countries collaborating in an unparalleled way to disseminate invention and innovation culture internationally and raise public awareness about the importance of inventors for the welfare of society. International inventors are provided the required information, linkages, and outstanding opportunities to share and discover innovative ideas and create an expanded network.

International invention exhibitions, seminars, training workshops are organized under the patronage of IFIA and with the cooperation of other international organizations of importance to provide an opportunity for the members to showcase their innovations and benefit from the wealth of its knowledge.



Besides, IFIA holds International Congress and Conference where all of the members can freely engage in dialogue and exchange their views in respect to further promoting the inventive and entrepreneurial spirit. Moreover, Social networking at IFIA events allows organizations to expand their contacts and knowledge base to explore possible commercialization with various stakeholders.

Some of the services IFIA offers include:

- · Organize training workshops and seminars in related fields
- · Provide expert advice on different aspects of patent and commercialization
- · Award IFIA medal to event organizers, supporters, and ambassadors
- · Disseminate member's news and events via IFIA professional publication
- · Increase member's visibility by creating their specific page
- · Display member's logo and contact details in IFIA website
- · Provide access to the online course of patent drafting
- · Create network between green technology providers and seekers







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OUR VALUES









Our MEDIA recites our past, present and future



Our international INVENTION EXHIBITIONS unveil cutting-edge breakthroughs

We are passionate about the promotion of **GREEN INVENTIONS**

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Industria de petrol și gaze



Conexiuni Premium



Industrial & auto-moto

Procesarea



hidrocarburilor

Sectorul energetic

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TenarisSilcotub operează un sistem industrial integrat ce transformă materii prime locale în cel mai cuprinzător portofoliu de produse tubulare cu valoare adăugată mare, ce pun în mișcare industriile de petrol și gaze, energie și auto din întreaga lume.

O echipă de peste 1.600 de profesioniști din 7 orașe și investiții de peste 350 de milioane USD susțin competitivitatea industriei siderurgice românești și confirmă angajamentul pe termen lung al companiei față de România și față de comunitatea locală.



Premium Connections

Oil & gas industry

Industry and automotive

Hydrocarbon processing



Energy sector

Pipe for onshore and offshore applications

TenarisSilcotub operates an integrated industrial system that turns local raw materials into the most comprehensive portfolio of tubular products with high-added value, powering the gas, oil, energy and automotive industries of the world.

A team of more than 1,600 professionals from 7 cities and investments of over USD 350 million support the competitiveness of Romanian steel industry, while confirming the company's long-term commitment to Romania and its local communities.

Grupul de firme Somaco reunește societățile Somaco Grup Prefabricate SRL, Somaco Structuri Prefabricate SRL și Somaco Antrepriză SRL. Acesta deține 5 fabrici pentru prefabricate din beton la Buzău, Roman, Teiuș, Târgoviște și Timișoara și o fabrică unde se produce sistemul de zidărie și termoizolație din BCA – la Adjud.

Cu o cifră de afaceri de 37,7 milioane euro în anul 2016, grupul de firme Somaco este unul dintre cei mai mari producători de prefabricate din beton utilizate în domeniul infrastructurii rutiere, electrice și de apă canal, precum și al construcției centrelor comerciale, halelor logistice sau de producție din țară. De asemenea, Somaco este unul dintre cei mari producători de beton celular autoclavizat (BCA) din țară, liderul pieței din regiunea Moldova.

Grupul de firme Somaco promovează materiale și soluții constructive inovatoare. Portofoliul de produse Somaco este generos, permițând fabricarea unei game largi de

somaco

PARTENERUL PENTRU CONSTRUCȚII INTELIGENTE

elemente prefabricate din beton pentru structuri la cheie, pentru infrastructura electrică – clasică sau alternativă, pentru infrastructura rutieră; sisteme de canalizare din beton – cămine, tuburi, guri scurgere, bazine prefabricate; sistemul REBLOC[®] de dispozitive de protecție la drumuri.

Produsele Somaco au contribuit în ultimii ani la realizarea a peste **3.500 km de** canalizare din beton, peste **50.000 case din beton celular autoclavizat** și peste **1.500.00 m² structuri prefabricate din beton.**

Printre cele mai recente structuri prefabricate realizate de Somaco se numără centre comerciale precum Mega Mall București, numeroase locații Dedeman, Kaufland, Carrefour, Praktiker, Metro, Hornbach, Penny, Leroy Merlin, Galeriile comericale Oradea; centre logistice din apropierea capitalei – Chiajna, Mogoșoaia, Dragomirești, din Ploiești, Brașov, Timișoara, Bacău, Cluj (P3, LogIQ, Wim Bosman, S.E.A., Lidl, Kaufland, Xindao, Millenium, Penny etc); hale de producție (Valeo, Sterkplast, Summitomo Orhei, Dräxlmaier Bălți, Swoboda, Gebauer&Griller, Hella, Daimler, GST, Continental, Hamilton, Martur, Elster, Yazaki); cel mai mare laser din lume ELI-NP Măgurele; complexul de birouri The Bridge din București – prima clădire multieajată de birouri cu structură prefabricată din beton etc.







"Hofigal" este unul dintre cele mai faimoase nume de marca pentru produsele homeopate, gemoderivate si fitoterapice galenice din România, conditionate sub forma de medicamente, suplimente alimentare, produse cosmetice, ceaiuri.

"Hofigal" este o societate pe actiuni cu capital social privat exclusiv romanesc. Suprafata utila a companiei este de 35 hectare.

In intreaga companie lucreaza aproximativ 400 angajati, fiind permanent motivati spre o perfectionare profesionala si personala continua; acestia isi desfasoara activitatea acoperind domenii diverse: Agricultura, Planificarea Productiei, Productie, Aprovizionare, Logistica si Distributie, Vanzari, Marketing, Terapii Noi, Managementul Calitatii Totale, Controlul Calitatii, Relatii cu Autoritatile, Cercetare & Dezvoltare, Resurse Umane, Juridic, Administrativ, Intretinere, I.T.- toti alcatuind un sistem.

"Hofigal Export Import" S.A. este o companie specializata in fabricatia produselor exclusiv naturale, având caracteristic faptul ca își produce majoritatea materiilor prime folosite in serele si pe terenurile agricole proprii.

Materiile prime active folosite se obțin in condiții controlate, in cadrul unei agriculturi strict ecologice.

Diversitatea portofoliului si calitatea produselor impun *"Hofigal"* ca unul dintre cei mai puternici concurenți al unor firme, deja cu tradiție, din Franta, Italia si Elvetia.

Un punct forte privind portofoliul *"Hofigal"* il reprezinta faptul ca toate produsele sunt obtinute pe baza unor retete si tehnologii proprii, brevetate in tara si reprezinta premiere mondiale absolute.

Obiectivele majore ale companiei sunt de a aplica conditiile si masurile privind asigurarea calitatii, eficacitatii si sigurantei tuturor produselor, precum si obținerea de ingredienti farmaceutici activi de natura vegetala garantata ce corespund in totalitate normelor ecologice internationale in vigoare. Toate etapele procesului, de la cultivare (pre-procesare, procesare planta), pana la faza de produs finit sub forma de medicamente, suplimente alimentare, cosmetice, ceaiuri , respecta cerintele internationale privind cultivarea si recoltarea plantelor, precum si Regulile GMP. Din punct de vedere al calitatii produselor, indiferent de etapa, acestea indeplinesc cerintele Farmacopeei Europene, completate cu cele ale altor farmacopei de circulatie internationala si ale conditiilor de calitate proprii filosofiei Hofigal.

Laboratoarele de control al calitatii produselor sunt dotate cu echipamente moderne, conforme cerintelor referentialelor de mai sus si opereaza cu un personal instruit si cu experienta, in care toate materiile prime procurate sau proprii, controalele interfazice pe parametri critici si produsele finite sunt analizate.

Toate liniile de fabricatie respecta cerintele GMP internationale in vigoare:

- fluxul de fabricatie "Forme Solide Dozate" (comprimate, capsule, capsule filmate);
- fluxul de fabricatie "Solutii de Uz Intern/Extern";
- fluxul de fabricatie "Extracte Vegetale";
- fluxul de fabricatie "Supozitoare si Ovule, Cosmetice monodoze";
- fluxul de fabricatie "Ceaiuri";
- fluxul de fabricatie "Cosmetice, Semisolide"

Echipamentele de fabricatie, de masura si control sunt de fabricație occidentala si de ultima generație.

Produsele portofoliului Hofigal reprezinta premiere pe plan mondial: *cea mai mare concentrație de* β -*caroten in ulei de cătina, de proteina in Spirulina, Coenzima Q10 in ulei de cătina.*

Aceste produse sunt rezultatul unei indelungate si sustinute activitati de cercetare sau dezvoltare desfășurate in laboratoarele noastre de către colectivul propriu de cercetători, doctori in științe (farmacisti, ingineri chimisti, medici, biologi, microbiologi, biochimisti, chimisti, agronomi). Acest colectiv colaboreaza cu cele mai importante instituții de învățământ superior si Institute Nationale de Cercetare si Dezvoltare din Romania.

Urmare a acestor activități nomenclatorul de produse realizate de *"Hofigal"* a crescut de la 3 produse in anul 1990, la peste 450 in 2008.

Preocupati de studiul si introducerea de Terapii Noi, recent am adaugat un element novator portofoliului Hofigal: gama **Gemoderivate**, sub forma de extacte hidrogliceroalcoolice in dilutie 1:10, obtinute din tesuturi vegetale proaspete aflate in faza de crestere (muguri, boboci, amenti, mladite, scoarta ramurilor tinere, scoarta interna a radacinilor, seva, seminte). Acestea sunt formate din tesuturi embrionare care concentreaza intreaga energie si informatie genetica a plantei, fiind mai bogate in vitamine, oligoelemente, minerale, acizi nucleici sau factori de crestere decat planta insasi.

Exemplificam gemoderivatele 1 DH din: afin negru, alun, arin negru, artar de campie, brad alb, castan salbatic, carpen alb, catina rosie, coacaz negru, dud negru, fag, frasin, ienupar, lemn cainesc, liliac, maces, mesteacan alb si pufos, mur, nuc, paducel, pin, plop, porumb, porumbar, rozmarin, salcie, sanger, stejar, tei argintiu, ulm, vita de vie, zmeur.

Valorificarea materialului vegetal obtinut de firma noastra are in vedere si domenii adiacente, deja aflate in studiu, cum ar fi: supernucleele pentru zootehnie (polivitamine), insectofungicide naturale vegetale netoxice.

Produsele noastre pot fi găsite in toate farmaciile din Romania.

Totodata Hofigal Export Import S.A. are si o rețea proprie de farmacii. In cadrul acestora produsele Hofigal se vând fără adaos comercial, adică cu costul de producție, in timp ce adaosul comercial pentru celelalte produse farmaceutice este mai mic decât in toate celelalte farmacii, cu excepția produselor cu preț fixat de Ministerul Sănătății.

In incinta fiecarei farmacii Hofigal exista amenajat un cabinet de consultanta, in cadrul căruia medici autorizați, angajati ai Hofigal, cu pregătire atât in domeniul alopatiei, fitoterapiei cat si al homeopatiei, acorda gratuit consiliere oricărei persoane interesate de portofoliul Hofigal.

O initiativa a firmei a fost infiintarea Complexul de terapie naturală "Alexandra"

Prin întreaga sa activitate *"Hofigal"* este promotorul celor mai înaintate si moderne concepte legate de fabricatia nepoluanta. De la materiile prime pana la produsele finite, totul este natural, curat si nepoluat.

Nici un produs Hofigal nu are contraindicații sau efecte adverse ! "Natura nu minte niciodata..." Mihai Eminescu

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LAPTOPURI







The largest railway center in Romania, CFR Paşcani Workshops, was established in 1869, by Austrian and Polish specialists. Between 1936 and 1938, the company develops due to the construction of new halls and an electric plant. In 1992, Remar becomes a state-owned company and in 2004 is privatized: the majority share package is acquired by Grup Feroviar Roman. In 2013 the name has changed in ELECTROPUTERE VFU Paşcani.

ELECTROPUTERE VFU Pascani is leader on the Romanian market of railway vehicles modernization. The company had developed and has been using a powerful concept, called Redesign & Rebuild aka "R&R". The processes of this concept have been applied on trams, DMUs, passenger coaches, freight wagons, in more than 15 different projects.

The product strategy of ELECTROPUTERE VFU Paşcani S.A. is oriented on the **closed circle of competences**:

• New constructed railway vehicles - the company has projects for new constructed railway vehicles: Monovolume coach - maximum speed: 160 km/h; Sleeping car 1st and 2nd class - maximum speed: 200 km/h; EMU train set 3 and 4 modules - maximum speed: 160 km/h; DMU train set 2 and 3 modules - maximum speed: 120 km/h.

• Modernization of railway vehicles - passenger coaches projects (monovolume coaches, double deck coaches and trains, compartment cars), 1 project for D1M Diesel Multiple Units, 2 projects for a GT4 trams, 4 projects of freight wagons (capacity increase, purpose destination change – from colt to cereals). The company had delivered modernization services to more than 500 railway vehicles, to clients from: Romania, the Moldavian Republic, Congo, Gabon and Belgium.

•Railway vehicles maintenance – to passenger and freight transport railway vehicles. In this area the greatest achievement is the portfolio integration of the R8 capital repairing services to the Siemens Desiro SR 20 D DMUs from CFR's fleet.

•Assemblies, subassemblies and spare parts manufacturing, modernization and repairing for the rolling stock and related industries.

•Consultancy, know-how, design, manufacturing, testing, training, warranty and post warranty, complex services and turn keys projects.

Electroputere VFU Pascani has an integrated management system which includes: the quality component ISO 9001:2008, the environment component ISO 14001: 2005 and the work health and security component OHSAS 18001:2008.



Cel mai mare centru feroviar, din Romania, Atelierele CFR Paşcani, a fost înființat in 1869 de specialiști Austrieci si Polonezi. Intre 1936 si 1938 compania se dezvolta, prin construirea de noi hale si a unei central electrice. In 1992 Remar devine companie o companie deținută de stat iar in 2004 este privatizata: pachetul majoritar este achiziționat de Grup Feroviar Roman. In 2013 numele este schimbat in ELECTROPUTERE VFU Paşcani.

ELECTROPUTERE VFU Pașcani este lider pe piața României de modernizare a vehiculelor feroviare. Compania a dezvoltat si implementat un concept denumit Reproiectat & Reconstruit (R&R). Acest proces a fost aplicat pe tramvaie, automotoare Diesel, vagoane de călători și marfă, în mai mult de 15 proiecte diferite.

Strategia de produs a ELECTROPUTERE VFU Paşcani S.A este orientate pe cercul închis de competențe:

• Vehicule feroviare construcție nouă – compania deține proiecte de vehicule feroviare: vagon monovolum (viteză maximă 160 km/h); Vagon de dormit(viteză maximă 200 km/h); EMU (3 sau 4 module, viteză maximă 160 km/h); DMU (2 sau 3 module, viteză maximă : 120 km/h).

• Modernizare vehicule feroviare – proiecte de vagoane de călători (monovolum, etajate, compartimentate), un proiect de automotor Diesel, două proiecte de tramvaie GT4, patru proiecte de vagoane de marfă. Compania a prestat servicii de modernizare la mai mult de 500 vehicule feroviare, pentru clienți din România, Republica Moldova, Congo, Gabon și Belgia.

•Mentenanță vehicule feroviare – destinate transportului de marfă și de călători. Cel mai important proiect este cel de reparație capitală, de tip R8, la automotoarele Siemens Desiro SR 20 din flota CFR Călători

•Producția de ansamble, subansamble și piese de schimb pentru industria materialului rulant și industrii conexe.

•Consultanță, know-how, proiectare, producție, testare, training, servicii complexe și proiecte la cheie.

Electroputere VFU Paşcani a implementat un sistem de management integrat, ce include componenta calitate ISO 9001:2008, mediu ISO 14001: 2005 și sănătate și securitate ocupațională OHSAS 18001:2008.



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vitamin aqua răspunde prin variantele sale la cele patru segmente esențiale actuale de necesități: hidratare, revigorare, sănatate (*wellness*) și controlul greutății. Ca băutură cu funcționalitate benefică, apa vitaminizată cunoaște un feedback pozitiv în rândul consumatorilor, fiind percepută ca o sursă excelentă de nutrienți vitali. Se încadrează ca produs în cele trei trenduri majore de consum: Health (sănătate); Convenience (portabilitate); Premium.

Prin transparența informațiilor și mențiunile de sănătate prezente pe etichetele celor cinci sortimente, **vitamin aqua** se identifică cu nevoile în creștere ale indivizilor pentru o informare corectă și onestă.

Gama largă de adresabilitate a produsului este dată de creșterea preocupărilor în rândul persoanelor active pentru îmbunătățirea stilului lor de viață. Mai mult, culorile, ambalajul și portabilitatea produsului fac din cele cinci sortimente **vitamin aqua** accesorii care reflecta personalitatea, indiferent de stilul de viata, a persoanelor interesate în a consuma produse premium.

Dimineața în mașină în drum spre locul de muncă, la școală, în vacanțe, în pauzele dintre mail-uri, când petreci, la apus, când simți nevoia de revigorare, la ski sau la o tură cu bicicleta, unul din cele cinci sortimente **vitamin aqua** disponibile va răspunde cu siguranță nevoii resimtite într-un anumit moment al zilei, indiferent de anotimp.

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Their consultancy services include: analyzing a company's trademark portfolio, research and search reports, registration and renewal of trademarks, designs and geographical indications, monitoring registered trademarks, filing oppositions and cancellations against other similar trademarks, filing points of view, representation before the Offices etc.

Alongside their clients, ProtectMARK develops the trademark portfolio strategy and offers legal advice on risk management, continuous growth and market protection. For the benefits of their clients, ProtectMARK offers the best advice regarding intellectual property rights so that no infringement of rights occur. Moreover, they aid their clients in other aspects, such as transfer or licensing of trademarks.

With clients as Fiterman Pharma, Iaşi City Council, Iaşi City Hall, Oameni şi Companii, Colegiul Naţional Emil Racoviţă, EDUMANAGER, Children Academy, FIDELIA CASA, OXYGEN, ELEMATIS, REGALLIA, HOLTZMETALL, their services target growing businesses as well as some key players from Iasi's business world.

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Oficiul de Stat pentru Invenții și Mărci (OSIM) își desfașoară activitatea ca organ de specialitate al administrației publice centrale, având autoritate unică pe teritoriul României în asigurarea protecției proprietății industriale, în conformitate cu legislația națională în domeniu și cu prevederile convențiilor și tratatelor internaționale.

Atribuții specifice ale O.S.I.M. conform obiectului său de activitate:

- înregistrează şi examinează cererile din domeniul proprietăţii industriale, eliberând titluri de protecţie care conferă titularilor drepturi exclusive pe teritoriul României.
- este depozitarul registrelor naţionale ale cererilor depuse şi ale registrelor naţionale ale titlurilor de protecţie acordate pentru invenţii, mărci, indicaţii geografice, desene şi modele industriale, topografii de produse semiconductoare şi noilor soiuri de plante;
- editează și publică Buletinul Oficial al Proprietății Industriale al României;
- editează și publică fasciculele brevetelor de invenție;
- administrează, conservă și dezvoltă, întreținând o bază de date informatizată;
- efectuează, la cerere, servicii de specialitate în domeniul proprietăţii industriale;
- desfăşoară cursuri de pregatire a specialiştilor în domeniul proprietăţii industriale;
- editează și publică Revista Română de Proprietate Industrială;
- atestă şi autorizează consilierii în domeniul proprietății industriale, ținând evidenţa acestora în registrul naţional.



State Office for Inventions and Trademarks

Str. Ion Ghica Nr.5 Sector 3, Bucuresti Tel.021.3060800-29; Fax:021.312.38.19; <u>office@osim.ro</u>; www.osim.ro

OSIM carries out its activity as a specialized government body having sole authority over the territory of Romania in ensuring the protection of industrial property.

The specific duties of OSIM involved in attaining the object of its activity:

- it ensures the protection of industrial property according to the special laws and international agreements where Romania is a party;
- it is the depositary of the national registers of filed patent applications and titles of protection granted to inventions, trademarks, appellations of origin, industrial designs, topographies of semiconductor products;
- it administers, preserves and develops the national patent collection, by international exchange, and generates the database in the field of industrial property;
- it edits and publishes the patent specifications;
- it edits and publishes the Official Industrial Property Bulletin with its sections on patents, trademarks, industrial designs;
- it edits and publishes, regularly, the Romanian Industrial Property Review as well as other publications designed for the promotion of the object of its activity;
- it renders specialized services in the field of industrial property, upon request;
- it examines and authorizes the industrial property attorneys;
- it lends assistance in the field of industrial property and organizes training courses, seminars and symposia on industrial property topics, upon request;
- it fulfils any other tasks deriving from the legal provisions and the international agreements where Romania is a party.





Agenția de Stat pentru Proprietatea Intelectuală a Republicii Moldova

The State Agency on Intellectual Property of the Republic of Moldova

str. Andrei Doga 24, bloc 1 MD-2024, Chişinău, Republica Moldova Tel.: +373 (22) 40-05-00, 40-05-92, 40-05-93 Fax: +373 (22) 44-01-19 GSM : +(373)69181660 E-mail: office@agepi.gov.md URL: <u>www.agepi.gov.md</u>

State Intellectual Property Agency (the Agency) is a public Institution subordinated to the Government, responsible for promoting and implementing activities in the field of legal protection of intellectual property.

Through AGEPI you can effectively protect your intellectual property (IP):

- Product and service of trademarks; inventions, industrial designs; geographical indications; traditional guaranteed specialties; appellations of origin; plant varieties, topographies of integrated circuits;
- Literary, artistic, scientific works, computer programs and other objects of copyright and related rights.

AGEPI issues titles of protection of IP objects, informs and provides legal consultations relating to the protection and enforcement of IP rights, publishes the Official Bulletin of Intellectual Property (BOPI) and the journal of intellectual property "Intellectus", promotes and popularizes intellectual property, organizes the attestation of patent attorneys, training and retraining courses for specialists in the field, provides IP pre-diagnosis services and other related services.

Agency's services are provided according to the Quality Management System ISO 9001: 2008, which ensures quality according to international standards.

Agenția de Stat pentru Proprietatea Intelectuală (AGEPI) este o instituție publică aflată în subordinea Guvernului, responsabilă de promovarea și realizarea activităților în domeniul protecției juridice a proprietății intelectuale.

Prin intermediul AGEPI vă puteți proteja eficient proprietatea intelectuală (PI):

- Mărci de produse și de servicii, invenții, desene și modele industriale, indicații geografice, specialități tradiționale garantate, denumiri de origine, soiuri de plante, topografii ale circuitelor integrate;
- Opere literare, artistice, ştiinţifice, programe de calculator, alte obiecte ale dreptului de autor şi drepturilor conexe.

AGEPI eliberează titluri de protecție a obiectelor de PI, informează și oferă consultații juridice ce țin de protecția și realizarea drepturilor de PI, editează Buletinul Oficial de Proprietate Intelectuală (BOPI) și revista de proprietate intelectuală "Intellectus", promovează și popularizează proprietatea intelectuală, organizează atestarea mandatarilor autorizați, cursuri de instruire și perfecționare a specialiștilor în domeniu, acordă servicii de prediagnoză a PI și alte servicii aferente.

Serviciile AGEPI sunt prestate conform Sistemului de Management al Calității ISO 9001:2008, ceea ce garantează calitate în conformitate cu standardele internaționale.



World Invention Intellectual Property Associations

www.wiipa.org.tw

INTRODUCTION:

World Invention Intellectual Property Associations (WIIPA) is a non-profit social organization, taking the whole world as the area of organization. The memberships are foreign inventors associations, schools and related organizations. Now WIIPA has 18 member countries, like Japan, Indonesia, Malaysia, Korea, Hong Kong, Iran, Philippines, Kingdom of Saudi Arabia, Macau, Thailand, Myanmar and Vietnam in Asia; Croatia, Romania and Poland in Europe; Brazil, Canada and the United States in America.

PURPOSE:

To improve the status of inventors at international levels, enhance mutual assistance and experience amongst inventors of the world, encourage creative thinking and the spirit of invention among national university hence to establish the WIIPA.

OBJECTIVES:

The objectives of WIIPA are:

- To encourage invention / creation development and protect the intellectual property of inventors or designers.
- 2. To promote and enhance the development and utilization of inventions and designs.
- To secure cooperation and mutual assistance amongst international associations of inventors and designers.
- To establish and carry on institutions of education, instruction or research and to provide for the experience of invention knowledge generally.
- To promote cooperation amongst the associations of inventors, designers and persons who in different fields of interests and research work for invention, research and technology.
- To improve the status of WIIPA inventors at international levels, and to promote cooperation between inventor associations worldwide.
- Hold or assist in holding conferences, exhibitions, competitions and organize lectures for the purpose of promoting the objects of WIIPA.
- 8. To achieve the foregoing objectives with WIIPA members.

ROMANIAN INVENTORS FORUM & EUROINVENT is member of WIIPA



Romanian Inventors Forum

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Romanian Inventors Forum (FIR) is a professional association which aims to support, stimulate the development and valorization of scientific and technical creative activities, and cultural - artistic, but also copyright problems of its members, diversification of research and technological development, design, scientific investigation, micro-production etc.

Research and development institution **certified** by the National Authority for Scientific Research (ANCS), according to HG. 551/2007, Decision ANCS no. 9708/29.07.2009.

FIR was established in 2003 by a group of university professors, elite inventors and researchers from the University Center in lasi.

www.afir.org.ro



Universiti Malaysia Perlis (UniMAP) is Malaysia's 17th public institution of higher learning. It was approved by the Malaysian Cabinet on May 2001. Originally known as Kolej Universiti Kejuruteraa Utara Malaysia (KUKUM), or Northern Malaysia University College of Engineering, it was renamed as Universiti Malaysia Perlis (UniMAP) in February 2007. The first intake consisted of 116 engineering students who started classes on June 2002. Currently, UniMAP has approximately 11,000 students and a workforce of more than 1,700 academic and non-academic staff members. It offers 21 undergraduate programs that lead to Bachelor in Engineering, one undergraduate programs that leads to an Engineering Technology degree and two undergraduate programs that lead to a Bachelor in Business. We also offer six Diploma in Engineering programs and 13 postgraduate programs that lead to the Master of Science in Engineering and PhD degrees.



Center of Excellence Geopolymer & Green Technology (CEGeoGTech) lead by Vice Chancellor Universiti Malaysia Perlis (UniMAP), Professor. Dr. Kamarudin Hussin. CEGeoGTech located at the School of Materials Engineering, Kompleks Pusat Pengajian Jejawi 2, Taman Muhibbah, 02600 Arau, Perlis. CEGeoGTech has been established on July 2011 with the intention to induce innovation in green material technology among researchers in Universiti Malaysia Perlis. CEGeoGTech are able combining their expertise and skills in various fields to support the academic structure in the generation of human capital that contributes to the development of high quality research. This center also can become a pillar of academic activities, especially regarding research, development and innovation. CEGeoGTech have 8 fields of research includes:

- Geopolymer
- Polymer Recycling
- Electronic Materials
- Ceramic
- Electrochemistry Materials & Metallurgy
- Environmental
- Manufacturing and Design
- Green ICT



Malaysia Research & Innovation Society No. 22 & 24, Taman Kechor Indah Fasa 2, Jalan Abi Tok Hashim, 01000 Kangar, Perlis, Malaysia

Phone: +604-9798885 & **Fax:** +604-9774026 **Website:** www.myris.org.my & **Email:** info@myris.org.my

The MyRIS acronym it came from "Malaysia Research & Innovation Society".

We are solely a research & an innovation organization entity. Our goal is to create the research & an innovation environment among researchers & innovators to the high level standard thus international exposure. With various international mutual networks with several academic institutions & research & innovation entities, MyRIS able to bring up Malaysian innovation to high level standard recognition. The objectives of establishing of MyRIS are:-

- 1. Building research and innovation, networking between academic institutions and related societies.
- 2. Encouraging research and innovation activities, especially among young researchers.
- 3. Helping researchers in improving innovation in various aspects.



Thus the museum hosts the largest collection of the artist's original materials (oil tubes, pastels, watercolors, crayons, palettes and brushes) apart the already known collection of canvas and cardboard paintings, prints and drawings. The magnificent donation to the Oslo City consisted of approx. 1 150 paintings, close to 18 000 prints depicting more than 700 different motifs, 7 700 drawings and watercolours as well as 13 sculptures. In addition there are nearly 500 printing plates, 2 240 books, notebooks, documents, photographs, art tools, accessories and pieces of furniture.

The Conservation Department at the Munch Museum is responsible for preserving the Munch Collection and the Rolf E. Stenersen's Collection and also for developing research on main topics related with conservation challenges in the collection (unstable paint



layers, with weak attachment to substrates (loss of adhesion) and weak binding cohesion; discoloration and fading phenomena on surfaces; extensive efflorescence of salts; deterioration of varnish and surface treatments from earlier restorations; probable metal soap formation in ground layers).
Research in the Conservation Department is led by the Conservation Scientist and will bring together competences from different research fields such as Art History/Technical Art History, Arts, Conservation and Heritage/Conservation Sciences. Research will be collaborative and with an international focus. Collaborations are devised with an aim of increasing doctoral and post-doctoral research opportunities.



In May 2013, the Oslo City Council voted to build a new Munch Museum in Bjørvika in the Oslo's harbour area, close to the new Opera. Spanish studio Herreros Arquitectos won the



design competition and made the project. The new museum will be completed in 2020. Modern, state-of-the art facilities (conservation



department, storage areas, scientific laboratory, library, concert hall) and larger exhibition areas will be available in the new museum.

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JUNE 13-15, 2017 DAVID L. LAWRENCE CONVENTION CENTER DOWNTOWN PITTSBURGH, PA



International Exhibition of Economic and Scientific innovative INTAPG is the platform for exchange of experience and knowledge between inventors, innovative companies, scientific and research units, industry, business circles, universities and schools. Participation in INTAPG opens up a worderful networking opportunity, which allows to escabilish new contacts, that will pay off in current as well as in future activity.

- Date:22-23 June 2017
- · Venue : International Congress Centre in Katowice, Polanci
- · Size: 300sqm, 150 inventors from 15 countries
- · Conference: 300 participants
- Farticipants: inventors, international inventors associations, scientific and research units, innevative enterprises, universities,
- Organizer: Haler Pro Invento Foundation in cooperation with Eurobusiness-Haller

The Exhibition will be held in a newly opened Internatorial Congress Centre in Katowice, modern world-class building, which modes the requirements of international congress and exhibition organizations. Its additional advantage is attractive location, in the heart of the capital of the most industrial region of Poland, next to Spodek and close to main routes connecting the city with the whole area of Silesia region and other pars of Poland. Such location undoublectly will have a positive effect on numbers and quality of visitors



EUROBUSINESS HALLER

e-mail: intarg@haller.pl www.haller.pl



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Complexul Muzeal Național "Moldova" Iași are sediul central în Palatul Culturii, unde se află patru muzee de talie națională:

- ► Muzeul de Istorie a Moldovei;
- ▶ Muzeul Ştiinţei şi Tehnicii "Ştefan Procopiu";
- ► Muzeul de Artă;
- ► Muzeul Etnografic al Moldovei.

Din cadrul Complexului face parte și

► Centrul de Cercetare și Conservare-Restaurare a Patrimoniului Cultural.

Complexul are în subordine și obiective muzeistice de pe teritoriul orașului Iași și, respectiv, al județului. Acestea sunt:

- Muzeul Memorial "Mihail Kogălniceanu" Iași;
- ► Muzeul Unirii Iaşi;
- ▶ Muzeul "Poni-Cernătescu" Iași;
- ► Palatul Memorial "Al.I. Cuza" Ruginoasa;
- Muzeul Arheologic de sit din Cucuteni;
- Muzeul Viei și Vinului din Hârlău.

Palatul Culturii a făcut subiectul unui amplu proces de restaurare, finalizat în ianuarie 2016, desfășurat în cadrul Programului Guvernamental de reabilitare a monumentelor istorice.

În data de 27 aprilie 2016, Palatul Culturii a fost redeschis publicului larg, cele patru muzee care își au sediul aici inaugurând fiecare expoziții temporare ce pun în valoare doar o parte din colecțiile muzeale.



INTERNATIONAL EXHIBITORS

Austria, Brazil, Bulgaria, Cambodia, Canada, China, Croatia, Egypt, Estonia, Greece, Hong Kong, India, Indonesia, Iran, Iraq, Japan, Kazakhstan, Korea, Lebanon, Macau, Macedonia, Malaysia, Morocco, Moldova, Philipines, Poland, Russia, Saudi Arabia, Slovenia, South Africa, Taiwan, Thailand, Tunisia, Turkey, Ukraine, United States of America, Vietnam

Austria

AT.1.	
Title	Energy saving method for mobiles, tablets and Smart tvs
Authors	Husam Alianahi
Institution	Individual Innovator
Institution	
Patent	AT 516952 BT 2016-10-15(herbal medicine) and AT 516094 B1 2016-11-15(energy save method
Description	(Energy saving method) The invention concerns a device and a method for portable electronic devices and/or modules and/or associated modules and/or processing modules depending on batteries with a screen, like mobile phones, tablets, I-pads, laptops, rolltops, smart TVs and the like. The devices can have flat screens or semi-flat screens and/or bent screens or normal screens with one or several bends. For example one border of the screen may be bent, like for example the new product of Samsung S-edge. The purpose of the invention is to let the user define the area of the display, which is used for displaying information. The area of the display used is chosen by the user for example by defining a certain percentage of the effectively used area in proportion to the full screen. The rest of the display should be in a stand-by and/or shut-down mode and/or be in black color. The unused area consumes less electrical energy than the used area. By this way it is possible to choose how many hours the device should be running and/or working and/or how many hours to save according to the chosen percentage by the user. For example, if the full screen would give another 3 additional hours.

Class

2. Energy and sustainable development

Brazil

Brazil International Innovative Inventors, Scientists and Entrepreneurs Association ABIPIR

BR.1.	
Title	VMS – Vehicle Management System
Authors	DATACI – Information and Communication Technology Company of Cachoeiro de Itapemirim City
Institution	Brazil International Innovative Inventors, Scientists and Entrepreneurs Association - ABIPIR
Patent no.	Software registration under the number 02568/2017 at Brazil Intellectual Property Institute
Description	The invention is a innovative software which allows to integrate information and images of vehicles of public and private transportation system giving more security, agility and comfort for the users and, at the same time, saving money by making the process more efficient. Applications This innovative invention can be applied in buses, taxis, trucks, ambulances and motorcycles allowing to identify the position of them and, at the same time synchronizing the information with the administration centers to monitor the routes, times and quality of the services which have been offering to the users.
Class	10. Information Technology and Communication

Bulgaria

BG.1.	
	Development of an ICP-OES method for determination
Title	of heavy metals and metalloids in sterile dump material
	from closed barite mine
Authors	Daria Ilieva, Veronika Ivanova, Andriana Surleva
Institution	University of Chemical Technology and Metallurgy
Description	Barium ore processing generates a huge amount of solid waste worldwide. Nowadays, the short and long term impact of these wastes on the environment is intensively studied. However, many challenges still exist. The migration of heavy metals, metalloids and other harmful substances from the waste impacts the quality of soil, surface and groundwater, which directly affect biodiversity and human health. In order to assess the state of the deposited waste and the environmental risk, a periodically determination of sterile dump material, surrounding waters and soils composition is necessary. The aim of the present project is development and validation an analytical method for determination of heavy metals and metalloids in waste material from flotation extraction of barite by inductively coupled plasma atomic emission spectrometry. The work program of this project includes: development of a method for sample pretreatment; estimation of the analytical characteristics of the atomic emission spectrometric method; estimation of the analytical characteristics of the detection method in combination with the chosen digestion method; method validation. Sample preparation will be optimized, appropriate spectral lines will be selected to provide selective determination of heavy metals in the studied sample, and the characteristics of the developed method will be evaluated using certified samples as well as the standard additive method before preparation of the sample. The proposed method will be applied for assessing the state of sterile dump material and ecological risk in the mine area of Tarnita-Suceava, Romania.
	The financial support of the Science and Research program

The financial support of the Science and Research program 2017 of UCTM, Bulagaria is gratefully acknowledged. Innovative Research

Class

BG.2.	
	Parametric analysis and estimation of efficiency of
Title	transparent structures in solar energy utilization
	systems
Authona	Nina Penkova, Andriana Surleva, Veselin Iliev, Kalin
Authors	Krumov, Zlatka Geshkova, Liliana Zashkova, Ivan Kasabov
Institution	University of Chemical Technology and Metallurgy
	Variety of configurations of transparent structures with
	selective transmission and absorption of the thermal
	radiation are used in the active and passive systems for solar
	energy utilization. The advanced technologies enable
	"regulation" of the spectral optical properties, emissivity,
	physical and mechanical parameters of the transparent
	materials depending of their functions. It is difficult to
	estimate uniquely the influence of the advanced transparent
	structures on the solar energy utilization systems efficiency
	due to the variety of materials, coatings, geometries and
	applications.
	The project aims increasing of the efficiency of solar energy
Description	utilization systems throughout optimized solution of their
	transparent structures, taking into account the thermal and
	mechanical behavior of the transparent facade elements at
	transient climate conditions.
	To achieve this goals an algorithm for structural –
	parametrical analysis of the efficiency of the transparent
	structures will be developed. The project implementation
	will results in a development of conception of application of
	the obtained results in the codes for investigation and
	estimation of the energy efficiency of solar energy utilization
	systems.
	This project DFNIE02/17 is financially supported by the
	National Research Fund, Bulgarian Ministry of Education.
Class	Innovative Research

Cambodia

KH.1.	
Title	The Fire Alarm Notification System Using GPRS
Authors	HOR Seanghuy, VANN Mengly, EL Eseor, CHAN Mithona (Advisor)
Institution	NORTON UNIVERSITY
Description	Fire is a major concern for Cambodian people. Generally, they fail to notify the fire station on time and it is difficult to find the on-fire location, which results in tragic aftermath. This inspires us to conduct a research on and invent the Fire Alarm Notification System Using GPRS to cope with this burning issue in Cambodia. In order to save time, to secure life safety, effective fire suppression, emergency, and ambulance services, it electronically and directly informs the Fire Agency Department. This department is under control of the Ministry of Interior.
Class	12. Safety, protection and rescue of people

Canada

by

Toronto International Society of Innovation & Advanced Skills (TISIAS)

CA.I.	
Title	VERSACRYL: Heat-Sensitive, Thermo-Elastic Multi-
	Purpose Denture Acrylic
Authors	BOB HUYBRECHTS, RDT
Institution	Innovation Initiative Co-operative Inc.
Patent no.	2,111,789 Canadian Patent No.

An innovative acrylic adjustable by heat from warm water, the biocompatible intraoral thermo-elastic acrylic material has received regulatory approval from Health Canada as well as FDA Approval and CE Mark in Europe. It can be used in any dental appliance for patients to adjust their own customized fit with enhanced comfortability. It can be used to produce repeatable thermos-relines, replace metal clasps on partials and create sublingual wings to stabilize denture forms.

Class

4. Medicine - Health Care - Cosmetics



China

CN.1.	
Title	A Rooftop Tangential Fan Wheel Turbine(Building
Authors	Ada Wai Vee Tang, Allen Kwok Fai Chan
Institution	Rud war ree rang, Anen Kwok rar enan Ru WIIDA
Patent no.	ZL 201220690418.6
D	A building integrated wind turbine comprising: a generator mounted on a chassis and coupled to a plurality of tangential fan wheels, all being housed in a cover with two long openings; one as the front intake and the other as the rear discharge. Wind-directing panels extending from the two said openings to form two long duct openings, which
Description	together with the vast building area, form augment to enhance wind speed passing through the wind turbine. The invention device works more quietly than a wall-hung AC fan unit permitting the direct installation of wind turbine on building structure, preferably in synergy installation with solar system to save cost and ensure electricity supply at all times.
Class	2. Energy and sustainable development



Croatia

Represented by ZAGREB INVENTORS ASSOCIATION / CROATIAN INVENTORS ASSOCIATION

HR.1.TitleNiKEL PRIVEAuthorsMIRJANA BRLECICInstitutionPRIRODA LIJECI d.o.o.Patent no.001622580-0001, IR1083058

With inspiration, love and passion, I have summarized all my knowledge as a pharmacists in a new world of beauty and antiagigin care in collection NIKEL PRIVE with innovative, extremely effective ingredients under the trademark MB Complex ®. Collection NiKEL PRIVE consists of three products whose performance is mutually complemented by providing results within a few days of use: the skin becomes incredibly smooth, shiny, hydrated, smoothed. On the face, neck and chest a Serum is applied first, then Elixir and finally cream. This intensive formula against aging on the skin has a high biological effectiveness.

Description

Advantage:

• ECOLGOY PRODUCTS

ORGANIC PRODUCTION

NICKEL PRIVE with it's ingredients contained in the MB $\operatorname{Complex}\nolimits \ensuremath{\mathbb{R}}$

• RESULTS OF APPLICATION

The smoothness effect of the skin is visible already after the first application of collection NICKEL PRIVE with MB Complex $\circledast.$

• INNOVATIVE INGREDIENTS

Products with innovative, high-quality actives based on naturally derived compounds and profound scientific know-how.

Class



INTERNATIONAL EXHIBITS

- blind,
 visually impaired,
 with motor disorders (finger problems)

Class



INTERNATIONAL EXHIBITS 100

HR.3.	
Title	SPIRAL FOR MARES
Authors	ALMIR KARABEGOVIC
Institution	ADLEJA d.o.o.
Patent no.	PCT/SI2014/000083
Description	The spiral for mare is copper plated V-shaped tension spring, which is inserted into the uterus of the mare. After insertion into the uterus, the spiral returns into its original form. The advantage of invention is that it is very successful in treating inflammation of the uterus without the use of products for rinsing and disinfection, antibiotics and other medicines that have a range of additional adverse side effects, and are not as effective as spiral. Treatment of inflammation of the uterus of mares.
	4

Class

HR.4.	
Title	MULTIFUNCTIONAL UTILITY ELECTRIC
	VEHICLE tom-tom
Authors	VJEKOSLAV MAJETIC
Institution	DOK-ING d.o.o.
Patent no.	EURTM 008132409; EURCD 003526383-0001
	Multifunctional utility electric vehicle is designed in such a way that in short time it is very easy to alter the shape of the vehicle. Changing of the module on the cargo bay of the vehicle the purpose of the vehicle itself is changed, and the "tom-tom" in an instant, transforms from the classic delivery
Description	truck for example, into a small dump truck. The vehicle is driven by electric motor powered by a battery pack integrated into the chassis of the vehicle while top speed is limited to 25 km/h. Engine power is sufficient for the smooth transportation of cargo weighing up to 2 tons, depending on the intended use of the vehicle at that point.

INTERNATIONAL EXHIBITS

Class



HR.5.TitleLiquid table sweetenerAuthorsGORAN MILJKOVICInstitutionVITE-VERDE d.o.o.Patent no.-

Zelena stevia, a liquid table sweetener, is a natural substitute for sugar. The sweetener has zero calories and it's glycemic index is 0 making it an exceptable sweetener for all the people sufferenig from elevated or high blood sugar level. It's for people who care about their health. Zelena stevia is a product derived from pure nature and processed with hand made.

Description Zelena stevia is a sweetener which contains 0 calories. It can be consumed by diabetics because it's glycemic index is 0. Zelena stevia has klorofil as a carrier of all the good properties which the plant contains. It is the only natural substitute for sugar. Pure nature transformed into a product. It can be used to sweeten all food and drinks. It is meant for all people, especially for those who look after their health and diabetics

Class

3



INTERNATIONAL EXHIBITS 102

HR.6.	
Title	OMEGA 6 CREAM - HYDRO
Authors	MELITA PAVLEK-MOCAN, MIRA MOCAN
Institution	COSMEL d.o.o.
Patent no.	002683508-0001
	This cream gives back "natural moisturizing factor" and natural nutritive emollient properties to the dry and dehydrated skin. It contains COTTON SEED OIL – high with linoleic acid Ω 6 (58%), essential fatty acids neccessary for normal growth and function of healthy cells. Quantity of Ω 3,6,9 is enhanced by VEGETABLE OILS – apricot, avocado and sesame. Cream also contains HYDRO COMPLEX whose composition protects the skin from loss of moisture, and CETINA- NATURAL SPRING WATER as the greatest gift of nature from Dinara, the highest Croatian mountain.
Description	Advantages:
	 strenghtens the lipid barrier of epidermis in dry skin protects against transepidermal loss of water normalises the skin metabolism oiling, softening, smoothing and protective properties moisturising effect natural antioxydative properties Natural organic cream is for dry and dehydrated skin with high content of linoleic acid (Omega 6). It revitalizes iritated, dry and sensitive skin. After usage young and mature skin is smooth, soft, elastic and healthy.
Class	4
	MARKE CAREA & CREAM

HR.7.	
Title	4shu Shoe Protection from Scuffing While Driving
Authors	ANDELKA TOTO ORMUZ
Institution	PAVORAN d.o.o.
Patent no.	 WIPO DM/082054, EU TM 013848551, USA TM 4877582 The foot leans against the gas/break paddle with its upper part, while the lower part is on the carpet or rubber during the entire ride. If there is dust or small pebbles on the carpet, which is frequently the case, the heel of the shoe is undoubtedly exposed to damages. Such damages are irreparable and consequently shoes are aesthetically damaged. For many women unusable. Unlike the damaged soles that are easily replaced by shoemakers. 4shu is user friendly and can be simply mounted before and after the drive. It is made of an elastic material shaped to simply "fit" the shoe. Dent on the rounded part will prevent unintended slipping of 4shu, especially if you are wearing flats. Leather inserts on the inside: prevent accidental sliding off as a result of typical moves of your foot while driving enable 4shu to softly "sit" without damaging the
	outer surface
Class	13

Class

13



HR.8.	
Title	LEVEL CROSSING PROTECTION SYSTEM RLC23
Authors	ZVONIMIR VIDUKA
Institution	ALTPRO d.o.o.
Patent no.	Z20102270
Description	Level crossing protection system RLC23 is an electronic microprocessor level crossing protection system. It consists of a central unit, train detection system, (half)barrier with control mechanism and ligt warning signals for road and railway track users. Level crossing protection system RLC23 is the ideal solution for installation on the existing unprotected or future level crossings with or without any signalling infrastructure. It is also an easy and convenient replacement for existing and old level crossing protection systems. This unique and innovative system requires simple configuration which is achieved through PC application which also serves the prupose of selecting the type of traffic situation. All types of road signals, barriers/half-barriers and train driver's indication siglans can be used according to the local national regulations. Connection to all types of interlockings and remote control is possible. The system RLC23 is completely designed and developed in Croatia, and it fulfills all requirements for the highest safety integrity level SIL4, which is proved by the cetificate from independent assessment body TUV Rheinland. This is currently the most comprehensive system in the world which was easily seen on the Innotrans 2016 fair in Berlin where it attracted great inerest of buyers, media and railway experts.







Egypt

Represented by The Egyptian Inventors Syndicate The Egyptian Society For Women & Youth Inventors

RECYCLING SLAGS MACHINE
Hebatalrahman Ahmed
(The Egyptian Inventors Syndicate)
THE EGYPTIAN SOCIETY FOR WOMEN & YOUTH
INVENTORS
PatentNo. 1068-2015 -Egyptian patent office
The method and machine to treat slag of metal industries, the
method based on improve the mechanical properties of the
slag as well as prevent its interaction with water;
improvement is done by bonding slag with binders in slag
treatment machine. consists of mill for crushing and grinding
of slag, mixer to achieve homogeneity, bunker to assemble
the bonding materials that do not need grinding, tank to
collect and heat mixture to become viscous and easy
deformed in pipes and a bowl to collect the treated slag
Advantages &New Topics *Increase mechanical properties
of slag and Decrease weight *Prevent reaction with
water*Suitable for all kinds of slags *Di fferent shapes &
sizes are manufactured in molds *Mass production
5. Industrial and laboratory equipments



Summary The method and machine to treat slag of metal industries, the method based on improve the mechanical properties of the slag as well as

INTERNATIONAL EXHIBITS 106

EG.2.	
Title	Noodles by Mobile
Authors	Khaled Abdul Hmaid Elnems
	(The Egyptian Inventors Syndicate)
Institution	THE EGYPTIAN SOCIETY FOR WOMEN & YOUTH
	INVENTORS
Patent no.	Copy Right No.: (Case / SR#:1-240407169)
Description	Just Put your favorite kinds of Noodles in device After
	(broken the Noodles inside same it Cyst cover) With filled
	water to bottle device And when you need to eat a Noodles
	only choice by your mobile witch kind for favorite Noodles
	you need (Give order) After 2 Minutes (Just Pick it from
	device ready to Eat it) The Advantages: Save time and effort
	with easy life / Easy and safety for chi ldren to use it to eat a
	favorite kinds of Noodles
	https://www.youtube.com/watch?v=EHUe31EvaLE

Class



EG.3.	
Title	Therapeutic Exploratory Robot for Nematodes
Authors	Walid Mohamed Ahmed Abady
Patent no.	-
Description	Nematodes is most dangers deses in the soil it infect most of the agricultural land and the plant cause in the following. The soil degradation and lack of productivity and the deterioration of agricultural crops and the lack of competitiveness and a lack of exports and it make decline in crop production and it infect humans and animals diseases of cancer through its destruction of chemical pesticides It cause the higher environmental pollution (soil – water – air – plant crops) and the presence of pesticide residues on crops the exports decline due to the presence of pesticide residues on crops and the high costs of pesticides of nematodes. The solving of the problem Making a robot to make the inventory infinite density of nematodes in the soil and determine their presence in soil to depth of up to 120cm and analyze information and then the mechanic handles data and gives immediate extermination commands for those .the robot is equipped with sensors to predict(fire , movement ,water ,and light) these sensors operate when there is any obstacle associated with including and the device is programmer to work automatically when subjected to the sensors as well as it is a solar-powered and it has the ability to complete the genocide nematodes The robot applications It the pollution that get by the robot is used to get rid of nematodes ,the robot is used to sterilize the soil, it can be used by a simple farmer and high economic feasibility it provides pesticide costs lower crops production costs it provides a cost analysis the laboratory ,it can be mounted on agricultural tractor ,it provides energy as a solar powered can raise the efficiency of the robot by providing speed and enlarge the band width or both
Class	

Class
Estonia

EE.1.			
Title	NEW TECHNOLOGIES FOR ACCESSORIES FOR BOAT PRODUCTION		
Authors	-		
Institution	Telger OU (Estonia)		
	Prepared new technologies for accessories for boat production		
Description EN	Juhtme 10, 10112 Tallinn, Estonia +3725016734 info@telger.ee		
Class no.	8		

Greece

GR.1 Title Electric Socket Removal Preventer Authors George Papageorgiou GR1007782 Patent no. The "Electric Socket Removal Preventer". ensures constant/uninterrupted power supply to any device of such feature on a global scale. Electric powered devices of any kind, from household appliances to business machines (mainframes. servers, end-use PC's) as well as healthcare devices. apparatuses in production lines, applications in devices that operate in the army/defense sector and other in numerous categories, according to their usage, may unexpectedly seize to operate due to their socket's extraction from the power outlet. This event may happen mistakenly (someone pulls the socket's electrical cord because he was not careful at the office/house/hospital etc.), or on purpose, mainly maliciously. The result of this effect has consequences to the operation and usage of the electrical device. This effect is different among **Description EN** these apparatuses and in many electric appliances it has an irreversible impact (for instance in servers, healthcare devices that support patients' lives in hospitals industry and many others). What this patent ensures, is the "locking" of the socket to the power plug mechanically guaranteeing its functionality.

It can be applied to all types of power sockets in terms of voltage and shape worldwide, and in terms of installation – wall-mounted, exterior wall-mounted plugs, multi-socket plugs. It can be manufactured at a very low cost and will provide constant profit flow to its manufacturer who will produce it and sell it on a worldwide basis.



Class no.

GR.2	
Title	The kitchenware with the semi-opening top
Authors	George Papageorgiou
Patent no.	Patent application No. PCT/GR2016/000044
Description EN	The kitchenware with the semi-opening top is designed so that its top to open without removing it from the main body and stay in 2 or more positions, in order to release the vapor and/or foam pressure temporarily during the cooking process. This makes more effective the cooking process. It can be applied to all types of cooking ware, cooking pots of all sizes, types and uses as well as frying pans that cook with water or cooking oil.

Class no.

3



Hong Kong

HK.1	
Title	Green Care Pocket
Authors	Lau Ching Hei
Institution	Tsuen Wan Government Secondary School
Description EN	I think everyone may have the experience of finding difficult to pour out the remaining detergents such as shampoo, conditioner, moisturizing lotion, etc. from the plastic bottle. Time is wasted to wait for the detergents coming out slowly from the bottom of the bottle. Space is also wasted for placing the plastic bottles.
Class no.	14

India

by Indian Innovators Association

IN.1.	
Title	Electrospun Nanofibers based Sanitary Napkins
Authors	Chandra Shekhar Sharma, Shital Yadav, Illa M. Pujitha, Tulika Rastogi and Mudrika Khandelwal
Institution	Indian Institute of Technology, Hyderabad
	WO2016016704 / PCT/IB2015/001264; US NP Application
Patent no.	No. 15/500,102; UK Patent Application No. 1702886.1; Indian Patent Application 3684/CHE/2014 Women constitutes almost 50% of world's population, out of which only half of the women use the feminine hygiene products like sanitary napkins due to various reasons. On an average, a woman uses approximately 15,000 napkins over the course of her
Description EN	woman uses approximately 15,000 napkins over the course of her lifetime. Most of these sanitary napkins that are commercially available are made of micron sized cellulose based fibrils and use large number of dyes for giving color, chemicals for giving fragrance, bleaching with chlorinated compounds to make it appear white and the most importantly superabsorbent materials to increase the absorbency performance. However prolonger use of these chemicals including superabsorbent polymers (SAPs) may cause severe health related issues like cervical cancer, skin allergies, Toxic Shock Syndrome (TSS) etc. We propose to replace micron sized fibrils with electrospun nanofabric due to its large specific surface area and controllable porosity and to eliminate the use of SAPs and other chemicals and that too without compromising the performance. We have tested electrospun nanofiber based matrix with and without adding superabsorbent polymers for their potential use in female hygiene applications and evaluated their performance in terms of free and equilibrium absorbency, absorbency under load, residue tests and mechanical properties. Results were then compared with commercially available products. Based on the results as shown in the poster, we conclude that use of SAPs can be eliminated by considering electrospun nanofibers based matrix as female hygiene products which may potentially address the related health concerns as well apart from solving disposal problem. Applications: Feminine Hygiene Products, Baby and adult Diapers
Class no.	1,4,12
	Commercially available



IN.2.	
Title	Direct Recycling of Polystyrene Waste using Citrus Peel Waste
Authors	Chandra Shekhar Sharma, Shital Yadav, Srinadh M., Aditya A., and Mudrika Khandelwal
Institution	Indian Institute of Technology, Hyderabad
Patent no.	WO/2016/083883; PCT/IB2015/002220; Indian Patent, 5928/CHE/2014
Description EN Class no.	 Polystyrene (PS), an integral part of global plastic market is used widely in both solid and foam form PS. Increase in PS usage results in proportional increase in the PS waste, which unfortunately is non-biodegradable leading to serious impact on health and environment. Also, the low density styrofoam (a popular form of EPS) packaging are usually discarded in dumps and landfills or incinerated. Moreover, technical challenges and poor economic viability of the presently available PS recycling technologies pose a serious challenge. According to a latest statistics by Alliance for Foam Packaging Recycling, the PS industry claims only 12% recycling. This includes scraps from EPS manufacturers also which are immediately reused. Another category of solid waste, which required management is agricultural waste. Worldwide, citrus preduction is more than 31 million tons annually, out of which nearly 50% is waste in terms of citrus peel. Although citrus peel waste is further processed to yield some chemicals such as limonene which is used in fragrance, cosmetics, cleansing agents and sometimes as solvents, the processes involved (distillation, microwave heating) are highly energy consuming. We at Restyro Technologies Pvt. Ltd. have developed a novel, energy efficient scalable process to recycle PS, directly into a versatile non-woven fabric by using citrus peel waste extract. These fabrics can selectively absorb oil and are hydrophobic, which makes it useful for applications in day to day household cleaning, packaging to global requirement of oil spillage remediation, Flexible Insulators and Packaging Material 1,3,9



Indonesia

Represented by

Indonesian Invention And Innovation Promotion Association (INNOPA)

ID.1.	
Title	FANTASTIC NATURAL HEALTH DRINK
Authors	Mardiyah Jusuf Hasan Mansoor, Sri Istuti Mamik
Institution	Surva Buana Malang Indonesia
Patent no	
Description EN	Drinking is a body activity that never stops by the reason of thirsty or just accompany to sit back or as a solver problem. The drink which is intended to release a thirsty usually refers to water or natural water. Meanwhile the drink that is intended to accompany when relax usually refers to coffee, tea, juice, syrup or carbonated beverage as well as alcoholic. Alcoholic drinks usually intended to release a tension or as a sign of joyfulness in a party then others also have assumptions to make warm the body by juxtaposed with cigarette. If it examined more seriously although it can make warm the body and have fantastic with alcoholic drinks and cigarettes are actually very harmful and sometimes difficult to stop it, especially for addicts. One of the ideas and innovations actually can be created a fantastic drink, make healthy and be able to control alcohol consumption and smoking habits by an easy and healthy way. An innovation by extracting the red ginger (as warmers, reliever cough, accelerating blood circulation), cardamom (lozenges), pandan leaves (freshener flavor), brown sugar (low-calorie sugar), cloves and cinnamon (accelerating nerve tensity) and lemongrass (accelerating blood circulation) then it may be created a complete and fresh drinks. The drink is much more delicious rather than alcoholic drinks and cigarettes, and also it can give function in every situation without damaging vital organs and not intoxicate. If it is packaged better, the drinks can be incredible beneficial because it can be able to control themselves from dependence on alcoholic beverages and cigarettes.

Class no.

3 Agriculture and Food Industry

ID.2.	
Title	WHITE TURMERIC AS MEDICINE FOR BURNTSKIN
Authors	LUCKY MAULANA FIRMANSYA, MARDIYAH JUSUF HASAN MANSOOR
Institution	SURYA BUANA MALANG SENIOR HIGH SCHOOL
Patent no.	-
Description EN Class no.	nis research is conducted due to the fact that there are many people got bad burnt wound caused by unafordability to buy medicine or special cream to cure the wound. this research is dedicated to help people who experience the case. White turmeric is chosen because it is easily found and very popular among people in indonesia because it is quite useful such as for food colouring as a medicine for burnt skin, gastritis, itchines etc. Another reason white turmeric is chosen is because it cotains useful substances. White turmeric is rich in many useful substances such as amilium, lipo peroxide, ribozome inacting protein, curcumin, sugar etc. 4. MEDICINE – HEALTH CARE COSMETICS
ID.3.	
Title	APPLICATION TURBIDIMETER FOR DETECT DISEASE IN HEMOGLOBIN ON THE LEAF EAR

THU	DISEASE	IN HEMO)GLOBIN ON	N THE LEA	F EAR
Authors	FAIQ IZZUL ISLAMI				
Institution	SURYA SCHOOL	BUANA	MALANG	SENIOR	HIGH
Patent no.	-				
Description EN	Earlobe is Break of th One source infrared. With the n type of pee detected w	a bony part he light can e of light th nethod Turb ople who su	of the body is be utilized to at can penetrat bidimeter blood ffer from the c d simple method	soft and trai detect blood te and be det dstream of the disease can b od.	nslucent. flow. ected is ne same e
Class no.	4. ME	DICINE – I	HEALTH CAI	RE COSMET	FICS

Iran

Represented by Rayan Innovation Institute

IR.1.			
Title	Credit Card with High Security		
Authors	FARZANEH TABIBI, MORTEŽA TABIBI		
Institution	Mokhtare Javan Institute		
Patent no.	WIRSO52896 / Patent application No 52896/2017		
i utent not	Credit cards are not secured by any property or deposits		
	that can be repossessed in case of default. Secured credit		
Description EN	cards are different and the thief can't empty the account		
	with threat		
Class no			
Class no.	12		
ID 1			
IK.2. Title	Non counterfeit Desenant		
Authors	FARZANEH TABIBI, MORTEZA TABIBI		
Institution	Mokhtare Javan Institute		
Patent no.	WIRSO42417 / Patent application No. 42417/2017		
	This idea is supposed to offer a previously unrivalled		
	level of security and protection against forgery.		
	Offenders commit passport crime to: conceal their		
Description EN	identity, such as fugitives and terrorists, commit		
-	financial crimes and bank fraud, for the purpose of		
	deceiving those who would view the documents about		
	the identity or status of the bearer		
Class no	12		
C1055 110.	<u>12</u>		
IR.3.			
	Designing a new device to open bottle of beverages. Jar		
Title	of Jam pickle and honey easier		
Authors	HAMED HOMAYELPOUR		
Description FN	Makhtara Javan Institute		
Class no	WIRSO/2081 / Patent application No. /2081/2017		
C1055 IIU.	This device with its new specific design help rearly		
	This device with its new specific design help people		
	even children open the bottle of beverages, Jar of Jam,		
	pickle and noney easier and it is cheaper to produce.		
	<u>2</u>		

IR.4.	
Title	Pollution caused by gases NOx, SOx and VOCs on the environment and animals
Authors	MOHAMMAD REZA MOHAMMAD SHAFIEE, FARSHAD AHMADI, EHSAN GHOLAMPOUR
Institution	Islamic Azad University, Isfahan, Iran.
Decription EN	Development of excessive and growing in the world, causing many environmental problems in various parts of the world has been. On the other hand, the negative consequences of its own industrial progress today. Environmental pollution increases the risk that the development cycle of all economic, social, cultural and environmental especially threatened. One of the most important global environmental problems, especially in large cities, air pollution is a constant and serious threat to public health and the environment.
Class no.	
IR.5.	
	Air senaration plant flue gas exhaust system design
Title	and reuse them in the production of refractory bricks and other derivatives
Title Authors	and reuse them in the production of refractory bricks and other derivatives MOHAMMAD REZA MOHAMMAD SHAFIEE, FARSHAD AHMADL ALI NADERI BENI
Title Authors Institution	and reuse them in the production of refractory bricks and other derivatives MOHAMMAD REZA MOHAMMAD SHAFIEE, FARSHAD AHMADI ,ALI NADERI BENI Islamic Azad University, Isfahan, Iran.
Title Authors Institution Description EN	and reuse them in the production of refractory bricks and other derivatives MOHAMMAD REZA MOHAMMAD SHAFIEE, FARSHAD AHMADI, ALI NADERI BENI Islamic Azad University, Isfahan, Iran. Increasing the growth and development of cities and factories of the world, causing many environmental problems in different parts of the world has been. On the other hand, industrial development and manufacturing, today has its own negative consequences. Environmental pollutants are increasing risks that the development cycle of all economic, social, cultural and environmental especially threatened. To design a successful system, anti-corrosion-resistant concrete structure to a significant reduction in gas NOx, SOx and particulate matter exhaust flue gases of factories and reuse it in the production of refractory bricks and other derivatives used in our environment. In this paper, systems and

Class no.

IR.6.			
Title	Pollution caused by dust in Ahvaz (Iran) and its effects on human health and the environment		
Authors	FARSHAD AHMADI, EHSAN GHOLAMPOUR, AREZOU RAHNAMA FALAVARJANI		
Institution	Islamic Azad University, Isfahan, Iran.		
Patent no.	-		
Description EN	There are dust storms, dust, or other metropolitan city of Ahvaz in Khuzestan province in particular, has caused a serious and growing problem for public health and the environment surrounding the city over the past years. Reports and research done over the last several years it has been found that most of the dust storms that cause this phenomenon is internal origin. Despite the dust in the air and the surrounding environment, a lot of complications and disease, especially in men enter into various devices that depending on the concentration of the human body and damage the environment		
Class no.	1		

IR.7.	
Title	THE STUDY OF DATURA STRAMONIUM IN
	IUAICITIES OF HERDAL MEDICINES
Authors	MILAD ARJMANDKIA
Institution	Islamic Azad University, Isfahan, Iran.
Patent no.	-
	Datura is a genus of nine species of Vespertine
	flowering plants belonging to the family Solanaceae, which is believed to have originated in the Americas. For centuries and even now, Datura has been used as an
Description EN	Herbal Medicine to relieve asthma symptoms and as an analgesic during surgery or bone-setting, however according to the newest international studies the Tropane alkaloids are fatally toxic and in careless use often results in hospitalizations and deaths
Class no.	- 4

IR.8.	
Title	Research-Based Education in Dr. Mohammad Shafiee's Schools in Iran
Authors	Dr Mohammad Reza Mohammad Shafiee
Institution	Islamic Azad University, Isfahan, Iran.
Patent no.	-
Description EN	Post method era has obliged educational managers of Iranian education and training system to design and devise new teaching methods in order to cope with the scientific demands of students. Dr. Mohammad Shafiee is one of the most well-known educational and university scholars in Iran and throughout the world. In order to operationalize the abovementioned demand, he has established a chain of research-based schools (primary, junior and senior high schools) and has been successful in Institutionalizing research in the lowest possible school levels, i.e. primary and middle schools and has won a great number of national and international awards in this regard. Now, in Dr. Mohammad Shafiee's Schools students learn to test whatever they learn theoretically in their school laboratories and workshops, observe their actual results and make a connection between education and their real life

Class no.

IR.9.	
Title	Examination of nitrate levels in mineral water
Authors	MOHSEN MIR MOHAMMAD MEYGOONI
Institution	Shekofa school
Description EN	The project of examination of nitrate levels in 40 brands of mineral water in iran, 7 foreign brands of mineral water, and 40 samples of sanitary and mineral water in tehran, najaf, dubai, caspian sea and persian golf
Class no.	1

TitleMULTIPURPOSE GAS – BURN URNAuthorsMOHAMMAD YOUSEFZADEHInstitutionYousefzadeh Company Multipurpose gas burn urn, with separated body and heater which is completely healthy due to not using tin and lead. it prevents wasting energy, prevents holes and explosion and without using burner in this urn it helps keeping the taste of tea and prevents boilingClass no.14IR.11.Title Apartment radiant clothes dryer AuthorsAuthorsIAI SHIRANIInstitutionDamesh Sepahan New Technologies Center This invention consists of two parts: surface clothes hanger and the halogen dryers. Clothes hangers can have various models and halogenic system can be installed on them. The halogenic section consists of one element in the way of the dimmer (the regulator of the electricity flow), a key to turn the system on and off and a fuse for the safety of the electric system of the circuit. All these systems have been located on the clothes hanger that dries the clothes through radiant heat.Class no.14
AuthorsMOHAMMAD YOUSEFZADEHInstitutionYousefzadeh Company Multipurpose gas burn urn, with separated body and heater which is completely healthy due to not using tin and lead. it prevents wasting energy, prevents holes and explosion and without using burner in this urn it helps keeping the taste of tea and prevents boilingClass no.14IR.11. Title AuthorsApartment radiant clothes dryer ALI SHIRANI Damesh Sepahan New Technologies Center This invention consists of two parts: surface clothes hanger and the halogen dryers. Clothes hangers can have various models and halogenic system can be installed on them. The halogenic section consists of one element in the way of the dimmer (the regulator of the electricity flow), a key to turn the system on and off and a fuse for the safety of the electric system of the circuit. All these systems have been located on the clothes hanger that dries the clothes through radiant heat.IR.12.Fact and slimming messagen
InstitutionYousefzadeh Company Multipurpose gas burn urn, with separated body and heater which is completely healthy due to not using tin and lead. it prevents wasting energy, prevents holes and explosion and without using burner in this urn it helps keeping the taste of tea and prevents boiling Class no.IR.11.Apartment radiant clothes dryer AuthorsAuthorsALI SHIRANI Damesh Sepahan New Technologies Center This invention consists of two parts: surface clothes hanger and the halogen dryers. Clothes hangers can have various models and halogenic system can be installed on them. The halogenic section consists of one element in the way of the dimmer (the regulator of the electricity flow), a key to turn the system on and off and a fuse for the safety of the electric system of the circuit. All these systems have been located on the clothes hanger that dries the clothes through radiant heat.IR.12.Exot and alimming massager
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Various models and halogenic system can be installed on them. The halogenic section consists of one element in the way of the dimmer (the regulator of the electricity flow), a key to turn the system on and off and a fuse for the safety of the electric system of the circuit. All these systems have been located on the clothes hanger that dries the clothes through radiant heat.IR.12.Title
Description ENthem. The halogenic section consists of one element in the way of the dimmer (the regulator of the electricity flow), a key to turn the system on and off and a fuse for the safety of the electric system of the circuit. All these systems have been located on the clothes hanger that dries the clothes through radiant heat.Class no.14IR.12.Fact and slimming messager
Description EN the way of the dimmer (the regulator of the electricity flow), a key to turn the system on and off and a fuse for the safety of the electric system of the circuit. All these systems have been located on the clothes hanger that dries the clothes through radiant heat. Class no. 14 IR.12. Foot and slimming messager
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dries the clothes through radiant heat. Class no. 14 IR.12. Foot and slimming messager
Class no. 14 IR.12. Title Foot and slimming messager
IR.12.
IR.12.
Title East and slimming massager
Authors Amir Hossein Mohammad Shafiee
Institution The Village High School 13051 Whittington
This invention is related to the field of medical
engineering. We have designed a massager that
stimulates the human foot nerves, as well as the veins
and canillaries located in it. It is worth mentioning that
Description EN
massager the specific ointment that has been located on
the device should be rubbed on the intended place and
then the device should be activated for use
Class no. 14

IR.13.	
Title	The neck and waist massager
Authors	NIAYESH NAJAFI
Institution Description EN	Damesh Sepahan New Technologies Center This invention is in the field of medical engineering. Through the identification of Shoulder and neck nerves and also the related muscles, veins and capillaries, we designed a Massage device to stimulate the sensitive parts of the neck and back. This invention consists of a series of mini vibrators that are embedded in sensitive areas and are connected to the body by special plates and coatings. The user fastens it to his body and then it
Class no.	14
IR.14.	
Title	Highly Efficient and Green Synthesis of New indol and benzofuran derivatives via Electrochemical Methods under ECECCC Mechanism
Authors	Mohammad Reza Mohammad Shafiee, Sasan Radfar
Institution	Damesh Sepahan New Technologies Center Islamic Azad University, Najaf Abad Branch
Patent no.	
Description EN	Electrochemical synthesis of new benzofuran and indol derivatives (8a-8c) has been carried out by the electrochemical oxidation of hydroquinone, 4- aminophenol and p-phenylenediamine in the presence of Cyanoacetamide (3a) and 2-Cyano-N-ethylacetamide (3b) as nucleophiles in a phosphate buffer solution (0.15 M) mixed with ethanol as a green solvent (80:20 v:v) using cyclic voltammetry, controlled-potential coulometry and UV-spectroscopy methods. The results revealed that the oxidation form of hydroquinone, 4- aminophenol and p-phenylenediamine participate in the 1,4-michael addition reactions with Cyanoacetamides via the ECECCC mechanism for the electrochemical synthesis of new benzofuran and indol derivatives with good yield and high purity under controlled potential conditions. In this new methodology, a carbon rod was used as the anode and the use of toxic and/or hazardous reagents was avoided
CIASS IIO.	

Iraq Represented by Iraqi Forum of Inventors

Synthesis and evaluation of antibacterial and antiparasitic activity of some pyrimidine nucleosides as antitumor and antibiotic drugs
Ihsan Edan Abdulkareem Alsaimary, Sundis S. Bakr, Najim Abood Almasoudi
College of Medicine – University of Basrah
Locally 2954 internationally : C07H19/06/067 / Patent application No. 210/2000
The patent in concerned the synthesis of some new novel nucleosides namely 1-(2- acetamido-3,4,6-tri-O-acetyl-B-D-glucopyranosyl) derivatives of uracil, thymine, trifluormethyluracil, fluorouracil, bromouracil and iodouracil(8,10,12,14,16 and 18), respectively, from condensation of the bases, uracil, thymine, trifluormethyluracil, fluorouuracil, bromouracil and iodouracil with 2-acetamido-1,3,4,6-tetra-O-acetyl-2- deoxy-D-glucose), in the presence of trimethylsilyltrifluoromethanesulphonate catalyst. Deblocking of the acetyl groups at 8,10,12,14,16 and 18 by treatment with methoxide ione afforded the free nucleosides(9,11,13,15,17 and 19), respectively. The antibacterial activity of the free nucleosides 9,11,13,15,17 and 19 against ten types of bacteria have been studied and evaluated by measurment of the growth inhibition zones and the minimumal inhibitory concentrations (MICs), and the protoscolicidal activity against protoscolices of <i>Echinococus granulosus</i> by using vability methode has been also determined
Recovery, extraction and characterization of <i>Staphylococcus aureus</i> superantigens (Staphylogen) as a cause and vaccine for Atopic Dermatitis/ Eczema Syndrome In Human.
Ihsan Edan Abdulkareem Alsaimary, Kawther H. Mehdi, Khalil I. Alhamdi, Sundis S. Bakr
College of medicine – University of Basrah
Locally3724 inernationally : C12N15/03 / Patent application No. 48/2009
A novel exotoxin from Staphylococcus aureus isolated from eczematous lesion of patient with atopic dermatitis was isolated, purified, and characterized in this study. Then groups of laboratory animals were injected with this antigens as a vaccine forprevention eczema disease These exotoxin has clotting activity (85.5) unit/ml. specific activity (2085.3658) unit/mg and total activity

Class no.	(1282.5) units after (347.56) degree of purification yielded (3.975)% of exotoxin resultant, and the solution of Staphylococcus aureus exotoxin show a very high purified single band protein by using polyacrylamide gel electrophoresis PAGE (7.5%), these band-in comparison with standard protein-has a molecular weight (43.315)kd. 12
IQ.3.	
Title	Preparation and Identification of Some Eugenol Derivatives and Study its Biological Activities
Authors	I AL-Assadi
Institution Patent no.	University of Basrah 3400 2008/364
Description EN	The invention includes preparation of five derivatives from eugenol, and purification by column chromatography technique. Many identification techniques have been used (R. Mass spectrum, H NMR "cNMR,"cdept NMR). The chemical analysis results showed two novel eugenol derivatives(AMs, AMT) The antibacterial activity of all prepared compounds were evaluated against Gram positive bacteria (Staphylococcus aureus, Enterococcus faecealis. Staphylococcus epidermidis, Bacillus cereus) and Gram negative bacteria (Escherichia coli, Proteus mirabilis, Klebsiella pneumoniae, Pseudomonas aeragenosa) by dick agar diffusion method. The results showed that (AM) exhibits greatest antibacterial activity (10-36 mm), followed by (AM2) (8-20 mm), the (AM1. AM) which showed moderate activity, while (AMs. AMT) showed no antibacterial activity. The antifungal activity evaluated against (Candida albicans, C. krusei, kefir, C lustaniae) as elucidated by disc diffusion method. The results showed that followed by (AM2) (22-29 mm), and the (AM, AM) showed moderate activity, while (AMs AM7) showed no antifungal activity The minimum inhibitory concentration (MIC) was determined for all these six compounds and the all values fall between 3.1- 12.5 Hg/ml) against all bacterial and fungal species. The anticancer activity for all compounds investigated against HeLa cells line using three concentrations (0.5 1, 2.5 HM The results showed that (AM) exhibit greatest anticancer activity (0.011,0.040,0.011, respectively) absorbance in 750nm wavelength, followed by (AMs. AM. AM2. AM i), respectively. Cytotoxicity of these compounds was determined on RBCs. The results showed that all compounds don't have any cytotoxity at all studied concentrations 1. Environment - Pollution Control
Class no.	1. Environment - Pollution Control

IO.4.	
Title	Effect of bisoprolol on bone healimng
Authors	Abdel Rasool A.M., Tawfig N.O.M., Avoub R.S.
11111111	College of dentistry/University of Mosul/IRAO
Institution	Neineyah College of medicine/University of
monution	Neinevah/IRAO
Patent no. Patent no.	Nemevah College of medicine/University of Neinevah/ IRAQ (52)A61K9/10 / Patent application No. 106/2014 Bisoprolol fumarate (BF) is a synthetic β_1 -selective a drenoreceptor-blocking agent. The aims of this study is to evaluate the local effect of BF gel 1% (BFG1%) used in bone healing examination of induced defect on rabbits femur. At the end of $(2^{nd}, 4^{th}, 6^{th})$ weeks of the experiment, serum obtained to asses Rabbit Bone Alkaline Phosphatase (BALP) and Calcium level, BALP showed a significant an increase at the end of 2^{nd} weeks. Radiography and computerized tomography Scan showed significant increase (p<0.05) in bone density in treated group after 4 th week (1345.80+ 155.03) as compared to the treatment groups after 2^{nd} and 6 th weeks. Image J results agreed with CT scan and Dual Energy X- ray Absorptiometry (DEXA) which were shown increasing in the density of the treatment groups compared to control groups. The local application of BFG1% showed a positive effect on bone healing through histological and histomorphometric analysis. Osteoblast diffusion and multiplication as osteiod presentation visually progressed as compared with two weeks treatment groups also appeared to be more prominent as compared with 4 th week control group.
	vascularity, capillaries maturation and soft callus mininralization were better performed than control, few multinucleated osteoclasts were noticed. Histomophometric analysis showed increased new bone area percentages at the end of 4 th week of local application of BFG1% on the defect
	area.
	Conclusion: local application of BFG1% can stimulate
	the regeneration of the bone defect sites because it promotes the proliferation of osteoblasts and enhance mineralization

Class no.

4

IQ.5.	
Title	Designing and development simple system and method of sampling and measurement sulphur dioxido gas in air
Authors	uloxide gas ill all. Hasan Mahammad I uaibi
Authors	AL Ordisiyah University / Science College / Chemistry
Institution	Department
Patent no	IO3164
Description EN	Designing and Development simple system and method of sampling and measurement very low concentrations of SO ₂ gas in pollution air by its gas. This Patent included design and assembly of a portable kit for collection of pollution air (SO ₂ gas) samples for field application at suspected areas, e.g. sulphuric acid production factory (in Babylon City – middle Iraq) and the regions around, where resurges SO ₂ gas to the air as side produce and pollution occur. In this Patent used spectrometric determination of SO ₂ in air based on passing of air sample (1-40 L) containing SO ₂ through a solution of Urea (absorbing medium) by two stages traps(first and second impingers) of trapping and retaining SO ₂ Molecules inside urea solution within a physic-chemical selective coordination bonding. The solution is then treated with the Dye Para-amino azobenzene where an pink complex develops between SO ₂ and the Dye readily after acidification and addition of formaldehyde. The colored complex was measured spectrophotometrically by absorption at 505 nm. The absorption was selective and quantitatively correlated with the concentration of SO ₂ , the method is applicable for wide range of SO ₂ contents in air. The calibration curve was linear within (0.1-3.8 ppm) SO ₂ concentrations and the sensitivity, the detection limit and molar absorption coefficient were 0.0088 ppm, 0.004 ppm and 1.6×10^4 l.mol.cm ⁻ respectively. These results in this patent were very acceptable and update compared with methods which used absorbent mediums instead urea medium, for example semicarbazide hydrochloride solution. Furthermore a portable kit which used for collection SO ₂ samples was very easily and successful.

Class no.

Construction electrospinning system with cylindrical collector and used it in fabrication alignment Nano fibers conducting polymer ((PAni, CSA//PEO)
Tariq Jafer Alwan, Kareema Majeed Ziadan
Dep. of physics /College of science /University of Basrah
4262 / Patent application No. 53/2015
The invention includes construct electrospaining system locally manufactured and at a very low cost .This technique of electrospinning was utilized to fabricate alignment nanofibers conductive polymer PAni.CSA/PEO, that diameters between (40.49-92.35) nm., nanofibers were electrospun from polymer blends of polyaniline doped with camphorsulfonic acid PAni.CSA and polyethylene oxide PEO in chloroform, with different concentration of PEO (30 wt%, 25 wt%,20 wt%,15 wt%,8 wt%). Experiments were performed for find the optimal process parameters that generate the minimum nanofibers diameters and the best alignment. 5
EXTRACTION AND PURIFICATION OF SPECIFIC
ANTIGENS USING IN THE DIAGNOSIS OF HYDATID
DISEASE
Wafaa Saadoon Shani , Nisreen Waleed Mustafa ,Ihsan Edan Abdulkareem Al-saimary
Biology Department/ College of science / University of Basrah
4845 / Patent application No. 4/2016
 This study aimed to prepare different antigens for detecting their efficiency in hydatodosis diagnosis in human which caused by larval stage of <i>Echinococcus granulosus</i> as following : a- Antigen B (AgB) was purified from hydatid fluid by anion exchange chromatography technique then treated electrophoretically to isolate its bands (8 kDa, 16 kDa and 24 kDaAgB) using them as an antigens. b- Another antigen from protoscoleces, (protoscoleces soluble somatic antigen PSSA) also prepared. 2- The diagnostic efficiency was examined for five prepared antigens with three immunoglobulins (total IgG ,IgG1 and IgG4) using chequer board titration ELISA to determine the best antigens concentration and sera dilutions for preparing diagnostic kits . 3- Then indirect ELISA method was used to evaluate the diagnostic performance values (DPV) (sensitivity ,specificity , INTERNATIONAL EXHIBITS

diagnostic efficiency ,positive predictive value and negative predictive value) .

4- Diagnostic efficiency (De%) for AgB was tested with total	
IgG, IgG1 and IgG4 were (73.333, 87.5 and 90)%	
respectively. The subunits of AgB (8, 16 and 24) kDa recorded	ed
highest DPV. De% of)8,16 and 24) kDa subunit of AgB	
examined with total IgG, IgG1 and IgG4 were (94.116, 95.83	3
and 99.116)%; (94.116, 95 and 97.5)% and (94.116, 95 and	
96,666)% respectively . Lowest De% was recorded with PSS	A.
5- According to the DPV the 8kDa subunit of AgB and IgG4	is
the best and a result was of ROC curve showed that 8 kI	Da
subunit was recorded a highest diagnostic accuracy wh	en
tested with IgG4 and IgG1.	
Applications	
Most important application for this work is using of antig	en
which prepared from a local strain of Echinococc	cus
granulosus for diagnosis of hydatodosis.	
Class no. 4	

IQ.8.	
Title	USING OF ADVANCED DRUGS IN TREATING PULMONARY FIBROSIS
Authors	Maha Kaleel ibrahem, Mahdi Murshid Thwainy ,Ihsan Edan Abdulkareem Al-saimary
Institution	Biology Department/ College of science / University of Basrah
Description EN	4846/ Patent application No. 168/2016
Class no.	1-In this patent pulmonary fibrosis(PF) was induced in experimental rats by bleomycin drug (BLM). The activity and efficiacy of dexamethason ,losartan and alteplase were established against (PF) induced by (BLM),the findings identified these drugs as inhibitory agents on scar and fibrous tissue formation. Administration of dexamethason ,losartan and alteplase caused significance increased with oxidative enzymes (SOD,GSHpx) when used in combination with (BLM) drug ,also level of hydroxyl prolin(HYP) increased significantly in serum of (PF)group while conversely The level decreased when using these drugs . The deleterious effect of (BLM) was witnessed by elevated activities of pathophysiological enzymes (ALT,AST,ALK,LDH) in rats of (PF)group while

Administration of dexamethason losartan and alteplase in combination with(BLM) lead to decreas in the concentration. Remarkable histological changes were observed induced by (BLM) included extensive fibrosis, heavy infiltration of inflammatory cells, tissue damage,emphysema, aleveoli Identified by reduce the collagenous fibers bands, deposition of fibrous tissue around intra-alveolar or interalveolar septa, no exudates and clear airways with terminal bronchioles, the tissue appeared resemble that on normal architecture. According to these findings this investigation evaluate the important role of dexamethason, alteplase and losartan as inhibitor agents on the most risk of (BLM) and may be offer one of the therapeutic mechanisim to prevent the lung fibrosis. Most important application for this work is using of drugs which tested its effect experimentally as inhibitor agents on pulmonary fibrosis it is one therapeutic mechanism to prevent the lung fibrosis. 6

10.9	
Title	The development of an innovative method for early detection cervical cancer through molecular marker for gene methylati (PAX1).
Authors	Mohammad I. Mezaal , Nada A.S. Alwan , Ismail Hussein Aziz and Maad M. Shalal
Institution	Iraqi Hereditary Company (IHC) for Medical and Genetic Researchs.
Description EN	4730 / Patent application No. 251/2016
Class no.	The design of new and innovative way of early molecular diagnosis for the detection of methylation pattern for PAX1 gene (promoter region) that responsible for Slicing of tumor suppressor gene (PAX1 gene) as a hallmarks of the tumor increasingly valuable for early detection of cervical cancer as a result of infection by papillomavirus (HPV), through the uses of modern techniques were used for the first time in Iraq, and in a manner designed (innovative): 1- MSP- Methyl specific PCR. 2- Bisulfate sequencing . (max 250 words)
	(4) Medicine - Health Care - Cosmetics

IQ.10.	
Title	HYBRID SOLAR POWER/THERMAL SYSTEM
Authors	Husam abdulrasool hasan, K. Sopian
Institution	National University of Malaysia UKM
Description EN	Patent application No. PI2015001744
Class no.	The hybrid solar power system broadly comprises a photovoltaic (PV) system and solar thermal absorber which is configured to produce both electricity and heat from one integrated component or a standalone system. In an aspect of the present invention, the photovoltaic system is used as a part of thermal absorber. The invention is related to a hybrid solar power system that is a combination of photovoltaic (PV) and solar thermal system and configured to produce both electricity and hot water from one integrated system. The water jet to the back side of PV module. The hot water collect and stored in the storage tank to use in different application. Advantages: Generates the electricity form the photovoltaic cell Increases the electrical efficiency for PV solar cell by reduction PV temperature Production of hot water can be used for many domestic and industrial application Remove the heat with high thermal efficiency by using heat transfer enhancement techniques which is jet impingement.

Invention Classification :2



IQ.11.	
Title	HIGH EFFICIENCY SOLAR THERMAL SYSTEM
Authors	Husam abdulrasool hasan
Institution	National University of Malaysia UKM
Description EN	Patent application No. PI2016701823 (19/5/2016)
-	This new and innovative high efficiency solar water
	heater system has been used for convert solar energy to
	thermal energy and produce hot water.
	The solar thermal collector type with jet impingement
	and fins has high thermal efficiency because of the high
Class no.	heat transfer coefficient between absorber and fluid
	flow.
	Remove the heat with high thermal efficiency by using
	heat transfer enhancement techniques which is jet
	impingement.

Invention Classification :1



IQ.12.	
Title	HIGH CONCENTRATION PHOTOVOLTAIC/ THERMAL SOLAR COLLECTOR
Authors	Husam abdulrasool hasan
Institution	National University of Malaysia UKM
Description EN	Patent application No. PI 2016701825 -19 may 2016
Class no.	The high concentration photovoltaic/ thermal solar collector broadly comprises a photovoltaic (PV) system and solar thermal absorber which is configured to produce both electricity and hot fluid from one integrated component or a standalone system. The parabolic trough is oriented so that sunlight which it reflects and then concentrated to the

photovoltaic thermal solar collector.

The photovoltaic system is used as a part of solar thermal absorber. Photovoltaic solar cell/panel fix on the solar thermal absorber.

The high concentration photovoltaic/ thermal solar collector further comprises jets of water that are used for cooling the solar thermal absorber which underside of the at least one photovoltaic solar cell/panel.

The impinging jets has the ability to efficiently remove the heat from photovoltaic solar cell to the cooling fluid with high heat transfer coefficient.



IQ.13.	
Title	Converting wind energy underneath vehicles to electricity
Authors	Waled Ahmed, Muthana Latef, Kasim Muhammed
Institution	Middle Tachnical University
Patent	F03D3/00 NO. 4315
Description EN	The idea is to generate electric energy by converting the wind caused by moving vehicles to electric power. The generator is Installed in a hole made in the middle of the street where the vehicle passed, the wind will be guided by fins to a turbine that rotate the generator and produce electric power each time vehicles passes by.
Class no.	2



Japan

JP.1.	
Title	Eco-Friendly LED Torch
Authors	Sakai Masayoshi, Yaguchi Hiroyuki
Institution	-
Patent no.	-
Description EN	This invention can be applied to mountain-climbing and power outage. Especially when blackout happens, the eco-friendly LED torch can function efficiently. With a generator installed inside, the torch can generate electricity itself and illuminate without batteries. When the electricity runs low, the electricity can be generated by pulling the hand strap.
Class no.	12. Safety, protection and rescue of people



Kazakhstan

KZ.1.	
Title	Method and device for grain drying
Authors	Sadykov Z., Espolov T., Sadykova S., Golubkovich A., Zhalnin E., Pavlov S., Orekhov A., Golikov S.
	NAU "Kazakn National Agrarian University"
Institution	LLP "Scientific-production center of resource-saving technologies " SAPA "
	Almaty Kazakhetan
Potent no	Pending
i atent no.	The invention belongs to grain druing preferably for
	The invention beiongs to grain drying, preferably for
	seed and coarse-grain crops purposes.
	The process carried out as follows: the grain is loaded,
	dry gently, binning and finish dryin N times, cooled and
	discharged. The bruchidae wheat consists of a
	membrane, nucleus and the nucleus of the starch
	cells. The thickness of the shell is, where - the radius of
	the grains, and the effective thickness for which
	calculated transfer of moisture at binning considering
	wheat germ, located under the shell can be accepted
Description EN	equal .
	The apparatus functions as follows. Wet grain after
	preliminary treatment is fed intonoria, further in over
	drving hopper pre-drving camera binning final drving
	and cooling chambers According to filling the dryer
	noria turned off but include a fan and a furnace after
	heating the grain comprise porial transporter and carried
	circulation of grain. After drying the first batch dryer is
	transferred to the stream. The dried within steam grain
	appling in a shamber and discharged by the converse
	and noria
Class no	3
V 1455 HV	,

Korea

by Korea University Invention Association (KUIA)

KR.1.	
Title	Smart toothbrush to check and analyze plaque
Authors	Han Sang Jun
Institution	Han Sang Jun Dental Clinique
Patent no.	-
Description EN	This invention is composed of a tube and a toothbrush. The tube embedded with plaque reagent and toothpaste that help to keep healthy teeth. The tube is placed separately and filled with plaque reagent and toothpaste in scale. When users want to use, they can push a rubber pump and then amount needed will be come out through nozzle of toothbrush. UV system helps to see plaques more clearly and strengthen sterilizing ability. For comparing teeth condition with previous results, a subminiature camera is retrofitted. These devices will be installed to toothbrush after miniaturized in the form of microchip by using various sensor function of Arduino. Users can check plaque by photo and improve the teeth condition as using this wireless power transmission toothbrush. This invention make user can check plaque accurately while brushing teeth so it is more comfortable than using additional plaque reagent and check plaque after dying teeth. Also, if this invention adopts wireless power transmission system and waterproof function, it will become smart toothbrush which has transportability and durability. It will stand people in good stead if it is compactly designed using 3D printer. The production cost is quite reasonable so it is also economically feasible.

plaque reagent and toothpaste storage

wireless po transmitter

ISS DI

wer transmission

KR.2.	
Title	Improvement of soil immunity using the changes in distribution of Aerobic and Anaerobic soil bacteria
Authors	Kim Jin Won
Institution	Yong San International School
Patent no.	-
Description EN	The growth of aerobic and anaerobic soil bacteria has varied greatly in regards to the four different soil types. More types of aerobic bacteria exist than that of anaerobic bacteria in healthy soil. Aerobic soil bacteria decreased and anaerobic soil bacteria increased in huge rates in soil near apartments or the soil contaminated with heavy metals. However, the growth of aerobic soil bacteria decreased greatly in contaminated soil. The growth of E.coli stimulated according to distribution of aerobic soil bacteria and anaerobic soil bacteria in contaminated soil. Throughout the confirmations of the existences of soil bacteria that lives in human skins and suppress the proliferation of other harmful bacteria and the effect of growth of this soil bacteria, the concept of soil immunization was defined. As a result, the accuracy of soil immunization was checked and the aerobic soil bacteria adapted to toxins of anaerobic soil bacteria were able to improve the soil not suitable for growth of the plants. Soil in apartments or schools which can be contaminated by heavy metals and other pollutants. Soil in playgrounds which is used by kids. Farmlands nearby roads or big cities.

Class no.

14



Adapt to anaerobic soil bacterial toxin Culture of pre-aerobic soil bacteria Culture of pre-aerobic soil bacteria

KR.3.	
Title	Sink filter washing device that can detect germs
Authors	Joo Myeong Jun
Institution	Jungsan High School
Patent no.	-
Description EN	Slops in a sink filter is a factor of stimulating reproduction of various germs. Because of these germs caused by unclean sink filter, users can undergo dermatitis. This invention can attach to sink filter and can detect germs. If slops piled up over certain level, the slops are going bad and cause bad smell and can be breeding ground for germs. Then, pollution sensor starts to operate and note the pollution to user by flicker red light. So users can catch the pollution that they clean a sink filter in a right moment. And they can keep their kitchen clean. Sink filter or sink with slops/ Polluted spoon holder and a washing-up bowl with germs

And other kitchen supplies which need to prevent bad smell and germs including food poisoning bacteria.

Class no.

14



KR.4.	
Title	Commercialization of Ultra-high Sensitivity Measuring Instrument for the Technology of All- Stage Diabetes Based on Interstitial Liquid Blood Glucose Measurement
Authors	Choi Kyu Dong
Institution	DIAMESCO CO, Ltd
Patent no.	
Description EN	Using a carbon nanotube/conductive diamond sensor electrode which is 650 times more sensitive than existing glucose sensor, the measuring equipment can measure blood sugar by inserting the sensor electrode to interstitial fluid a few second instead of the blood collection process using lancet. Medical treatment, healthcare device - Considering the characteristic of diabetes increasing blood-sugar level, it is portable to individual. - It is easy to install and store in the medical centers or community service centers.
Class no.	4





Lebanon

by Lebanese Innovators Society

LB.1.	
Title	Cure or Disease? J.AN.E Application
Authors	Nour Eid Lattouf, Joy Lattouf, Adam Ralph Najem.
Institution	LIS (Lebanese Innovators Society)
Pantent	Pending
Description EN	Cure or Disease is a project that helps us to differentiate between different kinds of medicines: the originals, the generics and the counterfeits according to their efficiency and to shed light upon the problem of the generic medicines and especially the counterfeit ones because they can kill people who take them. So, to solve this dangerous problem, we decided to create J.A.N.E Application that helps us to know if the medicine we're buying is fake or not. First of all, this application will be downloaded on our mobile phones, and when we go to the pharmacy, we enter a serial number written on the box of the medicine and we will receive an instant message that informs us if the medicine we are buying is fake or not.
LB.2.	
LB.2. Title	Smart Agriculture.
LB.2. Title Authors	Smart Agriculture. Nour Lattouf, Lynn Kari, Ghassan Sleiman, Jad Hamawi, Omar Bahi
LB.2. Title Authors Institution	Smart Agriculture. Nour Lattouf, Lynn Kari, Ghassan Sleiman, Jad Hamawi, Omar Bahi LIS (Lebanese Innovators Society)
LB.2. Title Authors Institution Pantent	Smart Agriculture. Nour Lattouf, Lynn Kari, Ghassan Sleiman, Jad Hamawi, Omar Bahi LIS (Lebanese Innovators Society) Pending
LB.2. Title Authors Institution Pantent Description EN	Smart Agriculture. Nour Lattouf, Lynn Kari, Ghassan Sleiman, Jad Hamawi, Omar Bahi LIS (Lebanese Innovators Society) Pending This invention aims to improve the performance of the agriculture sector by using innovative and modern technology. It is about a montage that is continuously measuring: temperature, humidity, pH via sensors and gathers the information to send it in graph form to a control panel and then to the application to be able to grasp the needs of the plants for a better development.

Macau

MO.1.	
Title	Wake you up
Authors	HAN, LANG
Institution	Pui Ching Middle School, Macau
Description EN	Wake You Up (WYU) can help the people not to fall asleep. In the modern, people always have so many things to do that cannot go to bed early. When you feel sleepy, you may just press the buttons on WYU. Then the motors on WYU may stimulate the acupoints of your waist and make you feel good
Class no.	6. Mechanical Engineering - Metallurgy



Macedonia

MK.1.	
	Antimicrobial effect of essential oils of wild oregano
Title	& black cumin and wild garlicextract on pathogenic
	bacteria and candida albicans
Authors	Jovan Petreski, Petar Miladinov
Institution	Private Yahya Kemal College/Butel
Description EN	The purpose of this project is to identify if natural essential oils of wild oregano (Origanum vulgare), black cumin(Nigella sativa) and extract of wild garlic(Allium ursinum) have antimicrobial effects in vitro against some pathogenic bacteria(<i>Staphylococcus aureus</i> , including Methicilline resistant <i>S. aureus- MRSA</i>), <i>Streptococcus pneumoniae</i> , <i>Moraxella catarrhalis</i> , <i>Pseudomonas aeruginosa</i> , <i>Escherichia coli</i>) and <i>Candida albicans</i> , and comparison with the effect of some often used antibiotics. The initial hypothesis is that oregano and black cumin oils and garlic extracts have antimicrobial properties on pathogenic microbes mentioned above, and that it can be compared with the effect of some often used antibiotics. In order to support the hypothesis, series of bacterial and Candida cultures were incubated
	with 1,2 and 3 drops of oil/extract. Same cultures were incubated with some often used antibiotics. The results
	showed significant antibacterial and antifungal effect of
	supported: in case of garlic extract however no
	significant antimicrobial effect was demonstrated so the
	hypothesis wasn't supported
Class no.	Innovative Research



MK.2.	
Title	Building Robots
Authors	Marija Prckovska
Institution	Private Yahya Kemal College/Karpos
Description EN	Building robots is fun, easy and can be done by nearly anyone. My project is for beginners who want to introduce new knowledge of skills and robotics. My project is in two parts, first I will build a simple robot which will familiarise me with the fundamentals of robot building. And the second part of the project is that I will build an advanced telepresence robot using a microcontroller and sensors.
Class no.	Innovative Research
MK.3.	
Title	Natural homemade ointment – a new low cost solution for everyday burns
Authors	Aleksandra Danailova, Tamara Mitrovska
Institution	Yahya Kemal College
Description EN	The main objective of the project is to come up with a new effective low cost solution for everyday burns by the use of a natural homemade ointment. This product is introduced in order to ease and speed up the process of healing burns. In this particular project we are dealing mainly with first level of burns and step by step we are showing you how to use plants and other natural ingredients to treat them appropriately. All of that with no cost, as the ointment can be easily prepared in every household, everywhere in the world by the use of domestic natural ingredients-plants. We start by showing the principles of our method for production of the ointment. Afterwards, we present data collection from the chosen sample of 30 households and use a comparative method to analyse the data collected, by having a control group and a test group. At the end, we have completed additional related work and further comparison on a set of benchmarks, weighed the results obtained against the classical portfolio. The produced ointment is a proper solution for our problem as defined within our hypothesis. It has two main effects on the human skin, firstly the skin heals more quickly rather than not used and secondly the pain after burning is relieved more quickly. Another spin off effect can be that at the end the healing process results with no scar left on the skin.

MK.4.

Title

Protecting the skin from pollution while treating skin problems

Authors Sevde Leyla Tor, Ayse Sena Tekkoyun

Institution Private Yahya Kemal College/Butel

In 21st century world we see that nearly everybody has problem with their skins. The main reason is air pollution. Acne, scars, pores, blackheads... And, cosmetic industry is very popular because of this reason. Cleaning gels, creams, tonics, acne gels etc. We need so much products to treat our skin, but they are so expensive and just some of the people can afford it. Also, not just money, but; they are inorganic, they have lots of chemicals in it, they may cause allergen, they are not good for the nature, and they have lots of side effects. Even though they say they are natural, actually they are not... With this project, we wanted to solve this problem and help to people. Then we started to search about what older people used to clean their faces, what is beneficial for the skin but organic and raw. And we found these ingredients: Calendula Officinalis, Turmeric, Olive Oil, Clove, Lanoline, Ginger, Black Pepper, Hypericum oil, Cinnamon, Glycerol. We did **Description EN** experiment and mixed them in the laboratory. We waited 2 weeks and mixed it every single day to have better mixed cream. Then I tried it on my face. After 2 weeks I had more beautiful face. I could not see my blackheads and acnes... All the ingredients that we used are from our country, they are very cheap, natural, effective and accessible. This organic cream is for all skin types, it has no side effects, it cleans the blackhead, reduces spots and blemishes, kills the acne, balances the skin oil, cleans the face deeply, clean the big pores, moisturizers the skin. Because of the vellowishbrownish color, it is best used in the night. The conclusion drawn from our study clearly suggests that after applying 1 month daily you can see that your face is very very pure and naturally glowing. We believe that our technique will someday find its way into organic cosmetic as a cheap and no-sideeffect helper in the effort to ensure a protected environment.

Class no.

Innovative Research



MK.5.	
Title	The implementation of solar power throughout the world and its benefits to society economy, and nature
Authors	Joakim Jakovleski
Institution	Yahya Kemal College
Description EN Class no.	The project aims to explain and analyze certain aspects of solar power, as well as its unused potential in today's global energetic income as opposed to fossil fuels. Then it attempts to point out the best ways to overcome the obstacles to making solar power the main energy input for the population of the Earth. Innovative Research
MK 6	
Title	Fasiar life for Deaf Deaple
Authors	Stale Spageska
Authors	Drivete Vehye Kemel Cellege/Kernech
Description EN	 What is disability? A physical or mental condition that limits a person's movements, senses, or activities. Who are disabled people? Disabled people are people that have a shortage in their health. Although they have these shortages, they deserve to be treated like all of us. They also deserve normal conditions for a normal life. How are they treated? Those people are usually humiliated and discriminated by others. The world cares less about them and judge them by their look. People overall are not really interested in the situation of the ill person, unless they feel it on their own skin or it happens to someone close to them so they start to re-search and start being worried. Even thought it has not happened to me yet, I tried to help and found a solution about their biggest problem.
Class no.	Innovative Research


MIZ 7	
WIN./	٠

Title

Authors Institution

Saving The Endemic Species In Ohrid Lake And Cleaning Up The Heavy Metals From Their Habitat By Using Natural Waste Products Angela Petreska Yahya Kemal College

Ohrid Lake is one of the oldest lakes in Europe. It is a lake consisting fauna that cannot be found anywhere else, but in Ohrid Lake. The lake is situated near the city of Ohrid and Struga and is shared between Macedonia and Albania. The airport "St. Apostol Pavle" is located near the lake. The aim of my project was to show how the aero fuel of the aero planes affect the animal world in the lake and in order to protect our endemic species I wanted to find a way and a solution to make the water near the airport as clean as the water near highlands, **Description EN** far from the airport. To not harm the environment I used just natural waste product, the peels from different fruits, such as: apple, orange, tangerine, kiwi, and banana. I decided to use the peels because they contain polysaccharide called pectin which attracts the heavy metals. First of all, the existence of the heavy metals in the part of the lake near the airport was proven by me and I succeed in cleaning it up. The gradual loss of the endemic fish inspired me to prepare this project and save them as well.

Class no.

Innovative Research



MK.8.	
Title	Molika tree as excellent natural color source
Authors	Nadira Baneska, Filip Sekuloski
Institution	Yahya Kemal College
	People do not use paints a lot in everyday life but they
	do use things made of paint. A lot of things when are
	people
	which means they harm the environment.
	To disappear this problem and to help to nature we
	started researching to make a point using less chemical.
	We wanted to do something special for our country and
	use some plants that are endemic. We also wanted to
	find the most natural way to solve the problem without
	destroying our environment. Before everything it must
	be useful and economic for us at the same time it should
	be practical.
Description EN	A paint which is made of tree was the most logical way
- ···· · · · · · · · · · · · ·	for us. That is way we decided to make it from a regional plant
	which is called "MOLIKA". This tree is very height and
	there are a lot of branches fallen down. Because we do
	not want to cut and destroy the trees we took from the
	fallen branches and we used them. Because this tree
	leaves (needles) are not released color to water we used
	alcohol, vinegar and ash. There are many other mordant
	that we could
	use such as iron sulfate, copper sulfatebut we wanted
	to be economical as well. The paint that we get from the
	tree we made some experiment on some fabrics and
	materials and by this experiment we showed that we are
Class no	Succession. Innovative Research
C1455 110.	



МК.9.	
Title	Thermal and sound insulation by using CO2 in glass windows
Authors	Liljana Gligorova and Irena Stojkova
Institution	Yahya Kemal College
Description EN Class no.	There are many ways of demonstrating with experiment the thermal and sound insulation by using gas carbon dioxide of glass windows, but we desided to do simple experiment to show not only effects, but we think in a way to give some solution of this huge process in our daily lives. The rise in temperature in atmosphere is proportional with the rise the temperature in our houses. One way to decrease the temperature in our houses is if we have good window insulation. For that reason we use the standard glass window, only the difference is that between the two glasses we put a small amount of gas carbon-dioxide. The benefits of this procedure is first decreasing the temperature in our houses and second is that we have a better sound insulation. Innovative Research
MK.10.	
Title	Reducing The Effects Of Greenhouse Gases
Authors	Tanja Bogoeva, Sofija Spasova
Institution	Yahya Kemal College
	In the last 50 years people have become more aware about their influence on the environment. Some substances and phenomena are highlighted as guilty for the bad influence on people and the environment. In most cases, they are the so called greenhouse gases. One of them is carbon dioxide, or CO2. Carbon dioxide is the

Description EN

Class no.

efficient and economic. One of these materials is zeolite Innovative Research

most accused of causing the greenhouse effect on the whole planet. It is also proved that the inhalation of

carbon dioxide is bad for the organism. The negative effect of CO2 on the atmosphere can be demonstrated in many ways, but the control of the emission of CO2 is a bigger challenge. The methods of purification, so far, have several flaws (energy/power consumption, low efficiency, high price etc.). Because of these flaws, we are searching for new materials that will be available,

MK.11.

AuthorsFertilizersAuthorsKostadin Mitkov, Dona ShterjovaInstitutionYahya Kemal College The main goal of this project is to search for natural materia which can decompose in the soil with rabbit manure's addition Rabbit manure's function is increasing poor soil by improving soil structure. Making a natural fertilizer which is cheaper, and better for the environment will eliminate the fabrical fertilized step by step. We combined rabbit manure with rice straw and mushroom residues separately and we got many different results while observing different related parameters. The results showed us that the combination of rabbit manure with rice straw greatly affected the improvement of beans set growth, while the combination of rabbit manure with mushroom residues was a much more efficient method fullizing the material. Finally we got that rabbit manure	Title	Agricultural and Animal Wastes as Organic
AuthorsKostadin Mitkov, Dona ShterjovaInstitutionYahya Kemal College The main goal of this project is to search for natural materia which can decompose in the soil with rabbit manure's addition Rabbit manure's function is increasing poor soil by improvi- soil structure. Making a natural fertilizer which is cheaper, a better for the environment will eliminate the fabrical fertilized step by step. We combined rabbit manure with rice straw a mushroom residues separately and we got many different results while observing different related parameters. T results showed us that the combination of rabbit manure with rice straw greatly affected the improvement of beans se growth, while the combination of rabbit manure with mushroom residues was a much more efficient method fullizing the material. Finally we got that rabbit manure	1100	Fertilizers
 Institution Yahya Kemal College The main goal of this project is to search for natural materia which can decompose in the soil with rabbit manure's addition Rabbit manure's function is increasing poor soil by improvision soil structure. Making a natural fertilizer which is cheaper, and better for the environment will eliminate the fabrical fertilized step by step. We combined rabbit manure with rice straw and mushroom residues separately and we got many different results while observing different related parameters. The results showed us that the combination of rabbit manure with rice straw greatly affected the improvement of beans set growth, while the combination of rabbit manure with mushroom residues was a much more efficient method fulfilizing the material. Finally we got that rabbit manure 	Authors	Kostadin Mitkov, Dona Shterjova
The main goal of this project is to search for natural materia which can decompose in the soil with rabbit manure's addition Rabbit manure's function is increasing poor soil by improvi- soil structure. Making a natural fertilizer which is cheaper, at better for the environment will eliminate the fabrical fertilized step by step. We combined rabbit manure with rice straw and mushroom residues separately and we got many differen- results while observing different related parameters. The results showed us that the combination of rabbit manure wirice straw greatly affected the improvement of beans se growth, while the combination of rabbit manure wiring mushroom residues was a much more efficient method fullizing the material. Finally we got that rabbit manure	Institution	Yahya Kemal College
combined with rice straw will compost much more efficient	Description EN	The main goal of this project is to search for natural materials which can decompose in the soil with rabbit manure's addition. Rabbit manure's function is increasing poor soil by improving soil structure. Making a natural fertilizer which is cheaper, and better for the environment will eliminate the fabrical fertilizers step by step. We combined rabbit manure with rice straw and mushroom residues separately and we got many different results while observing different related parameters. The results showed us that the combination of rabbit manure with rice straw greatly affected the improvement of beans seed growth, while the combination of rabbit manure with mushroom residues was a much more efficient method for utilizing the material. Finally we got that rabbit manure combined with rice straw will compost much more efficiently than with mushroom residues
Class no.	Class no	Innovativa Dogoanah

Class no.

MK.12. Title Leaf Cutter ants decomposition of cellulose Authors Elena Doneva and Iva Gjurkova Institution Yahya Kemal College One of our purposes in this project is to again put in the center of focus the importance of ecosystems considering ourselves as part of it, regarding our important resources and people have no chance for its development and survival if they lose their environment which is the source of all our goods. Characteristics biodiversity conclusively associated with the development and condition of the people in a particular area so **Description EN** that the specific social phenomena inevitably reflect on the state of the ecosystem, and therefore biodiversity. For this reason, and related matters, events and trends can and must work only in the perception of the whole and valorization activities of all social activities integrated. This is why, the below implemented experiment will show the way that the ants leaf-cutters are implementing a great deal within the biodeviristy contributing to the eco system. Class no. **Innovative Research**

MK.13.

T' 41-	Improving the efficiency of coal thermal power stations
litte	by the use of a Stirling engine
Authors	Nikola Sekulovski
Institution	Private Yahya Kemal College/Karposh
Description EN	With cities at a constant growth the need for electrical power is greater and greater. More than half of the electrical power sources in the world are thermal power stations. They are found even more than the renewable sources of energy like hydropower stations. Thermal power stations burn fuels like coal, natural gas or some type of radio-active material like radium or polonium in order to produce steam. Later this steam is used to rotate a turbine which is connected to a generator. But, on the other hand thermal power stations produce enormous quantities of harmful gases. Apart from that, only 40% to 50% of the energy generated by thermal power stations is used for the production of electrical power, the rest of the energy is used for heating homes or it is not used at all. The Stirling engine was invented in the time of the industrial revolution, but today it is not widely used even though of its efficiency and quiet operation. The Stirling engine operates on the principle of temperature difference. When a gas is heated the molecules from which it is comprised move faster i.e. the gas expands and when the gas is cooled the molecules move slower i.e. the gas contracts. With the use of this device the efficiency of thermal power stations would improve. Fossil fuel power stations burn coal at around 1900 °C, also water is used to condense the steam into water. All of this means that there are suitable conditions for use of a Stirling

Class no.

engine

Innovative Research



MK.14.	
Title	Chemical deposition of α-Fe ₂ O ₃ thin films and their usage in the construction of air cleansing filters
Authors	Marija Gjeorgieva, Kalina Stefanova
Institution	Yahya Kemal College
Description EN	he increasing concentration of carbon dioxide gas in the atmosphere has led to the serious greenhouse effect. Problems as glacier melting, global warming and high air pollution are seen. The high air pollution, as a particular issue, is seriously affecting our city Skopje. The struggle of everyday life in Skopje has motivated us to look for a scientific solution to this enormous problem we have and its consequences. Gas sensors based on metal oxide semiconducting thin films can be constructed on the basis of conductivity changes in the course of the adsorption and desorption of particular gases at their surfaces. α -Fe ₂ O ₃ thin films have been found to be highly sensitive to some reducing gases, such as CO2. Our project presents two revolutionary strategies. The first one is the chemical solution method for deposition of α -Fe ₂ O ₃ thin films on microscopic glass substrates which need no sophisticated laboratory and second strategy is to use those α -Fe ₂ O ₃ thin films, the filter is composed of silica gel and activated carbon, which have the well-known properties of improving the air quality. The α -Fe ₂ O ₃ thin films are formed by thermal conversion of chemically deposited material. With our experiment we proved 60% absorption of CO2 by the α -Fe ₂ O ₃ thin films. For applicable way of using these thin films we built an air cleansing filter. In a whole we can proudly say that we constructed a filter with more than 90% efficiency.
Class no.	innovative kesearch

Malaysia

Represented by Malaysian Research & Innovation Society (MyRIS) & University Malaysia Perlis

MY.1.	
Title	Sn-Cu Transient Liquid Phase Die-Bonds For High-Power Electronic Devices
Authors	Mohd Arif Anuar Mohd Salleh*, Rita Mohd Said, Norainiza Saud
Institution	Universiti Malaysia Perlis
Patent no.	P1201100849
Description EN	In recent years, the demand for high-temperature electronics, which require highly reliable and stable functionality, has been rapidly increasing in particular for applications such as automotive, aerospace, deep-well drilling and energy production industries. Transient liquid phase (TLP) soldering is a bonding process that is undergoing extensive research and development as a potential alternative method to improve the reliability of solder joint in electronic assemblies also systems that operates at elevated temperature as well. TLP bonding or commonly termed as Solid Liquid Interdiffusion (SLID) process is a method that enable a solder joint to be processes at a lower temperature while still resulting in the formation of a joint with a higher re-melting point. The TLPS offers various processing advantages over conventional sintering including rapid densification, lower sintering or bonding temperatures, reduce microstructural coarsening, void free interface and reduce cost by avoiding the use of expensive pre-alloyed powders. The TLPS bonding material can either be in a preform or solder paste form. Normally, solder paste results in better wettability on substrates compared to preform solders. Among many different soldering alloy system, Cu/Sn is become the most widely studied lead-free soldering systems. In this work, Sn-Cu lead-free solder paste was used as solder material due to the relative simplicity of Cu/Sn system and the resulting reaction products responsible for the metallurgical bonding
Class no.	1



MY.2.	
	Infinity Spoon – Combating Plastic Pollution and
Title	Pineapple Crown Waste with a 100% Biodegradable
	Spoon
	Christine Ling Chun Hui, Alicia A/P Dixon, Janarnii
Authons	A/P Ramesh Kumar, Krisharini A/P Manimaran,
Authors	Koh@Kok Jie Yi, Tunku Aminah Zarimah Bt Tunku
	Abdul Samad
Institution	IJ Convent Secondary School Malaysia
Patent no.	-
Description EN	Infinity Spoon is an alternative to the conventional plastic spoon. It is aimed at reducing plastic pollution, a major problem we encounter every year. The word 'infinity' symbolises the endless uses and benefits of the spoon. The spoon is fully biodegradable and will play an important role in saving our earth. The spoon also utilises the use of pineapple crowns, one of the main agricultural wastes in Malaysia especially in our hometown Johor which is famous for its pineapple industry. The pineapple crowns provide further strength to the spoon. This proves that our product is simultaneously combating two major environmental problems - plastic pollution and the food waste problem. The spoon paves the way for everyone to make a small change in an effort to save our earth. We strongly believe that starting small is the essence of creating waves of great change. We hope that our product, through small change, can bring great impact to the community and the world.
Class no.	1



MY.3.	
Title	Photoelectrochemical Cell of ITO/Cu ₂ O/PVC-LiClO ₄
Authors	Dewi Suriyani Che Halin, Mohd Mustafa Al Bakri Abdullah, Mohd Arif Anuar Mohd Salleh
Institution	Universiti Malaysia Perlis
Patent no.	PI 2014700315
Description EN	Photoelectrochemical cells (PEC), often referred to as solar cells, produce electricity from solar energy or hydrogen by decomposing water by irradiation with light. PEC refers to the cell which converts energy contained in sunshine to electricity. PEC cells are devices having a photoelectrode, an electrolyte and counter electrode. The PEC of ITO/Cu ₂ O/PVC-LiClO ₄ /graphite used cuprous oxide (Cu ₂ O) as a photoelectrode, which is a p-type semiconductor with a cubic structure. Cu ₂ O is an attractive alternative due to its high absorption coefficient, non-toxicity and it can demonstrate energy conversion efficiency as high as 20%.
Class no.	2
MY.4.	
MY.4. Title	Inventory Tracking System (ITS)
MY.4. Title Authors	Inventory Tracking System (ITS) Dr. Mohd Subri Tahir, Zamri Ahmad, Fathinul Najib Ahmad Saad, Azizul Othman, Mohammad Faisal Abd Nasir, Nuha Atina A Ghafar
MY.4. Title Authors Institution	Inventory Tracking System (ITS) Dr. Mohd Subri Tahir, Zamri Ahmad, Fathinul Najib Ahmad Saad, Azizul Othman, Mohammad Faisal Abd Nasir, Nuha Atina A Ghafar Fakulti Kejuruteraan Elektrik UiTM Cawangan Pulau Pinang
MY.4. Title Authors Institution Patent no.	Inventory Tracking System (ITS) Dr. Mohd Subri Tahir, Zamri Ahmad, Fathinul Najib Ahmad Saad, Azizul Othman, Mohammad Faisal Abd Nasir, Nuha Atina A Ghafar Fakulti Kejuruteraan Elektrik UiTM Cawangan Pulau Pinang
MY.4. Title Authors Institution Patent no. Description EN	Inventory Tracking System (ITS) Dr. Mohd Subri Tahir, Zamri Ahmad, Fathinul Najib Ahmad Saad, Azizul Othman, Mohammad Faisal Abd Nasir, Nuha Atina A Ghafar Fakulti Kejuruteraan Elektrik UiTM Cawangan Pulau Pinang - Workers in an organization waste hundreds of hours each year searching for inventories files and documents that have been misplaced and pilfered. This will lead to reduce of efficiency of work and business performances. Thus, Inventory Tracking System (ITS) can be implemented in an organization to keep track of tons of files, inventories and assets. This ITS uses the Radio-Frequency Identification (RFID) tracking system will provide security instantly and end inventory headaches as well as eradicate inventory pilferage in retailing, hospitality industry, file management system and others.
MY.4. Title Authors Institution Patent no. Description EN Class no.	Inventory Tracking System (ITS) Dr. Mohd Subri Tahir, Zamri Ahmad, Fathinul Najib Ahmad Saad, Azizul Othman, Mohammad Faisal Abd Nasir, Nuha Atina A Ghafar Fakulti Kejuruteraan Elektrik UiTM Cawangan Pulau Pinang - Workers in an organization waste hundreds of hours each year searching for inventories files and documents that have been misplaced and pilfered. This will lead to reduce of efficiency of work and business performances. Thus, Inventory Tracking System (ITS) can be implemented in an organization to keep track of tons of files, inventories and assets. This ITS uses the Radio-Frequency Identification (RFID) tracking system will provide security instantly and end inventory headaches as well as eradicate inventory pilferage in retailing, hospitality industry, file management system and others. 14



MY.5.	
Title	Go-Chak! : Our Child Healthy Buddy
Authors	Mohamed Syazwan Osman, Rosmaliza Mohamed, Siti Solehah Omar, Siti Aisyah Sabutdin, Nur Izyan Nazihah Dusuki, Muhammad Hanis Azhar Sabri, Nur Bazilah Abu Bakar
To add to do a	Fakulti Kejuruteraan Kimia UiTM Cawangan Pulau
Institution	Pinang
Patent no. Description EN	/ Patent application No. PI201650041 The foods that we consumed today are mostly over-processed and preservative-filled compared to our previous generation. Recent days, people favor instant and fast-foods due to its convenience in order to save people times and money. Besides, kids were surrounded with unhealthy food and lack of proper nutrition which lead to serious health problems. Aforementioned, it is important challenge for parent in this current situation to ensure the healthy growth of the children. Children that are less than 6 years old undergo development in critical phase to ensure the supplied nutritious are enough for their development of growth. World health organization (WHO) reported approximately 45% of children died under the age of 5 years old due to malnutrition. On the other hand, according to US National Health and Nutrition Examination Survey, approximately 40 percent of US population above 2 months of age is taking some kind of dietary supplements. Intake of splendid foods from nourishing sources is assumed enable to improve dietary supplements and to encourage healthier growth among kids. Therefore, we proposed an innovation called Go-Chak! to assist parents with guidelines on appropriate foods intake and healthy supplement for their children. In order to preserve its nutritional benefits and quality, Go-Chak! Innovative supplements were prepared in natural way with controlled processing. Go-Chak! could possibly be an appealing alternative by parents to ensure high
	quality and sustainable of life future generation is always been
	greatest significance.
Class no.	4



MY.6.	
Title	Kit-Wash: Green Water Treatment System for Treating Numerous Water Contaminants
Authors	Mohamed Syazwan Osman, Dr. Mohd Subri Tahir, Zamri Ahmad, Muhammad Salman Samin, Nur Izyan Nazihah Dusuki, Intan Zulaikha Mat Zaki, Nurul Wahida Shariful Azhar
Institution	Fakulti Kejuruteraan Kimia UiTM Cawangan Pulau Pinang
Patent no.	/ Patent application No. LY2016301953
Description EN	Water plays a vital role in our life. The water quality will greatly influence the human wellbeing and environment. In several parts of the world, the quality of water is at unsatisfactory level due to the effluent from industries as a result of rapid industrial development and lack of concern about environmental values. It is known that the constituents in wastewater proven to be harmful to human health as well as aquatic life. Treating wastewater is crucial for the sustainability of our future generation. Coagulation and adsorption process is widely used along with for treating wastewaters from domestic and commercial sites. Various chemicals have been used nowadays to treat the contaminants in the water stream. This is deemed to potentially cause adverse health effect in the long run as residue of it might reach end user consumers and aquatic life. As an alternative, to treat the wastewater without detrimental side effect to our environment, we propose green, environmental friendly agricultural wastes based materials named as Kit-Wash that derived from vegetables and fruits waste which is renewable and biodegradable. We envisaged this will promote sustainable solution for wastewater decontamination fields.

Class no.



MY.7.	
Title	ORLEACH Pure Glass : A Process To Transform Rice Husk To High Purity Glass Product
Authors	Faizul Che Pa, Nur Haslinda Mohamed Muzni, Ruhiyuddin M. Zaki, Murizam Darus
Institution	Universiti Malaysia Perlis
Patent no.	PI 2013701444
Description EN	Rice husks is an agricultural wastes produced in large amount with high-purity of silica (SiO_2) contents. This product focused on the efficiency of acid leaching treatment on rice husk to produce high-purity silica. Citric acid; C6H8O7 was used as a leaching agent. The rice husk was leached with citric acid to increase the silica content. Chemical composition analysis shows high amorphous silica content which is 98.47% with low metallic impurities at 1.0M C6H8O7, 70 °C. Fragmentation of TRH into small pieces after acid leaching is seen where there is significant increase in the exposed surface areas. High-purity amorphous silica with more than 98% was prepared via citric acid leaching treatment and combustion process.
Class no.	1



MV 0	
IVI Y .ð.	
Title	Open Wall – Replacement for a Cable Wall
	Adi Izhar Che Ani, Dr Mohd Subri Tahir, Rosmaliza
Authors	Mohamed, Azizul Othman, Nur Bazilah Abu Bakar,
	Muhammad Hanis Azhar Sabri
T	Fakulti Kejuruteraan Elektrik UiTM Cawangan
Institution	Pulau Pinang
Patent no.	-
Description EN	Open Wall offers wall that free from conventional electrical wiring that used to control home switches. It used smart switches that able to remotely control any home appliances via radio frequency (RF) and Bluetooth protocol. The smart switches connected to a companion hub that can simultaneously control multiple home appliances. This new concept for home switch allows flexibility for home walls to enhance cost saving and interior design
Class no.	14



MY.9.	
Title	Powered Knee Orthosis (PKO)
	Adi Izhar Che Ani, Ahmad Syamim Yusof, PM Ir Dr
Authors	Zakaria Hussain, Dr Fazah Akthar Hanapiah, Dr Nor
	Hazimi Hamzah, Nurul Wahida Shariful Azhar
T 4•4 4•	Fakulti Kejuruteraan Elektrik UiTM Cawangan
Institution	Pulau Pinang
Patent no.	/ Patent application No.
	Ischemic stroke occur as a result from obstruction within
	a blood vessel supplying blood to the brain lead to
	paralyze half of the body known as hemiplegia. One of
	the spasticity in hemiplegia is difficulty to bend the knee
Description EN	during gait which known as hemiplegic gait. The
-	innovation project called Powered Knee Orthosis (PKO)
	has powerful DC motor attached at the knee joint and
	with proper control technique will help hemiplegia
	patient to bend their knee during rehabilitation.
Class no.	4



MY.10.	
Title	QQmin Gel: Innovative Dermal Protector
	Mohamed Syazwan Osman, Nurdiana Zainuddin, Siti
Anthone	Aisyah Sabutdin, Raja Hasnida Raja Hashim, Atiqah
Authors	Abdul Hadi, Nurul Wahida Shariful Azhar, Intan
	Zulaikha Mat Zaki
Institution	Fakulti Kejuruteraan Kimia UiTM Cawangan Pulau
Institution	Pinang
Patent no.	/ Patent application No. PI2016500050
	Apparently, skin is one of the important tissues to human being that
	protect us from external contamination. As results, skins are typically
	tendency for human to be contaminated with germs, dust and others is
	tremendous and potential health issues such as rashness, dermatitis etc
	is highly anticipated. Various efforts have been made to combat this
	issue with the introduction of drugs in the shape of cream in the
	market. Nonetheless, readily available products are deemed costly and susceptible from unwarranted adverse health effects. Recently, there is
	an enormous demand to go back to nature to sought complimentary
	and medicinal plants to combat this issue. Not only there are more
D 1 (1) D 1	affordable and less stringent regulatory roadblocks, this alternative
Description EN	medicine possesses significant medicinal benefits that react in
	innovation called OOmin vel derived from locally abundant Turmeric
	is a spice derived from the rhizomes of Curcuma longa, which is a
	member of the ginger family (Zingiberaceae). Various study and
	researches have shown that turmeric has exhibited antioxidant, anti-
	inflammatory, antiviral and antifungal actions. Studies have also shown that turmeric is not toxic to humans. This interesting rhizome
	exerts anti-inflammatory activity by inhibition of a number of different
	molecules that play an important role in inflammation. Thus, with
	novel formulation, QQmin gel might enhance and improve skin
	qualities and overall comfort and quality health skin experiences to



MY.11.	
Title	Fabrication of Kaolin Geopolymer Ceramics with Addition of Ultra High Molecular Weight Polyethylene (UHMWPE) as Binder via Powder
A (1	Metallurgy Method Romisuhani Ahmad, Mohd Mustafa Al Bakri
Authors	Abdullah, Kamarudin Hussin, Nur Ain Jaya, Che Mohd Ruzaidi Chazali
Institution	Universiti Malavsia Perlis
Patent no.	MY-148054-A
Description EN	The fabrication and the properties of lightweight kaolin geopolymer ceramics with addition of Ultra High Molecular Weight Polyethylene (UHMWPE), to enhance high strength and toughness.Geopolymer based on alumina and silica polysialate units were synthesized at room temperature from kaolin and sodium silicate in a highly alkaline medium, followed by curing and drying at 80 °C. The UHMWPE was added to the optimum kaolin geopolymer ceramics based on mechanical performance, phase and microstructure analysis with the concentration of NaOH, solid/liquid and Na ₂ SiO ₃ /NaOH ratio of 12 M, 1.0 and 0.24 respectively. Kaolin geopolymer powders with addition of UHMWPE content of 2, 4, 6 and 8 (wt.%) were pressed into pellets followed by sintering at 1200 °C. At this temperature, the amorphous phase of geopolymer was fully crystallized. The highest flexural strength of kaolin geopolymer ceramics was achieved with addition of 4 wt.% of UHMWPE which is 92.1 MPa. The microstructure of the investigated materials was considerably affected by the content of the UHMWPE. The phase analysis for kaolin geopolymer ceramics with addition of uHMWPE was similar to the kaolin geopolymer ceramics with addition of UHMWPE without UHMWPE indicates that the incorporation of a little amount of UHMWPE does not affect the structure feature of geopolymer. IR spectra showed the disappearance of water band after sintering at high temperature. The optimum performance of kaolin geopolymer ceramics with addition of UHMWPE reduced the optimum sintering temperature compared to the conventional ceramics making process.

Class no.

7

MY.12.	
Title	Self – Wheel Alignment Checker (S-WAC)
	Nor Haniza Bakhtiar Jemily, Dr Mohd Subri Tahir,
Authors	Nurdiana Zainuddin, Ahmad Syamim Yusof, Nuha
	Atina A Ghafar, Mohammad Faisal Abd Nasir
T 1•1 1•	Fakulti Kejuruteraan Elektrik UiTM Cawangan
Institution	Pulau Pinang
Patent no.	Patent application No.
	An innovative design known as S-WAC that can help
	users to self-check their wheel alignment and visit a
	workshop only whenever necessary. This S-WAC comes
	with a pair of T-shape tools, one is equipped a laser
	pointer and another with an LDR sensor to align level
Description EN	detection. S-WAC will be attached to both sides of the
	vehicle wheel, front and back wheel. It will then be
	connected to a phone application that will notify the
	users whether wheel alignment is necessary or not. Most
	importantly, S-WAC is affordable and money savyy.
Class no.	14
	* 1



Morocco

Represented by Union of Inventors

MA.1.	
Title	Senstenna
Authors	Hafid Griguer, Monsef Benlazaar, Youssef Aiboud, Mbarek EL Missaoui, Marwane Rhouni
Institution	SmartiLab EMSI
Patent no.	PCT/MA2016/000022
Description EN	Already 20 billion IoT devices in 2016 and 50 billion by 2020, sensing the nearby environment and collecting data while improving our life's comfort. In front of this great growth, IoT industry is facing challenges in terms of high production cost and high-energy consumption. Thus, to meet these challenges, we present Senstenna IoT, the SENSORLESS IoT that uses only RF transceiver system for obstacle detection. Then low production cost, high battery autonomy and a greater time to market. Senstenna IoT has many applications, such as Smart parking, indoor positioning, geofencing, branding, etc.
Class no	14 / Internet Of Things

Class no.

14 / Internet Of Things



MA.2	
Title	Flexible Metamaterial Absorber
Authors	H. Griguer, Manos M. Tentzeris, A. Nauroze, M. Drissi
	SmartiLab EMSI - Morocco
T	School of Electrical and Computer Engineering,
Institution	Georgia Institute of Technology, Atlanta - USA.
	UEB, INSA de Rennes, IETR, Rennes - France.
Patent no.	In progress
Description EN	With the development of wireless energy transfer and communication systems, especially in wearable and IoT configurations, the ambient ElectroMagnetic (EM) radiation sources might be extremely disruptive to the human environment. Then, the use of an absorbent material for the human body protection seems urgent. Our Invention is an ultra-thin flexible absorber based on a novel metamaterial unit cell designed for human body protection from EM field Hazard and EM Thermal Impact. The simulation results show that the proposed Flexible Metamaterial Absorber features high absorption peak at the most common ambient EM
Class no.	radiations. 4 / 12



Moldova

Botanical Garden of Academy of Science Republic Moldova

MD.1.	
Title	Innovative technology for founding meliferous and energy plantations
Authors	Victor ȚÎȚEI, Alexandru TELEUȚĂ
Institution	Botanical Garden (Institute) of Academy of Sciences of Moldova
Patent no.	204/2016.05.31; 207/2016.05.31; 209/2016.05.31 New perennial plants varieties created in Botanical Garden (Institute) of ASM, registered in the Catalogue of Plant Varieties and patented by the State Agency on Intellectual Property (AGEPI) of the Republic of Moldova, are used for founding meliferous - energy plantations: - cv. "Energo" <i>Sida hermaphrodita</i> Rusby, catalog registration no. 0723130/2014 and patent no. 204 /2016.05.31. Medium-late melliferous plant (end of June to middle of September): 50-60 kg/ha honey. Green mass yield 104-112 t/ha, methane production 260 m3/t organic dry matter. Solid fuel with gross calorific value of 18.6 MJ/kg dry matter and 1.5% of ash, the potential production is 360 GJ/ha/year. - cv. "Gigant" <i>Polygonum sachalinense</i> Fr. Schmidt, catalog registration no. 2492625/ 2012 and patent no. 207 /2016.05.31, late melliferous plant (end of July to middle of September): 30 -60 kg/ha honey. Green mass yield 124 - 148 t/ha, methane production 236-250 m3/t organic dry matter. Solid fuel with gross calorific value of 19.3 -19.5 MJ/kg dry matter, the potential production is 390 GJ/ha/year, equivalent to 14 t of coal or 9.3 t of conventional oil. - cv. "Vital" <i>Silphium perfoliatum</i> L., catalog registration no. 2502626/ 2012 and patent no. 209 /2016.05.311, medium melliferous plant (middle of June to August): 120 -190 kg/ha honey. Green mass yield 136 - 142 t/ha, methane production 256 - 295m3/t organic dry matter. Solid fuel with gross
	production is 300-325 GJ/ha/year.

Class no.



MD.2.	
Title	VARIETIES OF ORNAMENTAL PLANTS: Chrysanthemum indicum 'FĂCLIA'
Authors	Voineac Ina, PhD, Gargalîc Svetlana, trainee researcher
Institution	BOTANICAL GARDEN (INSTITUTE) OF THE ACADEMY OF SCIENCES OF MOLDOVA
Patent no.	It was registered at the State Agency on Intellectual Property of the Republic of Moldova, in order to be patented: v 20140025, y. 2014

The variety was obtained in the Botanical Garden (Institute) of the Academy of Sciences of Moldova by hybridizing the varieties Zvezdopad.

Description of the variety. Făclia - has simple, chamomile-like inflorescences, 3-4 cm in diameter, red with burgundy hues, the petals (ray flowers), on the outside, are matte, with a silvery tint and, inside, are yellow with a greenish tint at the base. The tubular florets are bright yellow with greenish tint. The inflorescences are found all over the crown. This variety is globe-shaped, 25-30 cm tall, densely leafy. The leaves are bright green, medium-sized; the leaf blade is indented on 1/3, a little pointed at the tip, slightly pubescent on the inner side. It blooms from late September to mid-November. The plant winters well without shelter and is drought resistant.
 Use: for cut flowers in various floral decorations, in landscape planning: flower beds

landscape planning: flower beds, mixed flower beds, solitary groups, on the banks of water basins; can be promoted as a container plant.

Class no. **3.** Agriculture and Food Industry



MD.3.	
Title	VARIETIES OF ORNAMENTAL PLANTS: Chrysanthemum indicum 'ZEFIR'
Authors	Voineac Ina, PhD, Gargalîc Svetlana, trainee researcher
Institution	BOTANICAL GARDEN (INSTITUTE) OF THE ACADEMY OF SCIENCES OF MOLDOVA
Patent no.	It was registered at the State Agency on Intellectual Property of the Republic of Moldova, in order to be patented: v 20140024, y. 2014
Description EN	 The variety was obtained in the Botanical Garden (Institute) of the Academy of Sciences of Moldova by hybridizing the varieties Zvezdopad. Description of the variety. Zephyr - has velvety, pale pink inflorescences, 4-5 cm in diameter. It blooms abundantly, there are up to 40 inflorescences on, a flowering shoot. The shoots are resistant to flattening. The plant grows up to 75 cm tall, is of pyramidal shape, compact, with medium foliage. The leaves are medium sized (5-6 cm long and 2-4 cm wide), dark green, thick, slightly pubescent on the outside and slightly pointed at the tip. It blooms from early September until November. It is resistant to diseases and pests, frost and drought tolerant, reproduces well (produces a lot of root sprouts). Use: 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.

Class no. **3.** Agriculture and Food Industry



Technical University of Moldova

MD.4.	
Title	Device for laboratory measurements and control of temperature.
	DOROGAN Valerian; ZAPOROJAN Sergiu;
Authors	MUNTEANU Eugeniu; SECRIERU Vitalie;
	DOROGAN Andrei.
Institution	Technical University of Moldova
Patent no.	Pending patent application
Description EN	The device is used for teaching and research purposes in the synthesis process of various materials. It is manufactured based on ATmega microcontroller and DS18B20 digital temperature sensor, being equipped with a command panel assembled via Q-touch method, which assures high reliability for an infinite number of keystrokes, being used in aggressive environments. It permits recording and display of measured data on the integrated screen panel or transmission and PC processing of the data. The SW component permits to continuously generate on the screen the dependencies measured in graphic form or printing them on the paper.
Class no.	5, 10

MD.5.	
Title	Device for cleaning exhaust gas from soot particles (EG) for internal combustion engine
Authors	PETROV Oleg, MANOLI Ilie, DINTU Sergiu, BEIU Ilie, NASIROV Rif
Institution	Technical University of Moldova
Patent no.	a20170048
Description EN	The invention refers to the device for cleaning exhaust gas from soot particles (EG) of internal combustion engine and can be used in motor industry to protect the atmosphere from contamination with toxic components of exhaust gases from internal combustion engines. The aim of the invention is to improve the efficiency of cleaning exhaust gases of an internal combution engine from liquid and solid fractions, especially the capture of

carcinogenic nano particles of soot and combustion in a combustion chamber using the Exhaust Gas Recirculation (EGR) system. 1, 6

Class no.

MD.6.	
	Device for measurement of the microwire core
Title	diameter and the glass coating thickness by using the
	optical transparency phenomena.
	DOROGAN Valerian; ZAPOROJAN Sergiu;
Authors	MUNTEANU Eugeniu; LARIN Vladimir; PAVEL
	Victor
Institution	Technical University of Moldova
T	MD 941 Z
Patent no.	MD 942 Z
Description EN	The device include using two collimating sets with visible light and two collimating sets with of ultraviolet light, which include: light-emitting lens, collimating lens, optical shutters of rectangular or oval shapes, focusing lens for the light photo-detectors. The measuring method is based on light flows attenuation by microwire in the way as there are generated photocurrents of various values, depending on the microwire coat thickness and core diameter. The device include blocks of differential amplification which amplifies and filter the photocurrents, creates electrical signals with various voltage values, are converted into digital values used by the calculation unit for calculation of the core diameter and the microwire coat thickness. 5, 10

1,110,11,	
Title	Optical detectors based on birefringent ZnP ₂ -C ⁵ _{2h} crystals
Authors	I.G. Stamov, N.N. Sîrbu, A.V. Dorogan
Institution	Technical University of Moldova
Patent no.	Pending patent application
Description EN	The spectral dependences of refractive indexes $n_0(n^{\perp}), n_e(n^{\parallel})$ and $\Delta n = n_0(n^{\perp}) - n_e(n^{\parallel})$ had been studied in $ZnP_2 - C_{2h}^5$ crystals and an intersection of $n_0(n^{\perp})$ and

	$n_e(n^{\parallel})$ was found for $\lambda_0=0.906\mu$ m. The electrical,
	spectral and azimuth characteristics of monolith $n-p-$
	and $Me - n - p - ZnP_2 - C_{2k}^5$, and
	discrete $ZnP_2 - C_{2k}^5 - ZnP_2 - D_e^4$ structures had been,
	also, studied. These crystals possess positive dispersion $\Delta n = n_0 (n^{\perp}) - n_s (n^{\parallel})$ for $\lambda > \lambda_0$ and a negative dispersion
	for $\lambda < \lambda_{2}$. This gives possibilities to elaborate and
	manufacture optical detectors sensible on polarized light and make a prognosis on the usage perspective of these devices.
Class no.	5, 10
MD.8.	
Title	Excitonic polaritons in ZnAs ₂ nanocrystals
Authors	I.G. Stamov, N.N. Sîrbu, V.V. Ursaki, A.V. Dorogan
Institution	Technical University of Moldova
Patent no.	Pending patent application
	The proposed method of high resolution spectroscopy gives the possibility to study the spectral dependencies of ordinary and extraordinary dispersion of refractive index for ZnAs ₂ crystals in the region of excitonic transitions. The method permits to estimate the magnitudes of electrons $m_c^* = 0.10m_0$ and holes
Description EN	$m_{v1}^* = 0.89m_0$ effective masses. It was observed the change
	of holes mass m* from 1.02m down to 0.55m with
	m_{ν_1} from $1.05m_0$ down to $0.55m_0$ with

temperature change nom rok up to 230k. The
fundamental states and parameters of C and D excitons
which are formed by the $V_3 - C_1$ and $V_4 - C_1$ zones, had
been determined.
5 10

Class no. 5, 10

MD.9.

Title	Obtainment of jam and confiture type products from fruits with programmed sweet taste grade
	n uns with programmed sweet taste grade
Authors	D. Paladi, P. Tatarov, N. Mija
Institution	Technical University of Moldova
Patent no.	Pending patent application
Description EN	The process includes the preparation, cooking of the mix

	(raw material, sucrose, and gelling agent), packaging and pasteurization of finite product. A product with programmed sweet taste grade has been obtained, which iis included in the limits of 15 up to 20 units, depending on total acidity, pH value of the raw material and on the dry substance content hydro soluble in jam, comfiture.
Class no.	3
MD.10.	
Title	Device of control and maintenance of the thermal
	regime in stratification installations.
	DOROGAN Valerian; ZAPOROJAN Sergiu;
Authors	MUNTEANU Eugeniu; SECRIERU Vitalie;
	DOROGAN Andrei.
Institution	Technical University of Moldova
Patent no.	The device is consisted of a temperature sensor and a
Description EN Class no.	block for controlling the heater. The device operation is based on temperature measurement of substitute soil and control of low voltage heater. Thus, the overheat of trees grafting region is excluded and the maintenance dynamics of the treatment temperature is provided. The device is manufactured based on ATmega microcontroller and a DS18B20 digital sensor. It is equipped also with a keyboard with Q-touch technology. It tracks the break and shortcuts for the heater circuit with light and sound alert signal output. It offers the possibility of autonomous operation or as a part of a local network. 5, 10
MD 11	
WID.11.	The development of children's cognitive shilities by
Title	the new concepts of book editions with interactive
1100	elements
Authors	Cristina Grati, Viorica Cazac, Igor Vlas, Ion Osoba
Institution	Technical University of Moldova
Patent no.	-
Description EN	The interest and steps accorded to the continuous improving of educational quality, for the personal formation of children which includes the project

"Creation of book editions with interactive elements for the development of children's cognitive abilities" is in the real focus of users and bookmakers, who are involved in provision of cognitive values in touch with aesthetics and intelligence.

The aestetic and constructive concept of the congnitive ensemble for children consists of: a book edition for children based on the development of cognitive abilities by different methods materialized in games for children with an obvious description of all the necessary steps to be realized and all the particular interactive elements; the kit of interactive engraved wooden elements, the kit of interactive polychrome wooden elements which would be integrated and a wooden pen in a shape of laser cut and engraved book edition.



Class no.

MD.12.

Title	The assurance and maintaining of interest towards books by intelligent strategies of their promotion
Authors	Ina Moroșanu, Viorica Cazac, Alexandra Osoba
Institution	Technical University of Moldova
Patent no.	
Description EN	The survey presents the aesthetic and constructive concept of a specialized book promotion magazine sorted by styles and themes. Each category of a book edition is defined by the promotional outgoing element of a category incorporated in a page. This allows to define the group of categories of book editions, being a leading element and a bookmark in the same time.
	INTERNATIONAL EXHIBITS
	171

The conceptual news of specialized magazines simultaneous with aesthetics originality consists of involved constructive solutions. Thus, in relation to the traditional magazines, the created magazines are characterized by outgoing elements incorporated in the interior pages. The dimensional features of those outgoing elements of magazine were established using the proportional system called "golden ratio" or "golden section". Besides their aesthetic predestination, the outgoing elements have an important functional role as elements of content and promotion. The constitutive element of the magazine content is replaced with outgoing elements, that in the same time eases the reader's access to the section of interest. The mock-up of interior pages of the magazine is made having as beginning points such elements as: blank space, textual elements, images/photographies and graphic analyzing different methods of layout and using items. various softwares



Class no.

MD.13.	
Title	Process for microencapsulation of food and cosmetic oil compositions
Authors	BAERLE Alexei, TATAROV Pavel, DIMOVA Olga, COJOHARI Cristina
Institution	Technical University of Moldova
Patent no.	MD-557/ Patent application No. s 2012 0073
Description EN	The microencapsulation of food and cosmetic oil compositions protects them from oxidative degradation and to maintain the oil-soluble biologically active substances in the natural state. The process, according to the invention, comprises the preparation of food and cosmetic oil composition containing oil-soluble substances and 1.010.0% of oil extract of tea, its emulsification in 3.04.0% aqueous gelatin solution at the temperature of 7590°C, treatment with 1216% solution of sodium

sulfate in the ratio of 1:1, double washing of formed microcapsules with aqueous extract of marine algae and their subsequent separation.

Class no. 3+4

MD.14.

Title	Process for producing meat bread
Authors	SCRIPCARI Ion; MACARI Artur; TATAROV Pavel; GUDIMA Angela
Institution	Technical University of Moldova
Patent no.	MD-947/ Patent application No. 2015.02.25
	The invention relates to food industry, namely to a process for producing meat bread. The process, according to the invention, provides for the preparation of raw material by cooking beef meat for 2025 min, blanching pork liver for 1520 min at 90100°C, cooling and crushing thereof
Description	together with pork lard, afterwards there follows cutting of
EN	the prepared raw material with the addition of walnut meal containing 3545 % of proteins, meat cooking broth, eggs, salt, sugar, black pepper, cardamom or nutmeg and fresh dill, dosage in forms and baking, at the same time the walnut meal is added in an amount of $5,09,0$ %, and the pork liver is taken in an amount of 1525% .

Class no.

3



"N.Testemiteanu" State Medical and Pharmaceutical University

MD.15.	
Title	Method for treating exudative otitis media in children
Authors	First Author, DIACOVA Svetlana,
1 unior 5	Second Author, ABABII Ion
Institution	Nicolae Testemitanu State University of Medicine and
Potent no	MD 674: Patent application No : $s 2013 0044 / 2013 03 07$
Description EN	The method, according to the invention, consists in that under general anesthesia is made an incision of the tympanic membrane in the anteroposterior quadrant, then is performed a semi-oval incision of a length of 34 mm in the posteroinferior quadrant, through which is aspirated the pathological content by means of an aspirator, afterwards is carried out the revision of the tympanic cavity, then under the control of otomicroscope is introduced and fixed a
Class no.	tympanostomy tube for a period of 1218 months.4. Medicine - Health Care - Cosmetics
MD.16.	
Title	Method for plasty of infected tissular defect in the calcanean region with vascularized flap VEREGA Grigore dr hab st med FEGHIU Leonid dr
Authors	șt. med, RUDEI Mihail, FEGHIU Ana Maria
Institution	<i>Nicolae Testemitanu</i> State University of Medicine and Pharmacy of the Republic of Moldova
Patent no.	MD 1047/2017.01.31
Description EN	The invention relates to medicine, in particular to traumatology and orthopedics, and can be used for plasty of infected tissular defect in the calcanean region with vascularized flap. Summary of the invention consists in that it is performed the Doppler graphical examination to detect the projections of perforated musculocutaneous vessels of the posterior tibial artery, are removed the devitalized tissues in the defect region, is performed a longitudinal cutaneous incision on the posteromedial surface of the leg, behind the rear edge of the tibia to detect the perforated vessels, after determining the dimensions of the defect it is prepared a flap, which includes soft tissues, including a portion of the deep fascia, and a bone graft from the tibia of a dimension of 2 x 5 cm with the perforated vessel, then the flap is

rotated by 180° with the bone fragment located in the calcaneum defect and is fixed with the help of 1...2 screws, the Achilles tendon is sutured to the bone fragment, then the wound is sutured in layers, is drained and is applied a plaster immobilization.

4

Class no.

MD.17.

Title	Method for surgical treatment of pelvic fractures
	associated with sigmoid and / or rectum injury
Authors	KUSTUROV Vladimir, MD, PhD; ROJNOVEANU
Autions	Gheorghe, MD, PhD; KUSTUROVA Anna, MD
Institution	State Medical and Pharmaceutical University "Nicolae
institution	Testemitanu"
Patent no.	MD 1033 / Patent application No. s 2015 0110 from 2015.08.05
	The invention relates to medicine, and can be used for surgical
	treatment of pelvic fractures associated with
	sigmoid and/or straight intestine injury.
	Proposed method consists of: after median laparotomy, abdominal
	cavity revision, the sigmoid intestine is mobilized, is resected the
	affected segment of the bowels, is formed the rectal stump with its
	fixation to the anterior abdominal wall. Institution of colostomy is
	performed in the left hypochondrium, 1.5 cm lateral to the rectus
	abdominis muscle, where optimal conditions for the functioning of
	colostomy are created. Then pins are introduced in the iliac crests
Deservention	and are fixed to the external pelvis system, afterwards the dosing
Description	reposition of fragments of the pelvis is performed to their full
LIN	adaptation,
	The advantages: anatomical delimitation of surgical intervention
	zones, that allows stable fixation of the pelvic ring, aseptic
	conditions during the dressing around colostomy, installation and
	changing of fecal mass collector, possibility of repeated bone
	reduction, complications prevention. Early mobilization of the
	patients decreases hospitalization period, quicker recovery of
	intestine passage and improves treatment outcomes in difficult
	clinical cases.
	Fields of application: medicine, especially in surgery and
	traumatology

Class no.

4

MD.18.	
Title	Method for assessing the risk of severe cardiovascular autonomic neuropathy in type 1 diabetes mellitus
Authors	Cristina Rizov, Constantin Jucovschi
Institution	Nicolae Testemitanu State University of Medicine And Pharmacy of The Republic of Moldova
Patent no.	No. 1021/2015
Description EN	The method consists in assessing the risk of severe cardiovascular autonomic neuropathy (CAN) in type 1 diabetes, according to the clinical examination, with the following parameters determination: form of diabetic retinopathy (RD), degree of diabetic nephropathy (ND), visual acuity (AV), dyspnea on exertion (DE), sweating (T), irritability (I), orthostatic hypotension (HO), headache (C) and calculation of discriminant function (F) according to formula: $F=8,709+0,850\times RD+0,783\times ND+3,199\times AV+1,482\times DE-3,372\times T+1,5127\times I-2,167\times HO+1,700\times C$. Where F> 0 prognosis is unfavorable, and F <0 favorable prognosis. The advantage of this method is to increase the accuracy of assessing the risk of severe cardiovascular autonomic neuropathy. This method is easy to apply, requires no medical equipment and allow early detection of patients at high risk for severe CAN, which requires attention to this category of patients with correcting therapeutic program, highlighting the dynamic and avoidance of CAN complications. Fields of application: in medicine, especially in endocrinology.
Class no.	4
MD.19.	
Title	Method for predicting the risk of appearance of cardiovascular autonomic neuropathy in type 1 diabetes mellitus
Authors	Cristina Rizov, Lorina Vudu
Institution	Nicolae Testemitanu State University of Medicine And Pharmacy of The Republic of Moldova
Patent no.	No. 1046/2015
Description EN	The method consists in predicting the occurrence of cardiac autonomic neuropathy (CAN), in the base of clinical examination in which is collected data on diabetes duration (DD), diabetic ketoacidosis frequency (CAD) and diabetic nephropathy severity (DN) and discriminant function (F) is

Class no.	calculated according to the formula: $F=-4,972+1,767\times ND+1,530\times CAD+0,078\times DD$. Where F>0 prognosis is unfavorable, and F <0 favorable prognosis. The advantage of this method is to increase the accuracy of predicting the risk of cardiac autonomic neuropathy appearance in patients with type 1 diabetes. Proposed method is cheap, easy to apply and requires no medical equipment. It allows early detection of patients with increased risk of CAN. Fields of application: in medicine, especially in endocrinology. 4
MD.20	
Title	Treatment method of migraine attacks in patients with episodic migraine
Authors Institution	Șcerbatiuc Cristina, Bendelic Eugen, Moldovanu Ion
Patent no.	MD1018
	The invention relates to medicine, particularly to neurology and can be used for the treatment of migraine attacks in patients with episodic migraine. Migraine crisis is often accompanied by autonomic dysfunction (nausea, vomiting), because of this, oral administration of drugs is impossible, while parenteral administration is accompanied by certain difficulties. At the onset of the first warning signs of headache, the patient instilled 1 drop of Timolol 0.5% (ophthalmic solution) in both
Description	eyes.
EN	 Advantage of the method: ✓ The convenience of administration 0.5% Timolol (ophthalmic drops) during the migraine prodrome or migraine access contribute to halting or reducing headache intensity ✓ Simplifying of the initial method of treatment, with decreasing risk of drug adverse reactions ✓ It is much cheaper, more convenient and more accessible for patients Fields of application:
	medicine, especially neurology, ophthalmology.
Class no.	

MD.21

Title	Treatment method of migraine attacks in patients with episodic migraine
Authors Institution	Şcerbatiuc Cristina, Bendelic Eugen, Moldovanu Ion
Patent no.	MD1018 The invention relates to medicine, particularly to neurology and can be used for the treatment of migraine attacks in patients with episodic migraine. Migraine crisis is often accompanied by autonomic dysfunction (nausea, vomiting), because of this, oral administration of drugs is impossible, while parenteral administration is accompanied by
Description	certain difficulties. At the onset of the first warning signs of headache, the patient instilled 1 drop of Timolol 0.5% (ophthalmic solution) in both eves.
EN	 Advantage of the method: ✓ The convenience of administration 0.5% Timolol (ophthalmic drops) during the migraine prodrome or migraine access contribute to halting or reducing headache intensity ✓ Simplifying of the initial method of treatment, with decreasing risk of drug adverse reactions ✓ It is much cheaper, more convenient and more accessible for patients Fields of application: medicine, especially neurology, ophthalmology.
Class no.	
MD.22	
Authors	UNGUREANU Sergiu, FOSA Doina, GLADUN Nicolae, LEPADATU Corpeliu SIPITCO Natalia
Institution	USMF "N.Testemiţanu", Laboratorul de Chirurgie minmal
Patent no.	MD 1082/2016 /Patent application No. 43/2016
Description EN	The invention relates to medicine, particularly to surgery and can be used for treating patients with lower esophageal sphincter incompetence. Summary of the invention consists in that it is performed the general anesthesia, is placed the patient in the supine position with the lower limbs in abduction and antiTrendelenburg, is installed the pneumoperitoneum, are introduced the working instruments, are mobilized the crura of diaphragm, is created a retroesophageal window with

abdominization of the terminal part of the esophagus. It is performed the crurography and calibration of the newly created esophageal opening by introduction into the lumen of the esophagus of an orogastric tube of 20 Fr, then it is performed the fundoplication. At the level of the lower esophageal sphincter, above the fundoplication roller, are fixed 2 electrodes with exteriorization of their wires in the epigastric region and are connected to a pulse generator, is performed the revision of the operative zone, are removed the working instruments, is eliminated the pneumoperitoneum and are sutured the postoperative wounds in layers. On the 3rd day of the postoperative period is performed the electrical stimulation in the mode of 6 pulses/min, with a pulse duration of 375 ms and a current strength of 5 mA, and the duration of the procedure is 15 minutes.

Class no.

MD.23

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	nanoparticles are polarized with electrically stimulation of muscle tissue adjacent to injection of nanoparticles. As a
	result, muscle contraction occurs with moving of
	alimentary bolus through the digestive tract.
	The advantages of the use of enternal electrodes recommender
	electrical stimulation;
	Efficient localization of electrically stimulated tissue area,
	avoiding tissue necrosis
	Placement of nanoparticles in the wall of digestive tract is
	minimally invasive through gastroscopy;
	Presents the minimally invasive method and avoid a
	surgery for the patient;
	Possibility of artificial stimulation of motility of digestive
	field obtained from piezoelectric transducer
	Results: Getting coverage of minimally invasive methods
	for artificial stimulating of motility of gastrointestinal tract
Class no.	4 - Medicine - Health Care - Cosmetics
MD.24	
Title	THE NEW METHODS AND DEVICES FOR THE
11110	REGENERATIVE MEDICINE
Authors	Viorel Nacu, Olga Macagonova, Vitalie Cobzac, Adrian
	Cociug, Gheorghe Muşet, Mariana Jian, Violeta Sarev
Institution	Laboratory of fissue Engineering and Cells Cultures;
Institution	State Medical and Fharmaceutical University "Nicolae
	MD1067 (13), decision no. 8620 din 2017.02.13.
Patent no.	MD1048
	The essence of the invention proposed consists of the

The essence of the invention proposed consists of the modeling of the pemphigus-like lesions and the devices for the cross-linking of the collagen spongy by the glutaraldehyde vapors and of the cutting of the cornea.

The advantage of the proposed inventions consists in Description EN that the conditions and parameters of the claimed invention are necessary for the solving of the tasks of the study, in particular the formation of the autoimmune process with the generalized characteristic of the pemphigus-like lesions, devices allow the effective crosslinking of the collagen excluding the direct contact of the glutaraldehyde solution with the biological material and
	the forming of the glutaraldehyde polymers wich retain in the spongy and wich are difficult to remove and in the manual turning of the device on the surface of the eye, which easily cuts the conjunctiva and cornea in one step, to form the graft of the exact size. Fields of application: experimental medicine, regenerative medicine and stem cell field.
Class no.	4. Medicine-Health Care-Cosmetics
MD.25	
Title	ASSESSING THE SEVERITY OF ACUTE PELVIC INFLAMMATORY DISEASE CERNEȚCHI OLGA, CAUȘ CĂTĂLIN, CAUȘ
Authors	NATALIA, RAILEAN LUDMILA, ILIADI TULBURE CORINA, OSTROFEȚ CONSTANTIN NICOLAE TESTEMITANU STATE UNIVERSITY OF
Institution	MEDICINE AND PHARMACY of the REPUBLIC OF
Patent no.	MOLDOVA Certificate of registration of authorship SAIP (AGEPI). Series OŞ MD nr. 5383, 01.08.2016
Description EN	score (clinical manifestations + imaging data + laboratory data) is aimed at determining the severity of the acute pelvic inflammatory disease (APID) and at optimizing the medical and surgical conduct as well. Benefits: This mathematical score sums up three parameters: clinical Manifestations, Imaging data and Laboratory data (MIL), which then establishes the degree of severity (mild, moderate and severe). A MIL score (table) value of up to 15 indicates a mild form of APID; values between 16 to 28 point to moderate clinical form of APID and a score greater than 29 indicates the presence of a serious form of APID. Fields of application: medicine, particularly gynecology, surgery.
Class no.	4. Medicine-Health Care-Cosmetics
MD.26	
Title	METHOD FOR DIAGNOSIS OF CASTROFSOPHACEAL REFLUX DISEASE
Authors	DUMBRAVA Vlada-Tatiana, LUPAȘCO Iulianna, GRIBINIUC Anatolie, VENGHER Inna
	INTERNATIONAL EXHIBITS

Institution State University Of Medicine And Pharmacy "Nicolae Testemitanu" from Republic Of Moldova

Patent no. MD MD 1094 / anul 2016

Method consists in that it is carried out the clinical
examination, and then is administered 20 mg of (RS)-2-([4-
(3-methoxypropoxy)-3-methylpyridin-2-
yl]methylsulfinyl)-1H-benzo[d]imidazole, per os, and after
24 hours is repeatedly carried out the clinical examination
with assessment of symptoms, such as retrosternal pain (fig
1), regurgitations (fig 2), namely their duration and
expression, the factors that improve and/or deteriorate
them, the impact of these symptoms on the quality of life,
by assigning points for each symptom. In the case where
the disease, and when is 53 or more – it is set the diagnosis
of gastroesophageal reflux disease.

EN Benefits and the novelty of this method is that it sets early, accurate diagnosis of *GERD*, allowing the prescription of adequate treatment, to monitor evolution of disease in the short and long term during medication and therefore prevent disease progression, complications (esophageal ulcers, Barrett's esophagus, esophageal adenocarcinoma, esophageal stenosis, esophageal stricture, esophageal perforation, upper gastrointestinal bleeding), reduce the frequency of relapses, and therefore substantially improve the quality of life.

Fields of application: in medicine, especially in gastroenterology.

Class no.

4. Medicine-Health Care-Cosmetics

MD.27

	METHOD FOR DETERMINING THE TOTAL
Title	CONTENT OF ANSERINE AND CARNOSINE IN
	BIOLOGICAL MATERIAL
Authors	TAGADIUC Olga, GUDUMAC Valentin,
	NICOLAE TESTEMITANU STATE UNIVERSITY OF
Institution	MEDICINE AND PHARMACY of the REPUBLIC OF
	MOLDOVA
Patent no.	
Description	The invention consists in that the protein-free extract

Description EN obtained by treatment with a solution of Tween-20/-80, and homogenized in a solution of sulphosalicylic acid, after

which the sediment is removed by centrifugation or fitration. To the protein-free transparent extract is added a solution of NaOH, which additionally containes triethylamine or acetylcholine, stirred for 5 min at the room temperature, followed by addition of a solution of orthophthalic aldehyde, after which is added a solution of HCl and stirred, then is maintained for 30-60 min. The absorption of samples is determined 640 nm and the total content of anserine and carnosine is calculated by calibration curve.

The advantage of this method is the possibility of histidine dipeptide determination in different materials (human and animal fluids and tissues) with accuracy, specificity and reproducibility significantly higher, compared with existing methods.

Applications: medicine, veterinary medicine, zootechnics, food industry. Histidine dipeptides - carnosine and anserine possess strong antioxidant properties, they effectively annihilate toxic products of lipid peroxidation and minimizes meat food rancidity. Quality of meat products is directly proportional to the content of carnosine and anserine in muscle tissue. The invention may be used: to assess the quality of meat products; assessment of the intensity of oxidative stress (OS) in farm animal conditions (the OS decrease anserine and carnosine concentration in muscle tissue); for diagnostics and monitoring of the pathological processes in various diseases.

Class no.

4. Medicine-Health Care-Cosmetics

MD.28

Method for treating the chronic obstructive pulmonary disease to persons of elderly age
BODRUG Nicolae, CIUREA Tudorel, NEGARĂ Anatolie,
NEAMŢU Mihai Leonida, BLAJA-LISNIC Natalia,
PARASCA Vasile, NEGREAN Mariana, ISTRATE Viorel
Nicolae Testemițanu State University of Medicine and
Farmacy of the Republic of Moldova
MD 118 / Patent application
Method for treating the chronic obstructive pulmonary
disease to persons of elderly . The invention relates to
medicine, namely pulmonology and is meant for the
treatment of chronic obstructive pulmonary disease to

persons of elderly age. The method, according to the
invention, consists in that during 10 days it is daily
administered intramuscularly 1 g of ceftriaxone and 1ml of
0.5% BioR solution, and intravenously dropby-drop
250300 ml of ozonized 0.9% NaCl solution with ozone
concentration of 3 mg/L.

Class no.	4. Medicine-Health Care-Cosmetics
MD.29	
Title	Method for treating the nonspecific ulcerative colitis to persons of elderly age
Authors	Anatolie, CIUREA Tudorel, BLAJA-LISNIC Natalia, PARASCA Vasile ISTRATE Viorel NEGREAN Mariana
Institution	<i>Nicolae Testemitanu</i> State University of Medicine and Farmacy of the Republic of Moldova
Patent no.	MD 126 / Patent application
Description EN	The invention relates to medicine, namely gastroenterology and may be efficiently used in the treatment of nonspecific ulcerative colitis to persons of elderly age. The method, according to the invention, consists in that concomitantly with the basic therapy, during 10 days, it is daily administered intramuscularly 1ml of 0.5% BioR solution, intravenously 250300 ml of ozonized 0.9% NaCl solution with ozone concentration of 3 mg/L, and rectally 100500 cm3 of oxygen and ozone mixture with ozone concentration of 45 mg/L.
Class no.	4. Medicine-Health Care-Cosmetics
MD.30 Title	Orthopedic skull shape correction devices.
Authors	RAILEAN Silvia, RAILEAN Gheorghe, POŞTARU Cristina, RAILEAN Anastasia,
Institution	Nicolae Testemițanu State University of Medicine and Pharmacy of the Republic of Moldova
Patent no.	MD 852 / 2014
Description EN	Orthopedic skull shape correction devices. This invention relates to orthopedics and can be used for with cranial deformation for skull reshape in infants before 1 year. The orthopedic skull shape correction devices includes a body in the form of a skull embracing splint in

the form of a curvilinear band or in the form of a helmet. On the inner surface of the body is fixed by means of a detachable joint of "socket-protrusion" or "dovetail" type at least one pneumatic chamber with air valve. The body may be made of two sections, which are interconnected with the possibility of longitudinal displacement relative to each other and fixation of sections during the treatment period. (max 250 words)

Class no.

4. Medicine-Health Care-Cosmetics

The State Agrarian University of Moldova Republic of Moldova

MD.31.	
Title	Process for increasing the growth rate in broiler chickens
Authors	Caisin Larisa, Vrancean Vasile, Anton Vladimir,
Authors	Eremia Nicolae, Bivol Ludmila
Institution	The State Agrarian University of Moldova
Patent	Patent application No. s 2016.11.18
Description EN	The invention relates to poultry, namely to a process for rearing broilers. Process for increasing the broiler, which provides feeding them during the initiation, growth and completion of 14 days each, and feed containing, in mass %: corn - 49.3, wheat - 12.7-13.7, soybean meal - 22.2, sunflower meal - 6.1, soybean oil - 2.5, premix - 2.0, chalk - 2.7, feather meal - 1.5-2.5; in the period of rising: corn - 49.1, wheat - 22.0, soybean meal - 13.5-14.5, sunflower meal - 1.5-2.5; in the period finishing: corn - 49.1 wheat - 23.0, soybean meal - 15.0-16.0, sunflower meal - 4.5 soybean oil - 1.2, premix - 2.0, chalk - 2.7, feather meal - 1.5-2.5, while using feathers meal obtained by fermentation and extrusion.
Class no.	3. Agriculture and Food Industry
MD.32.	
Title	PROCESS FOR FEEDING PIGS
Authors	Caisin Larisa, Vrancean Vasile, Anton Vladimir,
Authors	Eremia Nicolae, Bivol Ludmila
Institution	The State Agrarian University of Moldova
Patent	Brevet de Invenție Nr. MD 991
1 atent	Z 2016.08.31
Description EN	The invention relates to livestock, in particular to a process for feeding pigs. The process, according to the invention, provides for the feeding of pigs with combined feed with addition of a feed additive, comprising strains of <i>Lactobacillus acidophilus</i> with a titer of $2x10^9$ CFU/g <i>Lactobacillus plantarium</i> with a titer of $1x10^9$ CFU/g, <i>Lactobacillus fermentum</i> with a titer of $5x10^9$ CFU/g and <i>Bifidobacterium bifidum</i> with a titer of $3x10^9$ CFU/g, and adsorbant comprising, in mass % : extruded wheat bran – 10, bentonite – 25, vermiculite – 25, polygorskite clay – 30, acidifier – 5 and yeast autolysate – 5, wherein the feed additive is added in an amount of 0.5 kg and the adsorbent of 4.0 kg to 1000 kg of
	combined feed.

MD.33.	
Title	METHOD OF HONEYBEES RISING
Authors	Eremia N., Chiriac A., Ivanova R., Maşenco N., Pătruică S., Modvala S., Sarî N.
Institution	The State Agrarian University of Moldova
Patent	Patent application MD, nr. 8467 din 2016.08.16
Description EN	The invention relates to beekeeping, namely to a process of bees rearing. The present invention includes bees feeding with a mixture of 50% sugar syrup and a preparation which containing 80 90% steroid glucose 3-O-[β -D-glucopyranosyl (1-2)]-[β -D- glucopyranosyl (1-3)]-[β -D-glucooiranozil (1-4)]- β -D- galactopyranoside [(25R)-5 α -furostan-2 α , 3 β , 22 α , 26-tetraol]-26- O- β -D-glucopyranoside in an amount of 2.0 1 of mixture per family, twice with an interval of six days in autumn and 1.0 mixture per family over every 1012 days in spring since the first days of April until the beginning of the main harvest. At the same time, the preparation of sugar syrup is added in an amount of 10 100 mg / 1 of syrup.
Class no.	3. Agriculture and Food Industry
MD.34.	
Title	TREATMENT PROCESS OF ARAHNOENTOMOZY AND NEMATODES IN PIGLETS AND CALVES
Authors	Iatusevici A., Samsonovici V., Subbotin A., Crasocico P., Eremia N., Cahanovici A., Subbotina I. Academia de Stat de Medicină Veterinară din Republica
Institution	Belarusă, Institutul de Crecetări Științifice în Veterinărie Experimentală din Republica Belarusă; The State Agrarian University of Moldova
Patent	Brevet de Invenție, nr. MD 1013 Z 2016.10.31
Description EN	The invention relates to veterinary medicine, in special to treatment process the of arahnoentomozies and nematodes in piglets and calves. The process according to the invention includes the administration of a remedy in piglets or calves, that contains, in mass%: concoction contains aversectin C, that contains 40% of lactulose and polyethylene glycol 400, at the same time remedy is administered twice in a dose of 0.1 ml per 1 kg of body weight, using dry food with an interval of 24 hours.
Class no.	3. Agriculture and Food Industry

Institute of Emergency Medicine (IMSP) - R. Moldova

MD.35.	
Title	LOAD MONITORING ON THE BONE FRAGMENTS.
Authors	Borovic E., Ciocanu M., Pavlovschi E
Institution	IMSP Institutul de Medicină Urgentă și IP USMF N. Testemițanu
Patent no.	Certificat ODA MDA seria OŞ Nr. 5409 08.08.2016
Description EN	Reparative regeneration (reconstructive) - Restructuring bone, during which there is a partial or complete resorption of bone structures and the creation of new bone lesions observed after skeleton. In the late stages of reparative regeneration of bone mineralization occurs and restructuring and reconstituting primary regenerate bone. Only fragments include the full and correct axial load is accompanied by a restructuring of fibrous tissue in the interfragmentară and finished with consolidation. Such control ensures maximum effectiveness of therapy functional and legal support of the medical process, it becomes feasible to use monitoring system proposed by authors functional lower extremity pregnancy during therapy and rehabilitation after surgery ortezoterapii.
Class no.	4

MD.36.

Title	PORTABLE APPARAT FOR MONITORING OF
	BIOSIGNALS VITAL.
Authors	Baciu A, Ciocanu M., Borovic E.
Institution	IMSP Institutul de Medicină Urgentă și IP USMF N. Testemițanu
Patent no.	in curs de brevetarea AGEPI- f 2016 0054
	Portable monitoring vital biosignals can: -monitoring the patient's physiological digital full (ECG, NIBP, temperature, SpO2, CO2 indirectly, breath, heartbeat) with the possibility of intervention of the medical advisor to carry out measurements at a distance and making treatment decisions;
Description	-take data from sensors;
EN	-in the case of the ECG signal on the morphological analysis is
	performed by detection of the five derivatives QRS complexes, the calculation of the duration, the determination of the R-wave amplitude and ST segment and T;
	-activate alarms if the monitored parameters exceed the limits; - connects in case of alarm or periodically to download the local center where the numerical values of parameters by using WiFi or GSM;
	INTERNATIONAL EXHIBITS

-has a graphical user interface through which you can view waveforms, numeric values of monitored parameters, alarm thresholds can be modified and can set parameters transmitter type devices.

-organizing audio and video conferences with multiple people (high category doctors) for making treatment decisions;

-in case of alarm module uses GPS to determine the position of the PDA module, and send the monitoring center;

-stores the monitored parameters and data from ECG amplifier supported on SD-Card.

Class no.

MD.37.

TitleDIAGNOSISOFMUCOCELEAPPENDIXANDPERITONEAL PSEUDOMYXOMA.

Authors Ghidirim Gh., Mişin I., Mişina A., Rojnoveanu Gh., Vozian M.

InstitutionIMSP Institutul de Medicină Urgentă și IP USMF N. TestemițanuPatent no.Certificat ODA MDA seria OȘ 5296 10.02.2016

In patients with mucocele appendix mucinous epithelial neoplasm comprising perforation can occur, which is not always macroscopically visible. Implementation of the proposed method ensures improvement of results of surgical treatment of patients mucocele appendix and reducing early and late with complications including peritoneal pseudomixom. The method allows to perform mucocele appendix timely diagnosis, monitoring and early detection of complications thereof. Thus, Description the importance of rigorous preoperative evaluation of patients EN with AML and PMP using the full range of available investigations is indisputable. Thoroughly analyze all parameters described positive preoperative diagnosis will help increase the rate, which in turn provides an opportunity for appropriate planning of patient eligibility for different types and volume of surgical treatment.

Class no.



Δ

INTERNATIONAL EXHIBITS 189

MD.38.

TitleTRATAMENTUL MULTIMODAL AL MUCOCELULUI
APENDICULAR ȘI PSEUDOMIXOMULUI PERITONEAL.
Ghidirim Gh., Mișin I., Mișina A., Rojnoveanu Gh., Vozian
M.InstitutionIMSP Institutul de Medicină Urgentă și IP USMF N. Testemițanu

Patent no. Certificat ODA MDA seria OS 5295 11.05 2016

The most appropriate treatment for MA is appendicectomy. The results of surgery depend on the extent and fullness citoreductiei process. Assessment of the extent or index carcinomatosis perioneală (PCI), combining the size of the lesion (0 to 3) the distribution of the tumor (the region abdominal-pelvic from 0 to 13) to measure the extension of the disease in a numerical score (PCI 0 39). Areas and volume of residual tumors also were evaluated using the score completeness of cytoreduction (CC). Surgical procedures were hyperthermic intraperitoneal chemotherapy combined with (n = 11) with the aim of eradicating the tumor micro- and macroscopic debris and prevent relapse. HIPEC has been used for soil. 5-fluorouracil at a dose of 750 mg / m2 dissolved in 0.9% NaCl solution or soil. 5-10% dextrose heated at 42-43°C

Class no.

Description

EN



MD.39.

Title	STAGING EVOLUTIONARY REPARATIVE PROCESSES
	IN THE COLONIC ANASTOMOSIS.
Authors	Ghidirim Gh., Mişin I., Pleşco E., Petrovici V., Sinițina L.
Institution	IMSP Institutul de Medicină Urgentă și IP USMF N. Testemițanu
Patent no.	Certificat ODA MDA seria OŞ 5105 2015.04.06

Anastomotic leakage represents a complication with high risk of morbidity and mortality. Incidence of anastomotic leakage, accordingly data of different authors, varies significantly from 2 till 24%. Postoperative mortality in anastomotic leakage varies from 6 till 22% and can appear during the first month after surgery. Consequently, improvement of results of surgical treatment is a very important and can be realized by in-depth study of basic mechanisms of anastomotic healing. As a result, we have proposed a clasification of regenerativ-reparative processes in colonic anastomosis. This clasification includes 4 morphologic stages - matrix predecessor; neoangiogenesis; fibrovascularization; cicatriceal modelation. Statistic analyses of obtained results has demonstrated predominance of exsudativdetersiv and infiltrativ extrinsic processes during first 3-7 days (p<0.05) and decreasing of their activity parallel with activization of neoangiogenesis and fibrilogenesis. The infiltrativ-intrinsic process, neoangiogenesis and fibrilogenesis predominate at the 14th day after syrgery.

Class no.

Description

EN



MD.40.

	SYNDROME MAYER-ROKITANSKY-KUSTER-HAUSER:		
Title	EARLY AND LATE RESULTS OF COLPOPOEZY		
	PERITONEAL TREATMENT OF VAGINAL AGENESIS.		
Authors	Mişina A., Gudumac E., Cernețchi O., Mişin I.		
Institution	IMSP Institutul de Medicină Urgentă și IP USMF N. Testemițanu		
Patent no.	Certificat ODA MDA seria OŞ Nr. 5409 08.08.2016		
Description EN	Syndrome Mayer-Rokitansty-Küster-Hauser (MRKH) is a		
	rare congenital malformation of female genitalia. The author presents the results of peritoneal colpopoiesis in correction of vaginal agenesis in MRKH syndrome. The findings are discussed in the prism data of similar studies published in specialized		
	INTERNATIONAL EXHIBITS		

literature. Out of 36 cases it was performed through access colpopoeza perineal isolated in 17 (47.2%) cases, access perineal + laparotomy - 12 (33.3%) and perineal access laparoscopy + 7 (19.5%) cases. Colpopoezy peritoneal surgery technique is quite clearly described in the literature, all together it makes sense to present the main stages of this surgery with the use of rational technical moments.

Class no.



Academy of Sciences of Republic of Moldova Institute of Microbiology and Biotechnology

MD.41.	
	The method of cultivation of Rhizopus arrhizus
Title	CNMN FD 03 micromicete strain – producers of
	lipase
	Ciloci Alexandra, Tiurina Janetta, Guțul Tatiana,
Authors	Clapco Steliana, Bivol Cezara, Labliuc Svetlana,
	Institute of Microbiology and Biotechnology of
	Moldova
Institution	Institute of Electronic Engineering and
	Nanotechnology "D. GHITSU of the Academy of
	Sciences of Moldova
Patent no.	Patent aplication No a.2016 0124, 2016 11 09
	The method for the submerged cultivation Rhizopus
	arrhizus CNMN FD 03 micromycete strain includes the
	inoculation of the sterile nutrient medium with the
	suspension of culture spores and the cultivation under
	continuous stirring at the temperature of 28-30°C for 48
Description EN	hours, characterized by the fact that prior to the
Description EN	iron oxide Ee O with dimension of 70 nm in the
	concentration of 5-10 mg/l
	The technical result of the invention consists the
	increasing of linase biosynthesis by <i>Rhizopus arrhizus</i>
	CNMN FD 03. with $312.5 - 330.5\%$ (around 3.1-3.2)
	fold).
Class no.	3 Agriculture and Food industry
MD.42.	
Title	Assessment method of the effects of nano-oxides with
	Usatîi Agafia Besliu Alina Chiselita Natalia Rusu
Authors	Emil Gutul Tatiana
	Academy of Sciences of Republic of Moldova
Institution	Institute of Microbiology and Biotechnology
Patent no.	Patent application No. A 20160147
	It is proposed an assessment method of the toxicity
Description EN	of nanoparticles of metal oxides using the biological
	indicators of yeast strain of Rhodotorula gracilis (with

Class no.	the testing of catalase activity and the content of β- Carotene) and can be used to the completion of estimation tests of the toxicity level and monitoring the harmlessness of processes using nanoparticles. 1, 2, 3, 4, 14. Environment-Pollution Control, Renewable Energy, Agriculture and Food Industry, Medicine - Health Care-Cosmetics, Biomedical Devices and Pharmaceutical Industry
MD.43.	
Title	New proceeding for obtaining β-glucans from yeasts using ZnO nanoparticles
Authors	Chiselița Natalia, Usatii Agafia, Beșliu Alina, Guțul Tatiana
Institution	Institute of Microbiology and Biotechnology of ASM
Patent no.	Patent application No. 0127/a2016
Description EN Class no.	glucans biosynthesis from <i>Saccharomyces cerevisiae</i> CNMN-Y-20 yeast strain with ZnO nanoparticles application and may be used in microbiological, pharmaceutical and food industries. β -glucans may be used as drug forms, antioxidants sources, nutraceutical ingredients, cosmetic components. The result consists in increase of β -glucans production. 3 Agriculture and Food industry
MD.44.	
	Protective media for <i>Streptomyces</i> strains for
Title	lyophilization and long-term storage.
Authors	Chiselita Oleg, Burteva Svetlana, Birsa Maxim, Rudic Valeriu
Institution	Institute of Microbiology and Biotechnology of ASM MD 4473, B1, 2017.03.31; MD 4474, B1, 2017.03.31;
Patent no.	Patent application (MD) No 0083/2016; Patent
	application (MD) No 0084/2016. The invention deals with utilization of cyanobacterial extracts as lyoprotectants for

Class no.	composition of medium gelatine 2,5%+glucose 7,5 % (control), enhance viability of strains after lyophilization and long-term storage by 18,4-38,0 and 20,5-39,8 %, respectively in comparison with control, in fuction of concentration. These results will contribute to essential eficientization of conservation and storage methods of microorganisms in collection work. 3 Agriculture and Food industry
MD.45	
Title	The strain of nodulating bacteria Rhizobium japonicum RD_2 for treatment of the soybean seeds before sowing
Authors	Onofrash L., Todirash V., Prisacari S., Lungu A., Zuza N.
Institution	Institute of Microbiology and Biotechnology of ASM
Patent no. Description EN	Patent application MD 4246 B1/2012 In the basis of the bacterial strain discovered by the authors and it's cultivation on the special nutritive media is obtained the biologic preparation used for soybean seeds treatment before sowing. <i>Advantage:</i> The utilization of this bacterial strain for seed treatment improves the azotfixation capacity of the rhizobio-root system in abut 1,3-2,0 times. The harvest of the seeds increases with 37,3%, the plant height increases with 15,8,% and the number of the
	rhizobial nodule increases in 1,5 times. During a year in the soil was accumulated from 60 to 100 kg/ha atmospheric nitrogen. Utilization of the microbial preparation decreases the consummation of the fertilizers. Plants become the good predecessor for the other agricultural crops.
Class no.	3





Academy of Sciences of Republic of Moldova Institute of Chemistry

MD.46.	
Title	Process for purification of deep waters from ammonium, ammonia and hydrogen sulfide ions
Authors	Lupascu Tudor, Ciobanu Mihail, Boțan Victor, Cațer Raisa
Institution	Academy of Sciences of Moldova, Institute of Chemistry
Patent no.	Brevet no 4435 B1
Description EN	The invention relates to processes for purification of deep waters from ammonium, ammonia and hydrogen sulfide ions. The process, according to the invention, comprises treatment of water with calcium hypochlorite in the ratio of 15 g per 5 liters of water, at a temperature of 15° C, mixing for 30 min and subsequent bringing of pH to $5.288.0$, precipitation of formed calcium carbonate for 30 min, after which the clarified layer is filtered through a column with activated charcoal AG-3 at a rate of 8 m/hour
Class no.	1.Environment – Pollution Control
MD.47.	
Title	The method of garlic (Allium sativum L.) plants cultivation
Authors	Ștefîrță Anastasia, Botnari Vasile, Bulhac Ion, Brânză Lilia, Chilinciuc Aalexei, Coropceanu Eduard, Bouroș Polina.
Institution	Academy of Sciences of Moldova, Institute of Genetics, Phyziologie and Plant Protection, Institute of chemistry, Institute of Applied Physics
Patent no.	Brevet MD no 1087 Y The invention relates to agriculture in particular to
Description EN	vegetable growing, namely to a process for growing garlic.

	[bis(dimethylglyoximato)-(selenocar-bamide) _{1.4} -
	(selenium-selenocarbamide) _{0.45} -(selenium-
	selenium) _{0.15} cobalt(III)], wherein soaking of cloves is
	carried out for 2 hours and spraving of plants-3 times
	with
	an interval of 2 weeks and a consumption of 0.5 L/m^2
	The technical result from use of the invention is:
	ontimize plant growth and productivity: decrease of linid
	perovidation: enhancing the activity, decrease of lipid
	enzymes protection: assimilating nigments protection
	from avidative destruction: the increase in value of
	food by increasing the colonium content in the locus
	and hulbs of social plants
Classes	and builds of game plants
Class no.	3. Agriculture and Food Industry
MD 49	
MD.40.	2.2 Putandiana his(isa)niaatinailhudrazana) tris
	2,5-Dutanuione-Dis(iso)incotinoiniyui azonej-ti is- aqua)iron(III)nitrata dihydratas as stimulatars of the
T:41a	aqua) if on (iii) intrate universities as stimulators of the
The	synthesis of proteontic enzymes in the micenal
	iungus cultivation of the strain <i>Fusarium giodosum</i>
	CIMMIN FD12 Dulhas I. Dessettis Cilasi A. Cuba I. Tiurina I.
Authors	Buillac I., Deseatilic-Choci A., Cuba L., Hurina J.,
	Bouroș P., Dragancea D., Ciapco S.
T	Academy of Sciences of Moldova, Institute of
Institution	Chemistry, Institute of Microbiology and
_	Biotechnology, Institute of Applied Physics
Patent no.	Patent application no a2016 0073, 2016.06.22
	The essence of the invention consists in the synthesis
	of new coordination compounds of iron(III) with
	Schiff bases, obtained by condensation of 2,3-
	butandione with nicotinic or isonicotinic acid hydrazide
	and their biological properties - capacity to act as
Description FN	stimulators of enzymogenesis in cultivation of fungal
Description En	strain Fusarium gibbosum CNMN FD 12-produser of
	proteases, cellulases, xylanases. The addition of
	coordination compounds to nutritive media for
	cultivation of micromycete Fusarium gibbosum ensures
	the incrising of acid and neutral proteases synthesis by
	16,4-100,6% and 50,8-87,1% respectively.
Class no.	3. Agriculture and Food Industry

MD.49.	
Title	(Z)-4,4-Dimetil-1-(4-nitrofenil)-2-(1 <i>H</i> -1,2,4-triazol-1- il)pent-1-en-3-ona – compus cu acțiune antituberculoasă și procedeul de obținere a acesteia
Authors	Macaev Fliur, Zveaghințeva Marina, Stângaci Eugenia, Pogrebnoi Serghei, Duca Gheorghe.
Institution	Academy of Sciensis of Moldova, Institute of Chemistry
Patent no.	Patent applications a2016 0145 2016.12.21 a2016 0146 2016.12.21
Description EN	The invention refers to the pharmaceutical chemistry and can be applied in the development of new medicines with antituberculosis activity. The essence of the invention includes the synthesis of (Z) -4,4-dimethyl-1-(4-nitrophenyl)-2-(1 <i>H</i> -1,2,4-triazol-1-yl)pent-1-en-3-one and its use in the development of new antituberculosis medicines. The problem solved by the invention includes stereo specific condensation of ketone - 3,3-dimetil-1-(1H-1,2,4-triazol-1-il)butan-2-on with 4-nitrobenzaldehyde to obtain desired compound with antituberculosis activity.
Class no.	4
MD.50.	
Title	Watch

Authors Institution

Patent no.

Description EN Class no. Lupascu Tudor.

Academy of Sciensis of Moldova, Institute of Chemistry Application of disign/industrial model f 2016 0052 MD 2016.10.05

Watch with chemical elements

14

INTERNATIONAL EXHIBITS 198

Academy of Sciences of Republic of Moldova Institute of Electronic Engineering and Nanotechnologies "D. Ghiţu"

MD.51.	
Title	Thermochromic VO ₂ -based nanocomposite thin films for energy-efficient windows
Authors	ŞAPOVAL Oleg, CANȚER Valeriu, BELENCIUC Alexandr, ZASAVIȚCHI Efim, CHIRIȚA Arcadi, VATAVU Sergiu.
Institution	Institute of Electronic Engineering and Nanotechnologies "D. Ghiţu" of Academy of Sciences of Moldova
Patent no.	The main aim of our project is to explore a strained nanocomposite approach for fabrication of VO ₂ -based thin films with enhanced thermochromic properties. The global demand on the decreasing energy consumption has resulted in the development of various energy-saving building systems, including a "smart windows" with a variable infrared transmittance. Owing to the metal- insulator transition at 68 , it is commonly recognized that VO ₂ possesses the greatest potential for this purpose. In this project we intend to decrease the transition temperature and increase luminous transmittance by fabrication of strained nanocomposite films, where properties of VO ₂ -phase will be tuned by a second oxide phase. That is, we intend to employ the strain engineering, instead of doping, for reducing the transition temperature. The strain tuning will be utilized in combination with a well-known nanothermochromic approach to improve simultaneously the luminous transmittance. The principal technological challenge consists of a matched growth of two-phase material on the amorphous substrate with an ordered microstructure. The tuning of material properties in nanocomposite thin films through manipulation of the strain of one of the phases by another one has been demonstrated for the first time in our work (Nature Mater. 2, 247) using a low-cost and industrially-oriented solution technique of metalorganic aerosol deposition. This deposition technique, which is developing by our group, will be applied for pursuing this project challenges. The advantages of artificially strained nanoscale-designed material for thermochromic will be directed by the metalorganic aerosol deposition.
Classic	uiscioscu as a result of the project.

Class no.

MD.52.	
	A TECHNOLOGY FOR THE
Title	ELECTROPHORETIC DEPOSITION OF
	NANOSIZED LEAD TELLURIDE
Authors	GUTSUL Tatiana, FEDOROV Vladimir, ZASAVITCHI
Authors	Efim
	Institute of Electronic Engineering and
Institution	Nanotechnologies "D. Ghiţu" of Academy of Sciences
	of Moldova
Patent no.	
Description EN	A technology for the electrophoretic deposition of PbTe nanoparticles from colloidal solutions has been developed. Electrophoretic deposition is conducted in a specially designed cell using In_2O_3 -SnO ₂ (ITO) electrodes coated with a conductive PANI polymer and a platinum electrode. Colloidal solutions of PbTe nanoparticles are prepared by dispersion in a mixture of nonpolar solvents in an ultrasonic bath. PbTe nanocrystals are prepared by the thermal solvation method. The time interval for the formation of PbTe layers at 300 and 700 V is 5–30 min. X-ray diffraction analysis of the resulting material has shown that the samples are single-phase lead telluride PbTe: cubic syngony, Fm3m, $a = 6.459$ Å. According to calculations based on diffraction peak half-widths, the geometric sizes of the lead telluride crystallites are ~35 nm.
Class no.	2

Academy of Sciences of Republic of Moldova Institute of Genetics, Physiology and Plant Protection

MD.53.	
Title	Mobil unit for attracting and exterminating injurious
	insect pests
Authors	Gorban Victor, Chicu Boris, Voineac Vasile
Institution	Institute of Genetics, Physiology and Plant Protection
Patent no.	-
	This non-en encounts on installation for attracting

This paper presents an installation for attracting and exterminating insect pests in agricultural crops, as a bait is used a source of ultraviolet light with the wavelength of 365nm. The light source and constructive elements installation provides selective attraction of the harmful insects and their killing. Being installed on a small mean (min tractor) of transport and, having the ability of carrying the loads along the protected plots, the proposed installation will significantly reduce the pest density and negative impact on the agricultural crops. Implementation this installation in agricultural practice will help to reduce chemical treatments by about 30 ... 40%, becoming an important element of harmless technologies for integrated plant protection. The proposed installation is endowed with a power generator of 0.75kW power which provides the working bodies supply with 220V ac or 12V constant.

Description EN

Applications. Advantages.

The advantage of the proposed installation is due to the fact that it is endowed with a source of ultraviolet light of 365 nm a wavelength, as the lure, which is mounted on a means of transport equipped with a lifting-lowering mechanism which provides radiation source installing at the level corresponding to the crops height and pests flight, as well. The light source and constructive elements of the mobile unit provides a selective attraction of the harmful insects and kills them. Being installed on a mini tractor and having the possibility of equipment movement on fixed route along the lots to be protected, the developed unit will uniformly cover the surface of the protected plot and will significantly reduce the pest density and their negative impact on crops.

Class no.

3

MD.54.	
Title	A procedure of haploids induction in barley
Authors	Smerea S., Andronic L., Macovei E.
Institution	Institute of Genetics, Physiology and Plant Protection
Patent no.	Patent no. 8496 / 2016-09-12.
Description EN	The invention contains the supplementation of nutrient medium (FHG) for inducing androgenesis with iridoid glycosides derived from plants <i>Linaria</i> <i>genistifolia</i> (GIS). The proposed medium leads to the increasing of anthers rate with positive response to <i>in</i> <i>vitro</i> cultivation, resulting in dedifferentiation of microspores and their conversion to the embryogenetic development path. The supplementation of FHG medium with GIS has favored the augmentation of rate of embryogenic structures for all three analyzed genotypes. In conformity to the proposed process it was established that the capacity of androgenesis increased about 1.3 to 1.89 times depending on the variety. The highest number of embryogenetic structures represents a result of microspores dedifferentiation conducting to an efficient path for obtaining haploid barley plants for genotype with low androgenesis capacity.
Class no.	
MD.55.	
Title	The method of sex determination in plants of Actinidia arguta in vitro
Authors	Cauș M., Călugăru-Spătaru T., Dascaliuc A.
Institution	Academy of Sciences of Moldova / Institute of Genetics, Physiology and Protection Plants
Patent no.	MD 1055 Z. 2017.02.28
Description EN	According to the invention, the method consists in the use of male and female leaves of <i>in vitro Actinidia</i> <i>arguta</i> mini cuttings for separation of soluble proteins, used to obtain the peroxidase (PO) electrophoretic spectrum in 7.5% polyacrylamide gel in native conditions. The described method offers the possibility to use the PO izoenzime spectrum from leaves to identify the sex of <i>Actinidia arguta</i> mini-cuttings cultured <i>in vitro</i> at the stage of complete development of
	INTERNATIONAL EXHIBITS

Class no.	organogenesis and subsequent transfer to <i>ex vitro</i> growing conditions. Molecular diagnostics allows identifying female plants with 4-5 years before their flowering, which ensures the acceleration of selection in this species at least with 4 years. 3
MD.56.	
Title	A method of producing entomophagus <i>Trichogramma</i> spp
Authors	Gavrilița Lidia, MD, Gorban Victor, MD, Nastas Tudor, MD
Institution	Institute of Genetics, Physiology and Plant Protection
Description EN Class no.	Solution: The technical result is that the invention relates to agriculture, lamely to a for mass rearing of entomophagy <i>Trichogramma</i> for biological plant protection .To increase effectiveness of mass rearing process of the parasite the <i>Trichogramma</i> spp., the eggs of host insect (<i>Sitotroga cerealella</i> Oliv) temperature of 2325°C, and air relative humidity of 7585%, on eggs of angoumonis grain moth (<i>Sitotroga cerealella</i> Ol.) of 24-26 hours age preliminarily irradiated with ultraviolet light dose (exponare) of 0.5 to 1.3 hours optimal, source lamp with an output of 200 watts and wavelength 365 nm. <i>ADVANTAGES:</i> proposed process provides irradiation of ultraviolet eggs of insect pests <i>Sitotroga cerealella</i> Oliv, dose (exponare) of 0.5 to 1.3 hours optimal, and <i>Trichogramma</i> production on them, resulting in increasing biological indices – female prolificacy by 1.4-1.6 times, life expectancy – from 1.2 to 2.2 times, hatching 5-8 % of adults and 5-12 in the percentage of parasitic females share that leaves survivors with 6-16.6% and from 4.8 to 8.5 % – static quality criteria, saving moth eggs and <i>Trichogramma</i> , biological efficacy-20-25%.
MD.57.	
Title	The new variety of <i>Melissa officinalis</i> L. (Lemon balm)
Authors	Gonceariuc Maria, Ganea Anatol, Balmuş Zinaida
Institution	Institute of Genetics, Physiology and Plant Protection
Patent no.	Patent application No. v20160012

INTERNATIONAL EXHIBITS

The *Melissa officinalis* L. variety, named Lămâița is an herbaceous perennial plant with 60-75 cm of height; the leaves dimensions are 5-8/4-5 cm, covered with fine hairs. Floral button and fresh open flower corolla are yellow, after then the flowers become white. The fruit is divided into four glossy small nuts (seed). Weight of 1000 seeds is only 0.7 g. New variety of the Lemon balm Lămâița ensure the fresh *herba* production of 11.5 t/ha and 3.9 t/ha of the fresh leaves. Drying yield is 4-5:1.

<u>the Applications</u>: Perfumery, Cosmetics, Medicine, Aromatherapy, Pharmacology, Culinary, honey and ornamental plant

Class no.

3. Agriculture and Food Industry



MD 58	
Title	New tomato varieties <i>Solanum lycopersicum</i> L. Cerrydani
Authors	Sîromeatnicov Iu., Botnari V., Balaur N., Ciobanu R., Cotenco E, Chirilov E.
Institution	Institute of Genetics, Physiology and Plant Protection
Patent no.	Patent application no. V20140032 from 2014.12.22
Description EN	Applications CerryDani tomato variety was obtained as a result of hybridization between the <i>Solanum</i> <i>lycopersicum</i> <u>Solearis x (s.Prizior x s. Nota)</u> . The vegetation period is 85-90days, it is the early variety. The fruit is round and flat with the weigh 25-60g, without the wrinkled peduncle, with fleshy pericarp and interior pulp. Fruits with high taste qualities, the dry matter content of the fruits 6,64,2- 7,03 %, sugars 4,4- 5,7%, ascorbic acid 27,5-39,5mg/%, titratable acidity 0,32-0,42 mg/%. The total harvest of tomato is 38,6-42,0

t/ha and commodities - 36,5-40,0t/ha The share of commodities is 94,6%. The variety is productive, resistant to drought. It is recommended for fresh consumption and processing.

Class no.

3. Agriculture and Food Industry



MD.59. Nutrient medium for cultivation of bacterial strain Title **Bacillus subtilis CNMN-BB-09** Shubina Victoria, Volosciuc Leonid Authors Institute of Genetics, Physiology and Plant Protection Institution Patent no. 8526 / 10.22.2016 Patent no. The object of research was the active strain of bacteria B. subtilis CNMN-BB-09, isolated from the rhizosphere of tomatoes. The strain possesses high antagonistic activity and stimulating effect. To optimize the cultivation of B. subtilis BB-09 used mineral medium M9. Were investigated the optimal sources of carbon and nitrogen nutrition. The optimum carbon sources are sucrose, maltose, glucose; nitrogen (salts containing ammonium ions). To improve the growth properties and antifungal activity of the investigated cultures were added the following ingredients: dry yeast, sodium citrate, tripton, glycerin, and their combined use The results of these studies showed that the maximum **Description EN** titer of *B. subtilis* BB-09 medium M9 was observed on the 4th day of cultivation (of 2.6×109 CFU/ml), whereas on the changed environment after 2 days of cultivation titer was $7.5 \times$ 109 CFU/ml, and on the 4th reached 1.7×1010 CFU/ml, exceeding 6.5 times the titer of medium M9. In the zones of oppression mycelial growth of the test culture of Alternaria alternata antifungal activity of B. subtilis BB-09 in modified M9 medium with the addition of the above-mentioned components, was higher than in control (M9 medium) at all test concentrations of bacterial suspension (from 0.1% to 5%) 1.4 - 3.6 times. The optimised medium for cultivation of Bacillus

subtilis CNMN-BB-09 in the laboratory and allows to obtain INTERNATIONAL EXHIBITS

48 hours of cultivation, high yield of viable cells, while maintaining high antagonistic properties of the studied culture. The invention relates to microbiology and agriculture, namely, nutrient media for cultivation of microorganisms with the aim of obtaining bacterial preparations that can be used in biological plant protection. 3. Agriculture and Food Industry Class no. MD.60. Procedeu de tratare a plantației de viță-de-vie împotrivă Title buruienilor Veliksar Sofia, Tudorache Gheorghe, Lemanova Natalia, Authors Toma Simion Institution **Institute of Genetics, Physiology and Plant Protection** Patent no. MD 973 Z 2016.07.31 The invention relates to agriculture, namely to a process for treating of vineyard against weeds. The process, according to the invention, comprises treatment of weeds of a height of 7...10 cm with an aqueous herbicide solution, containing 1.44...1...60 g/L glyphosate and an addition of suspension of bacterial strains Pseudomonas putida CNMN-PsB-06 and Bacillus subtilis CNMN-BB-06 taken in a ratio of 1:1 with a titer of 10⁷ CFU/L, in an amount of 3.0 mL per 1L of solution, at the same time the treatment is carried out with a total consumption of 450...500 L/ha, proceeding from glyphosate **Description EN** consumption of 720 g/ha. The result consists in maintaining the capacity of the nitrification of the soil at a higher level and increasing the content of nitrogen. phosphorus and potassium in the soil, which shows an improvement in the nutritional status of the plants, improve the processes of growth and ripening of the shoots, reducing the amount of applied herbicide while maintaining their effectiveness in controlling weeds (85-91% destruction of the weeds). Class no Agriculture and Food industry

Dry weeds after treatment by herbicide and suspension of bacterial strains.



**Pseudomonas putida* CNMN-PsB-06 + *Bacillus subtilis* CNMN-BB-08 (1:1) Influence of the herbicide and suspension of bacterial strains on the capacity of the soil nitrification.

MD.61.	
Title	Triticale_variety – INGEN 93
Authors	Buiucli P., Veveritsa E., Rotari S., Gore A., Jacota A., Lupascu G.
Institution	Institute of Genetics, Physiology and Plant Protection
Patent no.	MD 51 MD/ 2009-09-30
Description EN	The variety Ingen 93 (6 TA 502/CAD 2)/AD, Leucomelan variation (a white spike, without pubescence, white and gray awns, the kernel is red). The spike (9,5-11,0 cm.) cylindrical of a medium density (28-31 spikelet's per spike). The weight (1000 kernels - 46-47 g.), 13-14 % of protein and 22-24% of gluten. The spike has 54-62 oval kernels. The variety belongs to a medium ripening group (276-282 days). The height of plants –(94-96cm.) and the tailoring of plant is 2,8-3,0. It is resistance to drought, wintering, lodging and diseases (mildew, brown and yellow rust fusarial milt, septoriose etc. The variety is for grain and forage, with productivity of 5,5-6t/ha.
Class no.	3. Agriculture and Food Industry
MD.62.	
Title	Winter durum wheat varieties – Hordeiforme 333, Auriu 273.
Authors	Buiucli P., Veveritsa E., Kotari S., Leatamborg S., Palii A., Gore A., Jacota A.
Institution Patent no.	Institute of Genetics, Physiology and Plant Protection 50 MD/ 2009-09-30., 52 MD 2009-09-30
Description EN	The variety Hordeiforme 333 (Corall odesskii x Hordeiforme 1985) belongs to the Hordeiforme variation

INTERNATIONAL EXHIBITS

(a red spike with red awns and the white- yellowish kernel). The spike is of a medium size, cylindrical and has 42-46 large, oval kernels. The weight of 1000 kernels is 46-50g. They contains 12,5-13% protein and 24-26% gluten. It is of a medium ripening group. This variety has a good resistance to drought, wintering, lodging and diseases. The productivity is 4-5,5 t/ha. The quality of macaroni is high. The variety Hordeiforme 333 is approved in Moldova.

The variety Auriu 273 has been developed through hybridization of the varieties Iantari x Hordeiforme 333 followed by selection in F2. The variety belongs to the Hordeiforme variation. The spike is of a medium size (6.5-7.0 cm long), cylindrical of a medium density (29-31 spikelets per 10 cm of the spike rachis length). The kernel is large (the weight of 1,000 kernels is 45-48 g), oval, contains 14.0%-15.0% of protein and 27%-30% of gluten. It is characterized by a high resistance to diseases in field conditions (mildew, brown and yellow rust, root rot, smut etc.).The variety is high-productive with a yield of 4.6-5.0 q/ha. It has high qualities for macaroni production.

Class no.

3

Academy of Sciences of Republic of Moldova The Institute of Physiology and Sanocreatology

MD.63.	
Title	Bull sperm thawing medium
Authors	Teodor Furdui, Gheorghe Boronciuc, Ion Balan, Iulia Cazacov, Nicolae Roșca, Melania Bucarciuc
Institution	The Institute of Physiology and Sanocreatology of the Academy of Sciences of Moldova
Patent no.	Patent MD 1068
Description EN	The invention relates to cryobiology and zootechny, namely to a bull sperm thawing medium. The bull sperm thawing medium comprises sodium citrate, L-thyroxine and distilled water, in the following component ratio: sodium citrate, g $1.52.0$ L-thyroxine, $\mu g 3050$ distilled water, ml up to 100. The result is to maintain at a high level the mobility of gametes and the integrity of acrosome after thawing.
Class no.	3 - Agriculture and Food Industry
MD.64.	Complex of biologically active nutritional additives
Title	Tudor Strutinsky, Maria Timoshco, Mariana Petreanu
Authors	The Institute of Physiology and Sanocreatology of the Academy of Sciences of Moldova
Institution	Patent MD 993, 253, 290, 3879
	Complex use of biologically active nutritional additives
Patent no.	contribute to maintain the motor and secretory functions of the digestive tract in sanogenic limits, to optimize metabolism, to stimulate anti-aging processes and to normalize carbohydrate metabolism. The invention belongs to the food industry and can be used for production of biologically active nutritional additives. Biologically active agents which are contained in the nutritional supplements influence in complex metabolism of organism, its antioxidant and anti-aging properties, contribute to maintain necessary functioning of digestion and metabolic processes and also to correct their decrease caused by age.
Patent no. Description EN	contribute to maintain the motor and secretory functions of the digestive tract in sanogenic limits, to optimize metabolism, to stimulate anti-aging processes and to normalize carbohydrate metabolism. The invention belongs to the food industry and can be used for production of biologically active nutritional additives. Biologically active agents which are contained in the nutritional supplements influence in complex metabolism of organism, its antioxidant and anti-aging properties, contribute to maintain necessary functioning of digestion and metabolic processes and also to correct their decrease caused by age. 3 - Agriculture and Food Industry

Academy of Sciences of Republic of Moldova The Institute of Economic Research

MD.65.	
Title	ECONOMETRIC MODELING OF FINANCING OF INNOVATIONAL ACTIVITY IN MOLDOVA.
Authors	GANEA Victoria, STRATAN Alexandru
Institution	Institutul National de Cercetări Economice al AȘM
Patent no.	Certificat ODA MDA seria OS Nr.5332 din 12.04.2016
Description EN	 Innovation policy by responding to this new level of needs, must form a complex system of incentives, planning, development, management, supervision and control processes innovation activity. Intensive pace of national economic growth can be achieved by activation of the following mandatory elements: formation and development of innovative component of the national economy; increasing the competitiveness of domestic production, modernization and diversification of economic sectors; financial market development; boosting growth in demand both domestic and foreign; providing the necessary support for developing small and medium enterprises primarily by improving fiscal policy.
Class no.	Invention Classification - 14
MD.66.	
Title	EVALUATING OPPORTUNITIES TO IMPLEMENT CHAPTER INNOVATIVE BUSINESS VENTURE IN REPUBLICA MOLDOVA.
Authors	GANEA Victoria, STRATAN Alexandru
Institution	Institutul National de Cercetări Economice al AȘM
Patent no. Description EN	Certificat ODA MDA seria OŞ Nr.5334 din 12.04.2016 Was developed algorithm development financing mechanism venture in Republica Moldova, consisting of the following elements: funds venture companies venture specialized banks allocate financial resources unsecured corporate innovation - residents of scientific-technological parks and innovation incubators for the development of ideas of perspective, betting only on high income on success. Under these conditions, RM is inevitable and appropriate to create the National Venture Fund, which would finance as a center of innovation activity
Class no.	Invention Classification - 14

$\mathbf{WID.0/.}$

	ENHANCING THE ROLE OF INNOVATION IN
Title	BUSINESS GROWTH THROUGH THE EFFICIENT
11110	USE OF BUDGETARY ALLOCATIONS IN SCIENCE
	AND INNOVATION IN REPUBLICA MOLDOVA.
Authors	GANEA Victoria, STRATAN Alexandru
Institution	Institutul National de Cercetări Economice al AȘM
Patent no.	Certificat ODA MDA seria OŞ Nr.5332 din 12.04.2016
	Efficient functioning of the economy depends largely on the
	performance of management and the creation of innovations
	are implemented.
	By the analysis, it was found that without hard efforts of
	developing innovative sphere in Moldova is not possible to
	ensure steady economic growth. The current attempt crossing
	pattern innovational development is depending on the need for
	financial support of this process, or spending on innovation are
Description EN	characterized not only by the considerable amount thereof, but
	also a high risk and a long payback. The results of this
	scientific research developments has been included in the draft
	Strategy Innovation of Moldova for the period 2013-2020
	"Innovations for competitiveness". Moldova currently has
	some success in this area: business incubators are created,
	scientific-technological parks, but those measures have favored
	expected results after major development indicators of
	innovation.
Class no.	Invention Classification - 14

Practical Scientific Institute of Horticulture and Food Technology Republic of Moldova

MD.68.	
Title	Strain of Saccharomyces vini yeast for the production of sparkling rose wine
Authors	Taran Nicolae, Soldatenco Eugenia, Barsova Oxana, Soldatenco Olga
Institution	Public Institution Practical Scientific Institute of Horticulture and Food Technology
Patent no.	MD 4428 B1 2016.07.31
Description EN Class no.	The invention relates to biotechnology and can be used in the wine industry. The strain of Saccharomyces vini yeast, deposited in the National Collection of Non- pathogenic Microorganisms under the number CNMN- Y-27, can be used in the production of sparkling rose wine. The result consists in the selection of a local yeast strain having enhanced activity of fermentation of blends with different concentrations of phenolic substances, including anthocyanins, for the production of sparkling rose wine with high foaming and sparkling properties. 3. Agriculture and Food Industry
MD 69	
MD.69.	Strain of Saccharomyces vini yeast for the production of
MD.69. Title Authors	Strain of Saccharomyces vini yeast for the production of dry rose wine stock Taran Nicolae, Soldatenco Eugenia, Barsova Oxana, Soldatenco Olga
MD.69. Title Authors Institution	Strain of Saccharomyces vini yeast for the production of dry rose wine stock Taran Nicolae, Soldatenco Eugenia, Barsova Oxana, Soldatenco Olga Public Institution Practical Scientific Institute of Horticulture and Food Technology
MD.69. Title Authors Institution Patent no.	Strain of Saccharomyces vini yeast for the production of dry rose wine stock Taran Nicolae, Soldatenco Eugenia, Barsova Oxana, Soldatenco Olga Public Institution Practical Scientific Institute of Horticulture and Food Technology MD 4429 B1 2016.07.31
MD.69. Title Authors Institution Patent no. Description EN Class no.	 Strain of Saccharomyces vini yeast for the production of dry rose wine stock Taran Nicolae, Soldatenco Eugenia, Barsova Oxana, Soldatenco Olga Public Institution Practical Scientific Institute of Horticulture and Food Technology MD 4429 B1 2016.07.31 The invention relates to biotechnology and can be used in the wine industry. The strain of Saccharomyces vini yeast, deposited in the National Collection of Nonpathogenic Microorganisms under the number CNMN-Y-29, can be used in the production of dry rose wine stock. The result consists in the selection of a local yeast strain having a reduced absorption of phenolic substances, including anthocyanins, for the production of high quality dry rose wine stock. 3. Agriculture and Food Industry

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1111	••		••

Title	Rational use of CO ₂ meal from tomato wastes in bakery products
Authors	Olga Migalatiev, Marina Carelina, Vavil Caragia, Elena
Authors	Draganova, Valentina Gordeeva

Institution Public Institution Practical Scientific Institute of Horticulture and Food Technology

Patent no.

A perspective direction for rational use of tomato waste is supercritical CO_2 extraction, method whereby the fat-soluble compounds are extracted. Following this process it is obtained the CO_2 -defatted meal that can be used in the food industry.

The importance of CO_2 meal adding lies in enriching product with dietary fiber, which is the main component, essential to the digestive process: normalizes the beneficial intestinal microflora, improves the functioning of the gastrointestinal tract, and reduces cholesterol in the body.

Bakery products are among the most consumed foods. Using vegetable non-traditional ingredients (secondary raw materials) in classical recipes contribute to improving the organoleptic, physico-chemical properties and nutritional value of newly created products.

Description EN The scientific research purpose was the development of recipes for bread with added CO_2 meal of tomato wastes and its implementation on an industrial scale.

The basic principle of recipes is the fact that the content of dietary fiber in bread products to be at least 15% of the RDA ensured by eating a serving of 200 grams of bread.

Experimental laboratory samples of bread were prepared from patent wheat flour, from which a part has been replaced by the addition of 5-20% of CO_2 meal from tomato waste. The consumption of 200 g of bread with 5% CO_2 meal from tomato waste meets to 34.3% from RDA of dietary fiber (6.86 g).

The bread with 5% CO_2 meal of tomato waste was produced in industrial conditions, at bakery factory "Odius" LLC, Chisinau city, confirmed by Implementation document.

Class no.

3. Agriculture and Food Industry



IVID./1.

Title	Method for producing powdered fermented milk
The	products
Authors	Cartașev Anatoli, Bureț Elena, Coev Ghenadie
T 4•4 4•	Public Institution Practical Scientific Institute of
Institution	Horticulture and Food Technology
Patent no.	MD865Y / Patent application No. 1/2015
Description EN	The invention relates to the process of manufacturing of a fermented milk products in powder form. A major problem in the dairy industry is obtaining dairy products, with long shelf-life, stable sensorial, physical, chemical and microbiological characteristics. There are many ways to solve this problem. One way is to produce fermented dairy products in powder form. Invention proposal directed on simplify the technological process, improving quality and obtaining a product with high concentration of live lactic acid bacteria beneficial to the human body, with moderate acidity and stable during long shelf life at room temperature. The preparation process of a fermented dairy powder includes: - milk inoculation by starter culture (10^{10} CFU/ml Streptococcus thermophilus EPS and Streptococcus thermophilus non-EPS or Lactobacillus bulgaricus strains in ratio 1:1; -fermentation at 40 – 42 °C until a pH of 4.7- 4.6: - freezing to minus 10 12 °C; - freeze-drying time 20 – 22 h., residual pressure of 57 Pa, up to 24-26 °C - grinding of the final product and storage at max 20 °C. As exopolysaccharide producing strain was used Streptococcus thermophilus, non-producing exopolizaharide Streptococcus thermophilus strain and Lactobacillus bulgaricus CNMN -LB-42. In result was obtained freeze-dried yogurt and fermented baked milk in powder form. Products contain high concentration of live lactic acid bacteria, acidity is moderate, possess stable sensorial, physical, chemical and microbiological characteristics without adding stabilizers, with long shelf life at room temperature. After its rehydration restores structure and taste of fresh yogurt and fermented baked milk.
C1055 110.	J. Agriculture and robu moustly

MD.72.	
Title	Process for producing curds and beverage from sour whey (embodiments)
Authors	NECRÌLOVA Liudmila, BOGDAN Nina, BUREŢ Elena, COEV Ghenadii
Institution	Practical Scientific Institute of Horticulture and Food Technology, Chisinau, Moldova,
Patent no.	MD 889 Z 2015.03.31
Description EN	The present invention provides a integrated processing of sour whey in dairy industry to obtaining curds and beverages with improved prophylactic properties. The process, according to the invention, comprises production of curds with food additives, wherein the clarified whey is directed to the production of a beverages by adding fruit or vegetable additives to the whey (embodiment 1) or by adding the bacterial culture of <i>Streptococcus thermophilus</i> to the whey, fermentation, addition fruit or vegetable additive (embodiment 2). The present invention have the following advantages: •complex processing of sour whey and rational use of all its components •doesn't need complicated and costly equipment •introduced additives contribute to enhancing the nutritional and biological value of products •fermented beverages are characterized by high content of viable lactic acid bacteria, which have a beneficial effect on the digestive human system •bacterial cultures of <i>Streptococcus thermophilus</i> manifest high fermentative properties because are adapted to quality of raw materials
Class no.	3

Institute of Crop Science "Porumbeni"

Republic of Moldova

MD.73.	
Title	Hibrid of corn, Porumbeni 462 MRf
Authors	Pritula G.I., Gorciacov V.A., Frunze N.S., Vanicovici N.G., Ştirbu V.I., Iurcu A.I., Partas E.C., Ciobanu V.G., Frunze I.I., Criucicov O.M., Guțanu C.G., Micu V.E., Bejenari I.V.
Institution	INSTITUT OF CROP SCIENCE "PORUMBENI"
Patent	In patenting
Description EN	Medium-late single cross hybrid of maize, FAO 460. The grain is dent, yellow, with an average content of 10.9% protein, 4.5% oil and 72.0% starch, weight of 1000 kernel is 320-330 g. Potential productivity 14-15 t/ha, silage yield is 50-60 t/ha. Resistant to drought. Tolerant to diseases and pests. Responsive to high yield environment and irrigation. Registered in Moldova for grain and silage use
Class no.	<i>3</i>
MD.74.	
MD.74. Title	Hibrid of corn, Porumbeni 459 MRf
MD.74. Title Authors	<i>Hibrid of corn, Porumbeni 459 MRf</i> G. Pritula., S. Musteță., V. Gorceacov., N. Frunze., N. Vanicovici., V. Micu, V. Știrbu., I. Garbur., C. Guțanu.,G. Caraivanov., V. Pojoga., E. Partas., V. Ciobanu., I. Frunze., A. Rotari., A. Iurcu., I. Beienari.
MD.74. Title Authors Institution	<i>Hibrid of corn, Porumbeni 459 MRf</i> G. Pritula., S. Musteță., V. Gorceacov., N. Frunze., N. Vanicovici., V. Micu, V. Știrbu., I. Garbur., C. Guțanu.,G. Caraivanov., V. Pojoga., E. Partas., V. Ciobanu., I. Frunze., A. Rotari., A. Iurcu., I. Bejenari. INSTITUT OF CROP SCIENCE "PORUMBENI"
MD.74. Title Authors Institution Patent	<i>Hibrid of corn, Porumbeni 459 MRf</i> G. Pritula., S. Musteță., V. Gorceacov., N. Frunze., N. Vanicovici., V. Micu, V. Știrbu., I. Garbur., C. Guțanu.,G. Caraivanov., V. Pojoga., E. Partas., V. Ciobanu., I. Frunze., A. Rotari., A. Iurcu., I. Bejenari. INSTITUT OF CROP SCIENCE "PORUMBENI" Patent nr.MD107, 2012.08.31.
MD.74. Title Authors Institution Patent Description EN	Hibrid of corn, Porumbeni 459 MRf G. Pritula., S. Musteță., V. Gorceacov., N. Frunze., N. Vanicovici., V. Micu, V. Știrbu., I. Garbur., C. Guțanu.,G. Caraivanov., V. Pojoga., E. Partas., V. Ciobanu., I. Frunze., A. Rotari., A. Iurcu., I. Bejenari. INSTITUT OF CROP SCIENCE "PORUMBENI" Patent nr.MD107, 2012.08.31. Medium-late single cross hybrid of maize, FAO 460. The grain is dent, yellow, with an average content of 9.5% protein, 4.2% oil and 71.0% starch, weight of 1000 kernel is 260-270 g. Potential productivity 14-15 t/ha, silage yield is 40-50 t/ha. Resistant to drought. Tolerant to diseases and pests. Responsive to high yield environment and irrigation. Registered in Moldova for grain and silage use.
Hibrid of corn, Porumbeni 383 MRf	

V. Mîrza., V. Maticiuc., N.Vanicovici., G.Pritula ., A.	
Vereșceac., E.Partas., V. Pojoga ., E.Rotari., V. Știrbu.,	
Lebediuc .G ., Smîc A., Tarasov V.	
INSTITUT OF CROP SCIENCE "PORUMBENI"	
In patenting	
Medium modified single cross hybrid of maize, FAO	
380. The kernel is dent, yellow, with an average content	
of 10.5% protein, 5.0% oil and 71.0% starch, weight of	
1000 kernel is 300-320 g. Grain yield reaches 11-12 t/ha,	
silage yield is 50-70 t/ha. Tolerant to diseases and pests.	
Resistant to drought and lodging. Registered in Moldova	
for grain and silage use.	
3	

MD.76.	
Title	Hibrid of corn, Porumbeni 369 MR
	V.Ciobanu., E.Partas., V.Micu., V.Gribincea., C.Guţanu,
Authors	V.Maticiuc., V.Pojoga., V.Ştirbu., I.Frunze., S.Bruma.,
	E.Rotari.
Institution	INSTITUT OF CROP SCIENCE "PORUMBENI"
Patent	In patenting
	Medium modified single cross hybrid of maize, FAO
	370. The kernel is dent, yellow, with an average content
	of 9.4% protein, 549% oil and 71.5% starch, weight of
Description EN	1000 kernel is 340-355 g. Grain yield reaches 9-11 t/ha,
•	silage yield is 45-55 t/ha.Tolerant to diseases and pests.
	Resistant to drought and lodging. Registered in Moldova
	for grain and silage use.
Class no.	3

MD.77	
Title	Hibrid of corn, Porumbeni 280 MRf
	V. Maticiuc, V. Micu, A. Rotari, V. Știrbu, A.Iurcu
Authors	O.Criucicov, I. Frunze, E. Partas, V. Ciobanu,
	G.Lebediuc, V.Şterebeţ, A.Meleca.
Institution	INSTITUT OF CROP SCIENCE "PORUMBENI"
Patent	In patenting
Description EN	Early single cross hybrid of maize, FAO 300. The grain is yellow, with an average content of 15.3 % protein, 11.0 % sugars, 22.7% dextrins and 31.5% starch at the picking maturity phase. Is characterized by good taste. Yield of ears at the picking maturity phase reaches 12.0- 15.0 t/ha. Is distinguished by fast seedling growth. Tolerant to diseases and pests. Is suitable for mechanized harvesting. Registered in Moldova for use in food.
Class no.	3

MD.78.	
Title	Hibrid of corn, Porumbeni 254 MRf
	Vanicovici., V. Maticiuc., V. Mîrza., G.Pritula ., A.
Authors	A. Vereşceac., E.Partas., V. Pojoga ., A.Rotari., V.
	Ştirbu., G. Lebediuc ., A.Smîc., V. Tarasov.
Institution	INSTITUT OF CROP SCIENCE "PORUMBENI"
Patent	V2012 0014.
	Early three-way cross hybrid of maize, FAO 260. The
	kernel is dent, yellow, with an average content of 10.8%
	protein, 4.1% oil and 71.7% starch, weight of 1000
	kernel is 300-315 g. Grain yield reaches in North areas is
Description EN	10-12 t/ha, silage yield is 60-65 t/ha. High rapidly
	development at initial level. Tolerant to diseases and
	pests. Resistant to lodging and drought, high resistance
	to cool conditions. Fast grain dry down. Registered in
	Russia for grain use.
Class no.	3

Agency for Innovation and Technology Transfer Republic of Moldova



Agency for Innovation and Technology Transfer (AITT) was founded on October 29, 2004, in compliance with the Science and Innovation Code of Republic of Moldova, with the main objective to coordinate, stimulate and implement the mechanisms of innovation and technology transfer in Moldova.

On the basis of its main objectives and functions established in consent with the Academy of Sciences of Moldova, in accordance to the Law on Science and Technology Parks and Innovation Incubators, there have been created several science and technology parks and innovation incubators, which represent the best solution for domestic companies, as they offer a series of strategic and logistics services in order to reach prosperity.

In order to coordinate, stimulate and implement the mechanisms of innovation activity and technology transfer the Agency performs the following functions:

- Implementation of the state policy in the sphere of innovation and technology transfer;

- Defining main directions in the sphere of innovation and technology transfer, in terms of different programs and projects at all levels;

- Participating in establishing partnerships between different organizations in the sphere of science and innovation, higher education institutions and production units;

- Coordinating the process of creating infrastructure in the sphere of innovation and technology.

MD.79.	
Title	Homeopathic product
Authors	Postolachi Aureliu, Claudia Belinsky
Institution	Individual Enterprise "Postolachi Aureliu"
Patent	Patent application No. 3721/2010
Description EN	Floral-is a clear, colorless gel that will help you cope with problems such as swelling and felling of heaviness in the lower limbs, cramps in the calf muscles, sprains, bruises and contusions of soft tissues, nonspecific inflammation of the joints, premenstrual syndrome, herpes labialis and insect bites
Class no.	4

Junior Achievement Moldova Republic of Moldova

Junior Achievement Moldova introduces the business world by focusing on the basic free enterprise conceptions of operations, management, manufacturing and marketing. Creating an environment where small groups of students manage large expectations, our Business World gives elementary students experience of making big decisions in different areas of a small operation. Junior Achievement Moldova member Junior Achievement World Wide have this interactive program introduces the idea of money as a way to obtain needs and wants, managing money smartly, explores consumerism, and how to protect yourself financially. More Than Money also includes an introduction to entrepreneurship and business. Ideas and Innovations, building on previous learning and concepts, the opportunity is now in the hands of the students to apply their knowledge gleaned from other JA Program to operate their own retail business. Students create, organize and run their own business from their ideas and innovations for a day and see what challenges and successes come from working as a group towards a common goal.

Do you want to be a Doctor? Lawyer? Engineer? Teacher? Business Person? You will gain skills that can be used in any career! Junior Achievement is open to anyone, not only students interested in business, innovations or inventions.

MD.80.

1. Pilling-Ten	6. Treelib
Ilinca Bostanaru	Neghin Mihai, Puscasu Dorin, Anghel Elena, Tonu Alexandru
2. Bio-Thea (health-tea)	,
Codreanu Cristian	7. Potato-tekNova Scortescu Marius-Silviu/Muntean Sandu
3. Dizzy –effect	
Dimchi Cristina, Lascu Lilia	8. Travel-Bag, Invent-Light Tanase Daniel
4. Mini-planet	
Dascal Dorin	9. Travel-Bag Zarnitchi Tudor
5. Eo-Sun, Power -Bank	
Ganja Daniel	
	Coordinator: Silvia SCORTESCU Volunteer Teacher J.A Moldova

INTERNATIONAL EXHIBITS 220

Mentor J.A. School Companies

Philipines

PH.1.	
	Neuroprotective Activities of <i>Saccharum spontaneum</i> (Wild sugarcane) Root Extract via Reduction of Cerebral Cell
Title	Deaths and Conservation of Neuromotor Function of <i>Danio</i> rerio (Zebrafish) Model of Hypoxia/Reoxygenation Brain
Authors	Andrea Gale S. Alcala, Javee L. Gamboa, Maxyne Dheil A. Castro
Institution	Juan R. Liwag Memorial High School - Junior High School
Description EN	The discovery and development of neuroprotectants is a continuous global demand. This study aimed to evaluate the neuroprotective activities of <i>Saccharum spontaneum</i> (Wild sugarcane) crude ethanolic root extract (SRE) against hypoxia/reoxygenation brain injury in <i>Danio rerio</i> (Zebrafish) models. Embryotoxic and teratogenic assays were carried out to identify safe SRE concentrations. Larval zebrafishes were exposed to simulated hypoxic environment and recovery solutions to determine the neuroprotective activities of SRE via locomotor response and quantification of cerebral cell deaths. 1,1-diphenyl-2-picrylhydrazyl (DPPH) scavenging and acetylcholinesterase (AChE) inhibitory assays were also conducted. Based on the results of the toxicity assay, 3.125, 6.25 and 25µg/ml SRE were identified as safe concentrations which were used in proceeding neuroprotective tests since all parameters (mortality, hatchability, heart rate and whole body lengths) observed in these concentrations were comparable to embryo medium. After inducing hypoxia/reoxygenation brain injury in zebrafish, 70-80% SRE-treated larvae were highly responsive and freely swimming wherein, the lowest concentration was notably recorded with significant reduction in cerebral cell deaths by 85% and 94% in comparison to positive and negative controls respectively. The extract also exhibited potent scavenging and anti-AChE activities with IC50 values of 25.21µg/ml and 146.07µg/ml respectively. The SRE-induced survival of neurons and protection of motor function could be attributed to its mechanisms as an antioxidant and AChE inhibitor. Relevant studies must be done to isolate the bioactive compounds to better understand its mode of action. In conclusion, phytocompounds from Wild sugarcane roots could be further studied for its potential therapeutic use in post-stroke recovery.

Class no.

DILA	
РН.2.	
Title	DU30 Alcohol Sensing Crab Shells Composite Helmet
Authors	Sonny Dizon Valenzuela/ Brenda C. Caranto
Institution	Manila Young Inventors Association
Patent	Pending for patent
Description EN	This invention relates to the use of crab shells as filler and reinforcing material in the production of a cheap and impact resistant alcohol sensing crab shells composite helmet. The process in making the protective gear involves the following stages namely:(1) construction of the alcohol breath analyzer, (2) model making, (3) mould making, (4) casting, and (5) upholstery. The creation of the model which is made of plaster of Paris serves as a guide in making the rubber mold of silicone and catalyst. Wax is applied inside the mold and alternate layers of fiber mat and methyl ester ketone with powdered crab shells were formulated. The novel safety protection helmet has the tensile strength of 60.83 N/m2 at 3.00 mm thickness and 25.00mm using ASTM D638 standard method and has passed the Standard Impact Test for safe helmet. This prototype product is invaluable for motorcycle users to avoid alcohol related accidents. This high value product is drawn from the idea that the inedible part of crab shells must be utilized and recycled into something useful to minimize if not eliminate wastes generated from it. Resources and energy are conserved in the process and the environment is protected.

Class no.

РН.3.	
Title	JatroBatt: Green Battery Using Jatropha curcas
The	Water-based Extract
Authors	Ma. Chat Donna V. Ofilas, Chem Beaver P. Valenzuela, James Benedict G. Cuesta
Institution	Manila Young Inventors Association
Patent	(Pending)
Description EN	JatroBatt is a green battery. This invention relates to a device in generating alternative, cheap and renewable power source using Jatropha curcas Linn. fruit waterbased extract. The design of the battery is composed of 15 utility trays. Each tray has 14 unit cells of copper and zinc electrodes connected in a series and parallel circuits. The voltage output of each unit is 0.5 to 0.8 volts and the whole tray is 6 to 13 volts. The prototype battery which is connected in series (three trays) and parallel (five stacks of three trays) generates 20 to 26 volts. This brand new device is applicable to power 10 to 13 LEDs connected in series circuit and can charge a cellphone by converting the voltage to 5 volts using the designed charger circuitry. Moreover, this device is applicable to power microelectronic systems such as calculators, digital clocks, musical cards and other gadgets. The battery can generate electricity up to 10 hours. The mechanism has the simplicity of a voltaic cell. It has no harmful effects, is free from environmental pollution hazards and can be operated by anyone. It may further be repeatedly used. The corrosive effect of the energy source is nominal, so the electrodes remain in good condition for a long duration. The copper and zinc are however susceptible to a certain extent to corrosive action. There will be no impact of sunlight. Power can be obtained during the day or night on a regular and continuous basis. (max 250 words)

Class no.

Poland

Represented by Eurobusiness-Haller

PL.1.	
Title	Technology of production of culinary ostrich meat with enhanced nutritional and health-promoting properties Jarosław O. Horbańczuk, Ewa Poławska, Agnieszka
	Wierzbicka, Artur Jóźwik, Nina Strzałkowska, Anna
Authors	Wójcik, Janusz Pomianowski, Iwona Wojtasik-
	Kalinowska, Dominika Guzek, Krystyna Gutkowska,
	Cyprian Tomasik
	Institute of Genetics and Animal Breeding of the Polish
Institution	Academy of Sciences
	Warsaw University of Life Sciences
Patent no.	P.412491
Description EN	bynamic increase in the rate of civinzation diseases, such as obesity, hypertension, atherosclerosis and diabetes, caused by lifestyle and consumed food, results in the need of consumers and food industry to produce food with enhanced nutritional and health-promoting properties, including alternative animal species like ostrich. Thus the invention concerns production of culinary ostrich meat with enhanced nutritional and health-promoting properties, with optimized n6/n3 fat ratio (below 4:1), high content of micro- and macro- elements, reduced allergenic properties and high anti- oxidative potential. This aim has been achieved due to innovative selection of breed components, feeding technology with special diet supplemented with linseeds and organic selenium, vitamin E and addition of green forage of lucerne in the optimal period of birds' growth. This is a premium quality product dedicated mainly for children and the youth.

Class no.



PL.2.	
	MPS-000
Title	Universal Transducer Measuring Elongation of
	Rotating Machines
Authors	Grzegorz Bonikowski
Institution	Institute of Power Systems Automation Ltd.
Patent no.	Innovation
Description EN	Rotating machines are measured with a pair of devices: transducer – measuring probe. Both elements are connected with a coaxial transducer, adjusted to measuring conditions. The probe constitutes a mechanical and electric element performing the actual measurement of the displacement, and the transducer is an electronic device (microprocessor) converting a given measurement. Using a given type of probe allows to perform a measurement depending on mechanical conditions. The MPS-00 Transducer uses a uniquely developed compensation algorithm for measurement clearance. The actual value of the clearance is determined without additional sensors, and on the basis of that the value of elongation is determined at the level of working accuracy of 0.5%.
Class no.	2



PL.3.	
Title	Protection of cylinders with technical gases from impact of thermal radiation
	Marzena Półka, Bożena Kukfisz, Zdzisław
	Salamonowicz, Szymon Ptak, Rafał Matuszkiewicz,
Authors	Małgorzata Ciuka-Witrylak, Waldemar Jaskółowski, Marek Woliński, Joanna Ryszkowska, Marcin Leonowicz, Monika Auguścik, Milena Leszczyńska, Rafał Wróblewski, Łukasz Wierzbicki
Institution	Main School of Fire Service, Warsaw University of
	INTERNATIONAL EXHIBITS

Technology

Patent no.

Description EN

The invention consists in protective shields designated for cylinders containing technical gases to secure them from the impact of thermal radiation.

Technical gases stored in pressurised containers pose a serious hazard if subjected to fire conditions. Technical gases are stored both at low and at high pressure parameters inside containers ranging from a few (LPG) to even a few hundred bar (CNG). The direct contact of the container mantle with the thermal radiation stream coming from the fire gives rise to a rapid pressure increase inside the container, weakening the sheathing material and as an effect causing physical bursting of the cylinder. This type of physical explosions creates an overpressure wave, formation of fragments and impact of radiation as a result of ignition of flammable gas and flammable materials present in the surroundings and also at a considerable distance from the source of the fire/explosion.

To ensure the required insulation of mantles used in diverse containers holding flammable, oxidising, toxic and other gases from fire conditions, protective shields of cylinders were designed and built using materials offering good insulating and energy consuming parameters. The application of multi-coat material allowed the minimising of the amount of heat supplied to the cylinder in fire conditions and render impossible direct

contact of the flames with the cylinder sheathing, which in emergency conditions cause rapid deterioration of mechanical strength.

Assessed and verified was the functioning of protective shields in testing grounds conditions for cylinders with LPG, CNG, O_2 , H_2 and C_2H_2 . The shields have been found to offer significant insulation efficiency, and in such a way considerably limit the heating up of the cylinders and delay the time until ignition. Blocking the flame contact with the sheathing limited the local temperature growth of the sheathing over the value of the yield point. This allowed extending the time until explosion of the cylinders a few times.

The application of the developed shields considerably reduces the likelihood of occurrence of hazards connected with fire and explosion of cylinders containing technical gases. The adoption of a shield to protect cylinders containing technical gases from the impact of thermal radiation as a consequence enhances the safety of endangered persons, and in particular rescuers participating in a direct way in rescue and extinguishing actions.

Class no.

Poland

Represented by

Association of Polish Inventors and Rationalizers Stowarzyszenie Polskich Wynalazców i Racjonalizatorów. SPWIR

PL.4.	
Title	The innovation symbiotic preparation for animal feed application.
Authors	Katarzyna Śliżewska
	Lodz University of Technology, Poland
Institution	Institute of Fermentation Technology and
Patent no.	Microbiology Patent 212061, Patent 210685, Patent 217477 The novel synbiotic (probiotic and prebiotic) preparation for animals is a natural product containing bacteria resistant to
Description EN	aminats is a natural product containing bacteria resistant to gastric juice and bile <i>Lactobacillus</i> sp. as well as <i>Saccharomyces cerevisiae</i> yeast of a high fermenting ability. Prebiotic substance in the preparation is inulin. Research on the efficiency of new synbiotic specimen was conducted under industrial farming conditions on piglets with sows, turkeys and chicken broilers. In vivo study shown that novel synbiotic preparation have considerable influence on improvement of immunity and resistance in animals as well as improvement of assimilation of nutricients and decrease threat poison toxins, which can be introduced with feed to animals organism. Feeding a synbiotic preparation to animals (broiler chickens, turkeys and sows) stabilises the bacterial microflora of the alimentary tract, through the constant supplying of specified bacterial strains, enabling the optimal progress of the digestive function and the immune system. The preparation causes a visible pressure on pathogens and opportunist pathogens, makes its adhesion difficult and decreases the production of toxins. Bacteria and yeasts in the preparation detoxicates micotoxins. Preparation can be used as a novel synbiotic (probiotic and prebiotic) for animals, especially for pigs and poultry feeding. They can replace the hitherto used growth stimulators.

Class no.

PL.5.	
	New highly luminescent europium (III), terbium (III) and
	samarium (III) complexes and their use for the role of
Title	organic-inorganic luminescent molecular chemosensors for
	monitoring of polymerization processes and monitoring of the properties of polymer coatings and films
	Joanna Ortyl Anna Chachai-Brekiesz Iwona Kamińska-
Authors	Borek, Katrzyna Kukuła, Magda Bilut, Monika Topa, Maciej
	Pilch, Karolina Dzięciołowska
Institution	Cracow University of Technology,
Institution	Faculty of Chemical Engineering and Technology
Patent no.	Pending
	The present invention relates to a method for monitoring
	thickness, degree of cure, and other properties of a coating or
	using luminescence/fluorescence methodologies based on
	highly luminescent rare earth metal complexes (Fu(III) Tb(III)
	and Sm(III) complexes). In accordance with the present
	invention methods are provided for measuring the properties
	of an uncured curing or a cured polymeric mass such as a
	coating or film using fluorescence spectroscopy by using
	special designed luminescence molecular sensors based on rare
	earth metal complexes. Properties which can be monitored in
	accordance with the invention include degree of cure,
	hardness, kinetic of polymerization processes, efficiency of
Description EN	initiation process, value of pH, the strength of acid which is
2 comption 210	generated during cationic polymerization processes and also
	thickness (or coat weight) of a coating on the substrate and also
	irradiation A luminescence probe is provided in the costing or
	film and the changes in the luminescence characteristics of the
	probe are observed Using previously prepared calibration
	curves, these changes can be related to various properties of
	the coating and particularly to the degree of cure. While the
	invention is principally applicable to monitoring the properties
	of coatings and films, those skilled in the art will appreciate
	that these properties can be measured in a polymeric mass of
	any geometry or shape provided, of course, that the mass in at
	least one dimension transmits the luminescence such that it can
Classes	De detected.
Class no.	9. Chemical and Textile moustry + 11. Printing and advertising



PL.6.	
Title	"Flexible dye-sensitized solar cells with
THE	CNT/PEDOT-PSS/PVP counter electrode"
A	Leszek A. Dobrzański, Krzysztof Lukaszkowicz, Aleksandra
Autnors	Drygała, Marek Szindler, Magdalena Szindler, Marzena Prokoniuk vel Prokonowicz
Institution	The Silesian University of Technology
Institution	Two patent application:
Patent no.	• "Dve-sensitized photovoltaic cells" No P 413853
i atent no.	 "Dye-sensitized pilots (online cells" No. P.415758.
	The invention is characterized in that the counter electrode is a
	CNT/PEDOT-PSS/PVP layer deposited on a PET foil with
	ITO thin film. The invention allows extending the applicability
Description EN	of the dve-sensitized solar cells by using a flexible substrate
2 courprise 210	and extension of the stability of the cell by using CNT/
	PEDOT -PSS/PVP layer, instead of using a layer of brittle
	platinum.
Class	2
Cluss	-
PL.7.	
Title	A screw with moving elements of intensive mixing
Authors	Janusz W. Sikora
Institution	Lublin University of Technology
Patent no.	Patent application No. 41631/2016
	so far the extruder screws for polymers for obtaining different kinds of profiles e.g. pipes window profiles and open and
	chambered furniture profiles as well as agriculture and
	construction films, had fixed mixing elements. This enabled a
	conscious influence on the effectiveness of the mixing process
	in the first place but also on compressing, heating
	and transporting the polymer and consequently on the quality
	and output of the received products. The suggested solution is
	the first one in the world to enable the control of the height of the mining elements in the helical channel of the autruder
Description FN	plasticizing system and therefore to influence the phenomena
Description En	taking place there. The control is done without stopping the
	extrusion system, through the mechanical or pressure
	abanga of the placement of the slat on the surface of which the
	change of the placement of the slat on the surface of which the
	mixing elements are fixed. The change of the position of the
	mixing elements are fixed. The change of the position of the slat is done through the change of the inclination angle of the
	mixing elements are fixed. The change of the position of the slat is done through the change of the inclination angle of the connectors fixed to the slat with one end and to the threaded
	mixing elements are fixed. The change of the position of the slat is done through the change of the inclination angle of the connectors fixed to the slat with one end and to the threaded sleeve with the other end and moving along the threaded rod.
	mixing elements are fixed. The change of the position of the slat is done through the change of the inclination angle of the connectors fixed to the slat with one end and to the threaded sleeve with the other end and moving along the threaded rod. Moving the slat in the direction of the screw surface results in the increase of the height of the mixing elements and

	the direction of the screw axis results in the decrease of the elements height and therefore the decrease of the mixing intensity of the melt polymer.
Class	14
PL.8.	
Title	TRM [®] Tactical Throwable Robot
Authors	Adam Aftyka, Konrad Bożek, Łukasz Dudek, Mariusz Kozak, Rafał Czupryniak, Bartosz Stankiewicz
Institution	Industrial Research Institute for Automation and Measurements PIAP
Patent no.	Patent No. 225543
	TRM [®] Tactical Throwable Robot is a small, robotic device designed to deliver support in antiterrorist operations. TRM [®] has been designed in response to the threats faced by special forces units during area reconnaissance. The TRM [®] can be thrown into a building or to an open area and steered by remote control in order to perform inspection. TRM [®] 's construction is designed to withstand the impact produced by a fall from a high altitude (9 meters). Currently offered robot's second generation with new quiet drives and small control panel makes TRM [®] a product even better than before. Main features of TRM [®] robot
Description EN	 possibility of smooth, manually adjusted regulation of camera viewing angle within 360° radius, various illuminators can be installed (white light/IR), possibility of launching & initiating flash bang grenades, low mass and small dimensions of control panel, digital audio-video recorder integrated with control panel, possibility of steering three robots from one control panel.
	 Inspection and reconnaissance of the terrain or
	INTERNATIONAL EXHIBITS

objects,

- possibility to listen to conversations in the immediate vicinity of the robot,
- day and night operational,
- possibility to illuminate targets or dangerous objects,
- 1. possibility of video and sound recording (SD card).

12

Class

PL.9.	
Title	Innovative technology for the production of functional canned sprats
Authors	Wiktor Kołodziejski, Bogusław Pawlikowski
Institution	National Marine Fisheries Research Institute
Patent no.	Polish patent nr 214968
Description EN	The innovative technology of canning sprats facilitates the maximum retention of nutrients and other healthy ingredients of the fish, including n-3 polyunsaturated fatty acids and vitamins A, D ₃ and E. The new process also significantly reduces the volume of production and other waste products from the canning process. The essence of the invention is the elimination of pre- cooking from the canning process. This prevents thermal leak, a drawback of traditional canning that may amount to 25% of the fish batch mass and result in an average loss of up to 7% of dry weight with 3.2% of proteins, 2.2% of fat, and macro and micronutrients (including vitamins). The available ranges of canned Baltic sprats form functional food due to the guaranteed content of 2.33 to 2.41 grams of n-3 PFAs per 180 g net can. The innovative canning technology is patent-protected (Polish Patent no. 214968). It has been recognised by the Polish Ministry of Agriculture and Rural Development with an award for its developers.

Class

PL.10.	
Title	Barrier Textile Protecting Against Effects of
	Electromagnetic Fields
Authors	Edward Wilk, Barbara Filipowska, Joanna Koprowska
Institution	Textile Research Institute
Patent no.	P.400734
Description EN	The subject of the invention (patent in Poland – UPRP decision dated 22.12.2016; based on the patent application P.400734) is the woven barrier fabric protecting humans and electronic equipment against electromagnetic field (EMF). Electroconductive yarn is applied in warp and weft forming gauze/leno weave structure. Gauze weave due to specific interlacing - mutual wrapping up of warp threads while introducing weft ones - allows to fix both threads tight and limits thread slippage even at very low density of warp and weft threads. Different metals can be used for electroconductive part in yarns, e.g. silver – in a form of thin film covering polyamide filament yarn; copper - as a core of a core yarn in polyester blend. Depending on types of applied yarns and metal contribution (%) in a woven fabric - different shielding of EMF is obtained in the frequency range of 10 MHz – 1800 MHz. Developed woven fabric due to gauze/leno weave is characterised by : -a low contribution of electroconductive yarns, - openwork structure offering clearances in the woven fabric, - shape stability and forming simplicity which allow for a broad possibilities of its application.

Class

PL.11.	
Title	The machine aggregated with agricultural tractor for recultivation of fields after cultivation of energy
	Willow and Iruit Dusnes
Authors	Jan Szczepaniak, Pawei Frąckowiak, Fiorian Adamczyk, Stanisław Jankowiak, Grzegorz Wąchalski, Paweł Tylek Józef Walczyk Tadeusz Juliszewski Józef Faifer
	Industrial Institute Of Agricultural Engineering In
Institution	Poznan, University Of Agriculture Im. Hugona Kollątaja
	In Krakow, Promar Ltd. Company In Poznan
Patent no.	PATENT APPLICATIONS NO.P 415825/2016
	The machine uses a special design grubber consisting of
	form of a cylindrical cylinder, working in the vertical
	plane holding on the circuit symmetrically radially
Description EN	mounted cutters with reinforced construction and a shaft
	smoothing and crushing the soil for crumbling the snags
	of the energy willow and fruit bushes. The crumbling
	heads are pivotable relative to each other in the forward
	or reverse direction. The machine is equipped with a
	jointed telescopic shaft with overload clutch and
	hydraulic system to prevent grubber damage in case of a
	sudden increase in resistance work.
Class	3 Agricultural and Food Industry

Class



PL.12.	
Title	The chosen industrial application limited greenhouse gases
	emission
Authors	I omasz P. Olejnik, Elzbieta Sobiecka
Institution	Lodz University of Technology
Patent no.	PATENT PENDING
Description EN	The emissions of greenhouse gases is monitored and observed by risen up CO_2 emissions. EU legislation requires Member States undertaking research and implementation on industrial CO_2 capture and processing. Filed under development refers to the guidelines of the European Commission, expressed in the document "Towards an Integrated Strategic Energy Technology (SET) Plan: Accelerating the European Energy System Transformation". There are many innovative solutions related technologies CCS (Carbon Capture and Storage) operating on a laboratory scale and pilot plant. The most common methods that have found use in the binding of CO_2 produced during the combustion process appropriate amine solvents, aqueous ammonia capture, absorption, ionic liquids, adsorption and membrane. Some of the above mentioned technology has been used application on the industrial scale after earlier financial calculations for their use and possible scenarios with process calculations based on value-to-cost criterion
Class	1. Environment – Pollution Control
PL.13.	
Title	Disc granulation process as a method of the lime sludge
	management at the sugar industry
Authors	Lodz University of Technology
Institution Detent no	DATENT DENDING
Description EN	The research presents the results of the disc granulation technology and management of the lime sludge. The chemical composition and physical properties of the wastes were determined. The presented technology proposed a use of the lime sludge as the base raw material in the production of mineral – organic fertilizers. The experiment was made by the disc granulator in a semi-industrial scale. The lime sludge was moisturized by water and water solution of molasses on different process conditions. The final product followed the parameters required in the rural industry.
Class	3. Agriculture and Food Industry

PL.14.	
Title	SymSG Border Tactics – Virtual decision game environment for Border Guard tactics training, utilizing virtual and constructive simulators applied for supporting national and EU border protection doctrine.
Authors	Mariusz Chmielewski, Damian Frąszczak, Marcin Kukiełka, Marcin Gorgoń, Paweł Gajda, Dawid Bugajewski, Piotr Stąpor, Jakub Kędzior, Marcin Polak, Jakub Rzepiński, Krzysztof Chlebicki, Katarzyna Wilk, Jakub Nowakowski, Witold Narwojsz, Piotr Wiłkojć, Łukasz Matuszelański, Grzegorz Betliński, Wojciech Kulas, Roman Wantoch-Rekowski, Jarosław Koszela, Dariusz Pierzchała, Michał Dyk
Institution	Military University of Technology
Patent no.	Propriatery rights. TRL IX. System and training posts - deployed in Polish Border Guard training centers.
Description EN	Border Guard and Training Centre of Border Guard. Simulating system with developed methodology of executing simulation exercises for support of program for Border Guard's training. System includes didactic processes of advancement training course for Border Guard officers and commanders. Simulator is also designed to verify the accuracy and validity of decision made by Border Guard's supervisors. Project includes responsibility of every single supervisor, verifies validity of decisions and knowledge of Border Guard's tactical procedures during planning and execution of operations. Simulation environment includes two simulation modules: command headquarters simulator - which is the central component of simulation environment. It focuses on BG commanders training delivering tools which support real world Decision Support Systems deployed in Border Guard. High resolution simulator (virtual simulator) is focused on supporting training of officers who execute detailed decisions during pyrotechnical check at the airports, personality check procedures on the Border Crossings, as well as road blocks and check points planning. System provides innovative, interactive tools used in

training of Border Guard's officers and other Ministry of the Interior Affairs. It's functionality delivers training aimed at protecting exterior border of EU and Schengen zone. Such ICT solutions can imitate Border Guards activities, procedures and rules of cooperation with other institutions and government forces to strengthen the border protection and security. This construction provides practical use of project results in area of national defense and security. It is assumed that simulation system will be able to participate in multilevel simulation exercises of other resorts, functioning as one of the domain modules delivering various range of tasks connected with border protection and border traffic control.

> 10 Information Technology 12 Safety, protection and rescue of people



Class

Portugal By Inventarium-Srd.Com

РТ.1.	
Title	Al Quds Watch For Peace
Authors	Muhammad Abdul Aziz Al Baker
Institution	Lord Of Swiss
Patent no.	PCT / IB2016 / 000 183
	Al Quds watch For Peace The Master Peace
	The first technology in the world which leads to watch
	damage in case it is being opened except our company
	for quality reasons
	New technology which don't allow any scanning system
	to view what is inside it.
	Lifetime warranty
	Automatic and Lifetime battery
Description EN	Battery level Indicator
I	The watch battery can be charged once every 20 years
	for 10 minutes with certain charger
	Indicators for phone calls and messages since it is
	connected directly to the phone by Bluetooth
	Fasting time Indicator for Muslim, Christians and Jewish
	Praying time Indicator
	It is manufactured in Switzerland by our company Lord
	of Swiss in a very high quality
Class no.	14

1/5

PT.2. Title Authors Institution Patent no.

Description EN

SHOCK4SHIELD JOÃO GUERREIRO **AROUNDINSPIRE, LTD**

Pending

It is essentially an Electronic device that allows a effective way to daily save the precious potable Water. Using radio waves it controls 2 devices, one near the Heater and the other in the toilet or kitchen. It provide instantly hot Water.

Class no.



РТ.3.	
Title	KAROFSKIN -ECZEMAS
Authors	Fernando Maldonado Lopes
Institution	INVENTARIUM-SRD.COM
Patent no.	Pending
Description EN	A completely 100 % Natural treatment to be used in some Skin deceases temporary or even chronicle. It is a Skin regenerator that has the fantastic capability to immediately stop almost any kind of exterior skin itching. Mosquito bites (big and small, mosquitoes, bees and wasps), Eczemas, burned Skin, Solar burns, Herpes, Skin Rash, surgery recover, etc. It completely neutralizes in seconds the severe itching. To Veterinary uses, it definitely cures scabies and sarna in only two applications.
Class no.	4
	ANTIDOTE



PT.4.	
Title	SHOCK4SHIELD
Authors	FERNANDO MALDONADO LOPES
Institution	INVENTARIUM-SRD.COM
Patent no.	Pending
	Is essentially an electrified riot control shield, designed to provide added protection for Police and military personnel in
Description EN	hazardous crowd control situations. It can be used like any normal shield or activated to provide a less-than-lethal immobilizing ahock by the user.
Class no.	12



PT.5.	
Title	Veeco - Portuguese High Efficiency Electric Car
Authors	JOAO DA SILVA DE OLIVEIRA
Institution	VE-Fabricação de Veículos de Tracção Eléctrica
Patent no.	Pending
	The Veeco RT 1 series, is a two seater, full electric sport reverse trike, able to travel up to 250 Miles on a single
Description EN	charge. The RT stands out for its sportive stance, the imposing rear wheel, and the exquisite scissor doors.

Class no.

8. Aviation, car industry and transportation



PT.6.	
Title	RPH - BIGGUN
Authors	FERNANDO MALDONADO LOPES
Institution	INVENTARIUM-SRD.COM
Patent no.	WO2004PT00028 20041126
	Firearm for short-range and CQB.
	Electrical discharger and Baton.
	Pepper spray launcher.
	Progressive Impact Laser Sight.
	Front and backwards shooting.
Description EN	Less than lethal exclusive Ammunition.
Description EN	May be fired forward or backward.
	Designed to offer Police Agents and Army troops the
	possibility of use one more weapon besides the regular
	unit.

Class no.



Russia

RU.1.	
Title	Optical Device for Contactless Measurement of the Small Spatial Displacements of Control Object Surfaces
Authors	Miroshnichenko Igor Pavlovich [*] , Parinov Ivan Anatolievich ^{**} [*] Don State Technical University, Rostov-on-Don.
Institution	Russia,
Patent no.	**Southern Federal University, Rostov-on-Don, Russia Patent RU No.No. 2606245/2017, 2388994/2010. Certificates for computer programs inventions RU No.No. 2015611078/2015, 2015610921/2015, 2014662261/2014, 2014614502/2014, 2014614501/2014.
Description EN	It is designed for high-precision contactiess measurements of linear and angular components of the small displacements of control object surfaces in control of the constructional materials for load-bearing elements of goods in their application by using acoustic methods of nondestructive testing in stationary and mobile diagnostic stations in mechanical engineering, aeronautics, ship-building, instrumentation, fuel and energy complex etc. Combines 2 technical solutions for simultaneous non- contact measurement of linear and angular components of the small displacement of the surfaces of objects of control and protection of the measuring device from internal and external destabilizing influences, as well as a set of computer programs that provide the preparation of the measurement process, measurement process and processing the results. Developed on the basis of application of modern laser technologies and new methods of optical interference. Implements in full all the advantages of high-precision optical interferometric measuring means for solution of urgent scientific and practical problems. Provides the possibility of correction of the measurement results, excluding the impact of internal and external destabilizing effects, without the use of

additional measuring instruments, allowing to improve the quality of results up to 40%.

Protected by 2 patents of the Russian Federation for inventions and 5 state registration certificates for computer programs.

Successfully used in 2 research organizations and industrial enterprise.

Successfully used in the study of processes of defect formation in new construction materials.

Class no.

5,6,7



RU.2.	
	DEVICES AND TECHNOLOGIES FOR LIVING
Title	SYSTEMS AND ENVIRONMENT
	HARMONIZATION
Authors	V. Goch, V. Selishchev
Institution	"TSEL" LTD (Moscow)
Patent no.	Patents of Ukraine, Eurasian Patents (2009, 2011).
Description EN	Generation of high positive energetic zones by means of device configuration effect which combines golden section and Reich accumulator effect (phenomena). ECD application permits: oil viscosity; increase the productivity of agriculture, plant, animals and fish keep food; increase food quality and its subsistent properties; eliminate insects and rodents in living and working areas and other.
Class no.	14

Saudi Arabia

Represented by Highly Innovative Unique Foundation (HIUF)

SA.1.	
Title	CooZn, for healthy and soft skin
Authors	Prof. Dr. Najia Alzanbagi
T	Highly Innovative Unique Foundation (HIUF) /
Institution	King Abdulaziz University
Patent no.	Pending
Description EN	Natural mixture contains active ingredients to maintain the health and smoothness of human skin. It composed from <i>Indien Costus</i> oil, olive oil and the concentrated oil of <i>Boswellia Carterii</i> which preserved in natural wax with smell of natural flowers. It can be used for all ages and in all areas of the body including the face. Preferably not exceeding used for a maximum of twice a day.
Class no.	4

SA.2.	
Title	RCT "Refill Car Tires"
Authors	Prof. Dr. Najia Alzanbagi
T	Highly Innovative Unique Foundation (HIUF) /
Institution	King Abdulaziz University
Patent no.	Pending
Description EN	A specific technique to refill the car tires without need to go to the tires mobilization station. It is depend on checking the air pressure in tire and show its state in the car screen, so the driver can fill it by pressing the key which has directly contact with the air pump 'that will
Class no.	filled. During this process the car should be stopped.

SA.3.	
Title	ZNgagi, A combination for getting rid from head lice
Authors	Prof. Dr. Najia Alzanbagi
Institution	Highly Innovative Unique Foundation (HIUF)/King Abdulaziz University
Patent no.	Pending
Description EN	A specific combination for the elimination of head lice, it consists of some effective natural oils adding with the presence of a preservative material. This special combination is added to the wet hair and left for three hours as a maximum period, then hair will be combed with fine comb and it will be free from lice and their nits.
Class no.	4

Class no.

SA.4.	
Title	ZNECOLi (cream for skin itching)
Authors	Prof. Dr. Najia Alzanbagi
Institution	Highly Innovative Unique Foundation (HIUF)/ King Abdulaziz University
Patent no.	Pending
Description EN	A Specific combination of natural materials found in a natural soft cream for cosmetic purposes to treat skin itching and inflammation caused by microbes infections, it placed on the affected skin in very light layer and leave for 24 hours to show the result of effective use, it can be used as much as the skin need.
Class no.	4. Medicine – Health Care - Cosmetics

Slovenia

represented by ASI – Association of Slovenian Inventors

SI.1.	
Title	Tungaj Transformer
Authors	Drago Vrhovnik
Institution	V D d.o.o., Tunjice 12, 1241 Kamnik, Slovenia
Patent	Patent application No. P-201600121
Description EN	The air around us is full of electro-phonic waves: from radio antennae, cellular phone towers, satellites, microwaves, wi-fi routers, and so much more. While invisible, they are not all harmless. Countless studies indicate that this radiation can interfere with sleep, mood and even health. With the installation of the Tungaj Transformer, atoms of pure carbon, silicon and other elements establish torsion/scalar energy. This type of energy had already been researched by the great scientist and inventor of international repute, Nikola Tesla. After many years of research and tests, we have finally managed to develop the Tungaj Transformer, which creates harmony and a healthy wavelength. The Tungaj Transformer is an intricate combination of knowledge about the subtle, supportive forces of nature that help human beings to establish existential balance. Tungaj Transformer has been certified as effective by independent, objective scientists from the Institute of Bioelectrophotonics in Germany. The latest research was made in the laboratory of plant cytogenetics, where they used the Allium M test. The genotoxicity level in an onion exposed to non-ionizing radiation was much higher than the same onion, exposed to the same radiation but also placed next to a Tungaj Transformer. 1
Class IIU.	1



South Africa

Water Waste Eliminator
Driaan-Lou Kemp
-
-
Build a device with two electronically controlled water valves that controls the flow of the water to the shower head and pre-marked storage container. Make use of the Arduino platform again.
Shower and bath usage
It takes on average 2:45 min for a person to shower. The flow rate has been used to test and verify the water usage, in litres. To reach the desired water temperature, an average flow rate of $8.21 \ \ell/min$ was determined. The total shower water usage measured over a 1 month period for four persons was, $2700\ \ell$. The total bath water usage measured over a 1 month period for four persons was, $9000\ \ell$. The total shower time for four persons over a 1 month period was, 5hrs and 30 min. The total time it takes to fill-up the bath for four persons over a 1 month period was, 20 hours.
Water savings device With the device build, shower A (the closest to the geyser) took approximately 18 seconds to reach the correct temperature. This gives us a saving of about 1.071 (1281 per month by 4 persons). The actual big saving I got was from shower B (it's further from the geyser). It takes approximately 2 minutes and 27seconds to reach the desired temperature and adds a large saving of 8.71 (10801 per month by 4 persons).

Taiwan

Represented by WIIPA

TW.1.	
Title	Roller Machine with Hot Compress
Authors	Yu-Cheng Chen
Institution	All The Way Through International CO., LTD
Patent no.	M487071
Description EN	 Deeper Massage: 15 degrees tiled round plates and two symmetrical rows of massage balls make the balls rotate up and down closely and smoothly. Large hot compress range: Enlarging the diameter of the round plates to 8 centimeters with the infrared rays heating function. Conspicuousness: Using Lycra in bright red color. Easy-Operation: With only one hidden cycling switch button. Electricity heating is available. Safety: The power will be switched off automatically when working 15 minutes
Class no	4 Medicine - Health Care – Cosmetic
TW.2.	
Title	Cement Partition Wall
Authors	Cheng, Chin-Hsiang
Institution	Young-An Mineral Tech
Patent no.	M487071
	10 types of Portland acoustic insulation brick. Lightweight, Acoustic insulation, Thermal insulation,
Description EN	Fire resistant, Energy conservation, Environmental friendly, Non-organic.

Moisture proof, Smoke free, Non-toxic.

Class no. 7. Buildings and Materials



TW.3.	
Title	Floatable House
Authors	Chin-Cheng Kuo, Fan-Wei Yang, Fu-Lin Lin, Wen-Chung Chang, Chih-Yung Wang
Institution	Southern Taiwan University of Science and
Institution	Technology
Patent no.	M498785
	This invention is applied for Environmental protection at
Description EN	Tainan city. It include solar cells panel, raft, submerged motor. So that, the Floatable House can change with the
	level of water level to reduce the floods loss.
Class no.	6. Mechanical Engineering
	and a second sec



TW.4.	
Title	Land and Rain: An E-Book with Illustration and Words Regarding Environmental Protection
Authors	Fuh-Cheng Jong, Yun-Tai Hsueh, Fu-Lin Lin, Wen-Chung Chang, Chih-Yi Lin, Ting-Yu Chang
Institution	Southern Taiwan University of Science and Technology
Patent no.	M514040
	Hearing-impaired students understand people by reading lips. Our invention combining storybooks and computers will teach
Description EN	students by using a mother window of pictures and a child window of sign languages. By way of storybooks, students can be trained to learn independently.
Class no.	10. Information Technology and Communication



TW.5.	
Title	The Digital Sound Source Warning Device by Green Energy
Authors	Chin-Cheng Kuo, Fuh-Cheng Jong, Fu-Lin Lin, Wen-Chung Chang, Chih-Yung Wang, Ting-Yu Chang
Institution	Southern Taiwan University of Science and Technology
Patent no.	I486917
Description EN	This topic is through the solar energy conversion, to provide led and voice warning function, you can use to provide information in public places to remind, features the following (1) green energy generation (2) led warning (3)Voice alert
Class no.	- Environment - Pollution Control



TW.6.	
Title	Multi-Function Bird Warning Device
Authors	Fuh-Cheng Jong, Yun-Tai Hsueh, Fu-Lin Lin, Wen-Chung Chang, Chih-Yi Lin, Yung-Wei Chang
Institution	Southern Taiwan University of Science and Technology
Patent no.	M469749
Description EN	This alarm will be operated to show bright lights and loud noises, once thieves, birds and insects approach its sensor. Also, it could be used more, including farms,
Class no.	1. Environment - Pollution Control



TW.7.	
Title	3D smart camera has to go back to the studio to complete the single device independent
Authors	CHIH-HSIN WANG
Institution	JING FUNG IMAGE TECHNOLOGIES CO., LTD
Patent no.	M525467
Description EN	A combination of rack space segment of a camera, control device, a display screen, camera lens, light board and light board rotating disk and the computer's main power electromechanical coupling and provided in a combination of frame, light board power rotating disk top surface can be three hundred and sixty degree rotation
Class no.	10. Information Technology and Communication


TW.8.	
Title	Environment Monitoring System Based on Architecture of IoT by Wireless Sensor Network
Authors	Wen-Tsai Sung, Jui-Ho Chen, Ji-Lun Zheng
Institution	National Chin-Yi University of Technology
Description EN	M430668
Class no.	The concept of Internet of Things (IoT) established on monitoring of house environment system. Use Arduino Nano as a development board. Through wireless network module (NRF24L01) receives information collected from multiple sensor modules, including temperature, humidity, brightness, methane gas, Passive Infrared (PIR), RFID, PM2.5, WebCam. Moreover, It also can control multiple loads, comprising RGB LED, stepper motors, relays. Applied PHP combine MySQL to store multiple data to personal cloud database. With C # program Human–machine Interaction (HMI), data can be displayed on a computer terminal at home, and also can be controlled loads. It also can use the mobile devices to monitor the data that capture via website from database or load control at home. 5. Industrial and laboratory equipment

TW.9.	
Title	Smart Device Holder
Authors	Huang Yen Kai
Institution	Mika Enterprise Co.,Ltd
Description EN	M461565
Class no.	Smart Device Holder is easy and quick to installed and suitable for all kinds of EDR and Navigation. It could be used on the rearview mirror and the handle of the scooter, motorcycle or bike.

8. Aviation, car industry and transportation



TW.10.	
Title	Xin Chan Liu Ba Wang Cleaning Mop
Authors	Liu, Li Ling
Institution	TIAN SHENG LIANQ INDUSTRY CO., LTD
Patent no.	M513670
	We believe fine living comes from daily leisurely. This
	cleaning mop is commercialization. The operation is
Description EN	labor-saving and simple. No dead end due to the
-	wireless function. It is chargeable, so it is
	environmentally friendly.
Class no.	2. Environment - Pollution Control



TW.11.	
Title	Carry-On Cup
Authors	Hsieh Hsin Ming
Patent no.	M529429
	Most of the cups are unfolding, occupied the space and inconvenient to carry on in the market. Our cup with the
Description EN	feature of the enfoldment, for the users, it shrinks the bulk of the cups to carry; for the manufacturers, it greatly saves the space of the packing for the shipping
Class no.	14. Other



TW.12.	
Title	Foldable Table Tennis Table
Authors	Hsieh Man-Li
Patent no.	M527342
Description EN	Table Tennis is a good exercise for improving the limbs' flexibility and concentration training. There are many different choices of Table tennis in the market, but all of them are for two players, occupied spaces and in the same height which couldn't meet the needs for those who are single, little or have no space to place the table. After improving the disadvantages, the invention, The Foldable Table Tennis Table not only saves space but also opens and storages it fast and easily. Furthermore, depending on the player's height, its feet can be expanded and contracted. Hope all kinds of users can enjoy playing ping pong easily.
Class no.	13. Sports, Games and Leisure



TW.13.	
Title	Simple Horizontal Bar Structure
Authors	Shih, Yang-Lung
Patent no.	M525201
Description EN Class no.	The horizontal bars are usually firmly placed in the playground or park and the lowest height is about 155 cm (5.1 ft.). For kids, it is difficult and insecure to use it themselves. Once when I was exercising in the park, I saw the parents holding and raising the kids up to reach the horizontal bar, the distance from the ground is at least 30 cm, it could cause a danger if the parents carelessly loose the hands or the kids jump down accidently. For protecting kids' safety and using it fewer limitations, I invent The Simple Horizontal Bar which is adjustable, moveable and storable. 13. Sports, Games and Leisure
	1



TW.14.	
Title	Simple Shoe-Drying Machine
Authors	Shih Yang Chen
Patent no.	M526364
	First, to put a pair of shoe dryers into the wet shoes,
Description EN	utilize the thermal tubes to heat and dry out faster.

utilize the thermal tubes to heat and dry out faster. Second, the charcoal which is to be placed at the bottom of the shoe dryer is the deodorant for the bad smell.

Class no.



TW.15.			
Title	Home & Away Steam Iron		
Authors	Cheng, Yu-Mei		
Institution	Shin-Nan Enterprise Limited Company		
Patent no.	M500115		
	1. The smallest steam iron in the market. 2. Powerful		
Description EN	 and effective performance. 3. Light and easy to carry and pack. 4. Dual Voltage100V~240V 4. Automatic temperature control system, suitable for all kinds of clothes 		
Class no.	14. Other		



TW.16.	
Title	Cross Luggage Strap
Authors	Chien, Chih-Pin
Institution	
Patent no.	M525898
Description EN	1. This luggage strap will not just keep your suitcase secure but will also make it stand out at baggage reclaim. 2. It can deal with several of sizes suitcases. 3. Bring you bundled security and quality experience double reinforce protection, fastness, strong and not easily to loose, longer and widen belt carcass
Class no.	14. Other



TW.17.	
Title	Vehicle Arrival Reminder System
Authors	Chien Wei, Kang Tsai-Hua, Wang Chao-Feng, Lian Bin, LiuYong-Hui
Institution	Ningde Normal University - De Lin Institute of Technology
Patent no.	M524534
Description EN	The invention provides a vehicle arrival warning system. Users can be reminded of a specific, resulting in an effective reminder to avoid the problem of sitting or user settings.
Class no.	8. Aviation, car industry and transportation

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TW.18.	
Title N	1 M S - Jelly
Authors S	hen Cheng-Hsien, Shen Meng-Ju
Institution D	Dysan Technology Co.,Ltd
Description EN M	1479581
A Je Class no. w pi us	A perfect storage for iPhone original charger and cables. elly is the only one in the world, as long as an action when you collect wire and charger – it becomes a ractical Phone Stand. It's small, light and easy to be sed.



TW.19.	
Title	Magical Hook
Authors	Shen, Cheng-Hsien, Hsu, Ko-Hsin, Chen Hsing Han, Chen, Pin Shu
Institution	Chuan-Cheung Hardware Enterprise Co., Ltd. Tainan Municipal Wunsian Junior High School
Description EN	M510389
Class no.	Exclusive anti-shedding design can effectively prevent the hook off.Any kind of ropes can use with magical hook. Can be lifted 5 kg of items. 13. Sports. Games and Leisure



TW.20.	
Title	Deformable 3D Accessory
Authors	Sen-Chuan Liao
Institution	
Patent no.	M463672
	The most important purpose of this creation is through a simple translation or rotation operation to switch
Description EN	between the unfolded state and the accommodated state.
•	Moreover, the deformable jewelry is more variable and
	practical than the traditional jewelry.
Class no	14

Class no.



uCushion
Lin Wei Ting
Kuonao Co.,Ltd.
M486334
uCushion can support you comfortably, reduce pressure, shape your body, and keep you healthy. The multiple section adjustable string is user-friendly and can adjust the size and radian of the cushion according to your needs. The cushion of your own will immediately help relieve pressure from sitting for long periods of time. You can sit comfortably and stay healthy while sitting on uCushion.
4. Medicine - Health Care – Cosmetics



TW.22.	
Title	A Height Adjusting Structure with Directly Communicating Airbags
Authors	Cheng, Mei-Li
Institution	Kuonao Co.,Ltd.
Patent no.	1532941
	No electricity needed with environmental performance. uPillow, the smartest pillow in the market. uPillow can
Description EN	be adjusted easily with the angle you need, allowing you to relax comfortably with a good night's sleep, every night.
Class no.	4. Medicine - Health Care - Cosmetics



TW.23.	
Title	Dynamic Dinner Plate
Authors	Yu-Chi Chang, Hsiang-Ming Chan, Chiu-Chin Wu, Guan-Jon Qiu, Yong-We Xu, Mao-Huang Lin
Institution	Chienkuo Technology University
Patent no.	1556774
Description EN	For the sake of minimizing the carried volume of tableware for students in Taiwan. We design a set of small square dishes and a set of dynamic framework which can be assembled to a dinner plate.
Class no.	3. Agriculture and Food Industry



TW.24.	
Title	A High-Performance Heat Exchanger by Using the Hybrid Flow Combining the Transverse Impinging Jets and the Axial Flow
Authors	Tzer-Ming Jeng, Sheng-Chung Tzeng, Chao-Xun Wang,
Authors	Wen, Xiang-Han Shi
Institution	Chienkuo Technology University
Patent no.	1557392
	This is a novel heat exchanger, made of a flow-dividing
Description EN	device and a hybrid porous container. The transverse jets and the axial flow are formed in the container, suggesting excellent heat transfer.
Class no.	6. Mechanical Engineering
	Hybrid heat



TW.25.

Title	The Creative Mechanism of the Drying Racks for Clothes
Authors	Wu, Chiu-Chin, Hong, Tai-Hao, Wu, Chin-Chang, Zeng, Wei-Hau
Institution	Chienkuo Technology University
Patent no.	1523991
	This is a novel design of automatically rainproof and time clothes drying rack. The design is able to collect
Description EN	clothes regularly with the control of its motor and promptly collect clothes to avoid getting them wet by
	detecting whether it rains.
Class no.	6. Mechanical Engineering



TW.26.	
Title	The Creative Design of Cleaning-Mechanism for Contact Lenses
Authors	Wu, Chiu-Chin, Zheng-Hua Chu
Institution	Chienkuo Technology University
Patent no.	M510750
Description EN	This invention is based on the technology of contact lenses, especially used on its clean-up technique. A high-speed spinning machine spurs the contact lenses circling around its protecting-liquid, making the proteins, which is secreted by the eyes, easier to separate from the lenses. This technique can clean up the contact lenses in a fast and convenient way without using your hands.
Class no.	4. Medicine - Health Care - Cosmetics
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TW.27.	
Title	The Ventilated Brake Disc with Power Generation Function
Authors	Sheng-Chung Tzeng, Tzer-Ming Jeng, Yi-Chun Li, Bo-Jun
Institution	Y ang, Chi-Mie Lu Chienkuo Technology University
Patent no.	I563188
Description EN	The thermoelectric modules are proposed to be installed between the outer disk and the wind passages of the vented brake disk. Then the waste heat of braking is converted to generate electric energy
Class no.	2. Energy and sustainable development



Brake disk

TW.28.	
Title	Dry Ice Duct Cleaning Robot
Authors	Fa-Shian Chang, Yu-Hsuan Tsai, Chih-Chung Hsu, Cing-Wun Yao, Jia-Yao Jhang
Institution	Cheng Shiu University, Li Chih Valuable School
Patent	M522117
Description EN	The present invention relates to an air duct dry ice cleaning robot. The main body is connected with a rotating high-pressure gas nozzle, with high pressure gas and cleaning agent to remove the dust and adhesion in the diameter. The walking mechanism is constructed by three crawling crawler mechanisms that can be stretched with the size of the pipe to accommodate the movement of the pipes of various shapes and sizes. It can replace personnel into the narrow pipeline, reduce accidents and pollution incidents, and improve work efficiency.
Class no.	1. Environment - Pollution Control



TW.29.	
Title	A Standing Wheelchair with Toilet Function
Authors	Fa-Shian Chang, Xiu Xan Song, Ren-De,Huang, Hao Wei Song, Guan-Xun Liu
Institution	Cheng Shiu University, Li Chih Valuable School
Patent	M537894
Description EN	The present invention is a standing wheelchair with toilet function, which can make the inconvenience of the person acting in the toilet. The structure comprises a wheelchair, a toilet and a wheelchair, and the standing wheelchair has a direct toilet Efficacy, to address the use of wheelchair in patients with severe problems, and can reduce the cost of medical expenses to protect the safety of patients.
Class no.	4. Medicine - Health Care - Cosmetic



TW.30.	
Title	Ventilation Duct Cleaning Robot
Authors	Fa-Shian Chang, I-Chang Hsu, Ren-De Huang, Jian-Min Lin, Guan-Xun Liu
Institution	Cheng Shiu University,
Institution	Chung Shan Industrial & Commercial School
Patent no.	M522117
Description EN	The creation is an innovative design with multi-axis action and scrubbing function of the pipeline cleaning robot.Can be replaced by personnel in-depth pipeline inspection and cleaning work.The use of a power-driven high crawling force of the movement of the vehicle, the device lens, multi-axis action of the rotating brush and high pressure nozzle.It has a modular maintenance simple, compatible with a variety of cleaning brush, high pressure water spray system, easy to expand function.The machine has many advantages of improving the working efficiency and reducing the construction accident.
Class no.	1. Environment - Pollution Control



TW.31.	
Title	The Improvement of the Structure of Low Voltage Led Lighting
Authors	Chuang, Hsien-Tsung
Patent no.	M508449
Description EN	 Extension of colorful LED applications: A. In the transparent body, good light guide. B. Three - Dimensional. C. Exquisite and High Biofidelity Hyge with fast convergence: A. Easy to DIY – to install, change and pack. The biggest point is not easy to damage when delivery. B. Easy to install, pack, exchange and deliver. C. Good heat dissipation design.
Class no.	14. Other



TW.32.	
Title	Cup Base Structure of Blender
Authors	Liang Kai Fu
Institution	XIN-LI-KANG INTERNATIONAL CO., LTD
Patent no.	M475908
	The motor has auto- protection system. When it is over-heated, the power will be turned off to cool the motor. 2. The speed is adjustable and the operation is simple. 3. Can grind the fiber
Description EN	from the vegetable, fruit or grains. Meanwhile, the oxygen absorption and cell activation can fresh the flavor. 4. High Temperature Resistant and germ-proof to ensure the food is fresh and the process is hygiene.
Class no.	3. Agriculture and Food Industry



TW.33.	
Title	Drinking Water Device for Bike
Authors	HSU, HSING-KUEI
Institution	Hsing-Kuei Co., Ltd
Patent no.	M514776
Description EN	Biking is one of the popular outdoor activities. In order to make it more convenient to drink water during biking, this drinking device which is to be placed on the bottle shelf of the bike is upside down, so that the riders can easily drink the water by holding the suction head of the bottle in the mouth.
Class no.	13. Sports, Games and Leisure
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TW.34.	
Title	LOOP ADJUSTER FOR FACE MASK
Authors	CHENG, YUNG-CHU, CHENG, CHIEN-FENG, CHENG, YU-LIANG
Institution	MOTEX HEALTHCARE CORP.
Patent no.	M505308
Description EN	1. This is a head hanging mask, can completely reduce the uncomfortableness when wearing. 2. Suitable for long time wearing. 3. It can be adjusted according to the head size of the wearers, greatly raise the tightness between mask and the face. 4. Recyclable and eco- friendly.
Class no.	1. Environment - Pollution Control
	motex
	日本語 可要語 Loop Aquetry For Face mater



TW.35.	
Title	MOTEX SPORTS FACEMASK
	CHENG, YUNG-CHU, CHENG, CHIEN-FENG,
Authors	CHENG,
	YU-LIANG
Institution	MOTEX HEALTHCARE CORP.
Patent no.	M516987
	1. Improve the problem of stuffy and the air circulation when wearing masks. 2. Raise the safety and the
Description EN	tightness. 3. Avoid the mist coming out when breathing
-	to disturb the sight for those who wear glasses. 4. Made
	from non-woven fabric. 5. With the dusty filter function.
Class no.	13. Sports, Games and Leisure



TW.36.	
Title	TWO-STAGE WIND TURBINE
Authors	LU SHUN TSUNG
Institution	TRUE TEN INDUSTRIAL CO., LTD
Patent no.	M455769
	1. High Efficiency, light start, high torque and high power output
Description EN	 Beauty type design, integration in the urban landscape DIY-type lifting device, easy to assemble, adjustable height
Class no.	6. Mechanical Engineering

TW.37.	
Title	Nano Energy Distillation Water Machine
Authors	Wu Wen Huan, Wu Ming Che
Institution	Bor Jieh Enterprise Co.,LTD.
Patent no.	M507297
Description EN	Through the water generator to distill and to banish the impurities. Then filter the water again via Nano energy to make cleaner drinking water. Electricity saving system, heat recovery and low energy consumption.
Class no.	4. Medicine - Health Care - Cosmetics



TW.38.

Title	The Structure Improvement of Telescopic Device for
Authors	Chang Hong Jun
Institution	Chairman. Co. Ltd
Description EN	M456194
Class no.	 European style Air pressure, Warm, Double rolling function Artificial intelligence message chair All message chairs were approved by America, Europe & R.O.C. Spinal-cord protect
	4. Far away from disease, for better health
	4. Medicine - Health Care - Cosmetics



TW.39.

Title	The Shoe Insoles to Correct Foot Arches for Medical
	Use
Authors	Tsia Yun Chen, Tsia Mei Na
Institution	E-Huang Co., Ltd
Description EN	M493897
Class no.	The shapes of the common insoles are flat and they are difficult to absorb the shock because of the affection of the ground reaction force and lacking of the support for feet strength. This will be easy to cause muscle soreness, bone deformation or callus and corn. The invention is to use the feature of acupuncture points to stimulate the acupoint of the feet to active the organs and the peripheral nervous. 4. Medicine - Health Care - Cosmetics



TW.40.	
Title	Breathable Water Drainage Shoes
Authors	Liao Yu-Chang, Huang Pao-Chien
Institution	Song Yang Technology Ltd.
Patent no.	M481629
Description EN	Slippers are one of the shoes that we wear often in daily life. Especially in the wet and humid rainy days or water activities, it is the first choice, so that draining and breathe are the most 2 important functions of the slippers. This invention is breathable and with the high and low drop structure, can efficiently drain the water out of the slippers when getting wet to avoid the uncomfortableness and to prevent the skin diseases.
Class no.	14. Other



TW.41.	
Title	The Composition and the Structure of Movable Water Cooling Fan
Authors	Huang Ding Bau
Institution	Sheng Hong Ltd
Patent no.	M481293
	The fans have the limitation to cool down the
Description EN	temperature, especially when it's crowed or in a high temperature, so we made the improvements. 1. We added atomization device to produce the atomized water, and through the fan to deliver the atomized water. 2. Furthermore, when the air comes into the fan, it will be cooled by the cooling unit to raise the water cooling effect.
Class no.	1. Environment - Pollution Control



TW.42.	
Title	Portable Vacuum Cleaner
Authors	Hu Kuo Hai
Patent no.	D162585
	1. Efficient - The portable vacuum cleaner can clean
	the dust efficiently.
Description EN	2. Modern - The grip of the vacuum is streamline
	design
	3. Effort-Saving – Connect with the straight long
	mouth, easy to clean the dead ends.
Class no.	5. Environment - Pollution Control
	2 ER

TW.43.	
Title	Inversion Machine with Heating Device
Authors	CHOU CHIEN HSIN
Institution	YUAN-SHENG International Limited Company
Patent no.	M507775
	The purpose for inventing this machine is to increase the
	blood circulation. Through the heating device, when a
Description EN	body is upright, flat or Inverted on the machine, the
	blood circulation of the body will be rapid, to reach to
	purpose of health fitness and metabolism
Class no.	4. Medicine - Health Care - Cosmetics



TW.44.	
Title	Food Baking Machinery and Usage - Food Baking Equipment
Authors	Yin-Wang, Hsieh, Ying-Sung, Hsiung
Institution	Dual-Power Enterprise Corp.
Patent no.	M491343
Description EN	According to user's need, different operation modes can be chosen. No matter pancake or pie, with this equipment, you can also be a professional baker. Advantages: 1. Easy to operate 2. Effortless 3. Practical value 4. Meet the needs of consumer's diversified tastes.
Class no.	3. Agriculture and Food Industry



Thailand

By ATIP

TH.1.	
Title	Certified Organic Kid Chocolate Toothpaste
Authors	Witraporn Pimpla
Institution	Blessed Products of Asia Co., Ltd.
Patent no.	1601006009
Description EN	Certified Organic Kid Chocolate Toothpaste has been invented by the inspiration of chocolate favorite. This unique organic toothpaste contains no detergent agent, no fluoride, no artificial color and artificial fragrant. Its maximum benefit from pure cacao powder which has anti-bacteria property will help reducing tooth decay and promote healthy gum. As innovative process, different types of herbs such as clove, neem leaves, galangal and <i>Stevia rebaudiana</i> are steamed under light heat for certain hours to obtain concentrate extract. After rinsing sea salt with water to eliminate dirty particle, sea salt will be mixed with herbal concentrate then roasted until saturated. Crystal of sea salt will be produced. Zeolite clay as adsorbent is added and stirred to mix with sea salt follow with cacao powder. Slurry paste of Certified Organic Kid Chocolate Toothpaste is herewith produced. Anti-bacteria properties in the extract can strongly eliminate the bacteria, a serious cause for tooth and gum problem.
Class no.	4. Medicine - Health Care - Cosmetics

Advanced Computerized-control System of Temporary Title Immersion Bioreactor for Industrial Plantlets Micropropagation Poonpat Poonnoy, Nopmanee Topoonyanont
Micropropagation Authors Poonpat Poonnoy, Nopmanee Topoonyanont
Authors Poonpat Poonnov, Nopmanee Topoonvanont
Authory Financial States and F
Institution Maejo University
Patent no. No. 1601004930
The exponential growth of world population increases demain in foods, which mostly come from plants. The most importat economic plants are including but not limited to, sugarcam banana, pineapple, and cassava. Temporary immersion bioreactor (TIB) can be applied to produce high qualinumerous plants at low operating cost. As innovative idea, advanced computerized-control system we developed to precisely facilitate twin-flask-typed TI operations. The user-friendly graphic interfaces allow users accurately configure TIB operating parameters. It is able manipulate sixteen groups of TIBs independently, production of various plantlets at different growth stages is therefor possible. The control system activates forced ventilation in the TIBs as scheduled, to release gas or humidity accumulated the TIBs. Employing of industrial-grade embedded controller solenoid valves, and sensors provides high reliability funinterruptable plantlets micropropagation. The control system operates under DC power system and the ground fat protection device is also equipped to provide safe workin environment. A single unit of controller supports up to 640 se of 0.7-liter TIBs or 16 sets of 20-liter TIBs. Case study of banana and sugarcane plantlets within - 6 weeks per batch, depending on the growth stage, size an number of TIBs. It is evidently shown that advance computerized-control system plays an important role production of world economic crops and it has been ready serve plantlets production industry.

Arbited Computed States corrent System of Temperary Internets to

ТН.3.	
Title	ALLI-FOS, Prebiotic Sugar Supplement
Authors	Pairote Wongputtisin, Mr.Chartchai Khanongnuch
Institution	Maejo University
Patent no.	1601006677
Description EN	ALLI-FOS is an innovative prebiotic fructooligosaccharide (FOS) sugars obtained from a local variety of onion in Thailand. As an alternative source of FOS sugars, this onion variety is selected, because of unique and high potential as prebiotic substance. Under certain specific extraction process, ALLI-FOS is enriched with prebiotic FOS sugars, which mainly contribute in balancing of intestinal microorganisms, lowering of blood cholesterol, immune-modulation, mineral absorption, body weight control and resulting of the well-being of consumers. ALLI-FOS is manufactured in two forms as a capsule and syrup. ALLI-FOS capsule contains 500 mg of extract powder. It is very convenience for daily life as functional food supplement. Whereas ALLI-FOS syrup is contained in the pouch as one serving size. This syrup can be combined in several foods to enhance their function, such as dressing on several kinds of salads, steak sauces and soups. Functional foods can be designed and prepared from your own home kitchen and served to your beloved persons. Lastly, ALLI-FOS is not only gaining the benefits to consumer health but also improve more income and happiness to local famers. 3: Agriculture and Food industry



TH.4.	
Title	Water Soluble Curcuminoids for Anti- Osteoarthritis
Authors	Nasapon Povichit, Yohji Ezure, Miss Nathapha Inchai
Institution	Detox (Thailand) Co. ,ltd.
Patent no.	No. 1501004624 Aug 14, 2015
Description EN	Curcumin, the major biologically active substance found in <i>Curcuma longa</i> , exhibits many biological activities such as antioxidant, anti-inflammatory, antidiabetic, antifungals, anti-carcinogenic effects, and hepatoprotectives. However, the potential of curcumin in treating the various diseases is limited mainly owing to their poor bioavailability and poor stability especially in alkaline condition. In fact, the solubility of curcumin has been reported to be very low (0.0004 mg/mL in water at pH 7.3) The new formulations of curcuminoids consisting of water soluble curcuminoids and water insoluble curcuminoids, where water soluble curcuminoids are microsize or nanosize micelle of curcuminoids manufactured by using surfactants, and water insoluble curcuminoids are curcuminoids treated by using surfactants. The pancreatic lipase inhibitors can be preferably applied to the basic formulations and the improved formulations to protect the micelle decomposition by pancreatic lipase in the intestine. 4 Medicine - Health Care - Cosmetics
Class no.	4. Medicine - Health Care - Cosmetics



ТН.5.	
Title	ALLI-FOS, Prebiotic Sugar Supplement
Authors	Doungporn Amornlerdpison, Kriangsak Mengumphan, Lapatrada Mungmai, Tobi 1 Graduate School, Maejo University, Thailand
Institution	2 School of Pharmaceutical Science, Phayao University, Thailand 3.Dr.Tobi Co.Ltd.
Patent no. Description EN	3.Dr. Tobi Co.Ltd. Patent application Fresh green caviar alga (<i>Caulerpa lentillifera</i>) is popular for consumption as a healthy diet because of its nutritious and biological activities. The organic cultivation of fresh green caviar alga is significantly increasing over time in several provinces of southern Thailand. However, the fresh algae has short shelf-life for consumption within few days. Therefore, the experiment for value-added of alga was developed by extraction as biocompound and tested on pharmacological activity for innovative cosmeceutical product. The obtained alga extract contains of phenolic compounds such as gallic acid, quercetin, rutin, catechin and tannic acid. Additionally, the extract also contains high amounts of polysaccharide and amino acid such as phenylalanine, lucine, lysine, glutamine and tyrosine which provide good benefits on skin. The antioxidant activity exhibited that extract of green caviar alga can eliminate free radicals in three assays including 1) scavenging of ABTS radicals 2) DPPH radicals and 3) superoxide radicals. Interestingly, the alga extract inhibited both collagenase and tyrosinase enzymes. Thus, the extract was formulated into facial cream to reduce wrinkles and whitening. The skin face of 30 volunteers showed a significant increasing of hydration and elasticity within 1 month. From the knowledge of this research can increase the commercial value to both private and community enterprises that cultivate green caviar alga. It is an opportunity to directly increase income for the farmers and also promote the production of the organic
Class no.	cosmetic. 4



Tunisia

TN.1.	
Title	RF energy harvesting for charging the mobile phone
Authors	Mohamed Zied Chaari, Mongi Lahiani, Hamadi Ghariani
	Laboratory of electronics and information
Institution	technology, Sfax university, ENIS, Road Soukra,
	Tunisia
Patent no.	Pending
Description EN	Thus, outdoor enthusiasts, tourists and travelers, and person who utilize portable electronic devices habitually experience battery exhaustion of their devices before they find a time or means to charge their electronics device. The current research paper provides, to provide operating power to an external portable appliance such as, for example, a mobile phone or any electronic device with small power. The research paper will show our activities addressed to design a wideband system to recover wideband energy from electromagnetic radiation existing around us. An RF to DC converter circuit includes one or more multiband antenna to detect many RF signals. We can charge the battery of the mobile phone by the pollution electromagnetic energy in the space.
Class no.	2

Turkey

Represented by TUMMIAD (Turkish Inventor's Association)

TR.1.	
Title	Flame Detector
Authors	Ahmad Moazeni, Hamzeh Mirzaei, Afsoon Saeidi
Institution	Arman Instrument Co.
Patent	70139
Description EN	INNOVATIVE FEATURES: -Design based on the analysis of different wavelengths of flamesSuitable body for placement within the heater cavityAdjustable for different flame radiations. TECHNICAL EFFECTS: Spectral response:180 – 320 nm Field of view:15/30/45/90/120 degree, Size:129mm long by 52mm diameter, Weight:1090g Environment Protection: IP57, Material: Stainless steel, Bronze, Aluminum CONTRIBUTION TO SOCIETY: -Domestic production -Increase employment -More safety -Help protect the environment -Labor productivity -Advancement of technology ENVIRONMENT-FRIENDLY: Help protect the environment by Modified flame and Contribute to the lack of production Environmental emissions. ECONOMIC ADVANTAGE: Reduce exchange intensity
Class no.	12

TR.2.	
Title	Sinek
Authors	Enes Irmak
Institution	Namik Kemal University
Patent	-
	Measuring wind speed with drone. Nowadays wind power has a huge potential of growing. To do this with systems that using today is highly costed. When they do that with their method they found high tolerance.
Description EN	Normally people needed to setup wind measurement mast it highly cost and it this method has highly tolerance. Clean energy is making me exciting and working for supplying this is important for me. Academic resources. Without using any sensor measuring wind speed.
Class no.	8

TR.3.	
Title	Smart Wristband
Authors	Eray Aktokluk
Institution	Tummiad Science Academy
Patent no.	-
Description EN	The smart wristband is used by blind people by fitting it like a wristwatch. Continues to work with the battery all day long. It charges wirelessly. Smart wrist band functions: 1- When you come to the traffic lights, both the voices and the vibration form you of the situation of the lights and tell you when you can pass. 2- The presence of UV detectors in the environment, if there is a fire, fire warning both voice and vibrate. The visually impaired finds where there is no fire and find s places without fire by running around the wristband in his arm to escape. 3- Speaks the colors of objects (money, fabric, etc.) aloud. They continue to use colors in their lives in this visually impaired. 4- They can learn the light / dark situation of their environment. It aloud tells the user in the same way. They can use it in routine work, such as evening air clashes and curtains. 5- They will voice the clock when you bring the arm closer to your ear. 6- Weather condition gives air temperature all vital daily information like sun condition
Class no	Δ

Class no.

4



TR.4.	
Title	S.O.M.A. 1.0 S.O.M.A 4.0
Authors	Engin Senaydin, Ertugrul Iltizar
Institution	Avcilar Technical High School
Patentn no.	-
	Our robot is designed for the Mining Industry to overcome the accidents in the mines. The gases in the masses are designed to instantly measure and take various precautions in advance. It is suitable for ideal use due to the features of my robot.
Description EN	
	1)After our project mining accidents will not happen. Accidents will be prevented. 2)An end to the deaths that occurred in mining accidents. 3)Many mines conducted against identified deficiencies and these deficiencies we visit.
Class no.	8

TR.5.	
Title	High Frequency X-Ray Digital Generators
Authors	HAMZEH MIRZAEI, AFSOON SAEIDI
Institution	BARMAN ELECTRONIC CO
Patent no.	24691
	Technical problems and expressing objectives of the invention: - The problem of generators in the hospitals is that they
Description EN	are using an old technology. Because of the direct use of city's electricity (50 Hz), to produce high voltage to accelerate electrons and X-rays, ripple factor of ray increase and reduces produced image quality also using of 50 Hz frequency causes increase the physical size of components and transformers, as a result, the generator and in places with space limitations, possibility of using and installation is very difficult. In addition, these generators Because of the old technology, lack of modern microcontrollers and standard communication modules, it is not possible to connect to computer for digital radiography DDR. - And in this condition that the technology of using
	radiology film in country is going to the transition to
	digital radiology systems, has intensified problems of
	this changing technology
Class no	5

Class no.



TR.6.	
Title	TARMAK EK1
Authors	Fatma Zehra Kilic, Ibrahim Karabakan, Mustafa Anutgan
Institution	KARABUK UNIVERSITY
Patent no.	Pending
	GPS-assisted, seeding, fertilizing, life-watering, smart agricultural robot working with renewable energy.
Description EN	This is a robot designed to increase the efficiency in agriculture and to autotomize the saving processes. The robot, producing its own energy by the help of solar panels seeds on an area predetermined by the user at predetermined seeding internals. It can simultaneously open open a pit with adjustable depth, drop a desired amount of seed depending on its type, fertilize and give life water. The seeded area can be followed and controlled using a GPS module. Its rigid design renders reliable seeding even under tough terrain conditions.
Class no.	3

TR.7.	
	The novel flexible Amphibious Mobile robot with special
Title	mechanical structure, capable to obstacle climbing and
	compatible with variety surface coating.
Authors	Mohammad Safary Taze Kand, Mehdi Tale Masouleh
Institution	ANIA Institute – TAARLAB - Human and Robot
D 4 4	Interaction Laboratory
Patent no.	90568
Description EN	This is a nover nextole amphibious robot named Partol-S. The unique mechanical design of proposed robot made abilities such as obstacle climbing, reducing movement stroke, move flexibility in two axis, adequate movement on normal and harsh surfaces and suitable motion on water by its special structure of active wheels. According to the movement capabilities of proposed robot, some merit applications are defined for it such as environment identification, supervising in operation areas, research vicinity and rescue. Utilize an operator for achieving suitable decisions on missions is intended for Patrol-S as teleoperation. In order to detect the height of obstacle, several Ultrasonic sensors are installed in the front of the robot. The user could assign this phase of movement to the automatic navigation system. The controlling methods which are used for the proposed robot consist of manual and autonomous. Combining of the proposed controlling methods help to have a semi-autonomous movement for the under study robot. According to improve the accuracy of decision making for passing the obstacles, the Fuzzy logics method is used. In order to visual serving for the proposed robot, a camera is set on the top of robot workspace. Moreover, in order to find the path between the obstacles is used potential filed algorithm. The Path which is calculated with potential filed algorithm is send to robot with Bluetooth module. The proposed robot can move in the sand, stone, flat and heterogeneous surfaces. Furthermore, the other advantages of Patrol-S robot can be regarded as, passing the obstacles with the height lower than 15 centimeters, moving on slopes up to 20 degrees slope.
Class no.	5



TR.8.	
Title	Wearable skeletal support system
Authors	AYDIN GULLU, MUCAHIT KURALAY, AHMET ROBIN RAMAZANOLGLU
Institution	Trakya University Ipsala Vocational School
Patent no.	-
	In patients with stroke, it is planned to design a hand- held skeletal support, system in patients who need to apply physiotherapy and rehabilitation to the patient's hand. The design is based on a mechanical mechanism
Description EN	that can be worn on the hand and the movements of the hand joints on this mechanism in an autonomous manner. The movement performed by the robust side hand will be detected by the sensors and the robot will be made to perform the same movement as the hand.
Class no.	4

Ukraine

UA.1.	
Title	Hemocontrol: Haemostatics With Junction Coupling
Authors	V. Kurylenko
	National Technical University of Ukraine "Igor
Institution	Sikorsky Kyiv Polytechnic Institute"
	Ukraine
Patent no.	Pending
Description EN	The injection "HemoControl" allows to stop the bleeding of different intensity (including arterial) within the shortest time. The mineral that is a base of the product forms a blood clot quicker. The developed injection can not only stop the bleeding, but it will securely clog the wound for safely transportation of the victim. The injection can be used to stop the bleeding and disinfect deep penetrating wounds, including gunshot. With the help of "HemoControl" it becomes possible to anesthetize and stop bleeding quickly, to avoid infection and wound contamination, which will increase the survival of the victim. The patch can be used on open skin and muscle wounds. The components of the "HemoControl" are widely available and inexpensive. In that case the prime cost of the product will be significantly below the price of analogue.

Class no.

4

UA.2.	
Title	Variable pump control system
Authors	Burennikov Yuriy, Kozlov Leonid, Repinskyi Sergii
Institution	Vinnytsia National Technical University
Patent no.	Patent of Ukraine 48277 F04BI/24 of 10.03.2010 Application U200909893 of 28 09 2009
	Patent relates to the field of machine-building and can be used in hydraulic drives of operating mobile machines. Objective of the research is to expand functional possibilities of variable pump, providing the possibility of its operation in several modes. Control system comprises feed regulator, pressure regulator and control hydraulic cylinder. At the output of variable pump the control valve is installed. Pressure values, emerging at the input and output are used as signals, sent to feed regulator and pressure regulator. Combinations of these signals are used to provide the operation of variable pump in four modes: - unloading of the pump; - proportional control of pump performance; - constant capacity; - pump overload protection.
Description EN	Characteristic feature of control system construction is availability of the shaped window on pressure regulator spool. Usage of the shaped window allows to provide the realization of several function at the expense of pressure regulator operation and, correspondingly, reduce the number of elements in control system. This decreases the overall dimensions and specific quantity of metal of control system and increases the operation reliability. Application of variable pump with the developed control system enables to create hydraulic systems for wide range of mobile operating machines. In such hydraulic systems the possibility of using full capacity of machine engine and proportional control of working elements motion parameters is created. This greatly decreases unproductive losses in hydraulic systems of mobile operating machines, increases the performance of their operation and quality of work realization.

Class no.

5. Industrial and laboratory equipments


United States of America

TIC 1	
0.0.1	

	CandyLipz Xtreme Lip Shaper® System: Lip
Title	Enlargement Device for Enhanced Beauty and
	Healthy Well-Being
Authors	DR. THIENNA HO, Ph.D
Institution	CandyLipz LLC.
Patent no.	9,119,758 and D739,083 (US Patent No.)
	CandyLipz lip plumper creates fuller lips using 3,500- year-old Chinese "cupping" method known as air suction with a built-in advanced lip-shaper technology which allows the lip plumper to shape, contour, and
Description EN	instantly enhance the appearance of lips beautifully while also enabling biological maintenance of "lips age" with long-lasting shape helpful for retaining youthful lips for elders and also those people with oddly-shaped lips, smoke lines, and drooping mouth corners.
Class no	- 4



US.2.	
Title	Visualization of the concept of angular momentum conservation
Authors	Yoon Jae Hoon
Institution	Phillips Academy (USA)
Patent no.	"See it for yourself: Conservation of Angular Momentum".

Having studied abroad, I have become very interested in physics education based on experiments. Though my classmates had easily understood the principles of linear momentum through experiments using Vernier, we had a hard time understanding the conservation of angular momentum as we did not have the proper apparatus to prove this principle. Such experience made me wonder, "What could help visualize the concept of angular momentum conservation?"

Using special bearings and motors, this invention decreases the amount of friction between the two rotating objects and lets us see angular momentum for ourselves. When I simply rotate the top part with my hands, the force exerted by my finger to the objects creates friction between them, making both objects move in the same way. However, when the motor operates, the two rotating objects, as you can see, swirl in different directions due to action and reaction. Both objects have different speeds as the two have different moment of inertias and students can easily approximate the difference in speed through the LED arrangement that shows the changing speed through the photo sensor attached at the sides of both rotating objects. For various results, students will be able to add different weights to change the moment of inertia. Experiments using this apparatus will not help students perfectly understand the conservation of angular momentum by calculating Iw=Iw.

In the near future, this apparatus will be further improved by computerizing the process of earning velocities or by installing rotating objects that can change moment of inertia not only through mass, but also through change in radius. The impact of the apparatus will be shown as young students strive to achieve more in fields related to angular momentum such as improvement in accuracy of drone flights, in artificial gravity within spaceships, in gyroscopes, and many more.



INTERNATIONAL EXHIBITS 290

Class no.

Description EN

Vietnam

VN.1.	
Title	Assistive Devices for the Sightless
Authors	Nguyen Duc Nguyen, Le Thanh Binh, Doan Thai Hoang Anh
Description EN	There are millions of people in the world, nowadays, are complete blindness. They often have a difficult time to self- navigating outside and face up to the dangers. Unfortunately, there are not many tools to help them in their daily life. The assistive tools using high technology such as GPS-based devices, camera or laser-based devicesare very expensive while the sightless are not enough money to buy. To find the solution for this issue, our study focus on designing a tool with low cost and simple structure for sightless to detect the objects and get early warning of danger. It is designed basing on the distance measuring sensor unit (DMS) which is composed of an integrated combination of the position sensitive detector, the infrared emitting diode and the signal processing circuit. These tools are designed by using the available materials with low cost so that it is very appropriate to the poor people.
Class no.	12

VN.2.	
Title	The Smart Garden system for growing fresh vegetable
Authors	Nguyen Thanh Long, Nguyen Minh Cong, Nguyen Ngoc Linh
Description EN	Climate change and environmental degradation are the defining challenges of the 21st century. Some areas become drought and plants cannot grow. Besides, the pollution is more and more serious because of the fast developments of industrial. Food poisoning is wide spread and out of control. Therefore, the demand of fresh food, safe products will be indispensable with our life. The smart garden system is designed for solving
	INTERNATIONAL EXHIBITS

this problem. The system consists of a temperature sensor, a soil moisture sensor, a light sensor, a selfwatering tool, a heater, camera, leds, and a control module. Both of them are placed in the transparent room where the plants will grow. The system is connected to a computer to control many parameters such as temperature, soil moisture, light intensity... With the smart garden, we can be easy to get fresh vegetable or out-of-season fruit. This system operates with low cost, save energy and high effect. In addition, it allows remove control through internet. Thanks to this, we can monitor the garden from smart phone or computer everywhere.

Class no.

VN.3.	
	Protect human health and animals through the
Title	treatment of toxic microcystins in aquatic
	environments by biological method
Authors	Hoang Tuong Minh, Nguyen Ngoc Minh, Nguyen Ngoc Nhat Anh
	This study aimed to solve the problem of harmful
Description EN	cyanobacterial blooms in Hoan Kiem lake as sampling site. Hoan Kiem lake is a famous lake in the center of Hanoi, Vietnam. Hoan Kiem lake is closed eutrophic lake, so that it has a strong development of some particular species of algae, especially genus Microcystis. Microcystis aeruginosa is a freshwater cyanobacteria that can form harmful algal blooms have severe impacts on human health, aquatic ecosystems and the economy. Thus, study on stability and decomposition of toxins is necessary. Among many solutions, using microorganism such as heterotrophic bacteria, Sphingomonas capable of degrading microcytin from aquatic environments is very useful.
Class no.	4

NATIONAL EXHIBITORS

Universities Research Institutes Companies Individuals

University POLITEHNICA of Bucharest

RO.1. FILLER MATERIAL FOR CLADDING BY ARC-WELDING Title EN TOUGHNESS AND HARDNESS WITH HIGH AND PROCEDURE FOR OBTAINING Geantă, V., Voiculescu, I., Stefănoiu, R., Binchiciu, H., Vasile, Authors M.I., Bârlădeanu, M., Ionescu, M., Cârciumăreasa D., Irimia M. **University Politehnica of Bucharest** Institution RO A00354/05.08.2014 Patent no. The patent refers to a new filler material used for cladding by welding, characterized by a good behavior during mechanical processing and high mechanical strength under severe conditions of erosive-abrasive wear with impact, combined with mechanical fatigue, that are used for surfaces which work in conditions of crushing-grinding process in contact with natural aggregates (gravel, sand, ballast) and crushed stone. The metallic material shows high hardness and toughness, consisting of five high purity metallic elements having the chemical composition within the range of values: Al = 4.60 - 6.80 %, Cr = 20 - 22.50 %, Fe = 23 - 24.50%, Mn = 23 - 24.50 % and Ni = 24 - 26.50 %. The density of filler material varies in the range of 7.4-7.6 kg/dm3, as function of chemical composition, and the liquidus temperature is placed in the domain of 1350 – 1400 0C. Before heat treatment, in as cast state, the material shows average values of hardness of 400 - 535 HV0.1 but after applying of specific heat treatment, shows an increase of hardness until 700 - 950 HV0.1 associated with toughness expressed by the values of fracture energy of 55 - 70 J at 20° C, Description during Charpy impact test. The procedure for obtaining of the filler material for hard EN cladding is characterized in that the metallic materials used for its obtainment (Al, Cr, Fe, Mn, Ni) have high purity (more than 99%), are mechanically prepared before to be charged in the vacuum induction furnace or in the induction furnace under argon controlled atmosphere. The charge calculation takes into account the losses of elements that occur during the obtaining process, that are dependent on the furnace capacity, the nature of the refractory lining and the workflow. The raw materials are introduced into furnace in the

workflow. The raw materials are introduced into furnace in the following order: ARMCO type iron, nickel, chromium, manganese and aluminum, at the end of the process (in order to limit the mass losses during oxidation). The metal bath is protected against oxidation both by operating mode with low level pressure (technical vacuum of $10^{-2} - 10^{-3}$ mbar) and by using a controlled inert atmosphere (with Ar). The alloy with the casting temperature of 1550 - 1600 °C could be directly casted into ceramic or metallic molds, in order to obtain rods or plates.

APPLICABILITY DOMAIN: Cladding, Mechanical Engineering – Metallurgy, Buildings and Materials.

Class no.

6&7&8

RO.2.

MICROALLOYED STEEL WITH HIGH TOUGHNESS Title EN IN NORMALIZED CONDITION AND PROCEDURE FOR OBTAINING

Authors Tacă M., Daisa D., Geantă, V., Voiculescu, I., Ștefănoiu, R., Constantinescu, D.M., Vintilă, N. Vintilă, A.

Institution University Politehnica of Bucharest

Patent no. RO A-00479/04.07.2016

The patent refers to a new class of micro-alloved steels, characterized by high mechanical strength and toughness used for obtaining molded parts for automotive industry, that can be subject to complex stresses (shock, bending, compression and tensile). The chemical composition is in the following range of values: C = 0.30 -0.35 %, Mn = 1.40 - 1.80 %, Si = 0.6-0.8 %, Cr = 0.26 - 0.28 %, Nb = 0.20 - 0.40 %, V = 0.18-0.28%, provided that the ratio V/Nb to be in the range 0.6-0.8%. The mechanical characteristics in normalized condition are comparable to those of alloyed steels in hardened/annealed condition: yield strength: Rp0.2 = 600 - 800MPa; Ultimate tensile strength: Rm = 850-1100 MPa, the elongation: A = 15 -20 %, reduction of area: Z = 40-50 % and energy absorbed by breakage during Charpy impact test: KV=40-80 J. After forging/controlled cooling the steel microstructure has very fine grains, containing ferrite, pearlite and fine/globular carbides (100–500nm), distributed both on grain boundary and into grains volume.

The procedure for obtaining consists in production into an air induction furnace from scrap, graphite and ferroalloys used as micro-alloying. After casting, the ingots are subjected to homogenization annealing, plastic deformation and die forging. The cooling after die forging process is carried-out with controlled speed according to the desired values for toughness and mechanical strength.

APPLICABILITY DOMAIN: Automotive industry, Mechanical Engineering – Metallurgy, Buildings and Materials

Class no.

Description

EN



NATIONAL 295

6&7

RO	.3.
NU	.

- Method for obtaining hydroxyapatite scaffolds withTitle ENpredetermined physico-chemical characteristics for
major bone reconstruction
F. Miculescu, A. Maidaniuc, M. C. Costoiu,
- Authors Semenescu, M. Miculescu, F. Ionita-Radu, M. Arghirescu

Α.

Institution University POLITEHNICA of Bucharest

Patent application No. RO 001-04.01.2017 Patent no. The proposed method consists in fabrication of scaffold structures for major bone defects repair, based on monophasic (hydroxyapatite HAP) biphasic _ or (hydroxyapatite + tricalcium phosphate - α -TCP or β -TCP) ceramics which fulfill the product requirements related to mechanical strength and biocompatibility. The technical problem solved by this invention is the need for adequate Description adaptation of phase order and phase parameters, and for EN developing a specific procedure for producing a scaffold structure for major bone repair with predictable porosity and mechanical strength. The described method solves the technical problem by obtaining a predetermined ratio of HAP/TCP, after a preliminary stage of hydroxyapatite production by deproteinisation using thermal routes.





RO.4.	Mechano-electrical drier
	Florin MICULESCU. Marian MICULESCU. Cosmin-
Title EN	Mihnea COSTOIU, Oana-Roxana CHIVU, Catalin-
	Alexandru BARBU, Augustin SEMENESCU
Authors	University POLITEHNICA of Bucharest
Institution	Patent No. RO131500(A0) — 2016
	The patent relates to a mechano-electrical laundry dryer
	which can be used in households or hotels, for smaller or
	larger, coloured or white clothes or towels. The laundry
	dryer is characterised by autogenerating air streams which
	dry the clothes hanged on any type of holder by its horizontal
	translation motions at rights angle with clothes or towels'
	nositioning plane. The problem solved by the current
	positioning plane. The problem solved by the current
	invention is laundry drying without the warm air, which, by
	passing through wet laundry, accumulates water vapors
	which may condense and deteriorate the adjacent objects and
	the walls of the enclosure in which drying takes place.
Patent no.	By implementing the invention, the wet laundry or towels
	are fried without generating air streams in turbulent state.
	which contain large quantities of water vapors that may

are fried without generating air streams in turbulent state, which contain large quantities of water vapors that may deteriorate the furniture or the enclosure in which the drying takes place. It is estimated that the time required for drying will be reduced by more than half of the time required for natural drying, and by at least 10 - 20% of the drying time required by the solutions that imply using warm air streams generated by air blowers with electrical resistors. Moreover, since the drying takes place naturally and the air streams have low speed, the premise of efficiently removing the water vapors druing laundry drying is created.

Description EN



RO.5.	
	Semiconstrained total elbow prosthesis made of shape-
Title EN	memory alloys, with coupling system based on shape-
	memory effect
	Batalu N D, Semenescu A, Costoiu M C, Antoniac V I,
Authors	Doicin C, Amza C G, Mates I M, Chivu O, Codorean I B,
	Barbu C, Badica P, Negoita O
Institution	University POLITEHNICA of Bucharest
Patent no.	Patent application No. RO20160000383/2016
	(Patent no. RO131379-A0)
	Our proposed design eliminates auxiliary components used for
	elbow implant
	The connection between the ulnar and humeral components is based
	on shape memory effect (SME) of the metallic material used for the
	humeral component. SME allows the humeral component to reach
	two positions: open (before connecting), and close (after
	connecting). The body temperature (~36 °C) or warm saline
	solution will activate the humeral component to close. Initially, the
	humeral component is in an open position by keeping it in a cold
	The surgeon procedure is the following Before the implantation
.	the humeral component is getting cold at 1-3 °C to bring the
Description	catching device in the "open" position.
EN	The surgeon will start the approach and after identification and
	dissection of the ulnar nerve the radial head is excised and the
	humeral and ulnar ends are prepared and reamed according with the
	chosen stems.
	uncemented) to afford the biologic integration
	After implantation the two ends of the of the humeral and ulnar
	components are aligned and the coupling extension is getting warm
	with saline solution at 38-40 °C. The coupling extension is closed
	and the elbow is moved through full range of motion and the
	stability is checked.
	The ulnar nerve is anterior translocated and the wound is closed in
Class	usual manner.
Class no.	4; 0



NATIONAL 298

RO.6.	
	Total constricted elbow prosthesis made of shape-memory
Title EN	alloy with hinge-like fixation and coupling system based on
	shape-memory effect
	Batalu N D, Semenescu A, Costoiu M C, Sinescu I, Antoniac
Authors	V I, Doicin C V, Codorean I B, Mates I M, Barbu C A,
T	Badica P, Gavrillu I S
Institution	University POLITEHNICA of Bucharest
Patent no.	RO131261-A0)
	Our proposed design eliminates auxiliary components used for
	connecting the ulnar and humeral components in a total constrained
	elbow implant.
	on shape memory effect (SME) of the metallic material used for the
	humeral component. SME allows the humeral component to reach
	two positions: opened (before connecting), and closed (after
	connecting). The body temperature (~36 °C) or warm saline
	solution will activate the humeral component to close. Initially, the
	environment (e.g. cold water) The surgeon implantation procedure
	is the following.
Description	Before the implantation, the humeral component is getting cold at
EN	1-3 °C to bring the locking device in the "open" position.
	The surgeon will start the approach and after identification and disposition of the where nerve the radial head is available and the
	humeral and ulnar ends are prepared and reamed according with the
	chosen stems. The next step is to implant the two components
	(cemented or uncemented) to afford the biologic integration.
	After implantation, the two ends of the of the humeral and ulnar
	components are aligned and the coupling extension is getting warm with caling solution at 20.40 $^{\circ}C$. The coupling extension is closed
	and the elbow is moved through full range of motion and the
	stability is checked.
	The ulnar nerve is anterior translocated and the wound is closed in
	usual manner.
Class no.	4; 6



NATIONAL 299

RO.7.	
Title EN	MULTIMATERIAL ROD FOR EXTERNAL
Authors	Antoniac Vasile Iulian, Semenescu Augustin, Orban Horia,
Institution Patent no.	University Politehnica of Bucharest RO131543 (A2) — 2016-12-30

According to the invention, the multimaterial rod comprises a bone fixing part (1) made of biocompatible Mg alloys, with normal thread at the end towards the other component (2) of the rod, while, at the other end, the thread is pointed, in order for it to penetrate the bone, and a rod-type component (2) made of austenitic stainless steel, having the same diameter as the first component (1) and threaded at one end, the two components (1 and 2) of the rod being assembled by a ceramic sleeve (3) made of alumina or zirconia, which is externally ribbed to be easily screwed in and internally threaded, between the two threads there being a smooth zone meant to prevent the galvanic corrosion generated by putting together the Mg alloy and the austenitic stainless steel. Application of the "Multimaterials rod for external fixation

Application of the Multimaterials rod for external fixation devices" is the potential use for external fixation of the bone fractures, in orthopedic surgery. External fixators currently in use have all rods made by metallic biomaterials like stainless steel or titanium. According this invention, the biodegradation of the component made by biodegradable Mg alloy will eliminate the pain of the pacient that appear during the metallic rod removal, after fracture fixation.

Class no.

Description EN

6. Mechanical Engineering - Metallurgy



NATIONAL 300

RO.8.	
Title EN	Equipment for machining helicoidal surfaces through ultrasonically aided electrical discharge machining
Authors	Marinescu Niculae Ion, Ghiculescu Liviu Daniel et.al.
Institution	"Politehnica" University of Bucharest
Patent no.	Patent application No. A 00533 / 2016
Description EN	The invention deals with the equipment for machining interior/exterior helicoidal surfaces through ultrasonically aided electrical discharge machining, having a pattern in contact with three feelers at 120° , ultrasonic chain that has at its end (anti-node) a helicoidal electrode which executes torsional vibrations with their rotation centre on axis of helicoidal surface, position adjusted by two flanges with spherical surfaces.
Class no.	5



RO.9.

Title EN	Equipment for machining curving holes and micro-holes through ultrasonically aided electrical discharge
	machining
Authors	Ghiculescu Liviu Daniel, Marinescu Niculae Ion, et.al.
Institution	"Politehnica" University of Bucharest
Patent no.	Patent application No. A 00534 / 2016
Description EN	The invention deals with the equipment for machining curving holes and micro-holes through ultrasonically aided electrical discharge machining, using an ultrasonic chain that has at its end (anti-node) a circular electrode which executes torsional vibrations with their rotation centre on axis of curving hole / micro-hole.
Class no.	5

Class no.



NATIONAL 301

RO.10.	
Title EN	Mehod and device for reducing the vortices effect on suction chamber of centrifugal pumps
Authors	Adrian Ciocănea
Institution	Univ. "Politehnica" of Bucharest
Patent no.	345 / Patent application No. a2010
Description EN Class no.	The patent describes a method and a device used for reducing the nagative effect of vortices on suction chambers of centrifugal pumps. The device is basicaly consistig of three thin vertical cylinders symmetrically mounted on a horizontal rotating disk placed in front of the inlet section of the pipe. The section shape of the cylinders could be selected. The rotating device is moving by the water flux during the suction process. Due to the change of the water flux route, higher energy for the vortices is requested in order to reach the suction section of the pipe. Therefore vortices of low energy are not able to reach the inlet pipe section. Also high energy vortices are influenced by the general water motion and degenerates in low energy vortices. 1; 5

RO.11.

Title ENHIGH ENTROPY COMPOSITE MATERIAL AND
THE ROUTE FOR PRODUCING THIS MATERIAL

Institution University Politehnica Bucharest

Patent no. Patent application No. A00943/29.11.2016 High entropy composite materials, according to invention, is a new material with high entropy alloy matrix consisted in five elements (Al, Cr, Fe, Mn, Ni) in equiatomic proportions reinforced with titanium diborate (TiB₂) uniformly distributed in the matrix. The novelty of the invention consists in the alloying high entropy alloy elements with Description particles used as reinforcing (TiB₂) determining the increase EN of composite mechanical properties and corrosion resistance. The route for producing HEA/TiB₂ consists in elemental powder mechanically alloving, followed by pressing and sintering in controlled atmosphere furnace or spark plasma sintering.

Class no.

RO.12.	Magnetic nanostructures and device implementing same
Title EN	Cristian Predescu, Ecaterina Matei, Andra Mihaela Predescu,
THE EN	Andrei Constantin Berbecaru, Ruxandra Vidu
	Politehnica University of Bucharest - Center for
Authors	Research and Ecometallurgical Expertise (UPB-
	ECOMET)
Institution	US9469555-B2 / 18.10.2016

Apparatus for removing target pollutants and toxic heavy metal ions from liquid using and reusing magnetic nanoparticles in a continuous process comprises: reaction chamber in which the liquid is mixed with many magnetic nanoparticles; treatment chamber; means for removing the aqueous phase from the chambers while magnetic nanoparticles loaded with target chemicals remain inside the chamber using a magnetic solenoid; washing chamber; a Patent no. treatment chamber; and means of removing the liquid comprising reagents and pollutants to waste water tank. Independent claims also are included for: (1) a composition of matter comprising particles consisting of iron oxides, transition metal oxides with magnetic properties: and

(2) removing target elements from a liquid using magnetic nanoparticles and cleaning and reuse the nanoparticles.

Description 1 EN



RO.13.	
Title EN	Compositions and process for obtaining innovative enzymatic formulations for root canal lavage
Authors	Anton FICAI, Denisa FICAI, Ovidiu OPREA, Stefan MANEA, Anna-Maria PANGICĂ, Petru BODOGA, Camelia AGAPESCU
Institution Patent no.	University POLITEHNICA of Bucharest Patent application No. A/00472/2016

The present invention discloses the technology for obtaining root-lavage solutions based on enzymes and ternary components having an acidic, demineralizing, antimicrobial role. The proposed solution is binary type, obtained by mixing the two components before use. It is essential that the pH adjustment is performed efficiently by mixing the contents of the vials since most of the enzymes have maximum enzyme activity at a certain pH value.

Various studies have shown that large proportional areas of the root canal wall remain untouched by instruments, underlining the importance of chemical means of cleansing and disinfecting all areas. There is no unique irrigation solution able to cover the tasks that are required from an irrigant. Optimal irrigation is based on the combined use of two or more irrigation solutions in a certain succession to achieve the intended goals.

Due to the diversity of the components to be removed, a complex mixture of components is proposed by the present invention, which ensures efficient removal of organic and inorganic tissue as well as potential microorganisms. The organic component is difficult to be removed from the root canal by using existing irrigation solutions. In this regard, this patent application proposes the addition of enzymes that degrade organic components. Depending on the nature of the enzyme used, a metallic cofactor can induce increased enzymatic activities. Besides the enzymes and components necessary for optimal activity, the endodontic lavage solutions will contain calcium complexing agents, nanoparticles as antimicrobial agents and natural extracts.

Class no. 4: Medicine - Health Care - Cosmetics

Description

EN

RO.14.	
Title EN	Bone Grafts based on Collagen, Calcium Phosphate and Zinc and Process for their Manufacturing
Authors	Maria SONMEZ, Ioan Avram NEDELCU Madalina Georgiana ALBU
Institution	University POLITEHNICA of Bucharest
Patent no.	RO129822 (A2)
Description EN	The invention discloses the technology for obtaining improved bone grafts mainly based on collagen (Coll) and Calcium Phosphates (especially hydroxyapatite (HA)) but also containing $1 - 10\%$ Zn ²⁺ . The ratio between the collagen and hydroxyapatite should be in the range of 1:1 to 1:4, being similar with the composition of the substituted/augmented bony tissue. The presence of Zn ²⁺ is important because it can appear as ZnO (forming a ternary composite based on the three components COLL, HA and ZnO) or as Zn _x Ca _{5-x} (PO ₄) ₃ OH (forming a binary composite containing COLL and zinc substituted HA (Zn-HA)). In both cases, the presence of zinc is beneficial because it can assure a faster healing of the defects but also assure an antimicrobial activity, especially in the form of ZnO. The as obtained materials are expected to be exploited in both dentistry and implantology. The Zn ²⁺ release can be designed to assure faster or slower release and thus, mainly assuring a faster healing or a prolonged, protective activity (against infections of secondary fracture). The overall properties of these materials can be also improved by the synthesis route but also additional components could be used to potentiate some of the desired properties, in dentistry, for instance the combination of ZnO and eugenol being extensively exploited.

4: Medicine - Health Care - Cosmetics

RO.15.	
Title EN	A PROCEDURE FOR STIMULATING TISSUE DIFFERENTIATION
Authors	Amalia Gabriela DIACONEASA
Institution	University POLITEHNICA of Bucharest
Patent no.	-
Description EN	This innovation represents a new approach to aging based on a new theoretical model. Aging is an intriguing phenomenon, negligible or hard to detect in various species, but obvious in some homeotherms like birds and especially mammals. So far, there is no clear definition of aging, although there are two widely accepted criteria for aging, advanced by Finch and Austad: 1. an increase in mortality rate with age; 2. a decrease in fitness (the ability of producing viable offspring). But even these criteria are contradictory. For example, caloric restriction (CR, a special diet with the proper amount of nutrients, but lower energetic content) increases lifespan, but decreases fertility in various species.

Class no.

University of Agronomic Science and Veterinary Medicine Bucharest

DO 16	
KU.10.	Mathed adapted for I winds add der (Shiitaka) muchason
	Method adapted for Lentinuia edodes (Sniitake) mushroom
Title EN	cultivation at the laboratory level and automated application
	system
Authors	Emanuel Vamanu, Alexandru Petre
Institution	University of Agronomic Science and Veterinary
monution	Medicine - Faculty of Biotechnology
Patent no.	Patent application No.: A/00765/28.10.2016
Description EN	RomLabHouse is an automated system based on Arduino Yun platform, which aims to achieve optimum environmental conditions for the cultivation of <i>L. edodes</i> - Shiitake mushroom species, at laboratory level. Environmental conditions were obtained by a pearlite layer (about 5 cm thick), placed on the bottom of the system, and two Peltier systems, located on the top. On cover there are also two air filters with a diameter of 50 mm. Environmental parameters (temperature and humidity) are monitored every 10 minutes, being sent on-line in a Cloud Server (devicehub.net) for real time monitoring. Substrate for cultivation includes: 2.000 mL beech sawdust, 500 mL straw, 500 mL bran, 50 mL gypsum, humidity 50-60 %, sterilization at 121° C for 2 hours. The minimum productivity obtained was about 10 % after two flushes. This production was about 40% less than that obtained from using beech sawdust instead of straw. Also, there was a reduction in the browning phase of the mycelium, which was accompanied by a partial fructification. This was characterized by punctuate accumulation of mycelium without normal formation of the mushrooms.

Class no.

Invention Classification: 5



Technical University of Cluj-Napoca, România

RO.17.	
Title EN	Synthesis procedure for a nanostructured powder of
	permanoy (supermanoy)/rhometal type
Authors	Ionel Chicinaș, Iraian Florin Marinca, Florin Popa, Bogdan
	Viorel Neamțu
Institution	Technical University of Cluj-Napoca
Patent no.	Patent OSIM 130354/30.12.2016

The invention refers to a synthesis route for obtaining nanocrystalline and nanocomposite powder of pseudo coreshell type. The core of this powder is formed by alloy of Permalloy (Ni₃Fe) or Supermalloy (79Ni16Fe5Mo, % wt.) type with nanocrystalline structure and a high magnetic permeability and the shell is formed by Fe rich alloy, at the classic composition of Rhometal (64Fe36Ni, % wt.) alloy, obtained by microalloying and which possess a high electrical resistivity. The aim for obtaining this pseudo coreshell powder is to be used at the elaboration of magnetic core with good characteristics of soft magnetic material and in the same time with a high electrical resistivity, for medium frequencies applications.

Description EN The synthesis procedure assume the use of a Ni₃Fe or Supermalloy nanocrystalline powder, with large particle size, obtained by mechanical alloying, and of a Fe carbonyl powder, with fine particle size. The composite particles are composed by large particles of Ni₃Fe (Supermalloy), covered by a layer of very fine Fe carbonyl (6-9 μ m). By microalloying, obtained by annealing in protective atmosphere, at the exterior part of the Permalloy or Supermalloy is forming a layer (tens of μ m) of Rhometal composition.

Technological tests show that at the annealing temperature of 400-550 °C and 1 hour of maintaining, the core of Ni_3Fe (Supermalloy) is still in nanocrystalline state, and the exterior layer has a composition that vary from the Rhometal to the elemental Fe.

Class no.

RO.18.	
Title EN	Device to reduce lubricating oils' viscosity for cold- starting process of internal combustion engines at low ambient temperatures
Authors	Mariașiu Florin Emil, Varga Bogdan Ovidiu, Deac Teodora Alexandrina
Institution	Technical University of Cluj-Napoca
Patent no.	Patent OSIM 128768/30.06.2016
Description EN	The problem solved by the invention is to optimize the lubricating oils' viscosity at low ambient temperatures, to eliminate the negative effects of engines mechanisms wear and friction losses. It uses a low power ultrasonic transmitter, located near the oil pump sump, electronically controlled. Immediate benefits of the invention are related to increasing the engine performance with reduced energetic consumption, reducing the wear of piston-rod mechanism, the wear of valve timing command system, also reducing the pollutant emissions during engines' cold start process.
Class no.	1

RO.19.	
Title EN	Method of industrial robots control
Authors	Ciupan Emilia, Morar Liviu, Ciupan Cornel
Institution	Technical University of Cluj-Napoca
Patent no.	Patent OSIM 125211/30.05.2016
Description EN	The invention refers to a method used to determine a small set of points belonging to a robot workspace. This set is conceived to an effective training of the robot through neural networks.
Class no.	10

RO.20.	
Title EN	Method of robot training intended to obstacle avoidance
Authors	Ciupan Emilia, Morar Liviu, Ciupan Cornel
Institution	Technical University of Cluj-Napoca
Patent no.	Patent OSIM 125210/30.05.2016
Description EN	The invention consists of a method for modeling the kinematics of a robot, based on neural networks, so that it bypass an obstacle located on its way while it moves between two points of the workspace. Neural model is obtained through a training process, "deliberately wrong", by associating the coordinates (X, Y, Z) of some points situated on the direct path of the robot with appropriate motor couplings coordinates of points on the detour path.
Class no.	10

RO.21.				
Title EN	Plasma generator at atmospheric pressure and low power			
Authors	Dorin-Marius Petreuş, Emil Plăian, Alin Marius Grama, Emil Cordos, Sergiu Iulian Cadar			
Institution	Technical University of Cluj-Napoca			
Patent no.	no. Brevet OSIM 128077/30.03.2016			
Description EN	The invention consists of an electronic device that is capable to generate radiofrequency signal (13.56MHz) and to maintain plasma (~100W) at atmospheric pressure. It is used to generate integrated plasma in spectral analysis systems to estimate chemical composition of earth probe, materials, waste products etc. The device is portable, more reduced in weight and size, and has a very high power coupling efficiency. So it is a very useful tool for "in situ" chemical analysis of soils.			
Class no.	1			

RO.22.	
Title EN	Device for longitudinal rolling, right toothed gear, on presses
Authors	Marian Ionut, Tintelecan Marius
Institution	Technical University of Cluj-Napoca
Patent no.	Patent OSIM 129217/29.01.2016
Description EN	The invention relates to a device powered by a press rolling made of a semi-metallic longitudinal develop a toothed crown gears with right teeth similar. The subject patenting fails to produce semi-finished metal gears (the future right gear with teeth) through the transformation process of compression in the longitudinal rolling. It shows the advantages of flow / movement of metallic material in plastic deformation process identic to the longitudinal rolling process, a process that ensures the realization of a row material with high dimensional stability and easy control of all parameters outbreak strain which characterizes the process.
Class no.	6

RO.23. Title EN Authors Institution Patent no.	Carbon dioxide removal system from flue gases Vasile Hotea, Gabriel Badescu, Juhasz Jozsef Technical University of Cluj-Napoca Patent OSIM 127080/30.03.2016
Description EN	The patent relates to a process for the removal of carbon dioxide from flue gases. Installation according to the invention consists mainly of a centrifugal scrubber, a storage tank and preparing a solution of sodium carbonate and potassium sprayed through the nozzle of special design, a condenser for the vapor stream rich in CO_2 , desorption column with the role of the solvent regenerator and a condenser where the vapor stream rich in CO_2 desorption column is condensed, dried in the steam turbine, and stored.

RO.24.	
Title EN	Sound absorbent composite material and obtaining process
Authors	Ancuța Elena Tiuc; Tiberiu Rusu; Ovidiu Nemeș
Institution	Technical University of Cluj-Napoca
Patent no.	Patent OSIM 129228 / 28.08.2015
Description EN	The patent relates to a sound-absorbent composite material used, both in the exterior and in the interior spaces, to reduce the overall noise, to reduce the structural noise transmission and to obtain appropriate acoustic spaces, and to a manufacturing process to obtain it. Sound-absorbent composite material according to the invention consists of 70 80% of softwood sawdust or 70 75% beech wood fibers and 20 30% of flexible two-component polyurethane foam (PUF) as a binder. According to the invention the process consists in introducing into a mixing container the two components of the polyurethane foam, then followed by vigorous mixing at room temperature for 5 8 seconds, and then insert the sawdust of spruce / beech and mix for 12 seconds, the mixture was poured quickly into the mold, due to the high reaction speed, the mold was covered with a cap and left for 30 45 minutes for completion of the chemical reaction and to achieve dimensional stability as the material is extracted from the mold.
Class no.	7
RO.25.	
Title EN	Method for obtaining composite reinforced polymeric plates
Authors	Petru Paul Bere; Petru Berce; Ovidiu Nemeş; Nicolae Bâlc
Institution	Technical University of Cluj-Napoca
Patent no.	Patent OSIM 128093 / 29.05.2015
	The process for obtaining fiber-reinforced composite plates is filing the fibers with the un-polymerized matrix on a flat

covered mold and pressed them in a machine. The innovative Description idea is to mold pressing the composite material with an EN external force applied to the foil covering the composite material. 7

RO.26.			
Title EN	Seed germination method includes placing the selected seeds into boxes and exposing them to infrared radiation of high wavelength until the seeds germinate or until the first leaves or flowers emerge		
Authors	Coman Mirela		
Institution	Technical University of Cluj-Napoca		
Patent no.	Patent OSIM 126456/29.11.2012		
Description EN	The problem solved by the invention is that of creating a hospitable microclimate for seed germination, growth and development for a variety of vegetables and ornamental plant species. Method ensures a faster germination of seeds, seeds germinating in up to 1/4 to 1/3 of the time needed for the blank sample and also having a 10-15% higher germination rate. As the integrated germination process unfolds, the seed is in the ground, in its natural environment life, while irradiation occurs. Also, it can be used in any climate-controlled space, isolated chambers without the need for separate and special devices.		
Class no.	3		

RO.27.	
Title EN	Reconfigurable gearbox
Authors	Cornel CIUPAN, Mihai STEOPAN, Emanuela POP
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application OSIM no. A/10043/26.07.2016
	The invention presents a reconfigurable gearbox designed for
	the skills development of students in the field of mechanical
	engineering. The solution offers students the opportunity to
	build over 20 different types of gearboxes, depending on the
	structure and the speeds selected by the work load of the
Description	machine tool. Reconfigurability of the box is provided by a
ĒŇ	modularized concept, by using interchangeable shafts and
	gears and by creating an optimized set of gears. The
	invention will help the students to understand important
	aspects related to the design, construction and operation of
	the gearbox and, in addition, contributes to the
	development of their creative abilities.
	·

RO.28.				
Title EN	Paralel robot for space orientation and manipulation sistems - SIMOS			
Authors	Adrian PISLA, Liviu Calin VAIDA, Doina Liana PISLA			
Institution	stitution Technical University of Cluj-Napoca			
Patent no.	Patent application OSIM no. A/00984/2015			
Description EN	The patent refers to a robotic system designate to space manipulation and orientation, consist in two main components (intern robotic modules), one destined to incremental tasks for positioning – planar orientation of the active component caring platform (PCA) and the other one axial orientation and/or active torque transmission to an end effector. The two components works together having the same coordinating system. The "active" character of the platform results from the torque transmission capacity.			
Class no.	5			

RO.29.	
Title EN	Automated medical instrument for robotic assisted biopsy
Authors	Vaida Călin, Bîrlescu Iosif, Gherman Bogdan, Tucan Paul, Plitea Nicolae, Pîslă Doina
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application OSIM no. A/00936/29.11.2016
Description EN	The present invention refers to an automated medical instrument for biopsy that uses a biopsy gun which is manually mounted in the instrument supporting frame. The biopsy gun is actuated on a linear trajectory, which in turn leads to the needle insertion/retraction, and it is fired using a pushing mechanism. Mounting the instrument on a robotic system leads to the robotic assisted biopsy task.
Class no.	4

RO.30.					
Title EN	Method for multi-fuel supply of internal combustion engines with aerosols generated through ultra-sonication from biofuels based on alcohols				
Authors	S.l. dr. Ing. Baldean Doru; Prof. dr.Ing. Mariasiu Florin; Asist. dr. Ing. Burnete Nicolae Vlad				
Institution	Technical University of Cluj-Napoca				
Patent no.	Patent application OSIM no. A/00407/06.09.2016				
Description EN	The patent refers to a method of multi-fuel supply of the internal combustion engines, with aerosols produced through ultra- sonication from bio-fuels based on alcohols. The method according to proposed patent consists in using a device of fumigation made from a biofuel tank connected with a bio-fuel steady-state level chamber, a main ultra-sonication chamber in which is placed an ultrasonic emitter. Following the interaction of Ultrasounds with bio-fuel volume, due to the cavitation phenomena there are produced some bio-fuels aerosols, which are downloaded through a connecting pipe and transported inside the combustion chamber of internal combustion engine.				
Class no.	5				

RO.31.							
Title EN	Electromechanical actuator with electronic control device						
Authors	Ştefan Breban, Petre-Dorel Teodosescu, Adriana-Voica Neag, Mihai Chirca						
Institution	Technical University of Cluj-Napoca						
Patent no.	Patent application OSIM No. A/10001/5.01.2016						
Description EN	Technical University of Cluj-Napoca Patent application OSIM No. A/10001/5.01.2016 The invention presents an electro-mechanical actuator with electronic control device for the rotary drive of any components or equipment that require a maximum rotation of 180 degrees. The electromechanical actuator according to the invention is composed of a rotor having one or more permanent magnets with radial magnetization, mounted / fitted by means of a clamping bushing, or glued, on a shaft; the shaft being mounted on two bearings, each bearing being integrated in a plate made from a high magnetic permeability material; from coils placed around the stator poles, the stator poles being arranged on either side of the magnet / magnets placed on the rotor; the stator poles are mounted on some supports with high magnetic permeability, the supports are fixed on the ends of some plates to form together a rigid assembly; a circular torsion spring which is mounted around the rotor shaft, the spring having one end attached to one of the plates made from high magnetic permeability material, and the other end being fixed by means of a connecting element to the rotor axis; an electronic device that provides power to the coils and thus allows the movement between						

RO.32.				
Title EN	Variable reluctance motor with outer rotor and modular construction for e-bike applications			
Authors	Nicolae Florin Jurca, Răzvan Ințe			
Institution	Technical University of Cluj-Napoca			
Patent no.	Patent application OSIM No. A 2016 00756			
Description EN	The patent refers to a variable reluctance synchronous motor with outer rotor and modular construction. The rotor is made up of 6 modules, between modules is an element of non-magnetic separation. Each module is made up of three separate magnetic elements fixed to each other by a dovetail joint. The connecting elements are made of non-magnetic material. Each pole rotor is provided with holes that allow attachment of 3 different lengths of spokes on the same module. Each spoke is fixed by means of safety spring pin. Using this motor with outer rotor and modular construction, facilities maintenance operations for a such systems making them more reliable and simple. Depending on the type of defect can be removed the entire motor or only components (rotor poles, spokes).			
Class no	8			

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RO.33.	
Title EN	Method and device for hybrid position speed control applied to the intelligent platform control
Authors	L. Vladareanu, R. I. Munteanu, T. Sireteanu, I. Dumitrache, E. Albu, M. Iliescu, S. Cononovici, V. Vladareanu, R. A. Munteanu, O. Melinte, A. Gal, V. Barbu, M. S. Munteanu, D. Mitroi, M. Moisescu, O. Chelaru, I. Mihai, I. Sacala, Gh. Florea and M. Mihailovici
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application OSIM No. A2016 00821/14.11.2016
Description EN	Invention refers to a method and device for hybrid position speed control of the motion trajectory in 3D space of the robots or mechatronic systems for improve performances by Intelligent Control laws in rescue operations, military applications, in moon experiments and MEMS / NMM applications. The invention has applications to intelligent control platforms for MEMS / NMM systems, rescue operations in critical situations such as natural disasters, terrorist actions, in moon experiments and military applications.
Class no.	12

RO.34.	
Title EN	CO2 footprint reduction, Energy Efficient, Abrasion Resistant Concrete Obtained from Recycled Waste Glass and Concrete and its Production Method
Authors	Ofelia CORBU, Attila PUSKAS
Institution	TECHNICAL UNIVERSITY OF CLUJ-NAPOCA Faculty of Civil Engineering
Patent no.	Patent application PCT/IB/2017/052145
Description EN	Short description of your invention. The present invention relates to concrete and methods of manufacturing thereof. The concrete is made of recycled concrete waste and recycled glass waste, mixed with sufficient amounts of cement, natural aggregates, admixtures and water. The invention relates to an energy efficient concrete mix using waste concrete as recycled aggregates, partially substituting natural aggregates and using glass waste for reducing the cement ratio in the mix. It is the object of the invention to provide an improved CO2 footprint and embedded energy in the mix – improving in the same time the concrete characteristics (abrasion, increase freeze-thaw and cyclic heat resistance, fatique, etc.). Applications Since the abrasion characteristics of the obtained concrete is superior with respect to the regular one, while all the other characteristics are within specs, it can be used for any type application in road infrastructure, civil works and same, where improved durability of the concrete surfaces is needed. At the end of its lifetime the concrete composition can be easily recycled and reused for further concrete compositions, improving also in this way its energy efficiency.

RO.35.	
Title EN	A NEW SOLUTION FOR THE RETROFITING STEEL STRUCTURES
Authors	Cristina Campian, Maria Pop
Institution	Technical University of Cluj-Napoca, Civil Engineering Faculty
Patent no.	-
Description EN	The primary aim of earthquake resistant design is to prevent building collapse during the seismic event, but severe earthquakes have a low probability of occurrence during the life time of the structure, therefore in contrast to traditional structural design in earthquake design, structures are permitted to work in post-elastic domain under seismic load. The study aims for using bucking restrained braces (BRB) on an existing building.
Class no.	7
	Applicability



RO.36.

Title EN	Concrete Surface Repair with Tri Component Epoxy Resin System
Authors	Attila PUSKAS, Ofelia CORBU
Institution	TECHNICAL UNIVERSITY OF CLUJ-NAPOCA Faculty of Civil Engineering
Patent no.	-
Description EN	Repairing and rebuilding of concrete surfaces is often needed for used and new surfaces. The research aimed to study the use of tri component epoxy resins for concrete surface repair due to the well-known versatility of the epoxy based materials. The scope of the research has been to recover and improve the mechanical properties of the repaired concrete

surface. The bond quality between the epoxy resin and the concrete surface has been tested using standard size specimens consisted of composite concrete-epoxy cuboid/cube with rough concrete surface at the interference of the two different materials. Results have been obtained on composite samples for compressive strength, modulus of elasticity and tensile strength. The results on the specimens revealed high compressive strength of the composite sample, but also plastic deformation of the epoxy layer when parallel load on the specimen has been applied. For perpendicular loading of the adhesive plane the compressive strength depends on the quantity of the applied compounds. Tests for establishing the modulus of elasticity highlighted the material compatibility. Tests for establishing the tensile strength of the composite samples (and bond quality) revealed a high and resistant linkage between the epoxy resin and the concrete, as well as between the epoxy layer and the metal plate of the anchorage of the epoxy compound, obtaining tensile strength values corresponding to concrete class C25/30. It has been concluded that the used epoxy resin ensures proper bonding between concrete and metallic surfaces while assures also high mechanical strength for the repaired concrete surfaces.

Applications:

Repairing/rebuilding of cracked and damaged concrete surfaces

Filling of structural and non-structural concrete joints

Advantages:

Durable and sustainable solution for concrete surface repair

"Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca

RO.37	
Title EN	Innovative new products made by SLM (Selective Laser Melting) useful in bone tissue engineering
Authors	Ilea Aranka ¹ , Mager Voicu ² , Barabas Reka ³ , Barbu Lucian ³ , Vrabie Oana ¹ , Timuş Daniela ¹ , Boşca Bianca Adina ¹ , Berce Cristian ¹ , Miclăuş Viorel ⁴ , Ghiran Flavia ⁴ , Rus Vasile ⁴ , Cenariu Mihai ⁴ , Sorițău Olga ⁵ , Jurj Anca ⁶ , Băbțan Anida Maria ¹ , Petrescu Nausica ¹ , Dinte Elena ¹ , Câmpian Radu Septimiu ¹
Institution	 ¹University of Medicine and Pharmacy "Iuliu Haţieganu" Cluj-Napoca ²Technical University of Cluj-Napoca ³Babeş-Bolyai University ⁴ University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca ⁵Oncology Institute "Prof. Dr. Ion Chiricuta" Cluj-Napoca ⁶Research Center for Functional Genomic, Biomedicine and Translational Medicine Cluj-Napoca
Patent no.	- Regeneration of stomatognat apparatus structures using
Description EN	autologous stem cells (harvested from the oral cavity), titanium scaffold made by the SLM and they osseointegration under the local osteoinductive factors, will allow integration of the new hybrid device created. Selective laser melting technique is based on the production of the desired pieces by melting and solidifying a titanium powder, layer by layer using a three-dimensional model based on ".stl" type file. By this procedure were made titanium scaffolds with the porosity between 27% and 92%, and the mesh sizes of the network were: 0.6, 0.8, 1 and 1.2mm. Some of the titanium scaffolds surfaces were conditioned with nano-hydroxyapatite of crystal sizes between 2.5 and 9.2 nm (calculated by X-ray diffraction pattern and their morphology was determined by SEM). The aim of the research is to identify the most appropriate networks sizes of titanium scaffolds, that ensure the best possible osseointegration and highlight the best potential of mesenchymal stem cells types which are suitable for medical implants. Another objective of the study is to evaluate the osteoinductive and osteoconductive effect of Ti surfaces scaffolds conditioned with nano-hydroxyapatite. Applications. Advantages. Clinical application is to provide a hybrid structures through tissue engineering (titanium scaffold made by SLM and grafted with autologous mesenchymal stem cells harvested / isolated from the oral cavity and differentiated towards the bone line cells) in order to replace the larger bone defects, after tumor excision in the oral-maxillofacial area.

The advantages are:

- we can use a titanium scaffold with high biocompatibility suitable for anatomical defect (personalized treatment)

- using a titanium scaffold conditioned with nano-hydroxyapatite and grafted with autologous cells will allow to increase the osseointegration capacity of the device and reduce the osseointegration time required.

Class no.



RO.38

	Advanced drug delivery systems of curcumin and
Title EN	epigallocatechine-gallate and novel curcumin analogs for
	increased bioavailability in human periodontal stem cells
	Bosca Adina Bianca ¹ , Ilea Aranka ² , Soritău Olga ³ , Fischer-
Authors	Fodor Eva ³ Porfire Alina ⁴ Tefas Lucia ⁴ Miklášová
i unioi ș	Natalia ⁵ Dinte Elena ⁴ Virag Piroska ³ Pârvu Alina Elena ⁶
	¹ Denartment of Histology Faculty of Medicine, UMPh. Clui-Napoca
	Romania
Institution	² Department of Oral Rehabilitation, Oral Health and Dental Office
	Management, Faculty of Dental Medicine, UMPh, Cluj-Napoca, Romania
	'Radiotherapy, Tumor and Radiobiology Laboratory, "Ion Chiricuță"
	Institute of Oncology, Cluj-Napoca, Romania
	of Pharmacy LIMPh Clui-Nanoca Romania
	⁵ Department of Chemical Theory of Drugs, Faculty of Pharmacy.
	Comenius University in Bratislava, Slovakia
	⁶ Department of Physiopathology, Faculty of Medicine, UMPh, Cluj-Napoca,
	Romania
Patent no.	-
	Numerous clinical and experimental studies have demonstrated the
	anti-inflammatory, antioxidant, antitumoral, antimicrobial effects of
	curcumin - a natural polyphenol isolated from Curcuma longa - and
	epigallocatechin-3-gallate (EGCG) - a polyphenol obtained from
Description	Camellia sinensis. However, the low cellular uptake limits their
EN	biological effect. Therefore, novel pharmaceutical delivery systems
	and synthetic derivatives should be developed, in order to increase
	the bioavailability and the therapeutic potential of curcumin and
	EGCG

Among the delivery systems, liposomes seem to be the most promising, and have been proposed in this study as vehicles for

curcumin and EGCG. They have the ability to incorporate both water-soluble as well as poorly soluble molecules, and they are able to improve the bioavailability of drugs with problems related to aqueous solubility, *in* vivo stability or cellular penetration. The proposed liposomal systems were prepared by the film hydration method, using a lipid film composed of a mixture of 1,2-Dipalmitoyl-sn-glycero-3-phosphocholine (DPPC), N-(Carbonyl-methoxypolyethylenglycol-2000)-1,2-distearoyl-sn-glycero-3-

phosphoethanolamine (PEG-2000-DSPE) and cholesterol. The drugs were incorporated depending on their solubility. Thus, EGCG was incorporated in the inner water phase of liposomes, while curcumin was entrapped in the lipid film.

The synthetic curcumin derivatives – curcuminoids – obtained by the Knoevenagel condensation are metabolically more stable and have higher cellular uptake.

The aim of the research is to investigate the *in vitro* therapeutic effect of liposomal curcumin, liposomal EGCG and curcumin derivates on four types of mesenchymal stem cells derived from the human periodontium. We will assess the modulation of the molecular mechanisms implicated in the pathogenesis of the periodontal disease: the activation of the NF- κ B (Nuclear factor kappa B) and HIF-1 α (Hypoxia Induced Factor alpha), the ratio between RANKL (Receptor activator of NF- κ B) and OPG (Osteoprotegerin) – RANKL/OPG and the oxidative stress markers. **Applications. Advantages.**

The clinical application is to provide improved therapeutic agents based on the natural plant extracts that are capable to exert immunomodulatory effects, to control the pathogenic mechanisms and to limit the tissue destructions for a more effective treatment of periodontal disease.

The identification of novel delivery systems and curcumin derivates could enhance the biological properties of the natural plant extracts used in the periodontal therapy.

Class no.

DO 20

KU.39	
Title EN	Noninvasive molecular diagnostic test for bladder cancer
Authors	Floares Alexandru ¹ , Fersigan Marius ¹ , Berindan-Neagoe Ioana ² , Braicu Cornelia ² , Petric Roxana-Maria ²
Institution	¹ Solutions of Artificial Intelligence Applications, Cluj- Napoca, Romania ² Research Center for Functional Genomics, Biomedicine and Translational Medicine, "Iuliu Hatieganu" University of

Medicine and Pharmacy, Cluj-Napoca, Romania.

Patent no. A/00984/08.12.2016

miRNAs contribute to cancer development and progression, and are differentially expressed in different biological specimens. In this study, we aimed to establish a particular miRNA signature for bladder cancer progression, with the purpose to implement a specific molecular test using artificial intelligence based approaches. In the case of bladder cancer, due to its nonspecific clinical symptoms, a precise diagnosis is achieved only in its late stages, and mostly following a surgical procedure; thus, the development of specific biomarkers for the diagnosis, prognosis and

Description EN in specific biomarkers for the diagnosis, prognosis and response to therapy of this malignancy is of utmost importance.

> These results have the potential to enhance the present knowledge on bladder cancer development and progression and, by correlating them with molecular profiles of circulating miRNAs in larger cohorts of patients, can contribute to a better understanding of miRNA profile alteration in cancer, to become the basis for the development of more precise biomarkers for early diagnosis, prognosis and the response to therapy using artificial intelligence algorithms. 4

RO.40	
Title EN	Topical delivery of bioactive, nanoencapsulated antioxidants for preventing or treating age-related eye diseases
Authors	Christina M. Sabliov, Carlos E. Astete, Ede Bodoki, Oliviu Voștinaru, Ovidiu C. Samoilă, Elena Dinte
Institution	Louisiana State University and Iuliu Hatieganu University of Medicine & Pharmacy
Patent	International patent application no. PCT/US2015/044483 (published WO 2016025394 A1, WO 2016025394 A2 si WO 2016025394 A3)
Description EN	Methods and compositions are disclosed for delivering lutein or other antioxidant to target tissues such as the eye, in bioactive form, while protecting the antioxidant from degradation. The antioxidant is encapsulated in nanoparticles comprising a protein (zein) or a polymer (poly(lactic-co-
	NATIONAL

glycolic acid), PLGA). After topical administration of the nanoparticles the bioactive antioxidant is released to the target tissue over time. Admixing the nanoparticles with a thermosensitive, bioadhesive gel will promote prolonged release of antioxidant. The methods and compositions are useful for treating or preventing conditions for which nonsurgical cures are not readily available, such as age-related macular degeneration or cataracts.

Applications: biomedical and pharmaceutical

Class no.



RO.41.

Microparticulate pharmaceutical systems for the colon-**Title EN** specific delivery of low-molecular-weight heparins Authors Hales Dana, Tomută Ioan University of Medicine and Pharmacy "Iuliu Hațieganu" Institution Cluj-Napoca Patent application No. A/00577/12.08.2016 Patent The invention represents a colon-specific drug delivery consisting pharmaceutical system of polymeric microparticles loaded with low-molecular-weight heparins. According to the invention, the pharmaceutical system consists of a mixture of a pH-dependent soluble polymer and an insoluble but permeable polymer with time-dependent release. The preparation of the pharmaceutical system involves the use of strong electrolytes (sodium chloride, Description sodium sulfate, sodium phosphate, potassium chloride, EN magnesium sulfate) in order to increase the loading amount of heparin and to control the release. The pharmaceutical system prevents heparin release in the stomach's acidic medium and in the small intestine, but allows the specific release of the drug in the colon. The pharmaceutical system appears as a fine, white, odorless powder, which can be combined in any proportions with other acceptable NATIONAL
	excipients to obtain a pharmaceutical formulation for oral administration, in particular gelatin hard capsules, tablets, granules or freeze-dried preparations.
	Applications. The invention allows the elimination of the
	drawbacks associated with the parenteral route of
	administration of heparins (the need to sterilize the
	preparations, pain at the injection site, the risk of infection,
	etc.), and represents a potentially useful treatment of
	inflammatory bowel diseases.
Class no.	Invention Classification: 4

RO.42.	
Title EN	The process of carrying out the metallic structures of the movable component within the prosthetic skeleton by direct restorations
Authors	Dansorean Adrian Lucian
Institution	University of Medicine and Pharmacy "Iuliu Hațieganu" Cluj-Napoca
Patent	-
Description EN	The first invention has applicability in the field of prosthetic restorations with movable works. In fact, it is a "technical method" by which the dental technician can obtain a prosthetic product with far greater results than known classical methods
Class no.	Invention Classification: 4
RO.43.	
Title EN	The process of carrying out the passivisation of the mesostructures casted in the implants by the joint washers system.
Authors	Dansorean Adrian Lucian
Institution	University of Medicine and Pharmacy "Iuliu Hațieganu" Cluj-Napoca
Patent	-
Description EN	The second invention is applicable in the prosthetics field on implants, when performing Overdentures. Innovation offers the possibility of obtaining greater precision of the mesostructure even if fingerprint errors occur. On the other hand, the physician can disassemble and reassemble the prosthetic parts of the mouth, without
Class no.	Invention Classification: 4
	NATIONAL

University of Craiova

RO.44.	
Title EN	Modular exoskeleton for applications in recovery of human lower limb
Authors	Geonea Ionut, Daniela Tarnita
Institution	University of Craiova
Patent no.	Patent application No. A00047/30.01. 2017
Description EN	for assisting locomotion of persons with disabilities, useful to facilitate locomotion recovery activities. The exoskeleton invention integrates two linkage mechanisms for legs, that have nine mobile kinematic elements in it's structure. The elements of the kinematic linkages with articulated rods are connected by rotation joints, by means of bolts. Motion from the electric engine is transmitted to the two actuating elements of legs linkages via a chain transmission, that are mounted to 180 ° to ensure the succession of steps for exoskeleton feet.

Class no.



RO.45.	
Title EN	Device for recovering the progressive movements of human joints used in orthotic systems
Authors	Petcu Alin Ionel, Daniela Tarnita, Tarniță Dănuț Nicolae
Institution	University of Craiova
Patent no.	A0081/ 14.02.2017
Description EN	The invention relates to a device for recovering the progressive movement of human joints used in orthotic systems. The main feature of the device is the possibility to control the angle of flexion extension of the affected joint that requires rehabilitation therapy so that recovery can be achieved while progressive movement. The major advantage is the versatility of the device, it can be used in both orthotic systems: passive and active. The level of security given by this system in order to prevent a flexion or extension out of range of motion clinically indicated or permitted at some stage of the recovery, makes possible its efficient use taking into account the type and severity of the disease, effective degree of joint mobility, patient age or capabilities. Applications: Medicine, Human locomotion rehabilitation
Class no.	4



RO.46.

	MODULAR-ADAPTIV STEM FOR TOTAL HIP
Title EN	PROSTHESIS, BASED ON
	INTELLIGENT MATERIALS
Authors	Tarnita Danut Nicolae, Daniela Tarnita
Institution	University of Craiova
Patent no.	A01023 / 2016
Description EN	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
	ΝΑΤΙΟΝΑΙ

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.

Applications: Medicine, Prosthetics, Total hip replacement $\frac{4}{4}$

Class no.



"Alexandru Ioan Cuza" University of Iasi

RO.47.	
Title EN	Process for preparing an oily nanodispersion with regenerative capacity
Authors	Hagiu, B.; Sandu, I.; Vasilache, V.; Tura, V.; Mangalagiu, I.I.; Mungiu, O. C.; Filote, C.; Sandu, A.
Institution	"Alexandru Ioan Cuza" University of Iasi Universitatea Stefan cel Mare Suceava, Romania
Patent	RO127723 / 30.03.2016.
Description EN	The invention refers to a procedure for obtaining on oily nanodispersion with regenerative capacity for tissues (by stimulation of STEM menzenchimal and hair follicle cells) and antimicrobial. The procedure is straight and efficient, using a mixture of PVP / colloidal silver nanoparticles, of certain formulation.
Class	4

RO.48.	
Title EN	New hybrid azaheterocycles materials with antimicrobial activity
Authors	Violeta Vasilache, ¹ Dorina Mantu Amariucai, ² Vasilichia Antoci, ² Ionel. I. Mangalagiu ²
Institution	 Stefan cel Mare University of Suceava, Romania. Alexandru Ioan Cuza University of Iasi, Romania.
Description EN	The synthesis, structure and in vitro antimicrobial activity of new hybrid materials containing 1,2-diazine/gelatin/ZnO and or silver is described. The strategy adopted for synthesis is straight and efficient. The hybrids have an excellent solubility in microbiological medium and exhibit a very good antimicrobial activity.
Class	Innovative Research

RO.49.	
Title EN	Environmental Fraud Risk assessment based on Fuzzy approach
Authors	Ioan-Bogdan Robu ¹ , Ionut Viorel Herghiligiu ² , Marius Pîslaru ²
Institution	 ¹"Alexandru Ioan Cuza" University of Iasi ²"Gheorghe Asachi" Technical University of Iasi For listed companies, environmental information could be useful
Description EN	for all the stakeholders in decision making process. These information could be manipulated using fraudulent schemes, in order to obtain undue benefits or to influence significantly the shares prices of the listed companies on the regulated markets. Generally, fraud is determined by three major components (opportunity, pressure and rationalization), with direct impact on the fraud risk. In practice, fraud risk could be assessed using advanced statistical methods for data analysis (discriminant analysis, logistic or probit regression analysis and survival analysis using Cox regression models). For robust estimations of the parameters of these models it is required large data sets and samples of companies. In the context of non-mandatory environmental information reporting, this type of fraud is hard to be detected or signaled. Having a small number of environmental fraud cases is very difficult to use advanced statistical methods for fraud risk assessment. In this context is required to use other type of methods for uncertain data analysis, based on specific rules that describe the environmental fraud phenomena. The purpose of this research project is to present a possible architecture of a fuzzy model for environmental fraud risk assessment, using inference structure of IF-THEN cases. Comparative to the traditional methods for fraud risk assessment (based on advanced statistical methods), the use of fuzzy logic could bring real advantages in environmental fraud risk detection due to the customization of the model that fits to the particularities and realities of the investigated companies.

Class

RO.50.	
Title EN	Photocatalytic degradation of 2,4-dinitrophenol (DNP) by ZnFe2O4 nanoparticles in aqueous solution
Authors	Olga Pintilie, Marius Zaharia, Gabi Drochioiu, Aurel Pui, Robert Gradinaru, Viorica Vasilache, Ion Sandu
Institution	"Alexandru Ioan Cuza" University of Iasi
Description EN	The pesticide 2,4-dinitrophenol (DNP) is extremely toxic. Exposure to high levels of dinitrophenols for short periods may cause convulsions, unconsciousness, and death [1].

Exposure to lower levels may result in an increased basal metabolic rate, weight loss, increased sweating, heart and breathing rates, and body temperature. It is also assumed that DNP inhibit oxidative phosphorylation [2]. Since dinitrophenols may appear as residues in the environment, we have proposed here the UV photocatalytic degradation of DNP by using zinc ferrite ZnFe2O4 as catalyst [3]. The pollutant removal efficiency was enhanced up to 82% for photocatalytic degradation after 15 min of UV light iradiation, with first order kinetic rate constant k1 of 0.27•10-2 min-1. Our results showed a dramatically decrease in the toxicity of the resulting photodegradated DNP solution when treated wheat seeds within germination experiments. Possible mechanisms for the photocatalytic degradation are also discussed.

Class	Innovative Research
RO.51	
Title EN	METHODS AND TECHNIQUES OF INVESTIGATION OF EVOLUTIVE CHARACTERISTICS OF CORPSE SYSTEMS UNDER THE INFLUENCE OF ENVIRONMENT FACTORS
Authors	Cristiana MANEA (AMARIEI) ¹ , Ion SANDU ² , Viorica VASILACHE ² , Vasile SÎRBU ¹
Institution	Geography and Geology, Iasi, Romania ² "Alexandru Ioan Cuza" University of Iaşi, ARHEOINVEST Interdisciplinary Platform, Iaşi, Romania
Description EN	At the present time, from amongst the non-destructive methods that involve the taking of samples used afterwards in the scientific investigation of the surface structures of corpses, along with colorimetry through reflection, a series of modern analytical methods are often used, such as: UV, vis, and IR reflectography, 3D profilometry, X-ray fluorescence, CIE L*a*b colorimetry, in combination or not with artificial aging, when in fact the chromatic deviations at the level of dynamic polychromatic surfaces are monitored. In the study of cadaveric systems this technique has been used relatively recent. This, along with other classic analysis techniques in the field of forensic entomology, allows the identification of certain evolution markers of the cadaveric systems, favouring the estimation of post-mortem interval as accurate as possible. The establishment of the time of death NATIONAL

Class

RO.52

as accurate as possible, and of the stages of the post-mortem evolution at the same time, is conditioned by endogenous as well as exogenous factors (ante-factum and post-factum mortem). Innovative Research BEHAVIOR OF THE KERATIN SUBSTRATE UNDER Title EN INFLUENCE OF COSMETIC TREATMENTS AND THEIR IMPORTANCE IN FORENSIC BIOLOGY Cristiana MANEA (AMARIEI)¹, Ion SANDU², Viorica Authors VASILACHE², Vasile SÎRBU¹ "Alexandru Ioan Cuza" University of Iasi, Facultaty of Geography and Geology, Iasi, Romania

Institution "Alexandru Ioan Cuza" University of Iași, ARHEOINVEST Interdisciplinary Platform, Iasi, Romania From the point of view of forensic biology, the cognition of the morpho-structural characteristics of the female hair, consequent upon cosmetic treatments, may offer important details concerning the habits of the victim or those of the aggressor the hair belongs to. After cosmetic treatments, the hair may become stiff, the cuticular stratum becomes Description discontinue, and the hair becomes crumbly. If the hair length is not preserved in certain limits, the hair is thickened and EN the hair tips split, hair breaks easily when undergoing hairdressing and it loses its glossiness. This paper analyses a number of cases where female hair was sampled from persons known to have undergone certain treatments for a long period of time and their effects on the morpho-structural characteristics of the hair are known Innovative Research Class

"Gheorghe Asachi" Technical University of Iasi

RO.53.	
Title EN	NON-CONVENTIONAL METHOD FOR SELECTIVE
	SEPARATION OF CINNAMIC ACID
Authors	Dan Cașcaval ⁻ , Anca Irina Galaction ⁻ , Alexandra Cristina $Plaga^{1}$ Alexandra Tugaliug ¹
	Diaga, Alexandra Tucande ¹ "Choorgho Asachi" Tochnical University of Iosi
Institution	² "Grigore T. Pona" University of Medicine and Pharmacy of
Institution	Iasi
Patent No.	Patent 127015 B1/2014
Description EN	The cinnamic acid is a natural compound derived from phenylalanine, the main vegetable sources being cinnamon, resin of <i>Liquidambar tree</i> , storax, balsam of tolu, balsam of Peru. This acid, as well as its derivatives, constitutes important metabolic blocks in the formation of lignin from higher plants. It is also the intermediary for biosynthesis of some vegetable secondary metabolites (pigments, pungent taste compounds that deter the herbivores etc.). There are no reports on the possibility of cinnamic acid individual or selective separation by liquid- liquid extraction from fermentation broths or enzymatic media maybe
Class no.	due to its low solubility into the solvents immiscible with water. This patent presents a new method for selective separation of cinnamic acid from its mixture with p-hydroxy-cinnamic acid. The method consists on reactive extraction with Amberlite LA-2 and leads to the increasing of the separation efficiency, decreasing of the required steps number and, implicitly, reducing of the separation cost.
RO 54	
Title EN	NEW METHOD FOR SEPARATION OF PANTOTHENIC ACID
Authors	Dan Cașcaval ¹ , Alexandra Cristina Blaga ¹ , Mădălina Poștaru ² , Anca-Irina Galaction ²
.	"Gheorghe Asachi" Technical University of Iași
Institution	"Grigore T. Popa" University of Medicine and Pharmacy of
Dotont No	18\$1 Patent request 1/00100/17 02 2015
	Pantothenic acid. also known as vitamin B5, is a water-soluble vitamin
	involved in the conversion of carbohydrates into glucose needed to
Description EN	produce energy. This compound is involved in the health of the digestive, nervous, circulatory, and skeletal systems, skin and hair, as well as in the synthesis of hormones (insulin, adrenaline). It also plays an important role in increasing the immunity of the human body. The
	separation of pantothenic acid from natural extracts or biosynthesis

media can be carried out by crystallization, ion exchange, and chromatography, but with rather low efficiency and significant material and energy costs.

This invention presents a new method for the separation of pantothenic acid from aqueous solutions obtained by chemical synthesis or fermentation, namely reactive extraction.

According to the invention, this method consists on the extraction of pantothenic acid from aqueous solution with n-heptane, butyl acetate, and dichloromethane containing 5 to 80 g/l lauryl tri-alkyl-methylamine. The overall efficiency of separation of pantothenic acid related to the initial aqueous solution is 65 to 93%.

Class no.

RO.55.	
Title EN	Fractal design: the ultimate state to improve EMS integration
Authors	Ionut Viorel HERGHILIGIU ¹ , Luminita Mihaela LUPU ¹ , Ioan-Bogdan $ROBU^2$
Institution	¹ "Gheorghe Asachi" Technical University of Iasi ² "Alexandru Ioan Cuza" University of Iasi
Description EN	The current complex business environment and an evolving environmental legislative context are reflected at organizational level by the use of EMS - design according with ISO 14001/ EMAS. Likewise it should be mentioned the fact that Environmental management international standards, such ISO 14001 intend to provide organizations a management scheme in order to achieve environmental and economic goals. This research project idea are based on various very important facts such as: (a1) the current literature on ISO 14001 EMS has largely neglected this phenomenon of integration (internalization) (Yin and Schmeidler, 2009; Tari et al. 2012), (a2) it exists contradictions between ISO 14001 EMS and modern management trends (Boiral and Sala, 1998), (a3) the EMS can be considered as a hierarchical management system – that is "limited", having in view the explosive modifications that define the current reality, and (b) a research
	conducted at the level of the largest predominantly industrial organizations from NE area of Romania (Herghiligiu, 2013). Therefore this research project proposal aims to improve the EMS implementation and operation quality process by transforming and adapting its architecture relying on the principles of the fractal philosophy. The general objective of this research project is to propose a theoretical framework as a model based on fractal design that should allow the improvement of the EMS implementation and integration quality. It must be noted that this research has as a result also a practical component, since it provides to managers, new working instruments in
	order to improve the EMS implementation and integration.
Class no.	Innovative Research

RO.56.	
Title EN	THE POSSIBILITY OF BIOMOLECULES
	NANOMANIPULATION USING LASER IRRADIATION
Authors	Scutaru ^a Nicolae Hurduc ^a
	^a "Gheorghe Asachi" Technical University of Iaşi, Faculty of
	Chemical Engineering and Environmental Protection, Romania
Institution	^b Institute of Biochemistry of the Romanian Academy, Department
Institution	of Viral Glycoproteins, Bucharest, Romania
	CEA, LIST Saclay, Laboratoire Capteurs et Architectures
	Electroniques, France
	One of the latest applications of azopolymers is their use in biological field for call culture development [1, 2] and percentinulation of small
	objects at nano-and micro-scale [2, 3]. The growing importance of
	nanotechnology field is offering insurgent solution for developing
	strategies for self-repairing complexes and integrated structures [3].
	manufacturing biosensors and biochips. Our group developed
	photosensitive materials capable to adsorbed nano-objects [3] and also
	biomolecules (DNA, RNA) - like azopolysiloxanes modified with
Description	nucleobases (adenine and thymine) able to bind DNA at the film
EN	surface, through hydrogen bonds. Nanomanipulation was done by laser
	irradiation, a techniques that allow the manipulation of biological
	samples with minimal of no intrinsic natural structural damage. The
	presence of azobenzene molecules that undergo reversible
	photoisomerization reaction (trans - cis) Polymer film
	deformations together with the motion of the adsorbed nano-particles
	are recorded using atomic force microscopy and scanning electron
	microscopy technique.
Class no.	Innovative Research

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	RO.57.	

Title EN	Functionalization of PET recycled fibers with organic dyes as adsorbent for the removal of metal ions from aqueous media
Authors	Anca Mihaela Mocanu ¹ , Bianca Cojocariu ^{1,2} , Gabriela Lisa ¹ , Dumitru Bulgariu ^{3,4} , Marcela Zamfir ² , Laura Bulgariu ¹
Institution	 ¹ Iconnical University Greorgne Asachi of Iasi, Faculty of Chemical Engineering and Environmental Protection ² GreenFiber International Company ³ "Al. I. Cuza" University of Iaşi, Faculty of Geography and Geology, Department of Geology, Carol I, 20A, 700506, Iaşi, Romania ⁴ Romanian Academy, Filial of Iaşi, Branch of Geography, Carol I.
Description	180A, 700506, Iaşi, Romania In this study, the utilization possibility of PET recycled fibers as adsorbent for the removal of Cu(II) from aqueous media was studied in NATIONAL

EN batch experiments. To improve PET's performance and obtain new applications, it is often necessary to introduce specific functional groups on its surface.

The functionalization of a polymer surface proceeds generally in two steps with the first one used as a pretreatment to create a high enough quantity of reactive functions to incorporate covalently the desired molecules in the second step.

The activation of this material by functionalization with dyes (Orange G and Brilliant Red) at different initial concentrations, was also examined, and the adsorption capacities for Cu(II) ions obtained for each dye, compared with non-functionalized PET fibers. All the experimental results were modeled using Langmuir isotherm model, and the quantitative parameters of adsorption isotherms were assessed.

The higher maximum adsorption capacities are obtained in case of PET fibers -functionalized with dye Orange G compared with dye Brilliant Red and untreated PET fibers for Cu(II) removal.

Encouraging experimental results have shows that PET recycled fibers functionalized with organic dyes have the potential to be used as adsorbents for the removal of heavy metals, and this could be a solution for the sustainable use of this recycled material.

Class no.

Innovative Research

RO.58.	
Title EN	A Consumer-Oriented Intelligent Garment Recommendation System
Authors	Junjie Zhang ^{a, c, d} , Yan Hong ^{c, d, e, f} , Min Dong ^{a, c, d} , Kaixuan Liu ^{b, c, d} , Chen Chen ^d , Antonela Curteza ^f
Institution	 ^a School of Mathematics and Computer Science, Wuhan Textile University, 430073 Wuhan, China ^b College of Fashion and Design, Donghua University, Shanghai 200051, China ^c University of Lille 1, Nord de France, 59000 Lille, France ^d GEMTEX Laboratory, ENSAIT, 59100 Roubaix, France ^e College of Textile and Clothing Engineering, Soochow University, Suzhou 215021, China ^f Faculty of Textile and Industrial Management, TULASL Lagi, Pomania
Description EN	The invention is a consumer-oriented fashion recommendation system. This system serves as a virtual sale advisor, which is able to recommend garment products to specific consumers. This invention can be used to garment online shopping systems such as Amazon and Alibaba. Different from current recommendation system, this invention is developed by integrating the professional knowledge of designers and consumers' perception on products. This recommendation system includes four modules, namely 1) Successful Cases Database Module, permitting to recommend garments from past successful shopping cases; 2) Market Forecasting Module, used for recommending garments to fashion consumers according to historical shopping data and expert's shopping experience; 3) Knowledge-based Recommendation Module, considered as the core of

Highly Sensitive Strain Gauge

Cristian Foşalău, Cristian Zet, Daniel Petrişor

"Gheorghe Asachi" Technical University of Iasi

the proposed overall consumer-oriented recommendation system for providing more personalized products; and 4) Knowledge Updating Module, enables to progressively improve the quality of the knowledge base according to the unsatisfied evaluation descriptors on currently recommended products.

This system innovatively extracts designer's knowledge and experience as design rules and stored in different modules. In the recommendation process, based on the consumer's perception, this system can active different design rules and then automatically recommend garment products with ensured consumer satisfaction. This system is a dynamic system, which is able to update design rules based on the market trend. Also, the system is able to identify the dissatisfaction of consumer and generate new recommendation results. New design rules and cases will be identified by the system and adjust the knowledge bases.

Class no.

Innovative Research

RO.59.

Title EN Authors Institution Patent

Patent application No. A00110/2015 The invention refers to a highly sensitive strain gauge devoted to measure very small deformations for plane or curved surfaces, with good accuracy. Its main advantage is its high sensitivity assessed by the gage factor, which is approximately 1000 times bigger than that of a conventional metallic strain gauge. This makes it suitable to sense very small deformations, usually less than 1 ppm. It has a wide area of applications either for measuring direct strains or for indirectly gauging quantities like force, vibration, mechanical momentum, acceleration, etc.

The highly sensitive strain gauge, according to the invention, consists of a thin cooper covered plastic surface on which two pairs of pads have been etched. The novelty of this invention lies in the sensitive elements, Description consisting in two magnetic amorphous microwires of composition EN (Co₉₄Fe₆)₇₂ ₅Si₁₂ ₅B₁₅ of 120 µm in diameter and 10 mm in length, which are soldered in parallel onto the pads. They are electrically connected in series and their ends are available as terminals to which the signal processing electronic circuit is attached. The device is bonded to the surface to be gauged so that its main axis is aligned to the strain axis. As a deformation occurs, the microwires are subjected to the stressimpedance effect, according to which their impedance suddenly changes with an axial deformation. An appropriate electronic circuit supplies the strain gauge with an 1 MHz ac current and concomitantly processes the signal acquired from the microwire ends so that it provides an ac voltage as output whose frequency is proportional to the strain gauge deformation.

Class no.

5

RO.60.	
Title EN	Pore Water Pressure Sensor
Authors	Cristian Zet, Cristian Foşalău, Daniel Petrișor
Institution	"Gheorghe Asachi" Technical University of Iaşi
Patent	Patent application No. A00127/2016
Description EN	The invention refers to a cost effective pore water pressure sensor (PWP) for landslide prediction, based on a pressure transducer. The aim of the sensor is to detect the wetting conditions that trigger the displacements of the underground layers. The water accumulated above an impermeable layer makes the soil above heavier and wet this layer, triggering the sliding conditions. The pore water pressure sensor has a simple construction by measuring the pressure of the air in a small chamber, air that is compressed by the underground water table. It is buried in the ground just above the impermeable layer susceptible for sliding. The pressure of the compressed air is measured with a differential integrated silicon pressure sensor. It feels on one side of its membrane the pressure of the air trapped in the small chamber with the opening downward and on the other side the atmospheric pressure. Thus, the influence of the atmospheric pressure is compensated, making the output dependent on the underground water table only. The information acquired from the sensor is locally processed by a low power microcontroller that digitally sends periodically the measured values toward the ground level to a data collecting unit, and further remotely to the monitoring center. The overpressure created in the chamber is linearly dependent on the water column height, the reading being easy to be converted in mm water column. The sensor is located inside a polyethylene tube buried in the ground, the lower end being terminated with the chamber where the water creates the measured pressure. The sensor has a simple construction, it is low cost, has no moving parts, does not need an operator in the area to read the indication, can work on battery for years and can be remotely monitored.

Class no.



RO.61.Title ENMechatronic glove-neuroprosthesis hybrid system with
embedded textile electrodesAuthorsMarian-Silviu Poboroniuc, Danut-Constantin IrimiaInstitutionGHEORGHE ASACHI Technical University of Iaşi
PatentPatentPatent application No. 00072/10.02.2017

Description EN The patent application refers to a mechatronic gloveneuroprosthesis hybrid system (MANUTEX) with embedded textile electrodes aiming to rehabilitate the hand in stroke patients. The MANUTEX device accounts for a balanced control between the mechatronic glove and the applied electrical stimulation over the muscles, and integrates the resting voluntary movement induced by the user.

Class no.



RO.62.

 Title EN
 Hydroxyapatite – Eugenic Acid Biocomposites for restorative and prosthodontic applications in dentistry

 Ana Simona BAPNA¹ Constantin LUCA¹ Cabriela CIOBANU¹

Authors Ana Simona BARNA¹, Constantin LUCA¹, Gabriela CIOBANU¹, Florin Alexandru LUCA², Paolo GARGIULO³

1 "Gheorghe Asachi" Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection, Iaşi, România

2 "Gheorghe Asachi" Technical University of Iasi, Faculty of Civil Institution Engineering and Building Services, CMTM - Economics and Marketing, Iasi, România

> 3 University of Reykjavik, Institute of Biomedical and Neural Engineering, Department of Biomedical Engineering, Reykjavik, Iceland

Description EN The main purpose of the research in this study was to synthesize a dental biocomposite based on hydroxyapatite and a biologic agent – eugenic acid. Synthesis of biocomposites as a nanocrystalline powder was performed by precipitation reactions from solution, using as a biologic agent - eugenic acid and different sources of calcium and phosphorus. The aim of these biocomposites is to be used for surgical procedures, such as filling of periodontal defects. As a bioactive, biocompatible and osteoconductive biomaterial, hydroxyapatite

supports the growth and metabolism of human gingival fibroblasts. Another advantage of hydroxyapatite is that it can serve as a carrier delivery for biologic agents that are released from dental material into the oral cavity. As a biologic agent, eugenic acid is highly antibacterial, hemostatic, antioxidant and topical anesthetic.

The samples were investigated by means of scanning electron microscopy (SEM) coupled with X-ray analysis (EDX), X-ray diffraction (XRD) and Fourier-transform infrared transmission spectroscopy (FT-IR). The Hydroxyapatite – Eugenic Acid biocomposites were evaluated for their biocompatibility activity to determine the potential toxicity. The obtained data by SEM-EDX, XRD and FT-IR investigations revealed that Hydroxyapatite – Eugenic Acid biocomposites were formed.

Project carried out under the Research within Priority Sectors Programme under EEA Grants.

Class no.

DO (2

Innovative Research

KU.03.	
Title EN	Intelligent thermal protection of buildings
	Marcel Ionescu, Alexandru Stănilă, Oana Neculai, Marian Pruteanu,
Authors	Ana-Maria Toma, Teodor Fadur
	Student collaborators: Claudiu Aiacoboaei, Dimitrie Aneculaesei
Institution	Technical University "Gheorghe Asachi" of Iasi
Patent no.	in progress
Description EN	The process is applicable to any type of building, new or old, and can be applied on the facades/walls to produce a fireproof plywood layer, ventilated and treated on both sides with special paints, thermally and naturally ventilated, intelligent, based on sensors and automated flaps. Advantages: - Intelligent ventilation system depending on weather conditions; - Thermal equivalence in cold weather is equal to a 20 cm expanded polystyrene thermo-system; - Reflects solar radiation of maximum intensity, meaning that approximately 86.3% of solar radiation is reflected away from the building; - Cools the exterior walls during summer time, when the outdoor air temperature is lower than the indoor temperature, saving the air conditioning; - Removes water vapors in the walls during winter time, a phenomenon that does not allow the occurrence of dampness:
	- Protects the building against external fires:
	- Costs equivalent to a 20cm thick classic thermo-system.
Class no.	7. Buildings and Materials

RO.64.	
Title EN	Thermal protection of external doors and windows
	Marcel Ionescu, Alexandru Stănilă, Alexandra Ionescu, Oana Neculai,
Authors	Marian Pruteanu, Ana Maria Toma
	Student collaborators: Dimitrie Aneculaesei, Claudiu Aiacoboaei
Institution	Technical University "Gheorghe Asachi" of Iasi
Patent no.	in progress
Description EN	The process is intended to enhance thermal protection of exterior doors and window openings in buildings by sealing and double thermal reflection phenomena. An elastic diaphragm that can be tightened by folding or rolling and which can seal the contour on a frame edge of the opening that needs to be protected, is treated with special thermo- resisting paints. Advantages: - In cold weather, more than 90% of the thermal radiation of heat sources is retained in the room; - In warm weather, it repels outdoor solar radiation on the protected area by at least 86%. - Low costs of 10-12 euro / sqm.
Class no.	7. Buildings and Materials

RO.65.	
Title EN	Street storage facility for household waste from biomass
Authors	Alexandru Stănilă, Iuliean Hornet, Mihai Olan Collaborators: Oana Neculai, Ioan Mitan, Danut Zbughin
Institution	Technical University "Gheorghe Asachi" of Iasi
Patent no.	in progress
Description EN	The invention relates to a street-based biomass storage system for household waste designed following a new on-site processing, efficient storage and transport, encapsulated, optimized process for environmental protection. Raw material, crushed biomass, is the raw material for a centralized pellet plant from biodegradable waste. The biomass is a valuable solid fuel of at least 4MW / tonne. Advantages: - The unpleasant smells of the storage area are eliminated; - It optimizes transport of biomass to the maximum capacity of specialized transportation means; - Biomass is prepared to be pelletized in a centralized installation where it is stored for use in the production of electricity or heat by high- efficiency cogeneration.
Class no.	7. Buildings and Materials
	NATIONAL
	341

RO.66.	
Title EN	Constructions made of expandable parallelepiped modules for fully demountable profebricated buildings
	Alexandru Stanila Oana Neculai Alexandru Vlad Ana- Maria Toma
Authors	Teodor Fadur
	Student collaborators: Andrei Isache, Madalina Telechi
Institution	Technical University "Gheorghe Asachi" of Iasi
Patent no.	in progress
Description EN	The invention refers to a compact parallelepiped construction module, having, in the initial phase, all the equipment and components included in a predetermined structural volume, easily stored and transported on a trans-container. A module manually or mechanically expands on one or two or all of its lateral faces into functional volumes provided by design. The expansion phenomenon is reversible when needed, the module can be quickly tightened into its original form, fully recovered for storage or for transport to another location. Several identical or compatible designed modules can be used in groups, forming several architectural forms for multiple ground- floor or bunked dwellings. Advantages: - High productivity and quality due to execution in factory, at minimum costs; - Easy mounting and un-mounting; - Increased functional flexibility;
Class no.	- Guaranteed lifespan of 30 years. 7. Buildings and Materials
RO.67.	
Title EN	Art house
Authors	Alexandru Stanila, Oana Neculai, Ana- Maria Toma, Teodor Fadur Student collaborators: Andrei Isache, Telechi Madalina
Institution	Technical University "Gheorghe Asachi" of Iasi
Patent no.	in progress
Description EN	The Art House is the product of an original, rapid, automatic, rapid- expansion, parallelepiped volume process, in a fan-shaped, flat- bottomed, and mobile interior partition walls. Advantages: -Faster installation on site in maximum 30 minutes.
	holiday or permanent home
	-Energy independence is possible.
Class no.	7. Buildings and Materials

RO.68.	
Title EN	Fabrication method of reinforced concrete dwelling flats using
	semi-finished structural modules
Authors	Alexandru Stanila, Oana Neculai, Ana-Maria Ioma, Ionut-Ovidiu
Autions	Student collaborators: Ioan Isachi, Daunt Zhughin
Institution	Technical University "Gheorghe Asachi" of Iasi
Patent no.	in progress
Description EN	The invention refers to the realization of a block of flats made of semi- finished structural modules, which, in the initial stage, has all the equipment and components included in a predefined structural volume, made in the factory, easily stored and transported on a transcontainer. In the assembly phase, a module manually or mechanically expands on one or two or all of its lateral faces into functional volumes provided by design. From the factory a module contains: semi-fabricated formworks for thermo-insulated external walls and internal walls, soundproofed and reinforced ceiling formwork, and electrical and sewerage networks. On site, only minor reinforcement, concrete pouring and mechanized plastering are being carried out. Several identical or designed compatible modules can be used to build a ground floor at a bunked dwelling. Advantages: - Fast and low costs assemblage on site; - High quality and productivity due to factory fabrication - Increased functional flexibility; - Graduated service life of at least 50 years; - High cost reduction through high productivity, elimination of material losses, total transport optimization and reduced labor.
Class no.	7. Buildings and Materials

Structural cubic modules for prefabricated constructions
S.C. NEXT STUDIO SRL, Dorina-Nicolina Isopescu, Oana Neculai, Sebastian-George Maxineasa
S.C. NEXT STUDIO SRL Technical University "Gheorghe Asachi" of Iasi
in progress
The invention consists in a cubic module made of prefabricated metallic profiles, conceived as bearing structure for multipurpose buildings (office buildings, warehouses, residential etc.). The structure is composed of adjacent and stacked cubic modules, mounted on site in a very short time. The cubic module has variable

dimensions for its sides, from 3.2 m to 4 m. The structural elements are steel columns and beams, with square hallow cross-sections, joined at the ends using connecting pieces especially designed for this prototype. The elements are fixed to the connecting pieces using bolts and this type of connection provides a semi-rigid behaviour at the structural node level.

To limit the execution time of the structure, the perimeter closings have the bearing structure made of sandwich panels with metallic facings and rigid mineral wool core. The structure is reinforced using concrete floors, poured into a lost formwork of corrugated tin and the roof is of terrace type. An important feature of modular structures is the variable functional, ensured by designing the interior space as open, furnished with prefabricated partition walls, made of lightweight materials. In conclusion, the cubic modules present multiple advantages, such as easy and quick execution on site, the possibility of vertical and horizontal extension, flexible functionality, easily transportable and demountable elements.

Class no.

7. Buildings and Materials



RO.70.	
Title EN	The underground tower cemetery
Authors	Oana Neculai, Ioana Nistor, Stefania Guzga, Mircea Grosu, Alexandra Elena Lapusneanu Raducu Mihai Geantau
Institution	Technical University "Gheorghe Asachi" of Iasi
Patent no.	in progress
Description EN	Death is and always has been, one of the most important human existential moments, so since the Stone Age, people wanted to somehow mark the passage to the other world. With the evolution of man, the custom of burial changes from generation to generation. So, throughout the ages, only a few of the customs have been preserved, while, at the same time, we invented new funerary customs and practices. The proposed concept comes as an improvement to the already existing custom, the burial of the inanimate bodies. One of the biggest problems of today's society regarding this subject is the lack of space and, at the same time, the huge areas that the cemeteries occupy. NATIONAL

The best way to solve this issue is deep exposure by building a 20floors cylindrical overlaid cemetery, with the aim of protecting the environment and respecting funerary traditions, at the same time.

Above ground, the building will look like a simple funeral monument, but in depth, where access will be made with a elevator placed at the middle of the structure, the stories constituting a layered cemetery. For a burial building, it is recommended to use materials that allow the isolation and protection of the environment and of the buried bodies, because their decomposition has always been a real biological hazard (pollution of soil or of water sources). Hence, the principle of grave vaults is applied.

The cylindrical structure is made of reinforced concrete, with a rigid core as an elevator shaft, and radial solid walls which, besides creating the burial chambers, also have a stiffness, strength and stability purpose, to support the pressure coming from the surrounding soil.

The coffins will be introduced in the burial chambers using the elevator, which has opening doors towards all structural slices. This implies manual labor, which is cheaper and easier than mechanized insertion of the coffins.

Therefore, in a world where cemeteries occupy huge areas, this concept provides an alternative to traditional custom or at least opens a topic that concerns all humanity.

Class no.

7. Buildings and Materials

RO.71.	
Title EN	The very high school
Authors	Oana Neculai, Ioana-Lavinia Darie, Veridiana Iuliana Medves, Mircea Grosu, Alexandra Elena Lapusneanu
Institution	Technical University "Gheorghe Asachi" of Iasi
Patent no.	in progress
Description EN	This school concept consists in gathering together, in a skyscraper with 35 floors, all stages of education. The High Turtle School concept consists in bringing together all stages of education, in a harmonious and modern manner, as following: Kindergarten from the 1st to the 8th floor, Primary and middle school from the 15nd to the 22th floor, and High school from the 23rd up to the 33rd floor. The school is composed of two parts, the central building and the annex that is connected to the main building through a glass tunnel. In the annex, changing room and recreation areas are organized, for the students to spend the break time, for each floor and they are connected to. Both main building and annex have steel metallic structure. Every 10 floors, the main building has canteens have also the walls made out of glass so the students are enjoying both the meal and the view. There are also 4 floors for teacher lounges and offices. The main building has 4 elevators on the N, S, E,
	NATIONAL

W sides. The classrooms have circle sector shapes, for a better communication between teachers and students, supporting the modern student oriented education style. The middle floor, the 15th, has a different design from the others, by the fact that it has green spaces for recreation purposes. Up to the 34th floor, there is a big amphitheater for general meetings and the top floor is organized as a green rooftop where everyone can enjoy the view and for relaxing activities. The uniqueness of this concept consists in gathering together all stages of education, involving in common activities all levels of classes, thus creating role models for the younger students and making the older students more responsible.

Class no.

7. Buildings and Materials

RO.72.	
Title EN	Rotating wind shield
Authors	Oana Neculai, Raducu Mihai Geantau, David Nacu
Institution	Technical University "Gheorghe Asachi" of Iasi
Patent no.	in progress
Description EN	The rotating wind shield is a rotating wall that is supposed to prevent gusts of wind from disturbing your outdoors activities. The so called wall is a wave-looking like structure made from a strong and elastic material so that if the wind is more aggressive the wall will not break or get damaged, this wave shaped wall will be moving on a rail system that has an underground system of pivot feet to keep the wall from falling over, almost working like a counter weight. The wave shape was chosen for its aerodynamic properties, the design that is still undergoing improvements is supposed to act like a wind mill and change directions by itself according to the wind, but still be a smooth movement in strong winds, this is due to using stoppers on the underground rail system, the wall will be allowed to move in only one direction for now, this being the cause of the metal teeth helping the wall move smooth and stop, these issues will be addressed in future and improved designs. The user has the ability of rotating the shield in whichever direction it is desired by pulling up on the light-weight wall.
Class no.	13. Sports, Games and Leisure



"Grigore T. Popa" University of Medicine and Pharmacy Iași

Title ENNEW BIOREACTOR FOR IMMOBILIZED CELLS/ENZYMESAuthorsAnca Irina Galaction ¹ , Alexandra Tucaliuc ² , Len Kloetzer ² , Dan Caşcaval ² ¹ "Grigore T. Popa" University of Medicine a Pharmacy of Iasi ² "Gheorghe Asachi" Technical University of Iasi PatentPatentPatent request A/00689/22.09.2013 The equipment is a new type of packed bed bioreactor immobilized biocatalysts, namely basket bioreactor, y various applications: ethanol and carboxylic action
AuthorsAnca Irina Galaction ¹ , Alexandra Tucaliuc ² , Len Kloetzer ² , Dan Caşcaval ² "Grigore T. Popa" University of Medicine a Pharmacy of Iasi ² "Gheorghe Asachi" Technical University of Iasi PatentPatentPatent request A/00689/22.09.2013 The equipment is a new type of packed bed bioreactor immobilized biocatalysts, namely basket bioreactor, v various applications: ethanol and carboxylic action
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Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN Description EN EN EN EN EN EN EN EN EN EN EN EN EN

Class



RO.74.

	EQUIPMENT FOR EXTRACTION AND TRANSPORT
Title EN	OF BIOSYNTHETIC COMPOUNDS THROUGH
	LIQUID MEMBRANES
Authors	Anca Irina Galaction ¹ , Dan Cașcaval ² , Lenuța Kloetzer ² , Mădălina Poștaru ¹
	¹ "Grigore T. Popa" University of Medicine and
Institution	Pharmacy of Iasi ² "Gheorghe Asachi" Technical University of Iasi
Patent	Patent 119690 B1/2005
	The invention consists of a pertraction equipment with free

liquid membrane which allows obtaining and easily maintaining a solvent layer between the two aqueous phases. The equipment is a U-shaped glass pipe with three compartments for feed and stripping phases, and for liquid membrane, respectively. It can be used for separation of bioactive compounds, with pronounced chemical and thermal lability, by free or facilitated pertraction. This equipment does not require the use of tensides for stabilizing the liquid membrane, thus increasing the purity of the Description pertracted compounds.

> Compared with other separation methods, the extraction and transport through liquid membranes presents the following advantages: reduction of the solvent loss during the separation cycle; small quantity of solvent and carrier needed, owing to their continuous regeneration; the possibility of solute transport against its concentration gradient, as long as the pH-gradient between the two aqueous phases is maintained; no surfactant needed for stabilizing the liquid membrane.

Class 5.9

EN

RO.75.

- Title ENAssessment of tooth-composite resin interface by fractal
analysis pilot study
- Authors Simona Stoleriu, Călin Gheorghe Buzea, Sorin Andrian, Galina Pancu, Irina Nica, Gianina Iovan
- Institution University of Medicine and Pharmacy "Grigore T. Popa" Iaşi, Romania

Fifty freshly extracted frontal teeth were used in this study. Thirty cervical cavities were prepared in the buccal and lingual cervical third of the crowns. An universal bonding system (G-Premio Bond, GC) was used in self-etch and total etch technique to restore the cavities with a composite resin (Essentia, GC). The teeth were immersed in distilled water for 24 hours, then in 2% methylene blue buffered dye solution (pH=7) for 4 hours. After that the samples were transversely sectioned and the sectionons were examined in a stereomicroscope. The dye penetration was assessed according to the following scores: 0- no dye penetration, 1- dye penetration on less then a half of the interface, 2dye penetration on more then a half of the interface, bet less then whole interface, 3- complete dye penetration of the interface. The images registered by optic evaluation were processed for fractal analysis using the programs Description ImageJ (IJ) 1.28 and Adobe Photoshop CS4 (Adobe EN Systems, Inc., San Jose, CA). We considered that black zones on the image means that a fluid can pass and flood these areas and white zones means obstacles to the fluid. The flood areas of each image was divided into equal box sizes: BS(n), where n is the number of possible divisions of an image into boxes. For each box the occupation percentage (OP) was measured. Then the sum of the multiplications was calculated for each box size: OP(BS(k))(k) being a number from 1 to n) by the pressure applied to the box: PR(BS(k),pc), where pc is the position on x or y of the center of the box on the scale of pressure). Succolarity was calculated using Succolarity 1F.exe program (written in MS VC# 2010 Express Edition). Succolarity values were correlated with the dye penetration. Fractal analyse is a good method to evaluate the tooth-resin interface.

RO.76.

Title ENThe impact of environmental stress on the structure and
function of the main lacrimal gland

Authors Anisia-Iuliana Alexa, Alina Cantemir, Ioannis Gardikiotis, Florentina Severin, Oana Olariu, Carmen Lacramioara Zamfir

Institution Grigore T. Popa University of Medicine and Pharmacy Iasi, Romania

The **purpose** of the study is to evaluate the effect of environmental stress factors on the main lacrimal gland.

Material and Methods Starting from the stress models described in the scientific literature, we created our own environmental stress model based on swimming. 16 male Wistar rats were included in the research, divided into 2 equal groups. The first group swam in a custom made rat pool at a constant temperature of 34° C, for avoiding additional heat stress, at the beginning for 5 min, increasing the time progressively to 45 min, for a 1 month period. Swimming as exercise was chosen because it has much lower risk of traumatic damage. The second group was the control one. At the end of the experiment tears and main lacrimal tissue were harvested.

Description Results

EN

We found statistically significant decrease in the values of representative elements of the antioxidant system (superoxide dismutase and glutathione peroxidase) in the first group compared with the control group. The optical microscopy examination found changes in lacrimal gland morphology, epithelium and ducts diameter.

Conclusion/Applications

Chronic stress influences the parameters of the antioxidant system of the lacrimal film and at the same time induces structural changes of the lacrimal gland. That hypothesis that can be the basis of a pathophysiologic mechanism for inducing dry eye syndrome under stress conditions. This observation may help to understand the dry eye syndrome and to discover etiological therapy, in addition of the symptomatic one.

Class

Innovative Research - 4

"Lucian Blaga" University of Sibiu

RO.77.	
Title EN	Device for Sharpening Prismatic Knives by Round Grinding
	Ţîţu Aurel Mihail, Oprean Constantin, Cioară Silviu
Authors	Constantin, Cioară Gheorghe Romeo, Durdun Emilia,
	Răchieru V. E. Nicoleta, Sabău Dan
Institution	"Lucian Blaga" University of Sibiu
Patent no.	Patent application No. A 2013 00016 / 04.01.2013
	The device is intended to turning hemispherical ends of rod type parts. Using two identical devices placed in parallel, can simultaneously process both ends of the rods supporting head restraints of some cars. The tools are fixed in two
Description	closed places, radial, eccentric and inclined practiced into the
EN	body of the device. After each regrinding of prismatic tool, his cutting edges will be implicit in the center plane of the device body as a result of contact with the front of correspondent positioning screw. It requires only initial adjustment.
Class no.	6



RO.78.

Greenhouse Insulation Against Losses through Ground Thermal Conduction
Oprean Constantin, Oprean Letiția, Țîțu Aurel Mihail, Bondrea Ioan, Mărginean Ion, Moldovan Alexandru-Marcel, Bogorin-Predescu Marcel
"Lucian Blaga" University of Sibiu
Patent application No. A 2012 00845 / 20.11.2012
Greenhouse insulation against losses through ground thermal conduction for improving the structure of the vegetable and flower greenhouses' foundation by inserting special under- layers with thermal conduction insulation role to the basic earth shell starting from the construction phase.

Class no.



RO.79.	
Title EN	Computer Chair with an Active Principle of Spine Relaxation
Authors	Bondrea Ioan, Țîțu Aurel Mihail, Oprean Constantin, Mărginean Ion, Moldovan Alexandru Marcel, Bogorin- Predescu Adrian
Institution	"Lucian Blaga" University of Sibiu
Patent no.	Patent application No. A 2013 00825 / 11.11.2013
	For those persons working long hours behind the computer, was created with the purpose of reducing the negative effects on one's health and the stressful effects of the spine's
Description EN	continuous compression during continuous immobilization of the human body in the actual work behind the computer and to reduce and remove the already accumulated affliction of the spine due to prolonged work previously done at the computer.

Class no.



RO.80.

Title EN	Device and method for electronic measurement of leaf springs quality
Authors	Borza Ioan Sorin, Țîțu Aurel Mihail
Institution	"Lucian Blaga" University of Sibiu
Patent no.	Patent application No. A 2015 00003 / 05.01.2015
Description EN	The invention consists of a device and a method of electronic measurement of the dimensional quality of plate springs, in the technological field of leaf springs. The invented device
	NATIONAL

and method cancel the above-mentioned disadvantages, ensuring a specific verification bench for plate springs; the spring to be measured is attached to this bench which, using transducers and a dedicated program computer, ensures immediate results of the necessary technological measurements made.

6

Class no.



RO.81. Title EN

Laringoscope used in medical emergencies

SabăuDan,SabăuMariana,SabăuAlexandruDan,AuthorsSmarandacheAndreeaMaria,DumitraAncaMaria,SmarandacheCătălinGabriel, ȚîţuAurelMihail

Institution "Lucian Blaga" University of Sibiu

Patent application No. A 2015 00002 / 05.01.2015 Patent no. The invention referes to a laryngoscope used for medical emergencies, for tracheal intubation, witch is considered the best method to ensure a good and protected airway during resuscitation. Tracheal intubation is a good choice when we have trained and experienced personnel. It is considered to Description be superior to other techniques that ensure good and free EN airways, because when is done correctly realises: Functional airways, Protected airways, Posibility of aspiration, Posibility of correct ventilation during thoracic compressions, Liberty of a member of resuscitation team, Alternative way for volatile drugs

Class no.



RO.82.	
Title EN	Procedure of the Re-treatment of Textile Materials Dyed with Direct Dyes
Authors	Coman Diana, Grigoriu Aurelia, Drăgan Stela Ecaterina, Ghimici Luminița
Institution	"Lucian Blaga" University of Sibiu
Patent no.	Patent No. 118314 / 2003
Description EN	The invention is referring to a procedure of retreatment of dyeing of cellulosic fibres made materials, performed with direct dyes, in order to enhance both the washing fastness and hue's stability. The method relies on a textile material treatment with a cationic product of polycondensation of epychloro-hydrine with amines. By invention application a superior valuing of the textile materials dyed with direct dyes is achieved through the enhancement of functional and comfort features, the maintenance of touch and of colors lightness, as well the reduction of the environment pollution.
Class no.	9



RO 83	
KU.05.	

Title EN	Re-treatment Procedure of Dyeing with Direct Dyes onto Cellulosic Fibres
Authors	Coman Diana, Grigoriu Aurelia, Drăgan Stela Ecaterina, Ghimici
	Lummia
Institution	"Lucian Blaga" University of Sibiu
Patent no.	Patent No. 118809 / 2003
	The invention is referring to a procedure of retreatment of dyeing of cellulosic fibres made materials, performed with direct dyes, in order to achieve their stabilization. The method relies on a textile
Description EN	material treatment with a cationic product realized by the polymerization of epychloro-hydrine with a dimethyl-amine and a poly-functional amine. The invention shows the advantage of employing of a product with a reduced toxicity and a simple application and the obtaining of sustainable textile supports.
Class no	0

Class no.



"Dunarea de Jos" University of Galati

RO.84.

Title EN	Co/nano-ZrO ₂ functional surfaces obtained by electrodeposition
Authors	Lidia BENEA, Florentina Simona ŞORCARU.
Institution	Dunarea de Jos University of Galati
Patent no.	Patent application No. A201600501,
	The invention deals with the development of Co/nano-ZrO ₂
	nanocomposite coatings as novel functional surfaces with
	biomedical and / or industrial applications. The main objectives of

nanocomposite coatings as novel functional surfaces with biomedical and / or industrial applications. The main objectives of this invention are the following: (1) obtaining Co/nano-ZrO₂ nanocomposite coatings with zirconium oxide (30 mean diameter size) with different concentrations (10 gL⁻¹ and 20 gL⁻¹), as dispersed phase into the cobalt metal matrix by electro co-deposition, (2) morphological characterization, (3) compositional analysis, (4) thickness measurements in cross section, (5) surface roughness assessment, (6) microhardness investigations, (7) corrosion and (8) tribocorrosion resistance in a simulated body fluid (Hank's solution).

Description EN The surface morphologies of the obtained coatings are significantly different and depend on the current density used, electrodeposition time and the amount of ZrO₂ dispersed nanoparticles added to the plating bath. The inclusion of ZrO₂ nanoparticles increases with increasing the ZrO₂ concentration in the electrolyte as was demonstrated by EDX investigations. The thickness of electroplated coatings increases with increasing the current densities, with increasing electrodeposition time and also with increasing concentration of ZrO₂ nanoparticles in the electrolyte solution. The addition of the ZrO₂ nanoparticles to the deposition bath led to a decrease of the nanocomposite coatings roughness comparatively with pure cobalt coating obtained under the same conditions. With the increasing of ZrO₂ bioceramic particles concentration in the electrolyte the Vickers microhardness increases. The Co/nano-ZrO₂ nanocomposite coatings exhibit higher corrosion and tribocorrosion resistance than that of pure cobalt coatings.

Class no.





RO.85.	
	PROCESS AND MACHINE FOR DEFORMING
Title EN	TAPER-SHAPED ACTIVE ELEMENTS MADE OF SHAPE-MEMORY MATERIALS BY TWISTING UPON HIGH PRESSURE
Authors	Gheorghe Gurau, Leandru Gheorghe Bujoreanu
Institution	"Dunarea de Jos" University of Galati
Patent	Patent application No. 129900/2016
Description EN	The invention relates to a process for severe plastic deformation by twisting upon high pressure and high rotary speed of active elements made of shape-memory alloys of FeMnSiCr type, of tapered shape having an internal diameter of 10 mm. The HSHPT process consists in the severe plastic deformation of the active element to the final shape and size, by twisting with high rotary speed of 900 rpm under high pressure, starting from an annular half-finished product of shape-memory material in order to obtain nanometric structures to confer special properties on the material.
Class no.	6: Mechanical Engineering - Metallurgy



Stefan cel Mare University of Suceava

D.O. 0.(
RO.86	
Title EN	Heliothermic actuator with bimetallic band
	CERNOMAZU Dorel; POIENAR Mihaela; ROMANESCU Adrian
Authors	Neculai; ȚANȚA Ovidiu Magdin; CENUȘĂ Mihai; OLARIU
	Elena Daniela
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent aplication No. A/00218/25.03.2015
Description EN	The invention relates to a thermal actuator with plane bimetallic band, excited by the action of solar radiation. The actuator is constituted by a bimetallic band fixed by means of an anchor of a fixed pivot shaft, in coaxial position, on the bottom of the cylindrical carcasses. The free end of the bimetallic band is provided with a spur on which is fixed a flexible cable, through which the actuator intervenes on the operated objective. The flexible cable is fixed to the cylinder carcasses by means of a collar. In order, to enlarge the sunlight absorbent surface the thermo- bimetallic converter is provided, in the interval of two consecutive turns, with pellets made of a heat conductive material (copper, brass or aluminum). The heat captured and stored in these pellets is transmitted by direct contact or convection to the adjacent bimetallic band.
Class no.	2. Energy and sustainable development
RO.87.	
Title EN	Heliothermic actuator
Authors	ROMANESCU Adrian Neculai; POIENAR Mihaela; ȚANȚA Ovidiu Magdin; NIȚAN, Ilie; OLARIU Elena Daniela; CERNOMAZU, Dorel
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent application No. A/00690/12.09.2014
Description EN	The heliothermic actuator, according to the invention, is constituted of two bimetallic bands, molded to the path of a bimetallic arc, pre-formed in the shape of a circular arc embedded at one end in a cylindrical piece used as a pap which is laced in the focal point of a parabolic concentrator by means of a bedding made from an insulating material. The bedding together with the parabolic concentrator is fixed by a toggle joint on a horizontal surface. As described. The reflected solar radiation is concentrated on the cylindrical piece after which it is sent to the two bimetallic bladee Diract radiation is computed by means of fine through which

the solar heat is transmitted to the same bimetallic bands. Thus, through heating the bimetallic bands deflects outwards and transmit the movement to the driven element by the rods with roller that are associated with some springs and with some barrels.

Class no. 2: Energy and sustainable development

RO.88. Title EN Heliothermic actuator with bimetal ROMANESCU Adrian Neculai: POIENAR Mihaela: CENUSĂ Mihai; CERNUȘCĂ Dumitru; PAȚA Sergiu; OLARIU Elena Authors Daniela; UNGUREANU Constantin; POPA Cezar; MILICI Mariana Rodica Institution Stefan cel Mare University of Suceava Patent application No. A/00153/14.03.2017. Patent no. The invention relates to a heliothermic actuator constituted by a mechanical converter made of a bimetallic band, shaper by a circular-helical plane path and placed in a brass enclosure, filled with glycerin, that form an assembly disposed in the parabolic concentrator focal point. The ensemble mechanical convertor -Description brass enclosure is covered with a glass cap with a canal through EN which the bimetallic band deformation converted in force and angular displacement is transmitted through a spur and a flexible cable to a driven element. To increase the actuator performances were used metallic pellets placed between the turns of the bimetallic plane spiral. Class no. 2: Energy and sustainable development RO.89. Title EN Heliothermic actuator ROMANESCU Adrian Neculai; CERNUSCĂ Dumitru: PATA Authors Sergiu; CENUȘĂ Mihai; POIENAR Mihaela; ATĂNĂSOAE

Pavel; PENTIUC Radu Dumitru; MILICI Laurențiu Dan

Institution Stefan cel Mare University of Suceava

Patent no.Patent Application No: A/0030/ 26.04.2016.Description
ENPatent Application Converter made of a thermo-bimetallic band,
shaped through a cylindrical spiral path and placed in a cylindro-
parabolic concentrator made from glass, provided on downside with
a reflecting element. The assembly is placed between two caps
provided with channels, positioned on a support plate. The thermo-
bimetallic band deformation translated into force and angular
displacement is transmitted through a flexible shaft to a driven
element.

Class no. 2: Energy and sustainable development

RO.90.	
Title EN	Heliothermic actuator with bimetallic band
Authors	ROMANESCU Adrian Neculai; CERNUȘCĂ Dumitru; PAȚA Sergiu; CENUȘĂ Mihai; POIENAR Mihaela; OLARIU Elena Daniela; UNGUREANU Constantin; NIȚAN Ilie; MILICI Laurențiu Dan
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent application No. A/00439/16.06.2016
Description EN	The invention relates to a heliothermic actuator provided with a system for maintaining respectively evacuation of hot air from its interior. The heliothermic actuator is constituted of a mechanical converter made from a bimetallic band shaped in the helicoidal-cylindrical form, placed in a cylindrical-parabolic concentrator of stainless steel, closed with a glass cap. The assembly is placed between two caps and is joined to flexible shaft provided with a toggle joint, which enables the adjustment of the system relative to the position of the sun. The bimetallic spiral deformation, converted in force and angular displacement is transmitted through a flexible shaft, to a driven element.
Class no.	2: Energy and sustainable development

RO.91.	
Title EN	Linear actuator with bimetal
Authors	ROMANESCU Adrian Neculai; CERNUȘCĂ Dumitru; PAȚA Sergiu; CENUȘĂ Mihai; POIENAR Mihaela; NIȚAN Ilie; POPA Cezar; MILICI Laurențiu Dan; PENTIUC Gheorghe
Institution	"Ştefan cel Mare"University Suceava.
Patent no.	Patent application No. A/00487/05.07.2016
Description EN	The linear actuator with bimetallic band according to the invention is constituted through some bimetallic lamellas that are fixed by one end in an upright position on a support, within a parabolic concentrator. The free ends are clamped on a shaft that slides on the guiding grooves that are provided in the insulating caps that sustain the parabolic concentrator. As a result of the bimetallic blades summed deformation, the shaft will perform a linear movement that will actuate a particular system. The entire assembly is fixed on a support plate through some spacers.
Class no.	2: Energy and sustainable development

RO.92.	
Title EN	Test stand
Authors	CERNUȘCĂ Dumitru; POIENAR Mihaela; MILICI Laurențiu Dan; PAȚA Sergiu Dan; UNGUREANU Constantin
Institution	"Ştefan cel Mare"University Suceava.
Patent no.	Patent application No. A/00717/10.10.2016 The stand for testing the materials with shape memory according to the invention is constituted through two armatures
Description EN	made of conductive material, am movable armature and a fixed armature, between them being attached the samples for testing. The mobile armature slides along some guides that are attached to the fixed armature and the vertical support. In order, to be readable the force generated by the springs, it has been used a force transducer anchored by means of a guide rod which is integral with the movable armature; the opposite end of the guide rod is fastened to a vertical support by a bolt. On the armatures are placed the terminals through which electrical current can be injected for self-heating of the tested material, or in the second variant the material heating is done, through Joule effect, by means of a resistance which is supplied through the terminals.
Class no.	2: Energy and sustainable development
PO 02	
NO.75.	
Title EN	Flectromechanical micronumn
Title EN	Electromechanical micropump
Title EN Authors	Electromechanical micropump CERNUŞCĂ Dumitru; POPA Valentin; GRAUR Adrian; POIENAR Mihaela; MILICI Laurențiu Dan; NIȚAN Ilie
Title EN Authors Institution	Electromechanical micropump CERNUȘCĂ Dumitru; POPA Valentin; GRAUR Adrian; POIENAR Mihaela; MILICI Laurențiu Dan; NIȚAN Ilie Ștefan cel Mare University of Suceava
Title EN Authors Institution Patent no.	Electromechanical micropump CERNUȘCĂ Dumitru; POPA Valentin; GRAUR Adrian; POIENAR Mihaela; MILICI Laurențiu Dan; NIȚAN Ilie Ștefan cel Mare University of Suceava Patent application No. A/00151 din 14.03.2017
Title EN Authors Institution Patent no. Description EN	Electromechanical micropump CERNUŞCĂ Dumitru; POPA Valentin; GRAUR Adrian; POIENAR Mihaela; MILICI Laurențiu Dar; NIȚAN Ilie Ștefan cel Mare University of Suceava Patent application No. A/00151 din 14.03.2017 The invention relates to a device for dispensing a liquid, controlled by means of Nitinol arc-shaped elements (shape memory material). The device consists of a cylindrical recipient supplied from a central basin, whose mobile element (piston) is actuated by means of Nitinol elastic elements that are fixed to an end of a movable plate. The cylindrical recipient is provided with three apertures at different levels, the device having distinct positions, thus being controlled the amount of liquid dispensed by the three containers, which in their turn, are connected by means of some elastic ducts to a recipient. The device performs the dosage of the amount of liquid received through those three recipients according to the position of the mobile element. The Nitinol elements command is performed by means of a voltage source, in four different voltage steps, commanding the correct positioning in one of four different positions, in relation to the three apertures of the mobile element.

Class no. 2: Energy and sustainable development
RO.94.	
Title EN	Electromechanical micropump for vacuum and pressure
Authors	CERNUȘCĂ Dumitru; DIMIAN Mihai; POIENAR Mihaela; MILICI Mariana Rodica; PAȚA Sergiu
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent Application No. A/00152 din 14.03.2017
Description EN	The invention relates to a pressure pump made by means of a piston which regulates the pressure from an enclosure with a fluid, using two systems with Nitinol springs (shape memory material). The pump allows the modification of the pressure by moving bidirectional the piston rigidly fixed to a movable board that is controlled by means of two systems with six springs made of Nitinol, which in their turn are attached to the movable board. The systems of Nitinol springs fixed ends are fixed to a rigid board. The command of piston bidirectional movement is effected by fine adjustable voltage supplying, alternatively for each system of springs.
Class no.	2: Energy and sustainable development
RO.95.	
Title EN	Gas relay
Authors	CERNOMAZU Dorel, MILICI Mariana, MILICI Dan, DAVID Cristina, RAȚĂ Mihai, BUZDUGA Corneliu, OLARIU Elena, NIȚAN Ilie
Institution	Ştefan cel Mare University of Suceava
Patent no.	RO127146B1/2016
Description EN	The invention relates to a gas relay made by means of some contact systems designed based on the magneto-rheological properties of certain fluids, with a view to increasing safety under seismic vibrations and shocks conditions. According to the invention, the relay consists of a metal tank of a transformer, provided on two sides with some orifices intended for the connection to a pipe set between the transformer tank and the conservator thereof, two switch systems being mounted inside the tank, on a guiding support, each switch system consisting of a tightly closed cylindrical glass container provided at its top part with some electrodes , while at the bottom part there is stored an amount of mercury over which there is put another amount of electrically insulating ferrofluid placed under the influence of the magnetic field produced by some magnets converting the ferrofluid into a magneto-rheological liquid of increased viscosity, the magnets being fixed on a float which slides along the container and,

when the float descends towards the lower extremity, the positions of the two fluids are reversed and the extremities of the electrodes are submerged into the mercury bath acting as a conducting bridge between the electrodes, thereby closing a contact in the signalling circuit or in the release circuit of the relay.

Class no. 5. Industrial and laboratory equipments

RO.96.	
Title EN	Gas relay for electrical power transformers
Authors	LEONTE Petru, CERNOMAZU Dorel, MANDICI Leon, UNGUREANU Constantin, CUJBĂ Tiberiu, PRISACARIU Ilie, OLARIU Elena, CREȚU Niculina, GUGOAȘĂ Mihaela, SOREA Nicolae, BACIU Iulian, BUZDUGA Corneliu
Institution	Ştefan cel Mare University of Suceava
Patent no.	RO125488B1/2016
Description EN	The invention relates to a gas relay acting on the defects inside the tank. It is made up of a vertical capacitor connected to a measuring block and a gas analyzer, and another horizontal capacitor connected to another measuring block. The measurement blocks are connected to an acquisition board that collects information about the oil level in the transformer. The invention eliminates the contacts inside the classical relay and can react to the rate of variation of the gas volume.
Class no.	5. Industrial and laboratory equipments
DO 07	
KU.97. Title FN	Salar actuator
Authors	CERNOMAZU Dorel, MANDICI Leon, GRAUR Adrian, SOREA Nicolae, NIȚAN Ilie, MILICI Dan, MILICI Mariana, RAȚĂ Mihai, PRODAN Cristina, ROMANIUC Ilie, BUZDUGA Corneliu
Institution	Ştefan cel Mare University of Suceava
Patent no.	RO128654B1/2016
Description EN	The invention relates to a solar actuator designed on the principle of solar-thermal-mechanical conversion and carried out mainly by means of a bimetallic thermal convertor. According to the invention, the actuator comprises a thermal bimetallic strip (1) shaped according to a helical cylindrical path and placed inside a tube-shaped brass container (2) tightly closed by a cover (2'), associated with a sylphon (2"), employed to compensate the thermal dilation of a thermally conductive fluid (3) which fills the container (2) with a view to enhancing the heat transfer from the wall of the container (2) to the bimetallic thermal convertor proper, the said container (2) being placed within the focus point of a cylindrical-

NATIONAL

reflected solar radiation, an initial part (1') of the thermal bimetallic strip (1) being anchored to a hub (5) while the other one, i.e. the final part (1") is anchored to the wall of the container (2), the deformation of the strip (1) being converted into rotation motion and being transmitted to a rigid shaft (6) which is integral with the hub (5), the shaft (6) being mounted in a roller bearing comprising two radial ball bearings (7 and 8) and being sealed as against the tube-shaped container (2) by an oil sealing ring (10).

Class no. 2: Energy and sustainable development



RO.98.	
Title EN	Solar actuator
	SOREA Nicolae, Ilie NITAN, Iulian BACIU, Corneliu
Authors	BUZDUGA, Elena Daniela OLARIU, Ilie ROMANIUC, Dorel
	CERNOMAZU
Institution	Ştefan cel Mare University of Suceava
Patent no.	RO128772B1/2016
	The invention relates to a solar motor of limited movement,
	operating on the principle of solar-thermal-mechanical conversion
	and comprising a plurality of thermal-mechanical paraffin
	convertors According to the invention the motor consists of some
	thermal mechanical modules sliding along some guides fixed at
	their extremities to the wells of a color concentrator consisting of a
	then extremities, to the wans of a solar concentrator consisting of a
	cylindrical-parabolic mirror (3) which is associated, at its side parts,
	with some inclined plane mirrors, the extremities being reinforced
Description	by some support-plates, where the support-plate is provided, at the
EN	lower part, with a support leg, mounted in a knuckle joint, placed
	on a horizontal surface, the said modules consisting of some solid
	parallelepipedal blocks M3 made of an aluminium alloy sliding
	along two guides (1) and having embedded therein two paraffin
	actuators (10) with piston, where the movement resulting by
	summing up the movements of all the piston rods is transmitted to a
	mobile rod associated to an antagonistic spring (12), the movement
	being finally transmitted to the driven element via a flexible cable
	(14) mounted in the extension of the rod, by means of a connection
	()

NATIONAL

piece.

Class no. 2: Energy and sustainable development



"1 Decembrie 1918" University of Alba Iulia

RO.99	
Title EN	Monitoring Procedure of the Municipal Waste Land Field Stability
Authors	Dobra Remus, Risteiu Mircea, Păsculescu Dragoș
Institution	Universitatea "1 Decembrie 1918" din Alba Iulia
Patent no.	Patent application No. A/2017/00025
Description EN	The invented method of monitoring the stability of environmental waste depot, characterized in that in order to determine the stability of the sterile waste dumps and deposits of tailings, tailings ponds and waste deposits, uses strain gauges for spatial displacement, that includes strain gauge half bridge on both sides of the elastic elements, rigidly recessed supports at one end, the other ends being stress by gravitational masses component to determine the
	angular displacements αx , αy , respectively for the determination of linear displacement dz. Information processing is performed by the microcontroller via an instrumentation amplifier, power is supplied from the battery system or through the current regulator, connected to the photovoltaic panel.

Class no.



RO.100

Title EN	Method for Anticipative Automatic Control of Insulation Resistors in low Voltage Three-Phase Networks With Neutral Insulated from the Earth
Authors	Zoller Carol-Laurentiu, Chirigiu Gabriela, Dobra Remus
Institution	Universitatea "1 Decembrie 1918" din Alba Iulia
Patent no.	Patent No. RO00123449/2012
Description EN	The invention relates to a method, an algorithm and an apparatus for anticipative automatic control of insulation resistors in low voltage three-phase networks with the

neutral insulated from the earth, which are used in underground mining electrical networks. The method for anticipative automatic control of insulation resistors is characterized in that it uses a digitally processed information assembly by means of which there are identified the condition and the tendency to modify of the insulation resistors in low voltage electrical systems with the neutral insulated from the earth, in order to carry out some relays for the anticipative automatic control of insulation resistors.

Class no.



RO.101

Title EN	Protection Against Overcurrent in Electric Installations
Authors	Zoller Carol, Păsculescu Dragoș, Marc Gheorghe, Dobra Remus
Institution	Universitatea "1 Decembrie 1918" din Alba Iulia
Patent no.	Patent application No. A/2016/00246
Description EN	The invented method uses a set of information capable of detecting abnormal regimes, in order to take anticipative switched-off decisions and to avoid limit regimes of the consumer-source assembly. The flowchart according to the invention, sequential process the information about: symmetry voltage of the generator, the degree of imbalance in the consumer current drawn by the consumer, the slope of growth starting current, temporary overload in continuous operation mode.



NATIONAL 366

RO.102	
Title EN	Operative Control Method of the Symmetrical Components from Three Phase Power Systems
Authors	Zoller Carol-Laurentiu, Costinaș Sorina, Marc Gheorghe, Dobra Remus, Păsculescu Dragoș
Institution	Universitatea "1 Decembrie 1918" din Alba Iulia
Patent no.	Patent application No. A/2014/00312
	Based on the operational control method to build a subsystem firmware to take blood samples from the
Description	information, process them according to an algorithm
ĒŇ	designed for symmetrical components relay and make
	decisions about the degree of asymmetry and asymmetry of system.
Class no.	100



RO.103

1101100	
Title EN	Method for Efficiently Exploiting Pit Coal Resources With the View of Extracting Them From Very Deep
	Levels
Authors	Zoller Carol- Laurențiu, Zoller Iosif- Liviu, Dobra Remus
Institution	Universitatea "1 Decembrie 1918" din Alba Iulia
Patent no.	Patent application No. A/2013/00323
	The method for efficient use of energy resources of coal, According to the invention relates to exploitation and utilization of the energy potential of coal deposits directly into the area where they are stationed, in view of their operation from great depths by placing an energy complex in
Description EN	underground reservoir at elevation and proximity to coal energy consists of thermal coal fed methane and fun that converts chemical energy into thermal energy of combustion gases after filtration and neutralization being discharged to the surface through a chimney, and ash and chemical residues results are collected and processed in a mine mix by mixing water and stored underground
Class no.	hand have and serve and found.

NATIONAL 367

King Michael I of Romania Banat University of Agricultural Science and Veterinary Medicine, Timisoara

RO.104	
Title EN	Cioco MOST
Authors	Moldovan Camelia, Dumbravă Delia-Gabriela, Botău Dorica, Popa Viorica-Mirela, Raba Diana-Nicoleta, Borozan Aurica Breica, Ciulcă Ion-Sorin, Ciulcă Elena–Adriana, Simina Alina Georgiana
Institution	Universitatea de Știinte Agricole și Medicină Veterinară
D	A Banatului Regele Mihai I Al României din Timisoara
Patent no.	MARK M2017/007/5
Description EN	Chocolate with no added sugar, with stevia (<i>Stevia rebaudiana</i>) bio and bitter cucumber juice (<i>Momordica charantia</i>) bio obtained by different manufacturing recipes. This chocolate helps to maintain blood sugar in normal variation and prevention of cardiovascular diseases. <i>Application.</i> The product is designed for people with diabetes, those who have restrictions in terms of consumption of sugar, but also for people who want to eat
Class no.	healthy sweets. 3.Agriculture and Food industry
RO.105	
Title EN	MANUFACTURING PROCESS AND ROOTING PRODUCT BASED ON WILLOW EXTRACT (GENUS SALIX)
Authors	Poșta Daniela Sabina, Hădărugă Nicoleta Gabriela, Peț Elena, Poșta Gheorghe Marinel, Peț Ioan, Camen Dumitru, Hădărugă Daniel Ioan
Institution	Universitatea de Știinte Agricole si Medicină Veterinară
Institution	A Banatului Regele Mihai I Al României din Timisoara
Patent no	Patent application no.
Description EN	The invention concerns a development procedure of a rooting product based on liquid willow extract with effective activity of biostimulation of the root system to be applied in horticulture, sylviculture and agriculture. In biostimulation, the rooting of bioactive willow compounds (salicin and auxin) are easily assailable and they develop a strong root system, wich confers the species a healthy development and

increased drought resistance.

Application. Quickly and efficiently rooting in order to produce good quality of propagating material.

Class no.

3. Agriculture

RO.106	
Title EN	Regenerative composition for hair and nails
	Milovanov Cornelia, Mederle Narcisa, Ahmadi-Khoie Mirela,
Authors	Morariu Sorin, Popescu Gabriela, Morariu Florica-Emilia,
	Herman Viorel, Radulov Isidora, Mederle Ovidiu
	Banats' University of Agricultural Sciences and Veterinary
Institution	Medicine "King Michael I of Romania" from Timisoara,
	Romania
Patent no.	A / 00621 din 25.11.2016
Description EN	The invention consists of a composition for hair and nails regeneration and it is applied in human regenerative medicine. Technically, the invention aim was to establish the components, the form and anatomical parts (field thyme), and its association ratios, so that the composition can have regenerating effect on hair and nails. Hair and nails regenerating composition – eliminates the disadvantages of the products present on the market, as it is composed only from natural ingredients: 0.9196 parts Acacia honey, 0.0465 parts <i>Ceylon cinnamon</i> and 0.0357 parts <i>Thymus serpyllum</i> .

Class no. 4. Medicine – Health Care – Cosmetics



RO.107

The tolerance of willows to contaminated soils in field
(coal ash deposit) and laboratory trials - PN II 111/2014Title ENEvaluation of the productive potential, the capacity of
phytoremediation and adaptability to the hydric stress of
some Salix genotypes, in improper stations for agricultural
cropsAuthorsCorneanu Mihaela¹, Hernea Cornelia¹, Hollerbach William²,
Babeanu Cristina³, Corneanu Gabriel³, Sarac Ioan¹, Soare
NATIONAL

Marin³, Netoiu Constantin⁴

¹Banat's University of Agricultural Sciences and Veterinary Medicine "King Mihai Ist of Romania" from Institution Timişoara, ²REBINA Agrar S.A., ³University of Craiova, ⁴National Institute for Research and Development in Forestry "Marin Drăcea"

> The species of *Salix* genus, constitute a promising source in the fight against the environment degradation, offering the remedy for industrial waste dumps, including coal ash deposits belonging to Thermoelectric Power Plants (TEPP). In order to obtain successful crops, with a double function (biomass production and environment decontamination), the tests in field conditions and under simulated stress (laboratory) are necessary, associated with the analysis of metabolic processes in different plant organs, followed by the selection of the most valuable genotypes.

> There were established two comparative plantations in two different locations in Timisoara TEPP ash deposit, first in March 2015, on slag and the second one in March 2016 on crude ash. In the first plantation 7 Romanian genotype and 7 Swedish ones, in the second plantation, 7 Romanian and 3 Swedish genotypes were used. In the laboratory trials for tolerance to Cd, Cu, Ni, Pb were used 7 Romanian and 3 Swedish genotypes.

The results of the field experiments showed different behavior of the genotypes on slag and crude ash. Romanian genotypes are tolerant, both on slag and crude ash (good survival percent and development), while the Swedish ones are sensitive on slag, but with a higher growth rate on crude ash. Laboratory trial pointed out the good tolerance of Romanian clones RO892, RO1077, RO1082 to Cd, Cu and Pb, proved by the shoots development, enhanced stress oxidative enzymes activity, as well as different protection mechanisms of the parenchymatic cells. The researches were financially supported by UEFISCDI Bucureşti, project PN II 111/2014 (SAROSWE).

Class no.

4

Description

EN

RO.108	
	Process for biorefining of sugar yielding plants with
Title EN	conservation and extraction of sugars for production of
	biofuels and other bioproducts
Authors	Vintilă Teodor
Institution	Banat's University of Agricultural Science and Veterinary Medicine "King Michael I of Romania" from Timişoara
Description EN	Patent Application to Romanian Office for Inventions and Marks (OSIM) no. A201600334 published in BOPI No. 11/2016, identification code: RO131499
Class no.	The invention code: ROTSTATY The invention describes an integrated process for biorefining sugar yielding plants (using sweet sorghum as study case) to produce biofuels, other bioproducts and biocompounds usable in the renewable energy industry, chemical industry, food industry, agriculture and industrial biotechnology. In our research we have approached an integrated biorefinery concept of sugar plants, approaching sweet sorghum as a case study. Biorefinery consists of preservation of sugars by aditivate ensilage of freshly harvested sorghum biomass, extracting sugars from biomass silage, followed by fermenting sugars with the production of ethanol, hydrolysis without pretreatment of lignocellulose, obtaining ethanol from cellulosic hydrolysate and anaerobic digestion of residues from the fermentation and hydrolysis and production of biogas and organic fertilizer. These results brings an extremely important novelty, namely: treating for several months lignocellulosic biomass with preservative solution has better effect in terms of improving access of enzymes for hydrolysis of cellulose than conventional methods of physicochemical pretreatment (alkaline / steam). This has a major impact in the economy of biorefining processes of plant biomass, because the thermos-chemical pretreatment steps are energy intensive and polluting. In other words, treatment of sugary plant biomass according to patenting process has triple effect: (1) preservation of sugars, (2) extraction of sugars and (3) release of cellulose from lignocellulosic complex and access of cellulolytic enzymes to hydrolysis cellulose to glucose. Invention Classification 2



NATIONAL 371

RO.109

Studies on genetic variability of the species Fritillaria Title EN meleagris in the protected area "Meadow Pogonici" Madosa E., Velicevici Giancarla, Ciulca Adriana, Ciulca S., Authors Sasu Lavinia. Petrescu Irina **Banat's University of Agricultural Sciences and Medicine** Institution Veterinary "King Michael I from Romania", Timisora Fritillaria meleagris species is found in several locations in Romania, but the geographical areas are shrinking and the population become smaller. In western Romania, the species is found in the protected area "Meadow Pogonici". The study aimed at assessing the genetic variability of the species Fritiliaria meleagris in this area. For the evaluation of the genotypic variability, were used RAPD molecular markers. Using the five RAPD molecular primer allowed the classification of plants by the average cluster method. The plants studied are grouped into four main clusters, which have a similarity of about 61%. The first cluster is composed Description of plants between that there is a similarity average of about EN 68%. The second cluster is composed of three subclusters. which have a diversity of 32%. A special case is a plant that show a allelic diversity about 49%, to the rest of the plants included in the study. These studies show that the population presented genetic variability, with the possibility of of maintaining even if the population is reduced in number. RAPD markers can be used for the evaluation of genetic variability at *Fritilaria meleagris*. The studied population presents the necessary genetic variability to avoid the genetic drift. Of all markers tested in the study, OPA 11 marker is recommended for the discrimination capacity and incidence of bands. 3

Class no.

RO.110

Title EN	The use of ISSR markers for genetic diversity of some
	Romanian fig cultivars (Ficus carica L.)
Authors	Velicevici Giancarla, Madoşa Emilian, Ciulca Adriana,
	Petolescu Cerasela, Mălăescu Mihaela, Camen Dorin
Institution	Banat's University of Agricultural Sciences and Medicine
	Veterinary "King Michael I from Romania", Timisora
Description	Common fig, Ficus carica L., is one of the oldest cultivated
-	

EN Mediterranean fruit. This is widely distributed in all the climatic stages and is of great diversity. The fig is a very nourishing food and is used as an industrial product. It is very energizing, rich in vitamin, mineral elements, water and fats. Molecular marker is used for identification of genetic resources. Genetic diversity of plant germplasm is the important basis of conservation biology and genetic improvement. This work aimed to analyze the genetic diversity of *Ficus sp*. from the western Romania using inter simple sequence repeat (ISSR) markers.

The biological material was colected from three western regions (Svinita, Sebis and Timisoara). Fifteen Romanian fig-tree cultivars were fingerprinted with ISSR primers. The five primers were screened for their ability to generate ISSR polymorphic DNA bands. All primers produced 66 fragments with a mean of 11.2 polymorphic fragments per primer and a polymorphic rate with value between 66,66% in case of HB-14 and 100% for oligonucleotides P-02.

The ISSR analysis is an informative and suitable approach to the examination of the molecular polymorphism and the phylogenetic relationships in the fig germoplasm.

We conclude that is an important genetic diversity at the DNA level among the fig varieties and all genotypes studied could provide valuable material for use in breeding programs.

3

Class no.

RO.111 Title EN

Molecular characterization in alfalfa cultivars using ISSR markers

Authors Petolescu Cerasela, Velicevici Giancarla, Popescu Sorina, Gorinoiu Gabriela, Camen Dorin

Institution Banat's University of Agricultural Sciences and Medicine Veterinary "King Michael I from Romania", Timisora

Genetic diversity of the species *Medicago sativa* is assessed by numerous researchers from various geographical areas, where alfalfa occupies an important position among the forage legume crops. In order to analyze the genetic polymorphism of 30 Romanian alfalfa genotypes, we tested nine ISSR primers and used five of them

Description EN (A-12, A-13, A-17, A-21 and UBC-818). All the five ISSR primers generated polymorphic bands, the polymorphism rate ranging between 60-100%. The results obtained using the five ISSR primers, prove the existence of a high genetic variability among the genotypes analyzed, which could be efficiently explored in alfalfa breeding programs. We identified 22 alleles present in all the 30 genotypes studied. These alleles may be considered ISSR specific markers for alfalfa.

The dendrogram obtained with the method of clusters mean with ISSR markers groups the alfalfa genotypes analyzed into three groups. We should remark that the three groups include varieties and lines originating exclusively in the Romanian germplasm (for example, Saturn, Venus, Coral, Viking), genotypes with origin in the Romanian germplasm and in foreign germplasm as well (for example, Dorina, Selena, Magnat, etc.), or only in foreign germplasm (for example, Cosmina, F1206-00, etc.). So we cannot speak about any association between genetic similarity and the origin of the germplasm used in alfalfa amelioration in Romania.

3

RO.112	
Title EN	AVOREGO SPONGE CAKE
Authors	EMILA GURAN, ERSILIA ALEXA, MARIANA ATENA POIANĂ, ADRIAN RIVIȘ, DORICA BOTĂU
Institution	Banat's University of Agricultural Science and Veterinary Medicine "King Michael I of Romania" from Timisoara
Description EN	AVOREGO SPONGE CAKE is a dietary assortment, desert type, destinated for people with certain nutritional requirements but also for persons interested in healthy life style. The composition is based on goji berries, avocado and Rhubarb vegetable matrix with low glycemic index, high intake of minerals and vitamins required for a healthy diet. Cost-benefit analysis highlights that the product is economically profitable and the results of financial plan support the idea that this product represents a viable business idea with great success opportunities. The importance of this project implementation is that the market segment concerning production on Romania of functional and dietary foods is still underdeveloped and the demand for such products is high. Also, obtaining dietary foods in Romania leads to lower prices 3-4 times compared to imported products. The obtaining of functional products represents innovation and future directions in the bakery industry in Romania.
Class no.	3



RO.113	
Title EN	Behaviour of various <i>Paulownia</i> species cultivated <i>in vitro</i> and <i>in vivo</i>
Authors	Roxana LUCA ¹ *, Manuela CRIȘAN ² , Dorica BOTĂU ¹
Institution	¹ BUASVM - Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania", 119 Calea aradului, 300645 Timisoara, Romania. ² Institute of Chemistry Timisoara of Romanian Academy, 24 Mihai Viteazul Blvd, 300223, Timisoara, Romania
Description EN	 Paulownia is a multipurpose tree species with a rapid growth which is cultivated in several temperate zones worldwide for its economic importance. We studied the <i>in vitro</i> germination capacity of six Paulownia species (P. shantong, P. tomentosa, P. elongata, P. 9501, P. fortunei, P. catalpifolia) collected from 3 countries (Romania, Bulgaria, Spain), establishing that P. elongata and P. fortunei (Bulgaria) presented the highest germination. Our studies on physiological behaviour (photosynthesis, chlorophyll, dry substances, perspiration) - simultaneous <i>in vivo</i> and <i>in vitro</i> of three valuable Paulownia hybrids (P. shantong, P. cotevisa, P. 9501) collected from controlled field cultures showed that internodes of P. cotevisa registered higher results at all culture conditions regarding photosynthesis (ppm CO₂), the most important physiological process which contributes to the absorption of CO₂. The study on Paulownia shantong for economic reasons was to investigate the effects of 2,4-dichlorphenoxyacetic acid and different new compound, alkanolamine salts of 4-nitrobenzoate (4-NO₂BA MMEA), diethanolamine 4-nitrobenzoate (4-NO₂BA MMEA), diethanolamine 4-nitrobenzoate (4-NO₂BA TEA). Callus induction was observed at MS supplimented with 2,4-D and all the three new hormones studied induced a better plant regeneration than control, best results of our studies can be applied in rapid multiplication <i>in vivo</i> and <i>in vitro</i> at Paulownia species.

RO.114 Title EN Evaluation the effect of lead in root of *Allium sativum* L. Authors Sărac Ioan, Petrescu Irina, Madosă Emilian, Bonciu Elena, Banat University of Agriculture and Veterinary Medicine Institution "Regele Mihai I" of Romania, from Timisoara. When heavy metals are present in excess, or under wrong conditions, and in the wrong places, produce errors in the genetic information system. The present study estimate the toxic potential of lead using Allium sativum root chromosomal aberration assay. The effect of lead depends on the concentration, type of salts and plant species involved. effects are pronounced Though more at higher concentrations and durations, in some cases, lower concentrations might stimulate metabolic processes. The major processes affected are seed germination, seedling Description growth, photosynthesis, plant water status, mineral nutrition, EN and enzymatic activities. Root tips of Allium sativum were treated with different concentrations of lead, 50, 150 and 450 ppm. Various types of laggards or vagrants chromosomes, chromosomal breaks and chromatin bridges aberrations were observed in Allium sativum root tip cells following treatment with lead. The effect was found to be dose dependent and frequency of laggards and vagrants chromosomes aberrations ranged from 11.37 to 21.04% while chromosomal breaks and chromatin bridges aberrations ranged from 1.11 to 2.15%. Total chromosomal aberrations frequency ranged from 14.10 to 24 20%

Class no.

3

RO.115	
Title EN	DEVELOPMENT OF A MODERN ASSAY FOR
	DAIRY PRODUCTS AUTHENTICATION
Authors	Boldura Oana Maria, Popescu Sorina
T	Banat University of Agricultural Sciences and Veterinary
Institution	Medicine "King Michael I of Romania" from Timisoara
	Testing the authenticity of dairy products and counterfeits detection
	are important for the appreciation of product correct value, to
	exclude unfair competition and to ensure consumer protection from
Description	fraud.
EN	Most of dairy products from the local market are manufactured
	from cow's milk, goat and sheep dairy products being considered
	specialties with particular taste and aroma qualities. Frequently, in
	the recipes the raw materials represented by goat and sheep's milk
	NATIONAL

are replaced by cow's milk either unreported or used in higher proportions than those labeled.

Methods based on the analysis of nucleic acids are increasingly being used in recognizing the composing milk types with a low detection limit, being successfully applied to the processed products where methods of proteins analysis cannot be applied.

The method developed in our research involves dairy product authentication trough the simultaneous detection of the species *Bos taurus, Ovies aries* and *Capra hircus*, using multiplex PCR method. For this, total DNA is isolated from the processed product and amplified in the presence of three highly specific primer pairs, targeting the 12 S rRNA mitochondrial DNA regions. Obtained amplicons are visualized by agarose gel electrophoresis. Based on the presence of expected size PCR product, in the presence of a validated positive control the composition of analyzed product is interpreted.

The advantages of our method compared with the classical ones consists in fastness, high accuracy and low detection limit - 0.01% cow's milk in dairy products.

3

Class no.

RO.116

IMPROVEMENT OF DNA EXTRACTIONTitle ENPROCEDURE USING DEUTERIUM DEPLETEDWATER

Authors Popescu Sorina, Boldura Oana-Maria, Sărac Ioan, Butnaru Gallia

Institution Banat University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara

Deuterium (D) is a stable isotope of hydrogen with the atomic number 2, present in nature in very small amounts. Its binding to oxygen generated the D_2O molecules, present in the environment in 150ppm concentration. Due to its low electro-negativity the deuterium has a different inductive effect compared with the hydrogen, being involved in different biological processes.

Description EN In our experiments we used deuterium depleted water, with deuterium concentration decreased to 30ppm, to prepare all the solutions used in the DNA extraction process. As biological materials, the genetic model organism was used, namely *Drosophila melanogaster*. For DNA extraction the modified CTAB method was used, the biological materials being analyzed in three repetitions for each experimental variant. To determine the DNA concentration and evaluate its quality the spectrophotometric method was applied.

The samples extracted with the solutions prepared in distillated water, with a deuterium concentration of 145ppm, had a NATIONAI

medium concentration of 811.45 ± 9.65 mg/µl. The decreasing of deuterium concentration in the extraction solutions (30ppm) produced a higher DNA concentration, namely 854.99 ± 9.65 mg/µl. Besides, the 30ppm variant emphasized the closest value of OD_{260/280} to the optimum one and also highlighted the highest uniformity between samples - the difference between the maximum and the minimum being 0.023. The advantage of using deuterium depleted water in the solutions used for DNA extraction procedure is the increased DNA concentration and also the improved quality. Therefore, we recommend this special water to be used in the development of DNA extraction kits.

Class no.

3

RO.117

Authors

PROTOCOL FOR DETECTION OF AMMODYTESTitle ENAMMODYTES VENOM ADULTERATION WITHVEGETAL MATRICES

Tulcan Camelia, Ahmadi Mirela, Hutu I., Milovanov Cornelia, Radulov Isidora, Alexa Ersilia, Obistioiu Diana,

Folescu M., Mircu C., Boldura Oana, Popescu Sorina
Banat University of Agricultural Sciences and VeterinaryInstitutionMedicine "King Michael I of Romania" from Timisoara,
Faculty of Veterinary Medicine

The decrease of *Ammodytes Ammodytes* venom quality on the Romanian market is strongly felt by producers through increasingly difficult access on the international market.

A quality screening evaluation of this valuable material will lead to a decline of incidence of adulterated sample offered for sale.

Even though in scientific literature, snake venom adulteration is poorly presented (*Calvete et al.*. 2015, *Inacio et.al.* 2016), this study was performed as a result of identifying existing needs in the current practice of specialized laboratory in venom analysis from Research Laboratories Horia Cernescu - Banat's University of

3

Description EN Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timişoara. Presence of corn flour adulteration was detected by extracting the DNA from 25mg of freeze dried venom and using it as template in PCR amplification with zein specific primers known to be highly specific for corn species. The obtained amplicon was purified from agarose gel and sequenced in order to further confirm the presence of corn specific DNA sequences. The sequence thus obtained was uploaded in a DNA Data Base, and aligned with the reference zein sequence. The 99% of similarity between he two sequences enables us to confirm the corn flour adulteration in the analyzed venom sample.

"Mircea cel Bătrân" Naval Academy of Constanța

RO.118	
Title EN	"Marine Engineering Faculty" -USV01
Authors	Vasile DOBREF, Ionel POPA, Petrica POPOV
Institution	Naval Academy "Mircea cel Bătrân"
	Our research proposal relates to the construction of a naval platform, without crew on board, remote and its possibilities to transmit or record data in inaccessible areas. Unmanned platforms are not necessarily a brand new concept, being used mostly for military purposes. The solution presented is a Romanian premiere similar to international standards, but at much lower cost, with the advantage that certain environmental action is totally insignificant. It will only list a
	range of applications (video data, forecasts and
Description	submarines), the platform built in the "Mircea cel Batran"
EN	Naval Academy allowing many improvements based on
	equipment that can be mounted on board.
	Technical features designed shipbuilding generic platform
	are:
	• Length: 4m;
	• Body weight: 60 kg;
	• Power: two electric motors;
	• Displacement- 130, max 200 kg;
	• $Autonomy - 3h;$
	• Draught - 0.11 m;
Class no.	1. Environment - Pollution Control

RO.119	
Title EN	Automated Naval Photo-Electricity Collector (A.N.P.E.C.)
Authors	Pohonțu Alexandru, Ermolai Vasile
Institution	"Mircea cel Bătrân" Naval Academy of Constanța &
Institution	"Gheorghe Asachi" Technical University of Iași
	The ANPEC (Automated Naval Photo-Electricity Collector)
	project is a prototype of an electro-mechanical system designed to
	increase the light absorption of a solar panel that is exploited in
	In contrast to the land applications that relies on standard sun's
	trajectories during a regular year a maritime solar tracker system
	requires a totally different approach.
	ANPEC's main functionality is to solve the various sun's
	orientation problem resulting from the ship's change of routes and
	oscillatory moves (roll and pitch), induced by sea conditions.
	Sun's position is determined by analyzing data provided by four
	analog photoresists (piramidal disposed) and the unit of time in
	which to do adjustment to servomotors (for a minimum energy
Description	The guide orientation and positioning mechanical component
EN	with bearings was designed to lessen the effect of buckling and
	provide a much enhanced stability in case of bad weather and
	strong wind.
	An Emergency Position Indicating Radio Beacon or EPIRB is
	used to alert search and rescue services in the event of an
	emergency and it does this by transmitting a coded message on the
	406 MHz distress frequency via satellite and earth stations to the
	EPIDDa and an angle installed on boots and an either he
	constant automatically after an incident or manually
	ANPEC can be used as a reliable device for naval operation
	especially for rescue tasks where it can electrically charge a
	DISTRESS device with an improved performance of a solar panel
	by almost 40% and minimum consume for actuators.
Class no.	2
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	TOTAL OF THE OWNER

NATIONAL 380

"Nicolae Bălcescu" Land Forces Academy Sibiu, Romania

RO.120.	
Title EN	Mini-robot on wheels for special engineering applications
Authors	Silviu Mihai Petrișor, Dragoș Lecoiu, Ghiță Bârsan
Institution	"Nicolae Bălcescu" Land Forces Academy, Sibiu, Romania
Patent	Pending
	According to the organological design, the mini-robot on wheels for special applications represents a technological product that has four degrees of mobility, a simple mechanical structure, fully modularized and compact, self-propelled and electrically-driven. (Fig. 1a, b) It consists of two main modules: the base of the mini- robot (BMR) and the module for collecting data in the operational environment (MCD). The mini-robot mobility is achieved using an electrical motor with brushes, equipped with an aluminum alloy

radiator for passive cooling and transmitting power to all four wheels of the mobile platform, the latter benefiting from encapsulated differentials. The steering system has an adjustable geometry, being controlled by means of a horizontally placed servomechanism.

Description Propulsion is achieved through the four rubber wheels that allow the movement of the mechanical mini-robot structure on rough EN terrain. The mini-robot, designed and manufactured in this way, can reach speeds of up to 20 km/h, has a minimum radius of return of 75 cm and the battery it is equipped with provides an operating range of up to 2 hours. For collecting the data in the operational environment, the technological product is equipped with a color camera with infrared view, which ensures viewing at night on distances up to 12 m. The mini-robot also has a microphone and loudspeaker for providing audio communications. The mini-robot can be applied both in the applicative-military field, by improving the ability to remotely obtain and collect information on detection of UXO or IED, and in the educational field, in improving the professional skills of students in military advanced distanceoperated technology.



RO.121. Method of surface treatment with optical radiation pulses on **Title EN** sintered pieces of metal powders Authors Virca Ioan Institution "Nicolae Bălcescu" Land Forces Academy, Sibiu, Romania Patent Pending The innovative solution in the field of surface treatments with

concentrated energy lies in obtaining an unconventional method of treating the local surface of sintered pieces of metal powders with pulses of optical radiation emitted by the gas discharge lamps. Objectives:

improving roughness and micro-hardness parameters;

highlighting the micro-structure changes in the surface layer of the treated pieces, necessary for explaining the energetic transfer processes at the level of the surface layer of the sintered material. Treatment installation and experimental setup



Fig. 1

Fig. 3

The installation is composed of the radiation source (the tubular gas discharge lamp) powered from a block of electrolytic condensers with a capacity of 700 μ F (Fig. 1), connected to the alternating electrical current of 220 V.

After the preliminary investigations on the aptitude of sintered pieces to surface treatments, two types of pieces were set for research: the rocker ramp support (fig. 2 and 3, in experimental setup) and right lever.

Experimental results

The carried out research has allowed to draw some conclusions certifying the validity of using pulses of optical radiation in order to produce surface structural changes:

- the microscopic image (Spectrum 2) obtained with a scanning electron beam microscope reveals structural changes in the surface layer of about 30-35 µm;

- the treated surface layer looks fine and, unlike the substrate, showing a it has improved coarse grain, roughness values:

- at certain energy values, the intense thermal effect induced in the surface layer by the gas discharge lamp can be micro-hardness assessed by measurements



NATIONAL 382

Description EN

University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iași

RO.122.	
Title EN	Automatic Plug Seedling Transplanting Equipment
Authors	Vlahidis Virgil, Roșca Radu
Institution	The University of and Life Sciences and Veterinary
Institution	Medicine of Iași
Patent	RO130295 (A0) — 2015-06-30
Description EN	The invention relates to an automatic equipment for horticulture, intended for transplanting seedlings with prefabricated Jiffy pots, in rectilinear rows, for different planting schemes, in field and in protected environment. The equipment according to the invention has a supporting structure (A), on which is mounted system (B) for driving and forming planting holes, which, through a transmission (C), acts both a supplying system (D) with alveolar systems (E) with seedlings from a reserve (J), as well as a distribution device (F) and a planting device (G) wich allocates a planting material (I) for fixing in soil system (H), the empty cells systems (E) being received in a recovery system (K).
Class no.	Invention Classification: 3



Seedlings transplanting machine

Transplanting equipment on a soil stand

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RO.123.	
Title EN	RESPIROTON
Authors	Teodor ROBU, Vasilica ONOFREI
Institution	University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iași Thia tea una meda from: Abias alba, Askilas millafalium
Description EN	Althaea officinalis, Cichorium intybtus, Mentha piperita, Ocimum basilicum, Plantago spp., Tusilago farfara, Tymus vulgaris, Equisetum arvense, Origanum vulgare, Tilia sp. Properties: bronchitis, tracheitis, cough, colds, flu, lung disease
Class no.	3
RO.124.	
Title EN	SILUETA BALERINEI
Authors	Teodor ROBU, Alexandrina Roxana CLINCIU RADU, Alexandru Dragos ROBU
Institution	University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iași
Description EN	This tea was made from: Artemisia absintium, Betula alba, Cichorium intybus, Convolvulus arvensis, Equisetum arvense, Malva sp. Plantago sp., Taraxacum officinalis, Sambucus nigra. Properties: reducing weight (obesity), increased metabolism, purifies the blood, reducing cholesterol, cellulite, etc
Class no.	3

RO.125.	
Title EN	TONIC AROMAT
Authors	Teodor ROBU, Alexandru Dragos ROBU
Institution	University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iași
Description EN	This tea was made from: Ocimum basilicum, Hippophae rhamnoides, Tymus vulgaris, Equisetum arvense, Rosa canina, Melissa officinalis, Mentha piperita, Abies Turioni, Origanum vulgare, Rosa, Polygonum aviculare Properties: vitaminizant, tonic, food, depurative, debility, convalescence, senescence, mineralizing.

RO.126.	
Title EN	Spice for stews
Authors	Roxana Alexandrina CLINCIU-RADU, Elena PATROLEA
	Teodor ROBU (coordinator)
Institution	University of Agricultural Sciences and Veterinary Medicine
	"Ion Ionescu de la Brad" Iași
Description EN	This spice was made from: Anethum graveolens, Zingiber
	officinale, Beta vulgaris var. canditiva, Daucus carota, Allium
	сера.
Class	3



Romanian Inventors Forum

RO.127.	
Title EN	Ecological Mouthwash
Authors	Kamel EARAR, Andrei Victor SANDU, Mădălina Nicoleta MATEI, Ion SANDU, Ioan Gabriel SANDU
Institution	Romanian Inventors Forum
Patent no.	Pending/2017
Description EN	The invention refers to an ecological mouthwash made of 100% natural ingredients. It has no side effects and can be used by pregnant woman or children.
Class no.	4

National Institute of Materials Physics Magurele, Romania

RO.128.	
Title EN	Processing method and powder-in-a-metal-sheath superconducting MgB2–based tape
Authors	Mihail BURDUSEL, Gheorghe Virgil ALDICA, Petre BADICA
Institution	National Institute of Materials Physics
Patent no.	Patent application No. A00150/2016
Description EN	The proposed process is for manufacturing of superconducting wires and tapes. It consists of using the method of sintering assisted by an intense electrical field (known internationally under the name Spark Plasma Sintering (SPS), or Field Assisted Sintering (FAST)) on samples after plastic deformation such as extrusion, drawing, or pressing Samples are metal tubes loaded with MgB2
	powder, with or without additives



Title EN	Method of obtaining Nano-hydroxyapatite in Silicon
	Matrix for environmental applications
Authors	Dr. Predoi Daniela, Dr. Ciobanu Steluta Carmen, Dr. Ghita
	V.Rodica, Dr. Popa Cristina Liana, Dr. Iconaru Simona
Institution	National Institute of Materials Physics, P.O.Box MG-7,
	Magurele, Bucharest
Patent no.	Patent pending
Description	The present Patent is related to an obtaining method of a
ĒŇ	Nanocomposite material, namely Hydroxyapatite in a Silicon

matrix (Si:HAp). This material has the property of retaining Pb2+ ions from aqueous solutions at different concentrations values and pH. Chemical reaction between Si:HAp and an aqueous solution containing Pb2+ ions determines HAp dissolution together with the removal of Pb2+ as a result of precipitation of phases with high ionic concentration. The nano-powders in hydroxyapatite base are more efficient for Pb ions removal in a solution having pH=5. Nano-hydroxyapatite reactivity against aqueous solutions with different pH and containing Pb ions, recommend this nano-composite material as a promising key to be used in depollution of contaminated water.

1

Class no.

RO.130.

Title EN	Method of obtaining zinc doped Hydroxyapatite in collagen matrix with biomedical applications
Authors	Dr. Predoi Daniela, Dr. Ciobanu Steluta Carmen, Dr. Ghita V.Rodica, Dr. Popa Cristina Liana
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Patent	Patent pending
Description EN	material namely: Zinc doped Hydroxyapatite in collagen matrix (Zn:HAp-CBc). There are marked out the obtaining method, the morphology and elemental composition of these new materials together with cytotoxic action upon HeLa cells. MEB micrographs showed that Zn:HAp powders have an ellipsoidal morphology indicated the growth of the collagen quantity in the same time with Zn:HAp composite porosity. Cartographies recorded on as-obtained composites indicate a uniform distribution of constitutive elements. Experiments " <i>in vitro</i> " realized upon HeLa cells showed the excellent biocompatibility of these materials that recommend them to further " <i>in vivo</i> " studies. This new composite Zn:HAp-CBc is a biomaterial adequate for utilization in bony regeneration.

Class no.

4

Passivation procedure of III-V semiconductor surfaces and the obtaining of a sensitive structure type GaCl3- Sb2S3/GaSb.
Ghita Rodica, Frumosu Florica, Dr.Logofatu Constantin, Predoi Daniela, Negrila Catalin-Constantin, Trupina Lucian
National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Pending patent
GaSb-based devices are promising candidates for dedicated military and civil applications in micro and opto-electronics. Sulfur treatment of GaSb surfaces by sulfur compounds inorganic (e.g. S2Cl2) or organic (e.g. DDT, ODT) represents a possible alternative in the development of GaSb technology. The sulfur passivated GaSb surfaces exhibited antimicrobial activity and relatively recent studies (2011) revealed a pronounced bactericidal activity of sulfur particles. Procedure novelty is related to the use of Sulfur passivation in particular on GaSb in order to develop a GaSb device in a compatible III-V compounds technology. In this regard, the result of passivation studies indicates a variation of surface resistivity and this result in the present Patent is the base for a proposed sensor structure of a Schottky diode type active to microbial presence to be used in medicine.
9
Obtaining of oxide compounds on n-GaSb surface Ghita Rodica, Logofatu Constantin, Negrila Catalin- Constantin, Frumosu Florica, Predoi Daniela
National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Pending
The present Patent describes different obtaining procedures applied in growing thermal oxides e.g. Ga ₂ O ₃ and Sb ₂ O ₃ on n-GaSb (100). There was studied thermal oxidation characteristics using different sources namely: 1- water vapor furnace, 2- temperature controlled plate and 3- incandescence lamp. In all these cases, there were analyzed temperature oxidation and time together that influence oxide compound chemical nature. A more rapid alternative at thermal oxidation is anodic oxidation in an AGW (acid-glycol- water) solution. Surface preparation of n-GaSb for oxidation

processes is realized by a combination of chemical etching and thermal treatment. The resulted clean surface was investigated by XPS surface technique. The novelty of the present Patent consists in the establishment of oxidation parameters for the incandescence lamp case, an experimental case that is characterized by the surface development of a majority of Sb₂O₃ on n-GaSb (100) face.

Class no.

RO	.133.	

Title EN	Goggles with plasmonic metasurfaces that operates as
	polarization state analyzer
Authors	Costel Cotirlan-Simioniuc (INCDFM), Adrian Rizea
	(ProOptica S.A.), Constantin Marin (IOEL S.A.)
T	National Institute of Materials Physics, P.O.Box MG-7,
Institution	Magurele, Bucharest
Patent no.	Pending patent
	The invention relates to goggles with plasmonic
	metasurfaces that operates as polarization state analyzer in
	the visible range, characterized in that the interface of glasses
	to the object serves as quarter wave retarder with a structure
	of plasmonic nanoantennas in a split square form with the
	optical axes rotated with 180° angle on surface rows, and the
Description	interface of glasses to the eye acts as linear micropolarizer
EŃ	area with individual polarization rotated with 45° angle
	relative to adjacent micropolarizers, so that the serial
	assembly of the two metasurfaces determines the phase shift.
	linear control of the polarized wave front, and selective
	extinction of light beams bounded by pixels for obtaining a
	greater depth for field of view and an improved contrast of



RO.134.	
Title EN	Metallic Cu-based thermal barriers with insulator like thermal conductibility
Authors	M. Galatanu, G. Ruiu, M. Enculescu, A. Galatanu
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Patent no.	Pending patent
Description	The processing technology developed in our group allows to create Cu-ceramic composites with high content nano- structured ceramics. The resulting materials have a metallic like electrical conductivity and thermal conductivities with values specific to ceramic thermal insulators. (a few W/m/K). Such materials are ideal thermal barriers for various applications, benefiting from an easy joining to other components by different brazing techniques, depending on the intended application temperature range
EN	refractany amount (MD)



RO.135.	
Title EN	Ferroelectric memory structure with multiple memory states and fabrication method
Authors	Georgia Andra Boni, Chirila Cristina, Luminita Hrib, Pintilie Ioana, Pintilie Lucian
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Patent no.	Patent pending
Description EN	The invention refers to a ferroelectric memory structure that can have more than 2 memory states, going up to 8 possible memory states that can be independently addressed. The structure is based on a multilayer that includes ferroelectric films of the same material and thickness alternating with films of a different material, with or without ferroelectric

properties. The structure must be symmetric, starting and ending with the ferroelectric material. The structure offer the opportunity to increase the storage capacity up to 4 times.



Class no.	
RO.136.	
Title EN	PRINTER for succesive deposition of ultra-thin films with different physical-chemical properties
Authors	Luige, Necșoiu Teodor, Stancu Viorica, Tomulescu Andrei Gabriel, Beșleagă Stan Cristina, Sima Marian, Leonat Lucia Nicoleta, Elena Manuela Stanciu, Brinduș Comănescu, Alexandra Valentina Enuica
Institution	National Institute of Materials Physics; OPTOELECTRONICA-2001 S A
Patent no.	Pending
Description EN	The printer is designed for successive deposition of ultra-thin layers with different properties (composition, viscosity, content and nanoparticle size, etc.) and thickness of $0.5 \div 2$ µm. It has modular concept making possible the application of three different deposition techniques, such as: screen printing, doctor blade and wire bar, on the same equipment. Thus, layers of materials with different properties and consistency (viscosity) can be successively deposited. This printer has two working areas, one for the ultra-thin film deposition and other for drying / heat treatment (up to 150°C).
	The printer's construction is characterized by a modular structure, as shown in Figure 1, with three basic subassembly modules, namely: chassis (1); vertical module (2); oven module (3). Another two sub-assembly modules are used depending on the required deposition technique, namely: support blade rubber - for screen printing techniques (Fig.1a.
	NATIONAL

(5)) and doctor blade (Fig.1b. (4)) support bar - for wire bar technique (Fig.1c. (4)). The command and control of all the motions of sub-assembly modules are computer assisted. The spraying system is composed of two types of reservoirs, depending on the viscosity of the liquid materials to be deposited, one cylinder for low viscosity and one parallelepiped for high viscosity materials. Depending on the viscosity of the material to be deposited, it regulates the flow of compressed air for driving the liquid material through the spray nozzle orifice.

An example where the printer is used is given by the manufacture of perovskite solar cells. This type of solar cells requires successive deposition of several ultra-thin layers of different composition and structure.



National Institute of Research & Development for Technical Physics, Iasi

RO.137.	
Title EN	Invention Title: Apparatus for determining the abnormal electrical potentials at ventricular myocardium level
Authors	CHIRIAC Horia, GRECU Mihaela, CORODEANU Sorin, ȚIBU Mihai, LUPU Nicoleta
Institution	National Institute of Research and Development for Technical Physics
Patent no. Description EN	Patent application No. a 2016 00415/07.06.2016 The invention refers to an apparatus for the determination of the points of abnormal electrical potential at ventricular myocardium level, especially in the left ventricle, which can generate heart rhythm disturbances with vital impact. The device will assist the doctor for objective identification, in real time, of the points where the ablation must be carried out. This apparatus includes an amplification and analog filtering module, an analog-to digital signal converter, a hardware device that contains a microchip for digital processing, via a software, of the signals received from an EKG and from a catheter, a screen for the display of the signals received from the EKG, from the catheter, as well as the display of the abnormal electrical potentials from ventricular myocardium, identified by the software (Figure)
	The software analyses the signal received from the catheter with respect to the amplitude, duration, and synchronization with the QRS complex of the EKG signal, as well as spectral fragmentation degree. In order to evaluate the fragmentation of the catheter signal the FFT spectrum analysis was performed.
Class no.	



Image/ Photo

National Research&Development Institute for Chemistry and Petrochemistry - ICECHIM Bucharest

RO.138.

Title

Composition for paper deacidification, process to obtain it and method for its application

Authors Rodica-Mariana Ion, Sanda Maria Doncea

Institution ICECHIM, Bucharest

Patent no. EP2626464

This invention relates to a new chemical composition comprising nanoparticles of hydroxyapatite, suspended in solution of carboxymethyl cellulose (50%:50%) in isopropyl alcohol as solvent, this composition being used for paper de-acidification purposes, by the annihilating the paper acidity from pH = 4.5 to alkaline range pH = 7.2.

Novelty and advantages of the invention consist in:

the solution of hydroxyapatite nanoparticles suspension $Ca_{10}(PO_4)_6$ $(OH)_2$ in carboxymethyl cellulose (CMC) alcoholic solution (isopropyl alcohol) could be sprayed on the acidic paper surface; layering on paper involves the hydrogen bonds between the H

- **Description** atoms and OH groups existing in the structures of the two components, as well as electrostatic binding of the two components favored by acidic medium of the paper (pH 4.5), Ca²⁺ ions is located on the HA surface and come into contact with the COO²-ions from the CMC surface, forming ion-pairs COO²⁻Ca²⁺; isopropyl alcohol has a low toxicity, it is volatile, has a low surface tension and is environment friendly; the nanoparticles of HA and CMC are not toxic, being recognized as biocompatible materials; the paper treatment with nanoparticles is not followed by carbonation of the applied reagents, and there is no risk for the disappearance of paper alkaline reservoir and the reappearance of paper acidity.
- Class 9. Chemical and Textile Industry





SEM (up) and AFM (down) before (left) and after (right) treatment with HA:CMC NATIONAL 395

RO.139.

Title	A process for the obtaining of Red Mud- based Ceramic Foams
Authors	Andrei SARBU, Teodor SANDU
	National Research- Development Institute for Chemistry
Institution	and Petrochemistry (INCDCP- ICECHIM), Bucharest,
	Romania
Patent no.	Patent application No. 00317/2015
Description	The invention relates to an approach for the preparation of ceramic foams based on Red Mud (RM) to be used in catalytic processes, in the retention of suspended solids from gasses and in waste water treatment processes. According to the invention, the approach involves the gelling of an aqueous suspension consisting of RM (eventually using kaolin and/or sodium silicate besides RM), of acrylic acid acid and of methylene bis acrylamide, by redox initiation, yielding precursor ceramic bodies, submitted afterwards to thermal treatment in air to get the targeted ceramic foam having a porosity of 7085 % and 0.74 0.88 mm average pore diameter.
Class	1

RO.140.

	DECONTAMINATION PROCEDURE OF
Title	WASTEWATERS WITH DYES CONTENT FROM
	TEXTILE INDUSTRIE
Authors	Ionita Elena, Cristu Zoia, Mateescu Mariana, Deaconu Marian, Athanasiu Anca, Alifanti Constantin, Tolescu Ciprian, Oproiu Loti, Ruse Mircea, Faraon Victor, Filipescu catalin, Cojocaru Mariana, Ivan Melania
Institution	The National Institute for Research & Development in Chemistry and Petrochemistry ICECHIM, Bucharest
Patent	Patent invention No. 127640/2016
Description	The invention presents the researches regarding the realization of some technologic variants for decontamination of wastewaters from textile and leathers industries, using of macrocyclic and macromolecular-calixarene compounds, which have performances complying the Directive 2000/60/EC
Class	Invention Classification 1; 9
National Research and Development Institute for Soil Science, Agro-chemistry and Environment ICPA Bucharest

RO.141.	
Title EN	Complex liquid fertilizer with anti-chlorosis properties, for preventing and treating nutritional deficiencies,
Authors	sirbu Carmen Eugenia, Cioroianu Traian Mihai, Dumitru Mihail
Institution	Science, Agro-chemistry and Environment - ICPA
Patent	Bucharest Brevet: RO 128921 B1/30.03.2015, indexat Web of Science cu nr. 2013-U41433 (WOB – Derwent), http://bd.osim.ro/cgi-bin/invsearch8 The invention relates to a liquid fertilizer with anti-chlorosis properties for preventing and treating nutritional
Description EN Class	deficiencies, to a process for obtaining and a method for applying the same. According to the invention, the fertilizer consists of: total nitrogen 25.72101.3 g/l, phosphorus 20.5660.82 g/l expressed as P_2O_5 , potassium 24.5153.46 g/l expressed as K_2O , iron 10.1224.22 g/l, zinc 0.160.95 g/l, copper 0.040.56 g/l, magnesium 0.664.96 g/l, manganese 0.030.50 g/l, boron 0.250.73 g/l, sulphur 13.0431.63 g/l, organic substances 125.45258.42 g/l. As claimed by the invention, the method for applying the liquid fertilizer consists in using the product in viticulture and fruit farming by spraying it as aqueous solution of 12.5% concentration in a quantity of 10001500 liters/ha.
RO.142.	
Title EN	NPK type extraradicular fertilizer with humic substances, process for obtaining and method for the application thereof
Authors	Sîrbu Carmen Eugenia, Cioroianu Traian Mihai, Dumitru Mihail
Institution	National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA
	Bucharest
Patent	Brevet: RO 127894 B1/30.04.2014, indexat Web of Science
	NATIONAL

cu nr. 2012-P90038 (WOB – Derwent), http://bd.osim.ro/cgi-bin/invsearch8

According to the invention, the fertilizer comprises 55.6...165.69 g/l total nitrogen, 32.41...70.2 g/l phosphorus pentoxide, 30.92...58.4 g/l potassium oxide and microelements consisting of copper, zinc, iron, manganese and magnesium, completely chelated with disodium salt

EDTA, boron, sulphur and 23.65...35.89 g/l of organic Description substances of which 8.04...20.09 g/l of humic substances. EN The method for the application of the fertilizer consists in administering an aqueous fertilizer solution with a concentration of 0.01...25%, in an amount of 200...10000 l/ha, depending on the fertilizer type, crop and vegetation stage. 3

Class

RO.143.

	Extraradicular fertilizer with natural organic substances,
Title EN	process for preparing it and method for applying the
	same
A	Cioroianu Traian Mihai, Dumitru Mihail, Mărin Nicoleta,
Autnors	Sîrbu Carmen Eugenia, Soare Maria
	National Research and Development Institute for Soil
Institution	Science, Agro-chemistry and Environment - ICPA
	Bucharest
	Brevet: RO 127400 B1/28.12.2012, indexat Web of Science
Patent	cu nr. 2012-H55976 (WOB – Derwent),
	http://bd.osim.ro/cgi-bin/invsearch8
Description EN	According to the invention, the fertilizer consists of 100.8130.8 g/l of total nitrogen, of which 80.4120.6 g/l of amidic nature, 5.110.2 g/l of nitric nature, 5.110.2 g/l of ammonia nature, 40.660.3 g/l of phosphoric anhydride, 35.251.4 g/l of potassium oxide, 7.520 g/l of protein organic substances, 0.20.3 g/l of iron, 0.040.1 g/l of zinc, 0.050.1 g/l of copper, 0.10.2 g/l of boron, 0.050.2 g/l of magnesium, 0.050.15 g/l of manganese, 0.570.73 g/l of sulphur, as an aqueous solution having a pH of 5.868. The claimed method consists in spraying the fertilizer on the plants as a 0.52% aqueous solution, in an amount of 2501500 l/ha, depending on the crop and the vegetation
	stages of plants.
Class	3

RO.144.	
Title EN	Fertilizer with humic substances, process for preparing the same and method of application thereof
Authors	Sîrbu Carmen Eugenia, Cioroianu Traian Mihai, Dumitru Mihail
Institution	National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest
Patent	Brevet: RO 127192 B1/29.03.2013, indexat Web of Science cu nr. 2012-E88063 (WOB – Derwent), http://bd.osim.ro/cgi-bin/invsearch8
Description EN Class	According to the invention, the fertilizer comprises 0.947.2 g/l of total nitrogen, 1.066.6 g/l of phosphorus, 6.957 g/l of potassium, 9.019.8 g/l of humic organic substances, 0.200.62 g/l of iron, 0.190.3 g/l of zinc, 0.190.36 g/l of copper, 0.120.25 g/l of boron, 0.260.32 g/l of magnesium, 0.150.37 g/l of manganese, 1.83.3 g/l SO ₃ , having a pH of 6.88.4. The claimed method consists in spraying the fertilizer on the plants as a 0.52% aqueous solution, in an amount of 2501500 l/ha, depending on the crop and the vegetation stages of plants. 3
RO.145.	
Title EN	Extra-root fertilizer with protein hydrolysates, process of preparation and method of application
Authors	Cioroianu Traian Mihai, Sîrbu Carmen Eugenia, Dumitru Mihail
Institution	National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest
Patent	Brevet: RO 126939 B1/29.03.2013, indexat Web of Science cu nr. 2012-D25275 (WOB – Derwent), http://bd.osim.ro/cgi-bin/invsearch8
Description EN	The claimed fertilizer comprises 4.4217.76 g/l total nitrogen, of which 0.040.18 g/l ammonia nitrogen, 0.0010.01 g/l phosphorus pentoxide as organic phosphorus, 0.018.57 g/l potassium oxide, 22.1998.12 g/l collagen hydrolysate, 0.323.01 g/l iron, 0.121.02 g/l zinc, 0.141.02 g/l copper, 0.240.51g/l boron, 0.172.31 g/l magnesium, 0.140.667 g/l manganese, 4.0829.59 g/l SO ₃

having a pH between 5.4...6.8. The claimed method consists in spraying the fertilizer on the plants as a 0.25...2% aqueous solution, in an amount of 250...1500 l/ha, depending on the crop and the vegetation stages of plants.

Class

3

RO.146.	
Title EN	Complex fertilizer with humic substances and method of application
Authors	Sîrbu Carmen Eugenia, Cioroianu Traian Mihai, Dumitru Mihail
Institution	National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest
Patent	Brevet: RO 129938 B1/2016, indexat Web of Science cu nr. 2015-103808 (WOB – Derwent), http://bd.osim.ro/cgi-bin/invsearch8 The claimed fortilizer comprises 152.2, 271.8, c/l, total
Description EN Class	The clained fertilizer comprises $132.2271.8$ g/1 total nitrogen, of which $139.4147.2$ g/l as amide, $6.266.9$ g/l as ammonia and 065.5 g/l nitrate, 1035 g/l phosphorus pentoxide, 540 g/l potassium oxide, the microelements iron, copper, zinc, magnesium, manganese, boron, sulphur as SO ₃ in a concentration of $5.528.3$ g/l and $12.822.7$ g/l organic substances of which 3.310 g/l humic substances. The claimed method consists in that the product is administered as an aqueous solution of a concentration of 0.110% in an amount of 20010.000 l/ha, in 23 treatments, depending on the process of foliar or radicular fertilization, the crop type and the plant vegetative stage, and in a dosage of 50300 l/ha at the radicular application by incorporation into the soil. 3
RO.147.	
Title EN	Biocompost from vegetal organic wastes and animal dejections and process for preparing the same
Authors	Gabriela, Cîmpeanu Carmen Laura, Sîrbu Carmen Eugenia, Pohrib Costel, Cioroianu Traian Mihai
Institution	National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest
	NATIONAL

Patent	Brevet: RO 128371 B1/2016 The invention relates to a process for treating some organic
Description EN	wastes on individual ecological platforms. According to the invention, the process consists in collecting the animal solid and liquid wastes, and some biodegradable wastes from households into an underground fosse whereto there are added 5% zeolite, in relation to the fresh compost mass, afterwards the mass being left to ferment for minimum 2 months, wherefrom there results a compost with a content of minimum 7080% organic matter, 11.5% total nitrogen, pH of 6.5 7.
Class	3
RO.148.	
Title EN	Nutritional products used for bioremediation of polluted soils with oil products
Authors	Sîrbu Carmen Eugenia, Cioroianu Traian Mihai, Dumitru Mihail, Burtan Lavinia
Institution	National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA
Patent	Bucharest A/00570/2015
Description EN	The claimed fertilizer comprises 198.4216.5 g/l total nitrogen, of which 141.8178.8 g/l as amide, 2131,5 g/l as ammonia and 16.721.5 g/l nitrate, 28.730.1 g/l phosphorus pentoxide, 27.128.6 g/l potassium oxide, the microelements iron, copper, zinc, magnesium, manganese, boron, sulphur as SO ₃ in a concentration of 15.9320.32 g/l and 71.86106.63 g/l organic substances of which 7.812.0 g/l humic substances and pH 8.87.5. It is applied in soil in amount of 600 2000 l/ha with absorbent material and inoculum of microorganisms
Class	3
PO 140	
Title EN	Fertilizer with organic substances and method of application
Authors	Sîrbu Carmen Eugenia, Cioroianu Traian Mihai, Dumitru Mihail
Institution	National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest
	NATIONAL

Patent A/00528/24.10.2016 The claimed fertilizer comprises 0.26...15.59% total nitrogen, of which 0...13.7% as amide, 0...1.8% as ammonia and 0...0.71% nitrate, 0.39...5.48% phosphorus pentoxide, 0.81...19.28% g/l potassium oxide, the microelements iron, copper, zinc, magnesium, manganese, boron, sulphur as SO₃ in a concentration of 0...1% and 1.93....39.03% organic Description substances of the algae, alginic acid and carbohydrates, EN organic acids, cytokines, auxins, gibberellins and vitamins. The claimed method consists in that the product is administered as an aqueous solution of a concentration of 0.3...0.5% in an amount of 250...1500 l/ha, and the seed in the form of aqueous solution of $0.01 \dots 0.02\%$. 3

National Research & Development Institute in Electrical Engineering ICPE-CA

RO.150.	
Title	Planar transformer with magnetic nanofluid
Authors	PÎSLARU-DĂNESCU Lucian, POPA Marius, ILIE Cristinel-Ion, CHIHAIA Rareş-Andrei, BĂBUȚANU Corina Alice, NICOLAIE Sergiu, BUNEA Florentina, STOIAN Floriana Daniela, HOLOTESCU Sorin, MARINICĂ Oana- Maria, MOREGA Alexandru-Mihail, MOREGA Mihaela, DUMITRU Jean-Bogdan, POPA Nicolae-Călin
Institution	INCDIE ICPE-CA (National Institute for R&D in Electrical Engineering ICPE-CA)
Patent no.	Patent application a 2016 00713
Description	The planar transformer with magnetic nanofluid shows a miniaturized special construction, having a structure composed of the planar coils assembly, primary 1a and secondary ones 1b, the insulations 2 fixed with two spacers 3a and 3b, and the magnetic circuit consisting of two identical ferrite magnetic cores, symmetrical overlapped 4a and 4b, which are immersed in the magnetic nanofluid used as a liquid core. Housing assembly consists of the box 6 and the lid 7, both made by duralumin, the gasket 8 and the central screw 9, which is fixing the magnetic circuit and the planar coils with the box 6. The lid 7 contains the plate with terminals 10, the system of the magnetic nanofluid supply 11 (made by a supply nozzle, by a nozzle lid and a nozzle gasket), fixing screws 15 and four location screws. Applications: - harvesting energy; - high efficiency DC/DC converters - flayback and forward type; - separators transformers destined for electronic application circuits.
Class	2

3D image of planar transformer with magnetic nanofluid & Planar transformer with magnetic nanofluid - final product

RO.151.

- TitleSelf-protector overhead electric conductor at the deposits
of frost and ice for high voltage lines
- Palii Liviu-Sorin, Kappel Wilhelm, Codescu Mirela-Maria,AuthorsPătroi Eros-Alexandru, Iorga Alexandru, Ionescu Ion,
Racovițan Irina

INCDIE ICPE-CA (National Institute for R&D in Institution Electrical Engineering ICPE-CA), Bucharest, ROMANIA

Patent no. Decision granted patent 2017 The multifunctional alloy newly created for this purpose, characterized through thermo sensitive magnetic predetermined and reversible properties. without hysterezis, and without transformations of the crystalline structure is using the electromagnetic dissipated field by the operating transportation conductor EE-HVL with the intrinsic property of self-protection at the frost / ice deposits and which retains all other identical structural and use characteristics with those of the standard conductors used today.

The commutation yes / no to extra calories that ensure the undeposition of frost/ice on the aerial conductor is achieved by prestable and reverse modification of thermo sensitive properties of the multifunctional alloy wire type according ambient temperature, this extra calorie decreased gradually with increasing of the temperature

Description t

For positive ambient temperatures there is no supplementary thermal / caloric intake.

Ensures the self-protection at frost / ice deposits on the electricity aerial transport lines, without requiring additional energy consumption, without intervention of control (human or automatic) with no adverse ecological effects.

It completely eliminates today's practices, cumbersome and uncertain, used in removing the frost / ice which is deposited on the aerial electricity transport conductors, in the areas with cold, severe climate. (e.g. Romania)

Ensures high energetic security, virtually eliminating the EE-HVL transportation relays damage caused by the supplementary mechanical burden due to deposition of frost / ice on these conductors.

Class

2



RO.152.	
Title	Hydro power unit used for hydraulic energy conversion extracted from water streams
Authors	Mihăiescu Gheorghe Mihai, Popescu Mihail, Nicolaie Sergiu, Oprina Gabriela, Chiriță Ionel, Tănase Nicolae, Chihaia Rareș-Andrei, Mituleț Lucia-Andreea, Nedelcu Adrian
Institution	INCDIE ICPE-CA (National Institute for R&D in Electrical Engineering ICPE (A) Purchased
Institution	Electrical Engineering ICFE-CA), Ducharest, ROMANIA
Patent no.	Patent application No. 00865/2012 The invention relates to a hydropower unit used for the
	conversion of hydraulic energy extracted from water streams. The equipment provides increased voltage and is characterized by a reduced size of the electric generator due
	to the high rotational speed, obtained by using counter
	rotating hydrokinetic turbines.
ъ : /:	Applications:
Description	• Submerged kinetic turbines;
	• Hydraunc energy conversion units for placement on watercourses with relatively low flow speed.

Note: The technical solution with two counter rotating turbines can be also applied in the conversion of wind energy, having the same operational and constructive advantages (photo image).

Class

2



RO.153.	
Title	Sputtering targets and thin films made of silver doped zinc oxide antimicrobial nanopowders and process for
Authors	preparing the same Lungu Magdalena-Valentina ^a , Pătroi Delia ^a , Grigore Florentina ^a , Lucaci Mariana ^a , Tălpeanu Dorinel ^a , Tsakiris Violeta ^a , Mitrea Sorina Adriana ^a , Brătulescu Alexandra ^a , Cîrstea Cristiana Diana ^a , Stancu Nicolae ^a , Marinescu Virgil ^a , Sobetkii Arcadie ^b , Sobetkii A. Arcadii ^b , Chifiriuc Mariana- Carmen ^c , Popa Marcela ^c ^a National Institute for R&D in Electrical Engineering
Institution	ICPE-CA Bucharest (INCDIE ICPE-CA), Romania ^b MGM STAR CONSTRUCT SRL Bucharest, Romania ^c University of Bucharest Faculty of Biology Romania
Patnet	Patent application No. a 2015 00605/20.08.2015
Description	Sputtering targets, according to the invention are made of antimicrobial nanopowders of ZnO doped with 02.8 wt.% Ag nanoparticles (Ag NPs). The process consists in spark plasma sintering (SPS) in vacuum of the nanopowders at a temperature of 600750°C for 530 minutes and pressing pressure of 3050 MPa. The obtained targets have a disk shape with diameter of 50.8±0.1 mm and height of 3±0.1 mm, density of 4.85.5 g/cm ³ , Vickers microhardness HV2/15 of 102280, Young modulus of 3087 GPa, elastic contact stiffness of 5.128.58 N/µm and thermal conductivity of 1776 W/(mK). Technological demonstration showed that the targets are sintered qualitatively, have mechanical resistance and sufficient heat transfer to the power used at depositions by radiofrequency (RF) magnetron sputtering on stainless steel substrate, resulting antimicrobial nanostructured coatings of thin films type with thickness of 2001000 nm. Advantages: manufacturing high purity, homogeneous and dense crack free sputtering targets; low duration for materials processing, maintaining the chemical composition and particle size of the starting nanopowders; cost effectiveness, very good behavior at technological demonstration for manufacturing antimicrobial thin films deposited on stainless steel substrate by RF magnetron sputtering. Applications: Sputtering targets made of Ag doped ZnO

NATIONAL 406

nanopowders are used in medical applications for antimicrobial functionalization of critical stainless steel surgical instruments (scalpel blades, knives, forceps and scissors) with antimicrobial nanostructured coatings.

Acknowledgement: This work was accomplished through the PNII Program Partnerships in Priority Areas, Project PNII-PT-PCCA-2013-4-1292, Contract 215/2014, financially supported by UEFISCDI, Romanian Ministry of National Education and co-supported by MGM STAR CONSTRUCT SRL.

Class

4. Medicine-Health Care-Cosmetics





Sputtering targets manufactured by SPS process: (a) ZnO NPs, (b) Ag-ZnO with 0.54 % Ag NPs.

Thin films of Ag-ZnO with 0.8±0.07 % Ag NPs and thickness of 500 nm.

National R&D Institute for Cryogenic and Isotope Technologies - Ramnicu Valcea

RO.154.

Mnufacturing process of the carbon adsorbent derived from Title fly ash and carbon adsorbent thereof Authors E. David: I.Stefanescu National research Institute of Cryogenics & Isotope Institution Technologies-ICSI Rm.Valcea RO 130831/30.12.2016 Patent no. The invention relates to a process for obtaining of a sorbent derived from unburned carbon fraction, contained in fly ash and of the carbon sorbent obtained, with has the surface chemically modified to increase its capacity to capture CO_2 that can be used in control processes of environmental pollution by gas emissions resulted from fuel combustion or Description more widely in gas-solid separation processes.

Applications : In environmental protection; waste recycling; production of clean energy; production of selective materials ; gas separation and purification technologies; soil amendaments.



Class 5: Industrial and laboratory equipment

Research-Development Institute for Plant Protection Bucharest

RO.156.	
Title	Integrated method based on seed treatment with bacterial bio-products and chemicals for suppressing tomato phytopathogenic fungi
Authors	Constantinescu Florica, Sicuia Oana-Alina, Dinu Sorina, Oancea Florin
Institution	Research – Development Institute for Plant Protection
Patent no.	Patent application No. 00971/2012
Description	This patent application relates to a new horticultural method for phytopathogenic fungal control of tomato seedling against <i>Fusarium oxysporum</i> f.sp. <i>radicis lycopersici</i> infections. The novelty of the invention lies in the simultaneous use of bio-based bacterial strains, and specific chemical fungicides in low dose for fungal phytopathogenic control. This method is recommended for tomato seedlings protection crown and root rot, in order to reduce at half the chemical dose needed in seedlings production by supplementing the treatment with specific strains of biocontrol bacteria.
Class	3

RO.157.

Title	<i>Bacillus amyloliquefaciens</i> strain with potential use as agroinoculant for growth substrate with high phytosanitary risks, or soil improver in PHC contaminated lands.
Authors	Sicuia Oana-Alina, Constantinescu Florica, Dinu Sorina, Oancea Florin
Institution	Research – Development Institute for Plant Protection
Patent no.	Patent application No. 00972/2012
Description	This patent application refers to a new selected bacterial strain of <i>Bacillus amyloliquefaciens</i> with potential use as agroinoculant in the growth substrate with high phytosanitary risks, or as soil improver in PHC contaminated lands. These <i>Bacillus amyloliquefaciens</i> OS17 strain, with the deposit no. NCAIM (P) B 001415, has antifungal activity against soil-borne phytopathogenic fungi involved in seedlings dumping-off, and plant pathogens infecting horticultural products before harvesting. Moreover this bacterial strain is able to emulsify petroleum hydrocarbon NATIONAL

(PHC) contaminants. Therefore, *Bacillus amyloliquefaciens* OS17 strain is recommended to be used as agroinoculant to prevent plants from fungal infections, or as soil improver in *PHC contaminated lands*.

Class



RO.158.

Title	Beauveria brongniartii pathogenic strain for the
11110	European cockchafer, <i>Melolontha melolontha</i> L.
Authors	Ana-Cristina Fătu, Ana-Maria Andrei, Fătu Viorel,
1 utiloi 5	Cardaș Gabriel, Ciornei Constantin
Institution	Research-Development Institute for Plant Protection,
monution	Bucharest, Romania
Patent no.	RO 127712 B1
Description	The present invention refers to a biological control agent against European cockchafer, the most dangerous pest in forest nurseries. Is about <i>B. brongniartii</i> strain (BbgMm1a/09), isolated in Romania from a natural outbreak; the strain was recognized and allowed to be stored at NCAIM, Hungary [(P) F 001385]. The problem solved by the invention consists in that BbgMm1a/09 strain, selected on biotechnological and insecticidal potential, represents the only autochthonous source of biological material for obtaining effective bioinsecticides for <i>M. melolontha</i> control in Romanian nurseries.
Class	3
RO.159.	
Title	Microbiologically enrichment procedure of some organic fertilizers to prevent grape phylloxera infestation

Authors Ana-Maria Andrei, Ana-Cristina Fătu, Lidia Fîciu, Maria Gheorghe, Silvia Cazacu

Research-Development Institute for Plant Protection, Institution **Bucharest**, Romania

- RO 127797 B1 Patent no. The invention relates to a process for obtaining some biological products of phytosanitary use with complex action: fertilizing, insecticide, nematicide and soil repressive effect against grape phylloxera (Daktulosphaira vitifoliae) in
- vineyards; the obtaining procedure implies the colonization Description of selected Beauveria bassiana and B. brongniartii strains in some organic fertilizers. Beauveria bassiana and B. brongniartii are soil fungi, used on a commercial scale for obtaining bio-insecticides. 3

Class

RO.160.

Title	Foliage natural plant protection product based on essential oil and diatomaceous earth and process for preparing thereof
Authors	Fătu Viorel, Ana-Cristina Fătu, Milica Dima
Institution	Research-Development Institute for Plant Protection, Bucharest, Romania
Patent no.	Patent application No 00757/2016
Description	The invention relates to a foliage natural plant protection product with a repellent, deterrent, fungistatic and insecticide effect, for protection against intense solar radiation, as well as the process for preparing thereof; the product includes essential oils (sweet basil, pine, rosemary, mint, oregano), diatomaceous earth powder, agar, gelatin and water.

Class

3

National Institute for Research and Development in Environmental Protection - INCDPM

RO.161.	
Title	SELECTIVE RECOVERY PROCESS OF CHROMIUM, IRON AND ZINC FROM METAL PLATING SLUDGES BY OBTAINING USEFUL COMPOUNDS
Authors	Maria-Iuliana MARCUS, Mihaela Andreea MITIU, Ileana MITIU, György DEÁK, Alexandru Anton IVANOV
Institution	National Institute for Research and Development in
Patent no.	A/00931/2016
Description	 The invention is a process which consists in the selective recovery of chromium (III, VI), iron (III) and zinc (II) from sludges obtained from electroplating wastewater treatment or from other sludges with similar structure. The chromium recovery is performed by the sludge oxidation in a strong alkaline medium at pH = 12.0-12.5 with sodium hypochlorite and sodium hydroxide followed by steps of filtration, washing, precipitation or reduction and precipitation of chromium (III and VI) from the chromate solution obtained. The precipitates are filtered, washed and dried in order to obtain yellow and green chromium pigments. The iron recovery is performed from the cake remaining after the chromium recovery, by solubilization with sulfuric acid at pH=1-1.5, followed by oxidation with hydrogen peroxide of divalent iron to trivalent iron and its precipitation at pH= 3.0-3.5, with sodium hydroxide. The precipitate is filtered, washed and dried in order to obtain brown iron pigment. The zinc is recovered as zinc hydroxide by precipitation with sodium hydroxide from the filtered solution after the iron recovery, by increasing the pH value from 3.5 to 9-9.5. Extraction efficiency was: 84.20% for Cr; 98.50% for Fe; 85.74% for Zn. Advantages: The process allows the concomitant oxidation of chromium, iron and cyanide traces adsorbed onto the sludge and which are present in the old electroplating sludge deposited in decanters and which require neutralization in order to reduce the sludge hazard; It is a technical economically viable solution; metal ions recovery are performed by using classical chemical reagents commonly used in industrial wastewater and the process does not require an expensive installation The process lead to a decrease of useful substances losses through recovery of metal hydroxide/salts from sludge, simultaneously with a significant reduction of hazardous sludge

quantities. 7 Galvanic sludge Harmless cake with metal traces Pigments and raw material: Green pigment Cr(OH)₃ Yellow pigment PbCrO₄ Brown pigment Raw material Fe(OH)3 Zn(OH), RO.162. TECHNICAL SOLUTIONS FOR PROTECTING THE

	TECHNICAL SOLUTIONS FOR TROTECTING THE
Title	WETLANDS' ECOSYSTEMS AND POPULATION
	AGAINST FLOODS
	Lucian Augustin LASLO, Monica Silvia MATEI, Mădălina
Authors	Georgiana BOBOC, Nicu CIOBOTARU, Marius Constantin
	RAISCHI, George POTERAŞ, György DEÁK
T	National Institute for Research and Development in
Institution	Environmental Protection
Patent no.	A/00759/2016
Description	The invention relates to a solution that provides flood protection of settlements located on the shores of water bodies, while maintaining the ecological status of wetlands. The novelty of the proposed solution lies in a combination of several elements aiming to protect the population against flood risks and the ecological status of the wetland area, by ensuring its connectivity with the main water course during the periods of normal water level, restricting the connectivity only during periods when high or low water levels are recorded. The technological solution consists of an assembly composed of a protective dam which ensures connectivity to the river through viaducts provided with gates, pumping stations to control the water levels, monitoring stations type DKTB performing online registration of water levels and quality, and a control and alarming system. Based on the functioning of the solution's components it results 3 cases: a. low water level: water pumped to wetland during water
	NATIONAL
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defficit periods;

- b. normal water level: gates are opened;
- c. high water level: gates are closed and water is pumped from the wetland area if necessary, to evacuate the discharges of tributary rivers.

The functioning of the gates and pumping stations is controlled related to the information transmitted by the alarming and command system, based on DKTB monitoring stations type DKTB. This protective measure have the advantage of being environmentally friendly, considering its proactive principles:

- ensures hydrological connectivity,;
- contributes to sustainable development;
- 1. limits climate change effects on environment.





Normal water levels on the Danube river - opened gates



High water levels on the Danube river - closed gates

RO.163.

Title

OFF-SHORE COMPLEX FOR RENEWABLE ENERGY PRODUCTION

AuthorsGeorge POTERAȘ, György DEÁK, Andreea-Mihaela
MONCEA, Ionel NEACȘU, Natalia Simona RAISCHIInstitutionNational Institute for Research and Development in
Environmental ProtectionPatent no.A/00397/2016

The invention, which can be applied in off-shore areas, uses in the same system greater natural energy resources to produce electricity. The system couples two cylindrical modules with different diameter: an aerial module that captures wind and solar power and a submerged module which captures hydropower.

Description The aerial module has slots and deflectors with photovoltaic cells, which focus and direct the airflow to the blades located on the vertical axis. The submerged module has slots which direct the hydraulic power to the blades, on the same axis. The axis is provided with a movement decoupling system - the modules can operate independently.

The novelty of the off-shore complex:

• It is provided with slots that, focus the air/water currents to the

NATIONAL

blades located on the central axis:

- It contains deflectors that direct the airflow and can be automatically oriented so as to allow an optimal system operation, according to the climatic conditions. Also, the deflectors are equipped with photovoltaic cells in order to capture the solar energy.
- It integrates three natural energy production sources, the system operation is continuous, day and night with a high efficiency regardless of the environmental conditions.
- The coupling element always ensures the constant movement of the blades.
- It operates independently of the water level, being fitted with a rack that can slide.
- The system's vertical development involves the set-up of small areas, with little impact on the aquatic environment.
- It presents the highest efficiency per area unit.

Class



(1) Aerial module; (2) Submerged module; (3) Coupling for rotational movement multiplication; (4) Technological area 1; (5) Slot type 1; (6) Deflectors; (7) Photovoltaic cells; (8) Technological area 2; (9) Slot type 2; (10) Fixing device; (11) Rack; (12) Box with axial bearings; (13) Box with pressure bearings; (14) Propeller blades type 1; (15) Propeller blades type 2; (16) Central axis; (17) Clamping system: propeller blades - central axis.

RO.164.

Title

COMPLEX FOR RENEWABLE ENERGY **PRODUCTION IN RIVERS**

George POTERAS, György DEÁK, Alina-Florina Authors NICOLAE, Ionel NEACSU, Natalia Simona RAISCHI National Institute for Research and Development in Institution **Environmental Protection** A/00580/2016

Patent no.

The invention uses in the same system three natural resources to produce electricity, being composed by two cylindrical modules, Description with the same diameter: a vertical aerial module that captures wind and solar power and a horizontally partially submerged module

which captures hydropower.

The aerial module has a conical solar panel and slots which direct through deflectors (with photovoltaic cells) the airflow to the blades on the vertical axis. The partially submerged module has slots which direct the water current to the paddles on the horizontal axis (coupled with the vertical axis). The system is set on a floating platform.

The complex, which can be applied in water courses, sets itself apart from the other electric power production systems as follows:

• It can have various sizes and it can be fixed or mobile.

• This system doesn't depend on weather conditions, the water level variation or the watercourse morphology.

• The two modules can operate simultaneously or alternatively.

• Besides the photovoltaic cells fitted on deflectors, for the capitalization of solar energy, the system includes a conical solar panel.

The main expected results from implementing this invention are:

• Obtaining electricity by using the hydraulic, wind and solar energy into an integrated system, having a low impact on the environment.

• It is proposed as a project of the Danube Transnational Program.

• It can ensure electricity demand in the disadvantaged areas, being continuously operational day and night with high efficiency.

• The floating platform provides both a technological and research place.



(1) Aerial module; (2) Partially submerged module; (3) Vertical axis of the aerial module; (4) Horizontal axis of the partially submerged module; (5) Coupling for multiplier and transmission of the rotational movement; (6) Trapezoidal blades; (7) Aerial module slots; (8) Deflectors; (9) Photovoltaic cells; (10) Conical solar panel; (11) Rectangular paddles; (12) Partially submerged module slots; (13) Floating platform; (14) Box with axial bearings

RO.165.

Description

Research on the influence of human activities on priority
hazardous substances contamination in biota within aquatic
ecosystems located in crowded urban areas

Authors P. Ionescu, E. Marcu, A.-M Anghel, C. Tociu, M. Ilie

Institution National Institute for Research & Development in Environmental Protection

The large number of contaminants reaching the aquatic environment, affecting the ecosystem has led to a lot of controversy on the environmental risk assessment and water quality management. In this context, the objective of the project was to evaluate the concentration level of priority hazardous substances (heavy metals - HM) in the biotic and abiotic and identification the possible risks posed by their presence on human health. The case study was conducted on three bodies of water considered representative in terms of interest to local authorities for the environmental protection and for the management factors involved in the work area, respectively lakes Mogosoaia, Herastrau and Pantelimon II.

Samples of water, sediment and biota have been collected and processed, and the obtained values were reported according to the national legislation. The distribution of values (Cd, Pb and Hg) reported in the literature in different species of fish taken from the water on Romanian territory has been performed.

The bioaccumulation of HM in the biota samples was quantified by means of a bioaccumulation factor.

To estimate potential risks to human health caused by exposure to HM the following have been considered: estimation of average daily intake of heavy metals (EDI) by eating the fish species studied; target hazard quotients (THQ) and multiple risk assessment of the state of human health by simultaneous exposure to multiple contaminants - Hazard Index (HI).

Regular biomonitoring of HM contamination in fish is essential to prevent excessive accumulation of HM in the human food chain.



Class

Distribution of the reported values in the scientific literature for Cd, Hg and Pb in different species at national level

RO.166.	
Title	Study on the impact of overhead power lines, high voltage and very high voltage upon air quality near of residential areas, protected areas and migration corridors of birds
Authors	Mitiu Mihaela Andreea, Cociorva Danut, Raischi Natalia Simona, Mincu Mariana
Institution	National Institute for Research and Development in Environmental Protection – INCDPM
Description	High voltage electrical installations made up mainly of overhead lines and transformation substations and connection are installations with significant impact on the environment due to both the complexity of technical installations as well as the occupied land surfaces and lengths in the tens or even hundreds of kilometers, usually on territory of several counties. During the LEA operation, in certain special atmospheric conditions as high relative humidity, producing electric discharge phenomena limited around conductors. Overhead power lines LEA can be associated with the following types of environmental impact: visual impact, acoustic pollution and electromagnetic on the population and biodiversity in the immediate vicinity, the physical impact on the birds that pass through the location areas and air pollution due to emissions of NO _x and O ₃ . The project aimed to identify the impact of the overhead power lines on air quality in sensitive areas (residential areas, protected areas, migration corridors of bird) by determining the level of pollution due to emissions of O ₃ and NO _x generated by them and comparing the values obtained with the limits laid down by the legislation in force and the identification of the magnetic field due to the functioning of LEA. The result of the project may be made available to stakeholders (population, environmental authorities, equipment designers and electricity distribution networks, institutions with competences in the field of public health, custodians of protected areas, etc.) of the information relating to the results achieved in the measurements campaigns on the pollutants emissions due to LEA.

RO.167.	
	Research on the efficiency of green technology that
Title	uses solar energy using the principles of sustainable
Authors	development Sirbu Cristina, Dumitru Diana, Olteanu Marius, Cociorva Danut, Mitiu Mihaela Andreea
Institution	National Institute for Research and Development in
Description	Environmental Protection – INCDPM Solar energy is virtually inexhaustible. It's a renewables and clean, being the cleanest form of energy on Earth. Solar panels are used for capturing the Sun's rays; do not produce any pollution during operation, unlike thermal nuclear reactors and installations. Nuclear reactors have problems related to the discharge of nuclear waste, and the problem is that thermal installations produce harmful smoke and ash. This energy is "clean", meaning that there are no emissions of CO_2 or other pollutants and "sources" in the sense that it is not dependent on substances that need thousands or millions of years to form through natural processes. Production of solar energy by solar panels or other means using solar energy is free of noise, unlike other methods. Solar panels are becoming useful in situations where there are no local electricity networks, such as in space. Unlike oil and coal reserves, solar energy is available in all areas of the planet, not concentrated in one part. The project aims at determining the main factors that influence the aging of photovoltaic panels in order to assess their effectiveness and sustainability in terms of energy, in order to establish the optimum conditions of photovoltaic panels location, being a contribution to the attainment of the targets in terms of growth using renewable sources of energy.

RO.168.

Title Researches on setting up methods for abatement of hazardousness of different industrial hazardous waste, towards safe landfilling for environment and human health

Authors Maria-Iuliana Marcus, Mihaela Mitiu, Petra Ionescu, Simona Raischi

Institution National Institute for Research and Development in Environmental Protection

The need to decrease the amount of industrial waste, impose a clear strategy of reuse, to the detriment of landfilling under hazardous conditions for the environment and human health. most of the times. Some hazardous waste, such as galvanic sludge, has drawn the attention in the waste management, proving to be a great source of valuable metals. The research has been focused on a process regarding the selective recovery of heavy metals such as Cr (VI, III), Fe (III, II) and Zn (II) from galvanic sludge in order to obtain economically valuable compounds: green/yellow chromium pigments, brown iron pigment and zinc hydroxide as raw material. The studied process is a technical economically viable solution: metals recovery is performed by using chemical reagents Description commonly used in industrial wastewater and the process does not require an expensive installation. Also, the process lead to a decrease of useful substances losses through recovery of metal hydroxides/salts from sludge. simultaneously with a significant reduction of hazardous sludge quantities. Research has been also focused on the possibility of obtaining coloured ceramic products through the use of various amounts of chromium pigments and their addition in vitreous compositions for obtaining colored matte or glossy glazes. Potential beneficiaries of results are: companies involved in waste industry and waste management; designers in technologies and industrial waste treatment facilities; companies involved in the building materials industry (e.g. ceramics, glass).

RO.169.		
Title	Research on improving the conservation status of sturgeon populations from the natural habitats existing on the Lower Danube River using ultrasonic telemetry methods	
Authors	Marius Constantin RAISCHI, Adrian-Ștefan ZAMFIR, Alexandru CRISTEA, György DEÁK, Tiberius DĂNĂLACHE, Alin BĂDILIȚĂ, Simona RAISCHI, Ionuț PETRACHE, Bogdan URIȚESCU	
Institution	The National Institute for Research and Development in Environmental Protection	
Description	The overall objective of the study was to obtain new information regarding the behavior of sturgeon species that migrate from the Black Sea to the Danube for reproduction. For this, sturgeons were tagged with ultrasonic tags inserted through surgery, and telemetry monitoring stations were installed in the water flow in certain key points, using systems developed by the institute. The tagged sturgeon monitoring was made using the two systems developed and patented by experts INCDPM Bucharest: DKTB fixed monitoring system and the DKMR-01T mobile monitoring system. Active monitoring was performed using VR100 mobile receptor, which is placed in a watercraft and follows in real-time the ultrasonic tagged specimens. The results are unique regarding sturgeon migration monitoring and represents a baseline to future research which will focus on the sturgeons behavior in the wild.	

RO.170.	
Title	Research regarding the diagnosis of alkali-aggregate reaction (AAR) in hydraulic structures through advanced investigation
Authors	George POTERAȘ, Alina-Florina NICOLAE, Diana-Florina DUMITRU, Andreea Mihaela MONCEA, Marius Viorel OLTEANU, Monica Silvia MATEI
Institution	National Institute for Research and Development in Environmental Protection
Description	This project was proposed to implement a radiography of the level and the forms of alkali-aggregate reaction (AAR)
	NATIONAL
	422

manifestation in Romania.

Besides presenting the results obtained by applying conventional methods of aggregates reactivity verification in the laboratory (chemical method and mortar bars method), the reactivity potential of aggregates was evaluated from gravel plants and quarry that have been used in Romania to prepare hydro concrete.

On the other hand, there were presented case studies for concrete hydraulic structures that are susceptible of alkaliaggregate reaction (AAR).

The investigations were conducted by using modern techniques such as scanning electron microscopy (SEM) - images of secondary electrons (SE) coupled with spectroscopic analysis X-ray dispersive energy (EDX) and images of electron backscatter (BSE) or X-ray diffraction (XRD) - to determine the mineralogy of the silica gel.

A synthesis concerning the modalities for manifestation of the cementitious matrix-aggregate incompatibility was made, comparing the results obtained from this project with various research results reported in the specialized literature.

The main distinguishing features that can recognized with certainty in the alkali-aggregate reaction (AAR) were highlighted, elaborating methods regarding the conduction of the investigations focused on the structures affected by this reaction.

The obtained results are the basis for the development of restoring programs for affected concrete structures.



RO.171.

- TitleStudy regarding the impact of the emissions of suspended
particles on the environment and human health
Natalia Raischi, Cristina Balaceanu, Irina Ciobotaru,
Georgeta Tudor
- Institution National Institute for Research and Development in Environmental Protection

The research regards the identification and the evaluation of the environmental impact of atmospheric pollution sources present in the area of the waste dump from Moldova Nouă. For a better assessment of air quality, the specific objectives of the projects were: the monitoring of the suspended particle concentrations, the modelling of pollutant dispersion within the considered area and the comparison of the modelled and the measured concentrations. Results based on the analysis of the degree of pollution were obtained and a Gaussian model for the dispersion of atmospheric pollutants as well as the determination of the pollutants concentrations using a mobile auto-laboratory and DESAGA active sampling

Description mobile auto-laboratory and DESAGA active sampling devices and Low volume sampler-type were employed. Considering the stringent and largely debated issue of transborder pollution within the Moldova Nouă area which affects both Romania and Serbia, the main pollutants PM_{10} and TSP were monitored in three main sampling points, in different time periods and weather conditions. After the analysis of the izoconcentrations, one has noticed an exceeding of the limit value (50 µg/m³, as stipulated by Law 104/2011) in the most part of the area, with registered values of up to 200 µg/m³ in the case of PM_{10} , depending on the weather conditions.

RO.172.	
	Project MEVAS 48N/2016 - Research on the impact of pollutants
Title	on aquatic ecosystems
THE	Phase 16040302.1/2016 - Characterization of surface water quality.
	Case studies
	Mihaela Ilie, Florica Marinescu, Gina Ghiță, Alexandru Ivanov,
Authors	Ana-Maria Anghel, Carmen Tociu, Bianca Petculescu, Georgeta
	Iudor, Bogdan Uritescu, Catalin Cirstinolu
Institution	Protection (INCDPM)
	The project has as main objectives the development of
	procedures/methods for integrated pollutant investigation at aquatic
	ecosystem level especially for emerging pollutants that may
	present a significant risk and require regulation based on their
	potential eco-toxicological effects, as well as optimizing and
	improving the monitoring activity and analysis methods for
	assessing the pollution degree of aquatic ecosystems.
	Directive 2013/39/EU, which amending Directives 2000/60/EC and
	2008/105/EC regarding priority substances for water policy domain,
	provides new hazardous substances to be monitored by each
	Member State starting with 2021, Romania having to align to the
	new requirements. In this regard, it is important for institutions
	designated for monitoring water quality to have available analytical
	tools for more precise measurements, with high accuracy and
	In the first stage of the project has been developed a method to
Description	identify emerging pollutants (pharmaceuticals) from drinking water
Description	samples and waste water samples using LIHPLC Thermo Scientific
	Equan Max Plus TSO Quantiva equipment The screening of
	organic micro-pollutants using analytical methods developed and
	tested by UHPLC (high performance liquid chromatography)
	highlighted the presence in drinking water samples taken from the
	treatment plants of Urziceni, Fundulea, Călărași and Oltenița of the
	following pharmaceutical chemicals from benzodiazepine class and
	its metabolites: 2-Hydroxyethylflurazepam, 7-Aminoclonazepam,
	7-Aminoflunitrazepam-D7, 7-Aminonitrazepam, alpha-
	Hydroxyalprazolam, alpha-Hydroxyalprazolam-D5, alpha-
	nyuloxyulazolam, alpna-nyuloxytrlazolam-D4 Desalladfurazenam Diazenam Lorazenam D4 Mordiazenam
	Nordiazenam-D5 Ovazenam Ovazenam-D5 Tamazenam
	Temazenam-D5 Compounds like 7-aminoflunitrazenam and
	lorazenam were tested but they were not identified in the analyzed
	samples.
Class	1

RO. 173.	
Title Research on phosphorus release fr	om lake sediments
Irina-Elena Ciobotaru, Ecaterina M	larcu, Alexandru Anton
Authors Ivanov, Petra Ionescu, Carmen	Tociu, Cristina Maria,
György Deák	
National Institute for Research	and Development in
Institution Environmental Protection	-
The research regards the effect of or	xic/anoxic conditions on
phosphorus release from lake se	diments by means of
experimental installation/setup con	nsisting of water and
sediment columns subjected to oxic	and anoxic conditions.
This is to our knowledge, the fi	rst study conducted in
Romania regarding the phosphorus	release from sediments.
The oxic and anoxic procedures are	described and the results
are presented. Results show that ano	oxic conditions may lead
Patent no. to phosphorus release from the sedu	ments as the shift of the
oxic/anoxic conditions resulted in ar	increase of phosphorus
content in water in the newly develor	ped anoxic medium
The research may be regarded as a	first step towards lake
remediation as the understanding of	f the processes that take
nlace within the lake more specific	ally the nutrient release
from sediments provides inform	ation of a paramount
importance for the process of sele	cting the best available
remediation technique	eting the best available
Description	

RO.174.	
	THE COMBINATED PROCESS OF Fe(II, III)
Title	REMOVAL FROM POSTOXIDATION PESTICIDES
	AQUEOUS SYSTEMS
	Ligia STOICA ¹ , Carolina CONSTANTIN ¹ , Margareta
Authors	NICOLAU ² , Ignes NITOI ²
	University POLITEHNICA of Bucharest, Faculty of
Institution	Applied Chemistry and Materials Science, 1-4 Polizu
Description	Street, Bucharest, Romania
	This innovation relates to a method of precipitation-flotation
	for removing Fe (II, III) of aqueous systems resulting from
	Fenton oxidation process and/or photo - Fenton
	organochlorine monocyclic persistent pesticides, such as
	NATIONAL
	100

hexachlorocyclohexane (Σ HCH) in general and lindane (γ -HCH) in particular. The proposed procedure allows the enclosed content of Fe(II, III) within the limits of Romanian legislation in order to discharge in natural receptors (5.0 mg Fe \cdot L⁻¹ expressed as Fe total ionic under NTPA 001/2005) accompanying with the recovery of them.

Class

RO.175.

Title	Study on the methods of obtaining and characterizing
	nanomaterials used in environmental protection
Authors	Moncea Mihaela-Andreea, Matei Monica, Dumitru Florina Diana, Baraitaru Andreea-Georgiana
Institution	National Institute for Research and Development in Environmental Protection
Description	Mesoporous silica is a form of SiO2 with relatively recent use in the field of nanomaterials for environmental protection. Given the hexagonal mesoporous silica arrangement, characterized by a high specific surface, as well as very well defined shapes and dimensions of its pores, the interest in its absorbent and catalytic properties has increased. Thus, starting from the size of the water treatment plants, the production and maintenance cost and the efficiency of treatment, there are certain disadvantages that could disappear with the introduction of a thin mesoporous silica filter, with a depreciable production price with its refreshment capability, as well as with higher efficiency compared to usual methods. Mesoporous silica was synthesized by the hydrothermal method, while the chemical composition and microstructural properties of the obtained materials were determined by X- ray fluorescence (XRF), electronic scanning microscopy (SEM) and X-ray diffraction (XRD).
Class	

National Institute for Research-Development and Testing in Electrical Engineering – ICMET Craiova

RO.176.		
Title	Broadband transformer with variable sensitivity	
The	depending on the frequency of the measured signal	
Authors	ANDREI MARINESCU [*] , IONEL DUMBRAVA [*] ,	
	¹ National Institute for Research-Development and	
Institution	Testing in Electrical Engineering– ICMET CRAIOVA	
	² University of Craiova	
Patent no.	Patent application No. A/00929 / 28.11.2016	
	The patent refers to achieving a broadband current	
	transformer whose sensitivity may change automatically	
	depending on the frequency of the measured current. The	
	depending on frequency of the current to be measured	
	according to the paper has a circuit with the impedance	
	variable depending on the frequency, connected in parallel to	
Description	one of the output voltage of the transformer, which reduces	
	its sensitivity for a predetermined low frequency range,	
	designed so that its nominal sensitivity to high frequencies in	
	the measurement range of transformer remained unchanged.	
	Applications: Power electronics applications particle accelerators	
	technique electrical tests technique electromagnetic	
	compatibility.	
Class	5	
	1 9	
	3 Z(f)	

1 - Magnetic circuit;

2 - The secondary winding;

2

4

- 3 Integrated load resistor;
- 4 The primary winding;
- 5 Variable-frequency impedance;
- 6, 8 Coaxial measuring cable;
- 7 BNC T adapter;

5

9 - Measuring instrument.

RO.177.	
Title	Invention Title: Method and equipment for digital control of multi-motor electrical drives with braking
Authors	energy recovery, used for high capacity extraction plants ADRIAN HUREZEANU ¹ , MARCEL NICOLA ² , FLORIN VELEA ¹ CESI AUTOMATION CRAIOVA
Institution	² National Institute for Research-Development and
	Testing in Electrical Engineering– ICMET CRAIOVA
Patent no.	 Patent application No. : A 00749 / 24.10.2016 The equipment is designed for industrial multi-motor drive applications that have to synchronize the motors' speed (motors are connected through a rigid coupling) or to synchronize the motors' torque output (motors are connected through a flexible coupling). For high dynamic applications (high acceleration and high braking speeds), the resulted energy is regenerated to the industrial power grid by using an inverter that has the output synchronized to the thee-phase power grid. This means that there is no need for resistive braking units, thus eliminating all the draw-backs that braking resistors pose (excessive heating, continuity failure, value fluctuations, etc.) Advantages -driving under acceleration and braking of two to six induction motors; -electric drive using only one common DC bus; -braking energy recovery; -operation in the master-slave mode by using the vector control method; -no requirement for various transducers: motion, position, speed, etc; -achieving equal or similar input frequencies in order to maintain maximum torque in each motor; -equal or similar input frequencies in order to maintain maximum torque in each motor; -compensating current harmonics; -compensating current harmonics; -compensating reactive power or improving the form of supply voltage; -liminating the high power brake choppers and the heavy and bulky brake resistance; Applications Industrial machinery and large excavators; Conveyor units; Electric traction vehicle in urban areas (tram, metro); Railway electric traction (locomotives, EMUs); Cement mills, coal mills.
Class	2

RO.178.	
Title	Compressed air cooling equipment and device
Authors	FLORIN TEISANU, CONSTANTIN CHELAN, MARIAN DUTA, ION PATRU
Institution	National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA
Patent no.	Patent application No. A/01016/2015
Description	The freonless equipment, according to the invention consists in suction filter for the free air inside the room, two-way valve, turbo- blower or electric air compressor type blast air source, air-to-air heat exchanger, microfilter, pressure gauge, pressure valve, compressed-air cooling device based on the thermodynamic effect of expansion in centrifugal field, silencer, air disperser, depressurising valve for the enclosure undergoing cooling, microprocessor module for control. The invention, according to the proposed technical solution and the two requests has the following benefits: -converts the entire amount of $2,5\div4$ bar low pressure compressed air, into cold air with a temperatures of $5-15^{\circ}$ C below ambient; -provides air circulation inside the room, or feeds fresh air in to the room and exhausts foul air; -promotes freon-less green technology for the environment and personal health. Applications

Air conditioning, ventilation, to ensure a thermal comfort and physiological conditions inside a room/enclosure such as: living space, working space, space for technology process, vehicle cabin.



RO.179.	
Title	Rectangular aluminium bars with silver-plated copper contacts
Authors	CONSTANTIN SANDU, SERGHIE VLASE, MARIAN DUTA
Institution	National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA
Patent no.	Patent application No. RO128338 (A2) / 30.04.2013 The invention refers to rectangular aluminum bars with copper gives plated, or tip plated, contexts, for replacement of corner
Description	silver-plated or tin-plated contacts for replacement of copper uncoated silver-plated or tin-plated bars, used for passage of current. This proposal consists in replacing the copper bars for certain currents with aluminum bars with copper contacts without diminishing the properties of the copper bars by carrying out aluminum rectangular bars with copper silver-plated or tin-plated bars using the aluminum bar as a conductor support and the copper for carrying out contacts between two or more bars. The aluminum rectangular bars with tin-plated or silver-plated copper contacts, achieved through cold pressure have a series of benefits: -they have the same electrical and mechanical characteristics as the equivalent copper bars; -they weigh much less than the equivalent copper bars, providing; -an easier handling during execution and fitting; -have a lower cost price compared to the equivalent copper bars; -the aluminum bars with copper contacts can always be connected to a copper bar. Applications Due to both national and international high demand for copper, due to a reduction in resources, the price for this metal will be increasingly higher. Considering that in most cases the copper bars used in electrical contacts in the electrical engineering industry can be replaced for a certain segment by aluminum bars, the introduction of the new cold pressure welding technology is deemed desirable. This new constructive version can be implemented with low costs in low and medium voltage panels.
Class	2



RO.180.

TitleMEDIUM VOLTAGE APPARATUS IN METAL
CASES FOR SECONDARY POWER SUPPLYAuthorsSERGHIE VLASE, MARIAN DUTA
National Institute for Research-Development and Testing

- Institution in Electrical Engineering– ICMET CRAIOVA
- Patent no. Patent application No. RO128456 (A2) / 30.05.2013

The invention refers to medium voltage cells for secondary distribution of electricity fitted with a multipurpose vacuum switching device, with three positions (on, off, grounded) with solid insulation, operated with electromagnets with permanent magnets, with magnetic lock, locally or remotely controlled via an electronic module, providing for ampere rating break, overload or shortcircuit, breaking and earthing functions.

-Allow the fitting of a single multifunction vacuum switching device, which can be used both in the case of the cell fitted with the circuit breaker, and in the case of the cell fitted with mechanical load break switch, with the same cell pitch. At the same time the number of operations and interlocks between the locally or remotely controlled switching devices of the cell;

-By using the solid insulation and vacuum interrupters, the switching and disconnecting functions may be cumulated in a single chamber, thus eliminating the need to use switching equipment which is insulated or sulfur hexafluoride insulated and switched;

-It increases the reliability of the cells due to the number of operations allowed by the vacuum interrupters;

-The use of the same switching device both for switching of rated currents and for switching of overload and short circuit currents.

Applications

Substations, industrial applications, subway trains, small and medium power plants

Class

Description

2
110.1011

Title

Locally or remotely controlled apparatus in metallic case of medium voltage for primary and secondary distribution of electric energy

Authors SERGHIE VLASE, MARIAN DUTA, SEBASTIAN

POPESCU, CRISTIAN SALCEANU

Institution National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA

Patent no. Patent application No. RO129043 (A2) / 29.11.2013

The invention refers to locally or remotely controlled medium voltage metal enclosed switchgear for the primary and secondary distribution of electricity. The switchgear is fitted with multipurpose circuit breakers which provide for both interruption and separation functions and vacuum insulated earthing switches. These components provide for the same mechanical endurance at the level of vacuum circuit breaker, allowing for remote control operation of all switchgears at the same level of reliability, in order to minimize the periods of lack of power supply and to optimize the distribution of electricity to the beneficiary.

-It increases the reliability and efficiency of the primary distribution cells;

Description -Simplification of primary circuit diagrams by using a smaller number of quitabing deviaes:

smaller number of switching devices;

-Reduction of the dimensions of the cells;

-The use of solid insulation ensures the reliability of gas cells, thus eliminating the use of sulfur hexafluoride in the structure of cells and apparatus of equipment;

-Single-phase execution of vacuum switching apparatus of equipment in order to avoid short-circuit fault between phases with much greater (economic and environmental) effects than in the case of an earth fault (due to the generated short-circuit currents values);

-Using the same device as multifunctional vacuum circuit breaker or as mechanical vacuum load break switch.

2

Applications

Electrical equipment for distribution of electricity

National Institute for Research-Development for Non-ferrous and Rare Metals – IMNR

RO.182.	
	Process for the recovery of precious metals from electric
Title	and electronic equipment waste by anodic dissolution in
	ionic liquids
Authors	V. Soare, A. M. Popescu, M. Burada, D. Dumitrescu, I.
Authors	Constantin, V. Constantin, M. Buzatu, I. Neacsu, C. Donath
Institution	National Research-Development Institute for Non-
institution	ferrous and Rare Metals – IMNR
Patent no.	Patent application No. A00865/2016
	The present invention relates to a process of recovering precious
	metals (Ag, Au) from electric and electronic equipment wastes
	(WEEE) which are grinded, melted in a microwave furnace and cast
	as an ingot. The WEEEs come from PC boards. The composition
	of the propried fraction (45, 50%) of WEEE) is the following: Cu, 45
	of the organic fraction (45-50% of wEEE) is the following. Cu. 45- 50% Sp: 15 25% Db: 12 18% A1: 2.4% Fe: 0.5.1.5% Ni: 0.5
	1% Ag: 0.5-1% Au: 0.1-0.2% other elements: 0.5-1.5%
	The process according to the invention consists in a suite of distinct
	steps:
	- anodic dissolution of the WEEE multicomponent alloy ingot in an
	electrolyte based on H ₂ SO ₄ - CuSO ₄ , which leads to the cathodic
Description	recovery of Cu or Cu-Sn alloy and the concentration of the
Description	insoluble metals in the electrolyte, as an anodic slime,
	- melting the resulting anodic slime and casting as an ingot;
	- selective electrochemical dissolution of the cast anodic slime ingot
	in an electrolyte based on fonic riquids and the fecovery of the
	The selective anodic dissolution takes place in an ionic liquid based
	electrolyte, composed of a mixture of organic salts: choline
	chloride- ethylene glycol, which form a eutectic mixture (DES -
	deep eutectic solvent or Ethaline). The dissolution was carried out
	in a glass vessel, at a temperature of 20-25°C, using a Cu cathode.
	At the cathode, Ag with a purity of 99.5% was obtained at a cell
	current of 0.1-0.25 V, respectively Au with a purity of 99% at a
	current of 0.4-0.5 V.
(1986	



RO.183.

High entropy alloy with increased hardness and Title machinability and process thereof D. Mitrică, V. Soare, A. Caragea, M. Olaru, G. Popescu, I. Authors Carcea, R. Chelariu, M. Gherghe, M. Sârghi National Research-Development Institute for Non-Institution ferrous and Rare Metals – IMNR Patent application No. A00942/2016 Patent no. The invention relates to a process for the obtaining of a high entropy alloy (HEA) which is easily machinable and has high hardness, for mill rolls. The process according to the invention consists in the elaboration of the high entropy alloy 3-5% Al, 25-30% Cr, 27-35% Fe, 18-24% Mn, 11-18% Ni in an induction furnace, in a protective atmosphere (argon) at 1600°C; casting in molds preheated at 200- 300°C, with cooling in protective atmosphere at room temperature; machining for obtaining the net shape of the part and hardening heat treatment by annealing at 700°C for 20 hours. After the annealing heat treatment, the alloy hardness increases from 400 HV to more than 1000 HV. The process Description according to the invention has the following advantages: the low hardness of the as-cast alloy allows a facile machining of the obtained mill rolls; the high structural stability of the high entropy alloys at elevated temperatures and the high oxidation resistance allow the use of the rolls for hot-rolling at temperatures of up to 900°C; the necessity for surface engineering with hardening coatings is eliminated, thus avoiding the issues concerning the adhesion of the alloy to the substrate and the complicated and expensive processes; the method involves a small number of operations, with low time lapses and with low energy consumptions. Class 6



RO.184.

TitleProcess for obtaining hard fusible metals by
electrochemical reduction

Authors V. Soare, I. Surcel, M. Burada, M. Tarcolea, C. Roman

Institution National Research-Development Institute for Non-

ferrous and Rare Metals – IMNR

Patent no. Patent No. 125599/2014

The process according to the invention, of obtaining hard fusible transition metals through electrochemical reduction, solves the issues of the existing processes by that, after a preliminary stage of forming a cathode from metal oxide powder through pressing and sintering at a temperature of approximately 900°C, it carries out a stage of deoxidation and reduction of this metallic oxide, using the aforementioned solid cathode and a super-dense graphite cathode, through electrolysis in a molten calcium chloride electrolyte bath, at $800\div900^\circ$ C, with an applied potential of $2.5\div3.2$ V and a current of $10\div20$ A, correspondent to an anode-cathode distance of $20\div40$ mm and to an anode/cathode surface ratio of $1.5\div2.1$, with an initial cathodic current density of $3.2\div4.5$ A/cm2.

Description The deoxidation and electrolytic reduction of the oxide of the metal to be obtained is achieved in two sequential stages, one of deoxidation of the metallic oxide in a molten calcium chloride bath, at an electrolysis potential of $2.5 \div 2.7$ V, and one of reduction of the ionic calcium or elemental calcium, electrochemically deposited, in a molten calcium chloride bath which contains 5 wt.% CaO, at a voltage of $3.0 \div 3.2$ V. The used cathode is shaped as a disk sintered from metallic oxide, with a mass of $7.5 \div 20$ g, a diameter of approximately 30 mm, a height of $5 \div 10$ mm and a $40 \div 60\%$ porosity, fastened on the metallic holder of the cathode by crimping.

The process according to the invention presents the advantage of allowing the production of a transition metal, hard fusible, with high purity, through electrolysis, from an oxide of this metal, with optimum time lapses and costs. This method can successfully replace the energy-consuming and inefficient existing technologies for obtaining titanium and hard-fusible metals.

Class



436

RO.185.

Title	Silver based brazing alloys, with no cadmium contents, with enhanced properties, and obtaining method
Authors	I. Surcel, V. Soare, D. Baron, A. Caragea, M. Radu
Institution	National Research-Development Institute for Non- ferrous and Rare Metals – IMNR
Patent	Patent No. 126309/2016 The invention relates to a silver based brazing alloy, with no cadmium content, containing other alloying elements such as Cu, Zn, Ti, Si and Mn, for joining Cu and Cu alloys components used in the electric and electronic industries and in other applications, and to a process for obtaining the same. The alloy contains 4447% Ag, 2832% Cu, 2327% Zn, and 0.010.05% Si, 0.010.05% Ti, 0.010.05 % Mn, exhibiting a tensile strength of 2545 daN/mm ² , a yield strength of 2035 daN/mm ² , an elongation of 510%, a hardness of 130145 HB, a melting point of 660750°C, the electric conductivity of 2527% IACS and a wetting angle vs. the support of 1012°. According to the invention, the process starts with dozing the amount of metal depending on the charge weight, melting the Cu and Ag in an induction furnace, increasing the melt temperature up to 1150 1200°C and then adding Si, Ti and Mn or Cu-Si, Cu-Ti and Cu-Mn master-alloys, and then lowering the temperature down to 850 900°C and introducing the Zn amount under a protective flux consisting of 50% Na ₂ CO ₃ and 50% Na ₂ B ₄ O. Afterwards, the temperature is lowered to 800 850°C and the alloy is cast in metal molds. The resulting slabs are subsequently cold and hot-rolled at a 30 50% deformation degree between annealing and with intermediate annealing at 400450°C.



National Institute for Laser, Plasma & Radiation Physics INFLPR

RO.186.

Title

Advanced technology-based coatings using high power laser beam to increase the reliability and performance of materials PRELAM

Authors PROF. Ion N. Mihailescu, Project director

Institution INFLPR

The project develops new solutions for getting products and processes, and new technologies and / or improved in order to increase the reliability and performance of materials by functional coatings. A very important application is reconditioning and repair of surfaces subject to wear due to the work cycle. It aims to achieve excellence nationally and internationally, in order to become a reference for the development and spread of innovative technologies in the field of laser systems and radiation and their applications in industries and economic peak - such as automotive, aerospace, advanced materials, security, life sciences, etc. The laser has become a lance for processing different materials: metals, alloys, glass, ceramics, polymers, composite materials, etc. Technologies and equipment based on the use of lasers required in the modern economy, starting with the automotive industry as a vector of growth due to the unique advantages of laser radiation. There are such high quality and reliability products made with low cost, mainly due to the variety of lasers used in industry for Description welding, cutting, and marking different materials microprocessor. Injection laser cladding powder is a surface treatment technology, resulting in high quality coatings and surface quality weld metal, anomalies, ensuring minimal absorption of the heat in the substrate. The main objective of the method / technology reducing wear and corrosion gradulului achieved due to the operation and improve the impact resistance properties of the surfaces by the generation of a protective layer of another material with superior properties. In this process, the carrier gas is used to shape the flow of powder sprayed under the laser beam of high power while it scans the deposition surface, resulting in an area of the melt to a depth corresponding to the thicknesses of the individual generated by each single pass over substrate. A dense and completely is obtained by overlapping and complementary consecutive individual deposits. Laser cladding to improve the properties of the deposited layer is done in two ways: 1. By optimizing process parameters in obtain the desired geometric dimensions order to and

metallographic structure necessary depending on the specific application. 2. The development of new addition of the powdered material, so as to obtain alloy compatible with the base material, and reduced consumption of filler material. Technology cladding with laser beams in order to obtain layers with superior mechanical properties, involve complex processes, multidisciplinary, defending the need to delimit the scope of research in a specific framework and addressed in the context of the request initiated by the enterprises. The heat affected zone (HAZ) is low, rapid solidification, diluting powder material than the substrate, improved control along the entire length of the penetration depth of the heat affected zone; for reduced production; improved thermal control of the substrate; high quality repair parts; production of smart structures. Using a laser beam surface treatment provides a number of advantages, such as effective control of power supply; treatment can locate; low heat "Input" from source, resulting in minimal mechanical deformation of the affected area; high rates of heating and cooling, generating the microstructure fine "building" site and / or metastable phases: treatment of the substrate through the process of "non-contact"; no tool wear and the lack of action occurrence of mechanical forces on the substrate. One of laser applications plating consists of repair and refurbishment of major components, eg highly complex tools, turbine blades, turbine-based gas moving components of the internal combustion engine. Conventional methods used to renovate welding affected by wear of components in various stages. (max 250 words)

Graphical Abstract



RO.187.

Т:41.	FLEXIBLE SYSTEM FOR LASER DEPOSITION OF	
litte	MATERIALS	

AuthorsIon N. Mihailescu, Carmen-Georgeta Ristoscu, CristianMihailescu, Claudiu Hapenciuc, Maria Badiceanu, Carmen
Lavinia Gavrila Florescu, Ernest Popovici

Institution INFLPR - Institutul National pentru Fizlca Laserilor, Plasmei si Radiatiei

Patent no. a00123 010032017

The installation of flexible laser material deposition LC can improve various properties of processed parts. Surface alloying technology is due performance material deposition NP / NS optimized and customized. The installation includes universal independent production hybrid units with laser pyrolysis synthesis of NP / NS-doped or non doped, with predictable characteristics, with direct applications in laser clading - LC using of gaseous, liquid solid precursors. The installation utilizes optimized laser sources, combined CO2 / micrometer, in specific conditions in both the LC and in the synthesis Laser NP / NS. LC processing customized / optimized products such as new products and as a repair / reconstruction / reconditioning process MROT. By structure Description is new, innovative and original, makes it possible capitalizing the SFDML NP / NS results or products in order to optimize processes / research. The invention has the advantage of using a CAM / CAD / CAE system for control / monitoring and ordering involved processes, in real time, common for both laser pyrolysis unit and for LC process, carried out with a single BD database relating to the processes found in subordinate. By using experience gained in the phenomena of heat processing, invention solve / cancel the preheating of the base material with laser beam allowing deposits to obtaining improved structure and preheat / processing precursors in the synthesis of NP / NS.



RO.188.	
	HIGH FLOW RATE ELECTROSTATIC FILTER
Title	RECOVERING NANOSTRUCTURED POWDERS
THE	SYNTHETIZED FROM LIQUID OR GASEOUS
A /7	PRECURSORS BY LASER PYROLYSIS
Authors	POPOVICI ERNESI; MORJAN ION
Institution	si Radiatiei
Patent no.	RO128367
Description	The invention relates to a high flow rate electrostatic filter, recovering the nanostructured powders synthetized from liquid or gaseous precursors by laser pyrolysis, with applications in the technical field of electrostatic filters, nanotechnologies and laser technology. According to the invention, the filter comprises three stages of filtration, an electrostatic filtration, a gravity filtration, a mechanical and/or liquid filtration which are placed in a closed enclosure, with the pressure in the range of the preliminary vacuum, consisting of two metal covers (1, 7), made of stainless steel with connecting flanges (KF, CF) compatible with the upstream and downstream connected components, and a transparent cylindrical body (2) or a body with an eye slit, sealed from each other with resilient materials compatible with the materials to be processed, assembled by hollow rods (3); the closed enclosure is partitioned into two cylindrical components, an inner cylinder (6), made of an electrically insulating material, and two electrically insulating transverse membranes (9, 11) with the function of supporting the cylindrical components and a hollow central electrode (13) with pre-ionizing electrodes (14) in its upper part and a fluid communication space; the mechanical or the liquid filter (8) is placed horizontally in the lower part and prevents the contamination of the surrounding environment with harmful nanostructured materials, and the voltage source (12) ensures a specific control adequate to each processed material in conformity with the accumulated experimental technical data.

Class

X. Innovative Research

RO.189.	
	SYNTHESIS OF NANOTUBES AND/OR
Title	NANOPARTICLES / NANOSTRUCTURES IN DIRECT
	FLUX BY LASER PYROLYSIS
Authors	BÁDOI ANCA DANIELA; GAVRILÁ-FLORESCU
1 unior 5	CARMEN LAVINIA; POPOVICI ERNEST
Institution	INFLPR - Institutul National pentru Fizica Laserilor, Plasmei
	si Radiatiei
Patent no.	R0131388
Description	and/or nanoparticles/nanostructures in direct flux, by laser pyrolysis. According to the invention, the method consists in emitting a laser beam which is then conveyed through optical fiber (FO) towards a collimator (1) where it is expanded through a collimation lens (LC), and from here it gets, through a transparent optical window (FP) at the beam wave length, into an injection head (3) and then into a reaction chamber (7) where some precursors are also injected, and where the synthesis of nanotubes (NT) or nanoparticles/nanostructures (NP/NS) occurrs, and, through some separate assemblies, cooling gases (GR) and gases (GP) for protection against deposition are injected, the residual gases (GR) being collected by means of some graphite collectors (9), and the synthesis products are collected and separated by means of an electrostatic filter.
Class	X. Innovative Research
DO 100	
KU.190.	ENERGY TRANSEED BY SOLID DADTICLES IN THE
Title	ENERGY TRANSFER DY SOLID PARTICLES IN THE SVNTHESIS ZONE IN NANODADTICLES LASED
THE	PVPOLVSIS
Authors	POPOVICI ERNEST
Authors	INFLPR - Institutul National pentru Fizica Laserilor Plasmei
Institution	si Radiatiei
Patent no.	RO131386
	The invention relates to a method of nanoparticles laser
	pyrolysis with energy transfer by solid particles, in the
Description	synthesis zone. According to the invention, the method comprises several steps: a first step of supply with

precursors, a second step of thermally processing the

precursors by dispersion, using ultrasounds, or by dosing the precursors - solid micro/nanoparticles - using neutral gas transport and mass control, followed by a step of injecting the precursors, using an injector, while controlling the temperature of the injected precursors, after which, in the fourth step, processing takes place in the active reaction zone which is geometrically represented by the intersection of the flux of precursors and a confining gas with the laser beam, followed by a step of filtration and recycling of synthesis products and of discharging the gaseous components to purification systems.

X. Innovative Research

RO.191.

	PROCESS FOR PREPARING TITANIUM DIOXIDE BY
Title	LASER PYROLYSIS FOR APPLICATIONS IN
Authors	PHOTOCATALYSIS
	GAVRILĂ-FLORESCU CARMEN LAVINIA; POPOVICI
	ERNEST; MORJAN ION; DIAMANDESCU LUCIAN
	CONSTANTIN; RADITOIU VALENTIN; RADITOIU
	ALINA; WAGNER LUMINIȚA EUGENIA; BADOI
Institution	ANCA DANIELA; MIRON DAN
	INFLPR - Institutul National pentru Fizlca Laserilor, Plasmei
Institution	si Radiatiei
Patent no.	RO131631
	The invention relates to a process for preparing titanium dioxide by laser pyrolysis, for applications in photocatalysis.
Description	thermal processing of the base precursor as a source of
	liquid-phase titanium of the TTIP (titanium tetra-
	isopropoxide) type - CHOTi the CO-laser pyrolysis
	synthesis of TiOnanopowders of synthesized structure
	having 71.7% by weight anatase. a specific surface of at least
	50 m/g for photocatalytic applications in the size range of up
	to 30 nm.
Class	7, 14

RO.192.	
Title	SYNTHESIS OF NANO SIC BY LINEAR IGNITED
Authors	Popovici Ernest, Morjan Ion, Dumitrache Florian, Miron Dan
Institution	INFLPR - Institutul National pentru Fizlca Laserilor, Plasmei si Radiatiei
Patent no.	a201500681 / 2109'15
Description	There are broad areas of applications of nanostructured SiC, such as: biomedicine, nanoelectronics, industry, etc. due to its special properties that make between the component materials of, such as: refractory materials, high quality substrates for integrated circuits, manufacture of high temperature / wear spray injectors, use as an alloying element, bio-nano materials, layers for fuel cells, etc. Increase the volume of research in order to obtain industrial nanostructured SiC and about developing its applications. This invention presents results in synthesis by laser pyrolysis of NP / NS silicon carbide, after study the thermal processes that occur as a result of interaction with the laser beam of the SiH4 / C2H2 precursors, processed in different ways. Laser pyrolysis of SiH4 (Silane) has some specific features: i) most important is that it is a "burning" in the absence of oxygen, is basically a chemical heat decomposition, ii) the process is exothermic and the decomposition releases a significant amount of heat, etc. The invention presents a method and application of the phenomenon / mechanism of precursor decomposition during the linear ignition/combustion in the focused laser beam, the new methods of the synthesis flame control by image analysis.

Class

X. Innovative Research

RO.193.

 Title
 NANO SIC SYNTHESIS WITH LASER PYROLISIS AND IGNITION IN VOLUME

Authors Popovici Ernest, Morjan Ion, Dumitrache Florian, Miron Dan

Institution INFLPR - Institutul National pentru Fizlca Laserilor, Plasmei si Radiatiei

Patent no. a201500682 / 2109'15

This method has two variants of precursor ignition / combustion in volume: using a gas active medium laser and combined ignition / combustion. In these two versions mainly used the energy transfer of the laser radiation through solids materials. The second option is a combination between a gas active medium laser beam with $\lambda = 10.6 \,\mu\text{m}$, and thouse with solid active medium one with $\lambda \sim 1 \mu m$. The first ignit precursors by straight-line method at a low temperature and only works as a generator of solid particles, in or out of µm beam section. The µm SS laser can be fiber, fiber disc, disc, diode, etc. The µm SS laser beam completes synthesis by controlling the synthesis temperature and space. It is a method that highlight the achievements in the field of lasers and laser radiation interaction with materials, beam Description processing using transport and passive optical fiber, etc. For reproducibility of NP / NS the precursors are preheated at a constant temperature slightly above the ambient or technological related to the decomposition temperature. Laser pyrolysis of SiH4 (Silane) with ignition / combustion precursors in volume has several characteristics: i) most important is that it is a "burning" in the absence of oxygen and it is basically a chemical decomposition, ii) the process is exothermic and decomposition releases a significant amount of heat, etc. The invention presents a method and it application of the phenomenon of decomposition of the precursors during the combustion of the ignition / burning by the focused laser beam, new methods of the flame control by the synthesis image analysis.

X. Innovative Research

National Institute for Research-Development for Textiles and Leather -Division: Leather and Footwear Research Institute (INCDTP-ICPI) Bucharest

RO.194.

Title	Composition and process for leather pre-tanning using protein derivatives and metal oxides obtained from waste
Authors	Crudu Marian, Maier Stelian Sergiu, Roșu Liliana, Crudu Andra Manuela, Popescu Mariana
Institution	INCDTP Division ICPI, Bucharest
Patent no.	A 00283/15.11.2016
Description	The invention refers to a composition for leather pre-tanning and the process of using thereof, characterized by the fact that it starts from waste with protein content and metal oxide content, respectively. The composition this invention refers to is obtained by simultaneous processing untanned bovine hide trimmings and titanium metal waste in the form of cuttings, resulting from mechanical processing of ingots with high titanium content. The process for using the proposed composition does not change current leather processing technologies. The problem solved by the invention consists in concurrent resolution of two topics related to reduction of ecotoxic impact of industrial technologies, by exploiting two waste sources difficult to recycle (untanned hide and titanium cuttings) and by including the patented composition in products for leather pre-tanning according to the proposed process, with beneficial technological effects on increasing the quality of finished leather.

Class

9

RO.195.

Title	Active and preventive conservation product for the treatment of heritage leather
Authors	Crudu Marian, Miu Lucretia
Institution	INCDTP Division ICPI, Bucharest
Patent no.	127958/26.02.2016
	The invention refers to developing a product for active and preventive conservation for heritage leather treatment.
Description	This product is applied for care and conservation of heritage objects fully or partially made of leather. The resulting product has the consistency of a cream and meets
	NATIONAL

international requirements of conservation and restoration norms.

The advantage of the proposed invention consists in the fact that it provides leather treatment properties, the optimal type and amounts of materials that ensure reversibility characteristics imposed by conservation norms regarding leather for bookbinding, harnesses, saddles, tents for carriages, belts, footwear, gun holsters, tapestry leather with characteristics of uniform surface greasing, lack of colour change, homogenous greasing of cross-section, and antifungal and antibacterial properties.

9

Class

RO.196.

NO.1 70.	
Title	Product with antifungal and antibacterial properties for finishing natural leather and leather items
Authors	Niculescu Olga, Manta Anca
Institution	INCDTP Division ICPI, Bucharest
Patent no.	OSIM A/00538/17.07.2013
Description	The invention relates to the manufacture of a product with antifungal and antibacterial properties based on essential oils (coriander, basil), ethyl alcohol and wax emulsion (containing beeswax, lanolin, biodegradable nonionic emulsifier and water) used for treating natural leather and natural leather items (footwear, leather goods, clothing, etc.). The product has the advantage of being made of natural, non-toxic components and improves the resistance of leathers and natural leather items to biological factors (fungi, bacteria). It can be used in the composition of the aqueous final dressing (polyurethane) applied to the surface of film-coated leather or leather items, or it can be applied to the unfinished leather surface (crust), on the surface of polished leathers (velour, buffo, nubuck) and a slightly waxy feel and a better resistance to fungi and bacteria of natural leather.

Class

9

RO.197.	
Title	Product for biological protection and fragrance of natural furs and fur items
Authors	Niculescu Olga, Tonea Roxana Aurelia, Tonea Stoica
Institution	INCDTP Division ICPI, Bucharest
Patent no.	OSIM A00395/ 28.05.2014
Description	The invention relates to the manufacture of a product based on essential oils (lavender, orange), ethyl alcohol, polyethylene glycol, hexadecyl-trimethyl ammonium bromide, biodegradable nonionic emulsifier and water, used to treat the fur surface (as a final operation) and fur garments. The product improves the resistance of furs and fur items to biological factors - insects (moths), while ensuring fragrance and anti-felting of furs. The treatment with the product can be repeated at certain time intervals, as the application on the fur surface or fur garments is easy and ensures the quality of fragranced natural fur clothing.
Class	9

Agricultural Research – Development Station Secuieni-Neamt

RO.198.	
Title	<i>Silybum marianum L</i> . specific technology cultivation for seed production under the conditions of the Center of Moldova
Authors	Margareta Naie, Elena Trotuș, Cătălina Adina Druțu, Daniela Iuliana Dobrea, Cornelia Lupu, Paula Lucelia Ursache
Institution	Agricultural Research-Development Station Secuieni
Patent no.	Project ADER 2.4.1.
Class	Silybum marianum L is grown for its fruit (Fructus Cardui) which contain silimarin, a specific water-insoluble compound, with hepatoprotective liver cell reconstruction properties, prevents penetration of toxic substances in the liver, promotes their elimination, stimulate the dall baldder activity and counteracts the risk of biliary calculus. Milk thistle (<i>Silybum marianum</i>) is an annual species, herbaceous, with erect steam, hairless leaves, shiny, with a green with white mosaic, sessile and amplexicaule, with terminals veins at the margin ending in thorns. The fruit is a cyilindric achene which ends with a pappus. The cultivation technology specific under the Central of Moldovia conditions includes: -The basic soil works performed in autumn by cutting at a depth of 30 cm; -Field fertilization with complex fertilizers of type 20: 20: 0 or $15:15:15$ in the preparation of germination bed; -Preparation of the germinating bed by means of a ride with adjustable grooves. In the sowing of the seed, a work with the combiner will be carried out; -Sowing in early spring, at a distance of 70 cm between rows, depth of seed incorporation of $3-4$ cm, distance between grains per row 10 cm, with a sowing rate of 20 kg / ha; -Maintenance work consists of controling weeds, diseases and pests; -Harvesting occurs when $70-80\%$ of the inflorescences are dry. Late harvesting results in production losses. Harvesting is carried out with the cereal harvester.
Class	



NATIONAL 449

RO.199.	
Title	Secuieni – Jubileu – monoecious hemp variety
Authors	Constantin Găucă
Institution	Stațiunea de Cercetare – Dezvoltare Agricolă Secuieni
Patent no.	00322/2013
Description	"Secuieni – Jubileu" is a monoecious hemp variety, obtained by direct hybridization between a monoecious selection as male partner x a dioic selection as female partner. The hybridization was followed by backcrossing and then by repeated selection on families. The plant height in seed culture can reach $1.3 - 2.2$ m, the stems color being green-yellowish, with 7-9 grooves. The leaf is palmate - fidate, composed of 5-7 leaflets. The inflorescence is a compact scorpioid cyme, with the male flowers arranged at the base. It is the earliest variety, the vegetation period can reach $90 - 110$ days in seed culture. The flowering period is of $10 - 15$ days, being a cultivar resistant to low temperatures in the spring, to the heat and fall, as well as to the broomrape and Fusarium. The variety yield capacity reveals in 6-8 t/ha strains, 20-24% fiber obtained by chemical melting and 1200-1600 kg/ha seed. This variety is recommended to be cultivated predominantly in the Center and North of Moldovia.



National Research & Development Institute for Welding and Material Testing - ISIM Timisoara

RO.200.	
Title	Sonotrode and anvil for ultrasonic welding
Authors	Nicușor Alin Sîrbu, Octavian Oancă, Dan Ionescu,
Institution	National Research & Development Institute for Welding and Material Testing - ISIM Timisoara
Patent no.	Patent application, No. OSIM, Registration 203426 / 15 th .03.2017.
Description	The invention relates to a technical solution for the construction of sonotrode with removable active zones of the heads used for various applications. The active area of the sonotrode head is assembled on the sonotrode body by fretting. The sonotrode head, with its active area, is used for a particular type of application. In the case of changing the application type, only the active area that has the form required for the application is replaced or, if it is necessary, the entire head. The shape and material of the sonotrode provide a working value of the micro-vibration amplitude specific to the welding application. The same method of assembly by fretting is also used for the anvil with interchangeable head. The sonotrode assembly has the following components: 1-sonotrode body area; 2- sonotrode head area; 3- active area; 4-positioning area of the part to be welded, at the level of the anvil; 5-the anvil body; A- the surface through which the transfer of the micro-vibrations is carried out; B- the laying surface of the two components. Application. Automotive, electronics and micro-electronics, medical technology, pharmaceuticals and cosmetics industries are the main application areas
Class	the main application areas.

Figure 1. Sonotrode with removable head and removable active area

RO.201.	
Title	Method for friction stir soldering (FSS)
Authors	Cojocaru Radu, Verbitchi Victor, Dascau Horia Florin, Botila Lia Nicoleta; Ciucă Cristian,
Institution	National Research & Development Institute for Welding and Material Testing - ISIM Timisoara
Patent no.	Patent application No. OSIM A/00254 / 02 nd .04.2014.
Description	The invention relates to a method for friction stir soldering that uses the heat produced by the metal-metal friction in order to melt the filler metal, for the aim of soldering sheets of copper, steel, brass, aluminium and other alloys, similar or dissimilar, having the thickness of 1.03.0 mm. The assembly has the following components: 1- FSS tool (stir element); 2- thrust force; 3- rotational speed; 4- travel speed; 5- local heat source; 6- upper sheet (to be joined); 7- lower sheet (to be joined);; 8- filler material; 9- gap; 10- thermal flux; 11- joint by soldering; 12- fixture jig. Application. The process can be applied for the execution of contact parts, micro-joining elements, cases and screens in the electrotechnical and electronical industries, as well as elements of heating, water, gas, sanitary, refrigerating and air conditioning installations or decorating objects.
Class	5
	× × × / /



Figure 1. Principle of the friction stir soldering (FSS)

National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development URBAN-INCERC, Bucharest, Romania

RO.202.	
Title EN	Studies about human psychoacoustics perception of noise in civil buildings.
Authors	Marta Cristina ZAHARIA, Ioana Mihaela ALEXE,
Authors	Mihai Cristian MUSCALU
Institution	NIRD URBAN-INCERC, Branch INCERC Bucharest,
	Building Acoustics Laboratory
Description EN	In our country, studies on the psychoacoustics domain, specific for buildings with civil housing activities, were conducted during 2016, in project PN 16-10.03.01 concluded with MECS - ANCSI. Psychoacoustics noise perception by human subjects is very subjective; highly dependent on the sensitivity of psychiatric of each person, his temperament, education, living environment both for living (ie. no. of persons in a family or household) and the world of work (eg. a profession which requires an intellectual concentration compared to a profession requiring mainly manual labor), etc. Human perception of sound is different during the day time, hours 7.00-23.00, than during the night time, hours 23.00-7.00; noise is more annoying at night because the noise level is much lower than during the day and level differences of noise from different sources are much easier receivable and disturbing. We have carried out studies and analyses on the basis of socio- psycho-acoustic questionnaires and investigation of the test methods of collecting noise psychoacoustics perception, for residential buildings, supplemented by 42 human subjects. Finally <i>Synthesis</i> <i>questionnaire</i> was developed, in which they have passed all the answers for each question, and statistically synthesized several variants of calculation and analysis. Conclusion: in terms of acoustic comfort, choice of construction elements in a civil housing building, must be designed to take into account the subjective perception of human psychoacoustics residents, according to the noise spectra of activities developed in it. Innovative research
Class no.	Innovative research

RO.203.	
Title EN	Fly Ash Based Geopolymer Concrete – The Romanian Perspective
Authors	Adrian-Victor LĂZĂRESCU, Henriette SZILAGYI, Cornelia BAERĂ, Adrian IOANI
	N.I.R.D. "URBAN-INCERC", CLUJ-NAPOCA BRANCH,
Institution	ROMANIA.
Description EN	 TECHNICAL UNIVERSITY OF CLUJ-NAPOCA, ROMANIA. Nowadays, the environmental issues that are associated with the production of Portland cement, the main source for producing concrete, are very well known and are carefully monitored in terms of carbon dioxide amount released in the atmosphere. Fly ash creates new opportunities to use this waste by-product as a total substitute for Portland cement, creating a new, alternative material. By alkali-activating this source material using a combination of sodium hydroxide solution and sodium silicate solution, a new type of concrete can be produced, with similar or better properties than ordinary Portland cement concrete. In Romania, industrial waste is storaged, this being the most common used method of waste disposal and it is well known that it contributes to land, atmosphere and groundwater pollution. Only few quantities of waste are used in different industries. The benefits of recycling industrial by-products led to a worldwide interest in exploring and exploiting these new types of concrete. The aim of this research was to produce fly ash based geopolymer concrete using source materials from Romania, and open new perspectives on the global existing research about this type of material. Preliminary results obtained on fly ash based geopolymer paste show a very good possibility of using fly ash from Romanian power-plants to produce fly ash based geopolymer concrete, further research still being conducted.
Class no.	
	Solution Solution



NATIONAL 454

RO.204.	
Title EN	FROM MONITORIZED BUILDINGS TOWARDS MAPS WITH PGA DISTRIBUTION FOR RECENT VRANCEA EARTHQUAKES, WITHIN NIRD URBAN-INCERC SEISMIC NETWORK FOR BUILDINGS
Authors	Claudiu-Sorin DRAGOMIR, Vasile MEITA, Daniela DOBRE, Iolanda-Gabriela CRAIFALEANU, Emil-Sever GEORGESCU
Institution	National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development "URBAN- INCERC"
	Seismic instrumentation. Dense seismic instrumentation with performant equipment is a prerequisite of making accurate observations of Romanian seismicity and its effects on buildings. In- situ obtained data contribute to a proper understanding of the importance and of the influence of various factors on structural dynamic response, as well as their correlation with the targets of interest. Within NIRD URBAN-INCERC Seismic Network for Buildings, the seismic instrumentation is done by digital accelerometers, permanent installed in buildings (usually low-rise) and/or on free-field, which leads to the dynamic response under the effect of micro-earthquakes or in case of different vibration sources with amplification potential of other oscillations.
Description EN	Results related to low-rise buildings behavior and some trends of propagation and attenuation of motions. At the earthquake from 24.09.2016, with a local magnitude (M_L) of 5.3, the Seismic Network for Buildings has functioned properly, providing a lot of data records for an advanced processing. The acceleration values were reduced in comparison with the zoning map from Code P100-1/2013, which is normal relative to the magnitude of severe



acceleration values and the propagation of these PGA values in

Fig. 1. A map with distribution of the recorded accelerations. It can be seen as maximum values were recorded at a seismic station in Iasi and in vicinities (PGA = 0.7...0.9 m/s²). Innovative Research

Class no.

NATIONAL 455

RO.205.	
Title EN	Testing fire method for external cladding systems
Authors	Simion Adrian, Horatiu Dragne
Institution	INCD URBAN-INCERC
Description EN	This research presents a new romanian testing method in a natural scale for external cladding systems tested on buildings with minimum than 3 floors. Fire Laboratory from INCERC Bucharest, provides a test method for determining the fire performance characteristics of non-loadbearing external cladding systems and external wall insulation systems when applied to the face of a building and exposed to an external fire under controlled conditions. The fire exposure is representative of an external fire source or a fully-developed (post-flashover) fire in a room, venting throught an opening such as a window aperture that exposes the cladding to the effects of external flames,or an external fire source. The results obtained from the test provide the data, needed to evaluate the fire protection performance of the external cladding systems
Class no.	Innovative Research
RO.206.	
Title EN	Analysis and Seismic Qualification of a DC Field Breaker Cabinet for Cernavoda CNE - C007619, by calculation
Authors	Hariga Florin – Radu, Duta Andrei
Institution	National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development "URBAN-INCERC", Iasi Branch
Description EN	The determination of the seismic response of the DC Field Office Breaker Cabinet for Cernavoda CNE - C007619 was achieved by Modal Analysis with Response Spectra Method. The sections item with maximum efforts were checked on normal and shear stress distribution, and their maximum amounts were determined. The determined maximum effort values are lower than the resistance calculation set by specific rules.

Class no.



The DC Field Office Breaker 4200 A equipment

RO.207.	
Title EN	Comparative study on essential mechanical properties of medium strength self-compacting concrete and vibrated concrete.
Authors	Bradu Aurelia, Hariga Florin – Radu, Duta Andrei
Institution	National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development "URBAN-INCERC", Lasi Branch
Description EN	Medium strength self-compacting concrete was achieved due to the elaboration of individual mixture design methods, implementing local materials, without the use of viscosity modifying agents. The essential mechanical properties investigated for both types of concrete are: compressive strength for cubic and cylindrical samples, splitting tensile strength, static and
Class no.	dynamic modulus of elasticity. 7 from the list bellow: Invention Classification



RO.208. Title EN Sustainable planning criteria for Gorj traditional habitat Vasile MEITĂ, Alexandru-Ionut PETRIŞOR, PhD Authors National Institute for Research and Development in Institution **Constructions, Urbanism and Sustainable Spatial Development URBAN-INCERC, Bucharest, Romania** Gorj County is a representative part of Oltenia's cultural heritage. Unfortunately, the changes occurred in the transition period, including the decline of industry and traditional activities, but also of the agriculture, resulted into adverse social consequences, including the ageing of population and its migration to other countries or regions, all of these in correlation with adverse The overall consequence of the environmental outcomes. interrelated action of these drivers is the gradual degradation of the traditional heritage, which can even disappear unless an integrated approach is used for its spatial planning. A good example of this is Description represented by the projects carried out in relationship to the old EN fortified peasant houses - 'culas', also specific to Oltenia region. The criteria resulting from this innovative research can set the grounds for wise planning fitted to Gorj area. They integrate the traditional pillars of sustainability - economy, society, and environment, but also account for pillars which are specific to the area, including the culture, infrastructure, and administration. The main advantages of these criteria (and of the methodology relying on them) consist of using a multi-disciplinary and systemic scientific approach specific to the area instead of the approved guidelines, which are not specific to a region.



Innovative Research



RO.209.	
Title EN	Robust steel - concrete structure, assembled by post- tensioning, resistant to seismic action
Authors	Păstrav Mircea. Constantinescu Horia
Institution	NIRD URBAN-INCERC
Institution	Finding new design for mix structures made out of steel and reinforced concrete is a constant preoccupation for researchers and designers
	The proposed innovative structure is intended to combine the technical advantages of both steel and concrete as well as of the precast structures and the use of the prestressing. As for the concrete members, the prestressing is a regular concept for steel members is seldom used. The structural concept is complex and different from the in-use steel-concrete structures that are designed according to the in-effect standards. Some main characteristics of proposed concept are:
	 use of precast reinforced concrete slabs which do not cooperate with steel beams at lateral loading response; use of prestressing in general assembling of the structure, having some uncommon features as the positioning of the strands in the gravity center of the beams and the limited tensioning force applied in tendons and the unbond prestressing with respect to the beams
	 spans; special type of beam-column connection, named dual joint, as within the interfaces, two types of assembly organs are used, the prestressed strands and common screw and nuts;
Description EN	As consequences, the mechanical response under seismic type loading of this innovative structure is expected to be different from the classical steel-concrete ones. The potentially post elastic areas are located at the column-beams interfaces instead of the ends of the horizontal members, so the beams are expected to have mainly rigid body displacements along their spans, under seismic loading. Plastic hinges are expected to occur at the column-beam connection due to low class steel screws used. The structure has to be designed to support seismic action up to 0.035 story drift ratios, when the prestressed tendons have to perform in elastic range. This new design is considered to have some important advantages when compared to the classical structures, due to the fact that the horizontal members have few remanent deformation, the damages are concentrated in preset zones and the highly deformed parts are the screws that could be easily be replaced, after an accidental event as an earthquake. In order to verify this innovative structural concept a representative part of an actual structure is tested under horizontal seismic type cyclic loading. The results will be used to establish the failure mechanism as well as some equations to predict the mechanical resistance and also the overall response (deformation, displacements, interaction forces between concrete and steel structural elements) and last but not least
	to propose some acceptance criteria for the such innovative structures, designed based on test results.

Class no.

Innovative Research

RO.210.	
Title EN	Experimental research for mix design optimization of Self-Compacting Concrete with Polymeric Fibre disperse
	reinforcement (PF-SCC)
Authors	Szilagyi Henriette, Baeră Cornelia
Institution	NIRD URBAN-INCERC, Cluj-Napoca Branch
Description EN	Self-compacting concrete (SCC) is often preferred due to its obvious qualities and despite its increased manufacturing costs versus the traditional concrete. Fibre addition to SCC can bring supplementary benefits, like cracking control, mechanical and durability performance, brittle failure counteracting and attenuation. One of the main objective of the present study is to establish basic guidelines for achieving the optimum design of self- compacting concrete with polymeric fibres disperse reinforcement (PF-SCC). Self-compacting concrete is already a challenge in terms of robustness of design, considering its well-known sensibility to inherent variation of ingredients. Different percent (by volume) of Polymeric fibre addition to the concrete matrix increases the risks of compromising the mix: bleeding and segregation, balling effect, inadequate fibre distribution within the matrix, etc. As consequence guiding provisions regarding the mix design, considering the Romanian conditions (Raw materials, mix technology, etc.) must be drawn for obtaining improved behaviour of the mix, in both, fresh or hardened states. <i>Acknowledgments:</i> This research is performed within scientific and research project PN 16-10.04.03, with the financial support provided by Ministry of Research and Innovation, Romania
Class no.	
RO.211.	
Title EN	Using digital technologies in spatial planning for environmental data acquisition, monitoring and mapping
Authors	Cristina Ivana, Daniel-Gabriel Vâlceanu,

Institution INCD URBAN-INCERC

Description
ENIntelligent systems and digital technologies have replaced
more and more the classical approach used in the study of the
elements of natural environment. Nowadays, modern

technologies such as LiDAR, aerial photogrammetry, remote sensing, or the GNSS systems are used to acquire geographical data, to analyse and evaluate the vegetation, to monitor landslides and floods, to assess the climate changes.

The new technologies and software applications developed for data processing are used in order to monitor the land use patterns, forests or natural hazards, making a major contribution to the spatial planning process. The analysis and evaluation of data acquired with the support of modern technologies and mapped using Geographical Information Systems is useful in the process of spatial planning and in policy making activities in order to achieve a sustainable development.

Applications. Digital technologies have many applications in environmental sciences, such as in landslides monitoring or mapping natural habitats. In Romania, the photogrammetric mapping is used for acquiring information on protected areas, habitats or bio-geographical regions by achieving high resolution color orto-photo-plans, 3D models or digital surface models and aerial photographs.

Advantages. Video images acquired by terrestrial, aerial or marine platforms can be used in coastal areas surveillance, in agricultural and forest data collection, in mapping the underwater habitats or in disaster management. Digital technologies are largely applied in the environmental sciences for their capability of signaling and preventing the occurrence of natural risk events.

Class no.

Innovative Research

RO.212.	
Title EN	The integration of geospatial technologies and applications in territorial management activities
Authors	Oana Popescu, Jianca Stefan
Institution	INCD URBAN-INCERC
Description EN	Smart Specialization Strategies were introduced by the European Commission with the aim to better substantiate investments in research, development and innovation, as part of the Europe 2020 strategy. Based on a broad definition of innovation, they could be a tool in addressing social, environmental, climate and energy challenges. The new digital technologies and intelligent systems meet today's

challenges by managing various territorial information with direct influence on the process of sustainable urban and territorial development.

Using remote sensing systems and GIS to monitor various aspects of the Romanian territory has become an increasingly used practice among different stakeholders, being an essential element in achieving the goals set by territorial development strategies.

Applications. In territorial management, remote sensing has applications in every sector. In transport, UAV technologies can be used to monitor transport flows. The GIS and the automated mapping facilities can help in the management of urban specific issues. The satellite images can be used to determine the quality of water, make terrestrial measurements or monitor the security of technical infrastructure networks. The 3D information of archaeological sites allows detail topographical studies, their reconstruction and digital preservation. Digital images can help in monitoring and analyzing dangerous waste sites.

Advantages. Advantages of remote sensing – such as the low cost, the capability of producing digital data in a quick manner or to produce spatial information of high spatial and temporal resolution and the possibility of having quick answers in critical situations – make these new technologies a mandatory tool in the activities of spatial planning.

Class no.

Innovative research

RO.213.	
Title EN	Cost analyze of buildings and special constructions based on price index developments in the construction activity
Authors	for the third quarter of 2016 Silviu LAMBRACHE, Grigore MIHAI National Institute For Research And Development In
Institution	Constructions, Urbanism And Sustainable Spatial
Description EN	Development Urban-Incerc Cost evolution study in the construction sector is achieved by determining the cost indices based on estimates of construction works comprising buildings and special constructions, created under execution projects and technological solutions. Building subgroups are presented as a structure of the main costs of constructions works. Periodically, the constructions works weights on the structure

it changes as a result of market price developments of materials, labor and various categories of services (rental machinery, transport).

Input price index quantifies the changes occurring on prices and tariffs paid by the contractor for input elements (materials, labor, equipment and transportation). On the basis of this index we can identify the elements of the construction activity that influence the cost of the execution by price developments to suppliers and services rates.

The study of price trends in construction sector for member states in the European Union is an old and constant concern in most of the reports presented by Eurostat, the UN Economic Commission for Europe and Euroconstruct Conferences.

Class no.

Innovative research

RO.214.	
Title EN	Evaluation techniques of the anti-graffiti innovative products to combat anthropogenic attacks
Authors	Alina Dima, Vasilica Vasile, Mihaela Ion
Institution	NIRD URBAN-INCERC, INCERC Bucharest Branch
Description EN	Urban system identity is shaped mainly from the cultural attribute and historical resources including buildings, bridges or other structures or built elements from previous eras. The urban present is characterized through sedimentation of building practices, modification, destruction or preservation of neighborhoods, streets, buildings, activities or lifestyles. Contemporary city is the result of a collage of spatial shapes remaining from different periods of the past - houses and industrial buildings, offices and public institutions etc which interfere with shapes, materials and new technologies. More often we observe that urban environment abound of elements resulting from human actions that do nothing but generate a negative impact on residents leading to general perception of vandalism action type. Evaluation techniques of the anti-graffiti innovative products are intended to monitoring the behaviour in time of these types of coatings taking into account the action of climatic factors for the efficient combating anthropogenic attacks. The final goal represent the protection of built environment and, implicitly, of the urban identity.



Class no.

DO 417

Innovative Research

KO.215.	
Title EN	The waterproofing of buildings - applications for future
	Vasilica Vasile, Alina Dima, Mihaela Ion, Cora Stamate,
Authors	Mariana Cioncu-Puenea
Institution	NIRD URBAN-INCERC, INCERC Bucharest Branch
Description EN	One of the most important parameters considered in the construction of the buildings is the waterproofing of them, first to prevent leakages and dampness in walls, ceilings, roofs, etc., and finally to make the structures durable. In recent decades, the rising cost of the new buildings and the repair or rehabilitation of existing buildings, mainly by escalating raw material costs and the labor have imposed as project developers and owners to opt for materials and systems, effective and advanced waterproofing. The two types of systems, widely applied internationally, are crystalline waterproofing materials, used for waterproofing and rehabilitation of water tanks, swimming pools, basements, etc., and flexible membrane systems, applied for roofs and other exterior building elements. One of the modern trends in the waterproofing of roofs is based on the concept that "white is green", a concept whose realization has been made possible by the creation of polymeric compounds with high performances in terms of flexibility, adhesion to substrate, resistant to weathering, including UV radiation, while providing high reflectivity, emissivity and heat dissipation at moderate cost. Design and development of such products has allowed the use of technology called "cold roof" - a term used to describe that the coating is not only waterproofing, but has a reflectance of solar high, the feature which can reduce heat transfer to the interior and increases durability of the roof. These are some examples of the waterproofing applications for a sustainable future of the buildings.

Class no. Innovative Research

RO.216.	
Title EN	Integrated information system for assessing regional accessibility in Romania
Authors	Antonio Tache, Oana Popescu, Monica Tache
Institution	The National Institute for Research and Development in Constructions, Urban Planning and Sustainable Spatial Development URBAN-INCERC Bucharest Accessibility is a strong factor in territorial development and competitiveness. At European level, there are numerous scientific instruments for assessing accessibility, which significantly contributes to ease traffic congestion, to ensure a balanced economic development and to improve living conditions and tourism development. The challenges (isolation, rurality, population decline) the national territory
Description EN Class no.	Is facing can be managed by means of integrated regional strategies adapted to local conditions. The scientific study, developed as part of the Nucleu Programme, is based on the evaluation of accessibility indicators and can be a useful scientific tool in developing integrated strategies in the field of spatial planning and transport. The techniques used are based on a software application in Python language, developed as an open and easily accessible interface using the ArcGIS Server 10.2.2. system capabilities. The software is characterized by the transparent interoperability of the tools and resources for the end-user, as well as for the industrial sites and the distributed architectures. The concept of the software application will be modular; this means that the application for calculating accessibility indicators is only the first module of a dedicated spatial planning application which can be developed in parallel with the digital map of Romania. The novelty of this integrated system is found in the evaluation of accessibility indicators for the entire territory of the country, in comparison to the European systems that are only evaluating the accessibility of the transport networks. Innovative Research
RO.217.	
Title FN	Development of sustainable materials for thermal

THE EN	insulation systems to meet EU 20-20-20 targets
Authors	¹⁾ Monica CHERECHEŞ, Livia MIRON, Alina COBZARU, Adrian CIOBANU, Constantin MIRON, Ionel PUSCASU

²⁾Nelu-Cristian CHERECHEŞ

¹⁾National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development "URBAN-INCERC" Iasi Branch

Institution ²⁾Technical University Gheorghe Asachi of Iasi, Faculty of Civil Engineering and Building Services, Department of Building Services

> Sustainable construction materials can and should be used to satisfy all the requirements of construction, and especially their energy efficiency. Current scientific research aimed to use waste vegetable products from agriculture or after processing technical fibers, by incorporating them into composites intended for infill and wall cladding.

> The original elements pursued relate to the development of new technical solutions on the type of insulation products through quantitative changes of various parameters (matrices mixtures and fibre types, quantities and dimensions of fibres, binders, mixing solutions), in order to identify an optimal sustainable product from the thermo - hygro - energetically and mechanical point of view.

Description EN Applications: The new products and solutions with straw, hemp, sawdust, etc are used to increase energy efficiency in buildings according to the 2020 Strategy and also, to develop new knowledge about the processes undertaken in sustainable materials, contributing to the improvement of the design and execution of works in the construction industry.

Advantages: Owing to the development of technology, we can say that the thermal insulation made from natural fibres in the near future may become a good alternative to other materials commonly used such as mineral wool, polystyrene or polyurethane.

Acknowledgments: This research is performed within scientific and research project "Natural materials from renewable / recyclable resources for constructions Nearly Zero Energy and Nearly Zero Emission in 2020s Romania", PN 16 10.03.03, Contract No. 9.N/2016, with the financial support provided by Ministry of Research and Innovation, Romania.

Class no. Innovative Research

RO.218.	
Title EN	Weak soil foundation improvement by geosynthetics reinforcement
Authors	Felicia ENACHE, Aurelian GRUIN, Anamaria Ioana FEIER, Avram JURCA, Cornelia BAERA
Institution	National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial
Description EN	Development "URBAN-INCERC" Timisoara Branch This research program evaluates the possibility of improving the behavior of weak foundation soils (mainly sandy soils) by creating cushion foundations using existent soil which is consolidated through compacting and also geosynthetics materials (geogrid / geocells) reinforcing. Cushion foundations were simultaneously subjected to both, vertical static loads, similar to those induced by the suprastructure and also dynamic loads, generated by traffic, technological processes or even low intensity earthquakes. Dynamic loads were induced to the testing set-up by means of a horizontally movement seismic platform. The cushion foundations were created inside of a particularly designed, shear earth box-like set-up, built by the use of metal frames (rectangular cross- section pipes). These frames were individually provided with Teflon adhesive film at contact surface, allowing them to move independently and simulating this way the real behavior of cushion foundation. The entire system is connected in a rigid manner to the vibrating table, by the means of metal bolts/welding. The recorded results are close to the real behavior of cushion foundations, considering both types of loading, the vertical astatic and horizontal dynamic one. <i>Advantages</i> : The settlement values under loads showed a clear reduction when the geosynthetical reinforcement was used, in comparison to the free non-reinforced system. It can be stated that the maximum allowed deflection on the site is recorded for lower thickness values of the reinforced cushion foundation, with improved results also considering the costs and the execution interval. <i>Acknowledgments</i> : This research is performed within scientific and
	research project PN 09-14 01 04, with the financial support provided by Ministry of Research and Innovation, Romania.



Class no.

Innovative Research

RO.219.	
Title EN	Innovative methodology for assessing the functional
	urban areas in Komania
Authors	Antonio Tache, Oana Popescu, Monica Tache
	The National Institute for Research and Development in
Institution	Constructions, Urban Planning and Sustainable Spatial
	Development URBAN-INCERC Bucharest
	The planning activity is essential for territorial development.
	Cities have a catalytic effect on economic development and
	for the establishment of functional local networks. The poster
	aims to present the assessment of the economic potential of
	Romanian localities – for development stability or decline -
	by identifying the factors causing such trends. The method
	used is an inpovative one. Thus, for each analysed indicator
	at locality lovel a grouping of values was achieved on 10
	at locality level, a glouping of values was achieved on 10
	intervals, in accordance with the standard scheme for
	classification on natural breaks (Jencks), obtaining thus 10
	groups and for which scores from 1 to 10 have been assessed,
	in ascending order of values. For each studied domain and
	each locality, an index was calculated as the average of all
Description	scores, weighted by importance coefficients. Similarly, a
FN	final attractiveness index at locality level was obtained, as an
	average of corresponding indexes for all studied domains
	weighted by their coefficients of importance. Indexes that
	were calculated for each domain and the final attractiveness
	index for all localities were translated into thematic GIS
	maps, by using ARCGIS 10.2.2. and its statistical support.
	Assertion of European metropolitan integrated areas requires
	a new strategy for maximizing the integrated development of
	large cities in Romania. Therefore it is necessary to perform a
	diagnostic analysis that redefines urban functional areas of
	the county municipalities and to implement national
	strategies on achieving functional specializations and smart
	functional encoded a process of
	regionalization departualization to anable a callebration
	regionalization-decentralization to enable a collaboration
CI	based on integrated territorial principles.

Class no.

Innovative Research
RO.220.	
Title EN	Testing method for façade elements INCERC Romania
Authors	Simion Adrian, Horatiu Dragne
Institution	INCD URBAN-INCERC
Description EN	This research presents a new testing method in a natural scale for façade elements tested on buildings with more than 3 floors. The results obtained from the test provide the data, needed to evaluate the fire protection performance of the ETICS
Class no.	Systems.
RO.221.	
	The Influence Of Kaolin Content In Ensuring The Anti-
Title EN	Corrosive Character Of Acrylic Products With Ceramic
	And Silicon Microspheres
Authors	Irina Popa, Alexandrina Mureșanu
Institution	INCD "URBAN-INCERC" Sucursala INCERC București
Description EN	Experimental results of research works developed in order to obtain innovative systems for corrosion protection of steel are presented. The innovative nature consists in the material type and the multilayered systems that were created and then tested in laboratory and in situ conditions. Several recipes of an acrylic compound in aqueous dispersion, with ceramic and silicone microspheres, with a kaolin addition in different proportions were created and applied on steel surfaces in three and four layered systems. It is presented the influence of kaolin content on the thickness and the survey results of the systems exposed to the actions of some corrosive environments – temperature variations, heat and humidity, salt fog (exposure to corrosive environments in accelerated laboratory conditions) but also to an urban-industrial environment specific for coastal areas (exposure to natural atmospheric environment artificially accelerated). The results of the survey expressed by means of the adherence of the multilayered systems to steel surface indicates a possible new merge between nanotechnology and natural resources, and a new possible direction for the use of kaolin in paint industry, in order to obtain a new type of coatings with a good reaction to the aggressive actions of the current climate manifested in various countries.

Class no.

Innovative Research

RO.222.	
	Sustainable measures for improvement of deformability
Title EN	and bearing capacity soil characteristics focused on
	durability of engineering works
Authors	Cornelia-Florentina Dobrescu, Elena-Andreea Călărașu
	National Institute for Research and Development in
Institution	Constructions, Urbanism and Sustainable Spatial
	Development "URBAN-INCERC"
	A major engineering concern is linked to a proper selection
	of technological procedure and materials depending on site
	conditions required by projects and ground properties which
	have to be modified. The present research is aim to achieve
	the improvement of soil performance characteristics in terms
	of deformability and bearing capacity. Experimental
	applications on natural and stabilized soils in various
Dentification	mixtures with different composite materials as binders were
Description	carried out to assess the soil behaviour after stabilization
EN	process, exposure on normal temperature conditions and
	tested at different ages. By applying of soil stabilization
	technique, several advantages related to cost and time
	savings, ease-of-use and environmental friendly can be
	obtained. The end-results will serve to establish the
	appropriate mix design for engineering purposes and
	effectiveness of material performances on field according to
	soil conditions
C1	

Class no.

Innovative Research

Military Equipment and Technologies Research Agency

RO.223.	
Title EN	DEVICE FOR MONITORING (DPM)
Authona	Adrian ALEXEI, Ionuț CIOBANU, Daniel ȘUTEU, Ion
Autnors	GHERGHINA, Liviu TATOMIR
Institution	Military Equipment and Technologies Research Agency
Description EN	The monitoring device (DPM) is designed for determining, analyzing and monitoring the parameters of aerial platforms. This device is composed of 4 modules (block): sensors, data acquisition and processing; storage/data transfer; supply. Sensor Module is designed for data acquisition of the position, speed, altitude. Module storage/ transfer data: used for data transmission, being a radio modem which carries serial data communications with ground data terminal. This device has been successfully used in testing and evaluation of development "Parachuted Standard for Personal Modernized 1 (PSPM 1)".
Class no.	Innovative research
RO.224.	
Title EN	UAV MONITORING SYSTEM ULTRA - 20 MULTIROL
Authors	Adrian ALEXEI, Sabin CODREA, Ionuț CIOBANU, Ion GHERGHINA, Nicolae NĂCIOU, Florin STANCIU
Institution	Military Equipment and Technologies Research Agency
	Destination system:
Description EN	 training in real drawings with various types of weapons in conditions simulating threats type unmanned aerial platforms, cruise missiles or aircraft piloted by low speed; tactical video surveillance field, in real time. Compose System: ULTRA-20 V1 aerial platform; ground control station - GCS; data terminal robotic - GDT; modernized pad.
Class no.	Innovative research

RO.225.	
	COMMUNICATION SYSTEM WITH AUTOMATIC
Title EN	TRACKING OF GROUND A MOBILE GPS
	COORDINATES FOR THE PLATFORMS
Authors	Adrian ALEXEI, Daniel ŞUTEU, Ion GHERGHINA,
	Marin DUMITRU, Nicolae NĂCIOU
Institution	Military Equipment and Technologies Research Agency
	The system developed allows communication with an aerial
	platform in motion (UAV), allowing:
	• GPS position determination time the platform;
Description	• Determining the future position of the platform using
EÑ	mathematical models of type predictor corrector;
	• filtering the signals (selection and elimination of unwanted);
	 Selecting optimal communications channel.
	• Moving the antenna in the direction of the optimum signal.
Class no.	Innovative research



Research Center for Navy, Constanta, Romania

RO.226.	
Title EN	Hydro-acoustic system for determination of potential targets signature (HDAPT) as part of the system for detection, localization, tracking and identification of risk factors for strategic importance objectives in littoral areas (SIROLC)
Authors	Georgică SLĂMNOIU; Ovidiu RADU; Valerică ROȘCA; Camelia PASCU; Roxana-Gabriela DAMIAN; George SURDU; Elena CURCĂ
Institution	Research Center for Navy, Constanta, Romania
Description EN	The hydro-acoustic system for determination of potential targets signature(SHDAPT), provides the: - survey of underwater environment in harbor areas and other coastal objectives, anchorage areas and mandatory pass points; - warnings about presence of underwater (divers, diver vehicles) and surface dangers (fast small boats) in the interest areas; - determination of the acoustic signature for surface ships and divers(including their anchoring devices) The functional HDAPT system includes: -Bruel&Kjaer 8105 / 8106 hydrophones; -fixed point anchoring device for hydrophone; -input module LAN XI 3052-A-030, hydrophones connection cables; -laptop;

-software application for ships and divers detection.

Class no.

Innovative research



RO.227.	
Title EN	Autonomous underwater vehicle used in maritime security missions
Authors	Georgică SLĂMNOIU; Ovidiu RADU; Valerică ROȘCA; Camelia PASCU; Roxana-Gabriela DAMIAN; George SURDU; Elena CURCĂ
Institution	Research Center for Navy, Constanta, Romania
Description EN	Ine AOV has a key fole in the missions of detection, localization, tracking and identification of risk factors situated on the sea bottom as it can move over a relatively wide area and provides a high coverage degree with spatial and temporal resolutions that are not accessible with other means. The efficiency of the AUV is very high when compared to costs and the duration of the measurements. The AUV has an integrated side scanning sonar and a sensor package for conductivity and temperature.
Class no	Innovativa Dasaarah

Class no.

Innovative Research





Scientific Research Centre for CBRN Defense and Ecology

RO 228	
11012201	New highly efficient catalytic and photocatalytic systems
Title EN	for decontamination and detoxification of chemical warfare
	Nicoleta PETREA ¹ , Răzvan PETRE ¹ , Gabriel EPURE ¹ ,
Authors	Claudiu LAZAROAIE ⁴ , Vasile ŞOMOGHI ² , Dr. Ştefan NEAŢU ²
Institution	¹ Scientific Research Centre for CBRN Defense and Ecology ² SC STIMPEX SA
	This research describes some catalytic and photocatalytic
	innovative technologies capable of rapid and efficient
	decontamination and detoxification of CWAs and other highly
	toxic chemicals (including organophosphorous pesticides).
	These technologies are far less polluting compared to existing
	technologies and have a high yield, ensuring rapid
	decontamination and detoxification of CWAs and their
	degradation products.
	CWAs are the most toxic and lethal compounds ever
D	invented, currently divided into two major groups: nerve
Description	agents, such as the G-series (soman, sarin, tabun), the V-series
EN	(Vx, Russian-VX) and vesicant agents, such as the H-series
	(sulfur/nitrogen mustard) (Fig. 1). Eliminating the hazard of
	CWAs is desirable both in storage sites and on the battlefield.



Figure 1. Molecular structure images of the targeted CWAs.

Class no.

Innovative Research

RO.229.	
Title EN	Cooling device
Authors	Marcel SONU
Institution	Scientific Research Centre for CBRN Defense and Ecology
	Using the principle of heat absorption, when a substance is
	evaporated, two systems where accomplished for cooling of
	different interiors.
	The first system consists of an evaporator (tubular system
	partial filled with thermal agent) situated in the intended cooling
	interior, collector pipe for resulted vapors and, a condenser tubular
	net situated in exterior. The condenser tubular net is coated with
	porous material that can get wet. This material has at the base a
	vessel filled with water. Through material capillarity is ensured that
	the whole surface is permanently wet (like the wet thermometer
	from psihrometer). Because water evaporation, the tubular net
	becomes the cold source on which the thermal agent's vapors (from the interior of the system condense)
	The design of the condenser allows the return of the thermal
	agent in evaporator when a certain level of condensed phase is
	reach The condenser tubular net is situated at a superior level by
	comparison with the evaporator.
	The second system (Fig. 1) consists of: exterior jar with
	semi permeable walls (1); insulating interior jar (2); lid (3);
Description	insulating material (4); cold zone (5); water (6). The exterior jar
EN	with semi permeable walls is permanently wet with the water
	between the two vessels. Being situated in atmosphere the water
	evaporates due to the air draft, according to the law of exchange
	heat through convection. The water in between the two vessels will
	separate according to its density at different temperatures.
	I he lowest temperature will be found at the bottom. -3
	100
	8 <u>.</u>



Figure 1. Cooling device. Innovative Research

NATIONAL 476

Class no.

HONEYWELL ROMANIA SRL

RO.230	
Title	Benzene sensors using metal oxides and associated methods
Authors	Bogdan-Catalin Serban, Octavian Buiu, Mihai Brezeanu, Cornel Cobianu, Cazimir Bostan, Cristian Diaconu
Institution Patent no.	Honeywell Romania WO 2016/081241 A1, Publication date: 2016 -05-26 Benzene (C_6H_6) is a highly flammable, toxic, human carcinogen, organic hydrocarbon.This invention introduces a novel, environmental friendly, gas-phase benzene sensing solution based on the supramolecular chemistry principles and on Ultra-Violet Visible (UV-VIS) detection. The low-cost, easy-to-manufacture solution has the potential to go beyond the state-of-the-art in terms of specificity, being able to discriminate between several flammable aromatic hydrocarbons. Numerous results reported in literature indicate that benzene reacts with iodine and generates a charge complex which can be easily identified due to its specific UV absorption band. This band is attributed to a partial intermolecular charge transfer between an electron-acceptor (iodine) and an electron–donor (benzene):
Description	$C_6H_6 + I_2 = C_6H_6I_2$ The formation of this type of charge complex can be understood in the terms of the Hard Soft Acid Base (HSAB) rule. One of the most important statements of the HSAB theory is that hard acids prefer to react with hard bases, while soft acids prefer to interact with soft base. According to this theory, since benzene is classified as soft a base, while iodine is soft acid, they will yield a strong interaction. The theoretical foundation for an iodine-based benzene sensor is therefore laid. However, there is drawback when trying to fabricate a benzene sensor employing iodine as sensing material. Although a solid, iodine is highly volatile and can sublimate even at room temperature. In order to stabilize it, iodine can be encapsulated in the cavity of either $\alpha -$, β -, γ - cyclodextrines (CDs) or their derivatives. Cyclodextrines are enzyme modified starch derivatives, comprising D-glucose units. Formation constants of cyclodextrin inclusion complexes with iodine were determined by measuring solubilities of iodine vapor in water, at 25°C (8.3×10 ³ dm ³ mol ⁻¹ for α -CD, 1×10 ² dm ³ mol ⁻¹ for β -CD, and 13 dm ³ mol ⁻¹ for γ -CD). The supramolecular cyclodextrine-iodine assembly is stable due to the van der Waals forces which exist between the hydrophobic interior of the cyclodextrin as host molecule and iodine as guest

molecule The dissociation of the iodine-cyclodextrine complex can be achieved above room temperature ($>50^{\circ}$ C). At the same time. benzene has a significantly larger affinity for iodine than for cvclodextrine. Therefore, when exposed to benzene, the supramolecular cyclodextrine-iodine assembly is expected to eliberate iodine, thus leading to a benzene-iodine reaction which can be optically detected.

Class

Environment - Pollution Control Ontical fibers Ronzone inlet UV-VIS Light Source (shutter included; Diffraction CCD dicde correlated with heater grating апач rentrell Cyclodextrine & locline compound Substrate (kapton / polycarbonate)

Fig. 1 Optical system for benzene detection based on the cyclodextrine - iodine complex

RO.231.

Title Chlorophyll-based sensors for mineral and organic acids Bogdan-Catalin Serban, Octavian Buiu, Mihai Brezeanu, Authors Cornel Cobianu. Cristian Diaconu Institution Honeywell Romania Patent no. EP 2806268A1 Publication date: 2014 -11-26 (A1) Mineral and organic acid detection is an extremely important issue related to safe operation of numerous, highly complex industrial areas, such as: food industry (employing acetic acid, propionic acid, butyric acid, phosphoric acid), semiconductor manufacturing (where hydrogen chloride and hydrogen fluoride are employed), chemical plants (where hydrogen fluoride is used), etc. In this invention, we propose the design of a sensor for mineral and organic acids based on chlorophyll molecules. Chlorophyll is one of the most studied metallic biomolecule. found in various plants and algae. There are different types of chlorophyll, Description with different chemical structures: chlorophyll a (molecular formula C₅₅H₇₂O₅N₄Mg), chlorophyll b (C₅₅H₇₀O₆N₄Mg), chlorophyll c1 $(C_{35}H_{30}O_5N_4Mg)$, etc. All these structures contain the Mg²⁺ cation surrounded by a tetrapyrrolic ring. According to the Hard Soft Acid

Feate

Base (HSAB) theory, the magnesium (II) cation (small, doubly charged) is classified as a hard acid, while nitrogen atoms, which are present in the tetrapyrrolic ring (due to large electron delocalization), are borderline base.

One of the most important statements of the HSAB theory is that

hard acids prefer to react with hard bases, while soft acids prefer to react with soft acids. As a consequence of this principle, the central magnesium in the chlorophyll structure cation can be easily removed from the tetrapyrrolic ring in reaction with different cations, such as Cu (II), Zn (II), a mineral acid such as HCl (as described in **Fig. 1**), or an organic acid like CH₃COOH. In the presence of a mineral or an organic acid, chlorophyll a is converted into pheophytin a, while chlorophyll b is converted into pheophytin b. All these chemical reactions are accompanied by color changes. While both chlorophyll a and b are bright green, pheophytin b is green-grey and pheophytin b is olive-green. These color changes could be exploited in order to conceive a colorimetric method for mineral acid sensing.

The sensing layer, based on chlorophyll and a hygroscopic compound, such as cyclodextrines (α or β or γ or mixture of these), xylitol or maltitol, is a much simpler and environmental-friendly solution compared to the one currently used. This second component ensures the amount of humidity necessary for the ionization of mineral or organic acids *in situ*. The whole formula composition for mineral acid sensing comprises only two elements, is environment friendly and is based on a single chemical reaction. The formula composition is made by dissolving chlorophyll and a little amount of α – cyclodextrine in ethanol. A cellulose substrate is then passed through a bath containing the formula solution. The coated paper substrate is then dried in an oven, at 50°C.

Class 1. Environment - Pollution Control



Fig.1 The reaction of chlorophyll-chore a with a mineral acid (HCl) leading to the formation of pheophytin-chore

Title	Colorimetric gas sensing layer, system, and method of
	making the same
Authors	Bogdan-Catalin Serban, Mihai Brezeanu, Cornel Cobianu,
	Octavian Buiu, Mihai Mihaila, Cristian Diaconu
Institution	Honeywell Romania
Patent no.	EP2884274B1, Publication date: 15 03 2017
Description	Hydrogen sulfide (H ₂ S) is a flammable, irritating, corrosive,
	typically bad-smelling and extremely toxic gas. Toxicity of

hydrogen sulfide can be comparable with hydrogen cyanide, which is considered as a broad-spectrum poison. Hydrogen sulfide can affect different parts and systems such as skin, eyes and throat in the human body, depress the nervous system and eventually cause death. The present invention is directed toward a colorimetric hydrogen sulfide sensing layer, system, and method of making the same. The colorimetric gas sensing layer, systems, and methods of the present invention can provide various advantages over the previous approaches. For example, the sensing material of the colorimetric gas sensing layer can include two elements, which can reduce the complexity and manufacturing costs of the colorimetric gas sensing layer. The colorimetric gas sensing layer is environmentally friendly and biodegradable and the reaction with the target gas (e.g., hydrogen sulfide) is based on a single chemical reaction. Further, the performance of the colorimetric gas sensing layer of the present disclosure can minimize adverse effects due to relative humidity changes, as the adsorbed water does not react with the gas sensing layer and does not change the color of the gas sensing layer. Additionally, the colorimetric gas sensing layer of the present disclosure does not have cross-sensitivity with other gases, as the only reaction of the gas sensing layer is one between a metal cation (e.g., ferrous (II) or cuprous (II)) and hydrogen sulfide).

The sensing material can comprise dextran and a salt. Dextran having a molecular weight below 1,000,000 Daltons is soluble in water and can form a clear and stable solution. Dextran can provide increased adhesion to the cellulose substrate, increased mechanical resistance of the substrate and sensing material. The salt can be chosen from one of an iron (II) salt, and copper (II) salt. The iron (II) salt can be selected from ferrous chloride, ferrous acetate, and iron gluconate. The copper (II) salt can be chosen from copper chloride, copper acetate, copper gluconate.

Thus, a ferrous cation (Fe⁺²) can react with H₂S yielding iron (II) sulfide (FeS), which is a black precipitate. The chemical reaction can be represented by the following: Fe⁺² + H₂S =FeS+2H+. In an example, the sensing material can be made of dextran and copper (II) salt. In this case, a cuprous cation (Cu⁺²) can react with H₂S yielding copper (II) sulfide (CuS), which is a black precipitate. The chemical reaction can be represented by the following: Cu⁺² + H₂S =CuS+2H⁺.

Class

1. Enviromental - Pollution

SC HOFIGAL EXPORT -IMPORT SA

RO.233.	
Title	Natural phytotherapeutic product with antioxidant and anti- inflammatory activity and its development process
Authors	Manea Stefan, Popescu V. Carmen, Carabela Viorica, Tamas Viorica
Institution	Hofigal Export-Import SA
Patent no.	<u>C.B.I:</u> no. a 201300540
Description	Natural phytocomplex obtained by associating Willow Bark, Rosemary and Oregano extracts, with major anti- inflammatory and antipyretic properties, indicated for respiratory and heart health, in the form of capsules. The product have a selective behavior and passes the stomach lining in a non-invasive manner. Reaching the liver and after suffering transformations it enters the blood stream as salicylic acid to yield its benefic effect. As the gel for external use, the product "Salicilol" gel is indicated in inflammatory / rheumatism disorders
Class	4
RO.234.	
Title	Natural polienzyme complex for human and veterinary use and its obtaining process
Authors	Manea Stefan, Tamas Viorica, Cozea Andreea, Neagu Mihaela
Institution	Hofigal Export-Import SA
Patent no.	<u>C.B.I:</u> no. a 2016 00582
Description	The product is performed as food supplement in capsules/tablets, containing well-balanced enzymes and ather phytotherapeutical compounds necessary for digestion process to humans and small animals (pets).
Class	4
RO.235.	
Title	Phytotherapeutic product for prevention of prostate and bladder diseases and obtaining process.
Authors	Staicu Vasile, Luntraru Cristina, Suciu Alexandru, Tamas Viorica, Manea Stefan
Institution	Hofigal Export-Import SA
Patent no.	<u>C.B.I:</u> no. a 201700060

Description The invention shows a unique combination of herbs, herb extracts and a propolis extract which compose an herbal product for prevention and/or improvement of benign prostatic hyperplasia symptoms. Concentrated extracts of *Epilobium parviflorum, Rosmarinus officinalis* and *Xanthium spinosum* are used in the formulation along with a concentrated extract of propolis as a relevant ratio for an optimal concentration of active substances. Chemical composition of the extracts and of the formula was carefully analyzed and characterized. The results, correlated with published scientific studies, show the potential benefits of this phyto-apitherapeutic complex on prostate diseases.

4

Class

RO.236.

Title	The nanostructured lipid carriers loaded with active vegetable and synthetic ingredients which provides an
Authors	Ioana Lacatusu, Nicoleta Badea, Gabriela Badea, Lucia Moldovan, Irina-Minerva Panteli, Iuksel Rasit, Mariana Popescu, Natalita Bordei, Raluca Stan, Daniela Istrati, Aurelia Meghea
Institution	Politehnica University of Bucharest, Hofigal Export-Import SA
Patent no.	<u>C.B.I:</u> no. A00672/23.09.2016
Description	The invention provides a process for producing, in aqueous phase, of lipid nanocarriers (NLC) based on Rosehip oil and Black Caraway oil able to co-encapsulate two active principles of lipophilic and hydrophilic nature, Marigold extract (EGb) and azelaic acid (AAz) with entrapping efficiency of 83% for AAz and 92% for EGb. The results of <i>in vitro and in vivo</i> tests demonstrated that the NLC with a content of 24%, loaded with vegetable oil, loaded with 0.02% EGb and 8% AAz shows a good biocompatibility with fibroblast cells L929 and exhibits a superior anti-inflammatory action, compared with a commercial product.
Class	4

NATIONAL 482

RO.237.	
Title	Cosmetic composition based on fresh plant juices, designated to delay the aging process of the skin
Authors	Stefan Manea, Viorica Tamas, Anca Daniela Raiciu, Nora Radulescu, Georgeta Alexandru
Institution	Hofigal Export-Import SA
Patent no.	B.I 123484/2009
Description	The invention relates to a cosmetic preparation designed to delay the aging process and to moisturize the skin. By association of the fresh plant juice with collagen and vegetable oils, it has been achieved until now a total of 5 products.
Class	- 4

S.C. BIOTEHNOS S.A.

RO.238.	
Title	Innovative therapeutically solution for degenerative processes inhibition and restoring the joint mobility
Authors	Laura Olariu, Veaceslav Ciuhrii, Brindusa Dumitriu, Diana Manuela Ene
Institution	S.C. Biotehnos S.A. The inflammatory and traumatic disorders of joints, tendons and muscles comprises complex aspects, multifactorial guided, what compete on the disease intensity and progression. In order to accomplish an optimum efficiency of the treatment in this kind of pathologies, are extremely important the mechanisms' modulation and the synergism of action of pharmaceutically active principles. The diversity and complexity of the insects' world, as well as the plants chemical structures obtained through a well defined technological processes offer a study platform in drug research and superior toxicity/efficacy ratio bioproducts development. The results of Biotehnos Laboratories' research propose the use of an entomological extract, Ento-S, which has a role in chondrocytes cell division stimulation, suggesting the osteoarticular regeneration, sustained also by the over-expression of α 5 integrine and the restoring of cell-extracellular matrix bonds.
Description	The standardized, vegetal extracts, GMP (Good Manufacturing Practice) authorized, encoded CSv and CCs, contain structural complexes with polyphenols, flavones, triterpenic acids, poliphenolcarboxylic acids, being optimized to assure a structure – function relationship, convenient for cellular antioxidant and anti- inflammatory effects. These concretized in mechanisms of action at the level of free oxygen radicals, extracellular released cytokines, expression of membrane adhesion molecules using three different cell types (keratinocytes, fibroblasts, vascular endothelium). Multiple pro-inflammatory stimulatory conditions (LPS, TNF α , PMA) have been investigated. CSv also induced dermal regeneration effects, motivating its use as an active ingredient in topical products formulation.

The *in vitro* efficiency of entomological and plant active complexes recommend them in the algorithm of inhibiting degenerative processes and restoring joint mobility.

RO.239.	
	Superior capitalizing of indigenous Camelina crops and
Title	Solanaceae family species in order to obtain a prototype with
	antifungal applicability
Authors	Brindusa Dumitriu ¹ , Stefana Jurcoane ⁻ , Stelica Cristea ⁻ , Larisa Stangu ¹ Cristina Croitoru ¹ Mirela Calinescu ⁵ Alina Pone ¹ Laura
Authors	Olarin ^{1,2}
	1. S.C. Biotehnos S.A.
	2. Academy of Romanian Scientists, 54 Splaiul
	Independentei 050094, Bucharest, Romania
Institution	3. Microbial Biotechnology Centre-BIOTEHGEN
Institution	4. University of Agricultural Science and Veterinary
	Medicine from Bucharest, Romania
	5. Research Institute for Fruit Growing, ICDP-Maracineni,
	Pilesu, Komania Several plants, including those of Solangeage family, accumulate
	sterols and triterpenes as antimicrobial glycosides secondary
	metabolites assuring a chemical protection against parasites and
	pathogenic attack. <i>Camelina sativa</i> is a vegetal source of oil reach
	in essential fatty acids and could be noticed its remarkable
	resistance to pests due to camalexine, a protective substance
	intrinsic secreted. Our research has been focused on evaluation of
	the antifungal and antimicrobial potential of camelina and Solanum
	glycoalcaloids, starting from the original biocomplexes resulted
	from modern biotechnologies. The study of antimicrobial action of
	steroidic glycoalcaloids (GLY) and camelina oil (CAM) on
	standardized microbial strains reveals areas of growth inhibition for
Description	two complexes' biological activity on kerstingeytes and fibroblasts
	show the decrease of intracellular oxygen reactive species in both
	type of cells and stimulation of fibroblasts division in pro-
	inflammatory conditions.
	Considering the efficacy spectrum of these compounds: the
	antimycotic action and the complementary antioxidant effects,
	including the cellular protection against inflammation, we shall
	develop a pharmaceutical prototype that will sustain the
	capitalization of agricultural potential and that one of vegetal waste,
	as well as the extension of use for ecologic camelina oil as active
	Ingredient for skin disorders therapies.
	The research was conducted as part of the project PIE21 / 2016.

SC DFR Systems SRL

RO.240.	
Title	Vertical settler
Institution	Gabriel PETRESCU, Bogdan Dumitru NĂSĂRÎMBĂ- GRECESCU, Ioana Corina MOGA
Authors	SC DFR SYSTEMS SRL
Patent no.	Patent No. 129628/30.09.2016
Description	A settler is designed to remove suspended solids by sedimentation. The low flow velocity in a settler allows settleable particles to sink to the bottom, while constituents lighter than water float to the surface. The proposed vertical clarifier is used in the final stage of wastewater treatment, for the final separation of solids from the water. Settling is attached to a DAF unit. Efficient removal of the suspended solids can be done in two ways: heavy suspensions settle to the bottom of the vertical settling, and the "light" suspensions are stuck to the air micro-bubbles and are ascended to the free surface. Vertical decanter gives an efficiency of removal of suspended solids without using chemicals that help form the floc sludge and without the use of electricity-consuming equipment. Final settlers in wastewater treatment plants operate under continuous flow and load conditions. Mixed liquor flows from the aeration tank to the settler and return sludge, containing the concentrated sludge, is pumped back to the aeration tank, while a clarified effluent flow (equal to the wastewater influent flow) is discharged from the system.
Class	1

Class



NATIONAL 486

RO.241.

	IMPROVED FLOTATION TREATMENT
Title	TECHNOLOGY FOR HEAVILY LOADED WASTE-
	WATERS – APIFLOT-II
Authors	Gabriel PETRESCU ¹ , Ioana Corina MOGA ¹ , Ileana Cristina
	COVALIU ² , Mihai Gabriel MATACHE ³
	1 - SC DFR Systems SRL;
	2 - University POLITEHNICA of Bucharest;
Institution	3 - National Institute of Research - Development for
	Machines and Installations Designed to Agriculture and
	Food Industry

The project is based on the need of SC.DFR. Systems SRL to obtain an improved technology for treatment of heavily loaded wastewater by flotation. The main objective of this proposal is the conception and design of improved treatment technologies by flotation performance that can solve the problem of heavily loaded wastewaters. The proposed solution consists in a modern treatment technology, based on the flotation treatment using artificial dissolved air that will be enhanced by the addition of nanomaterials and biological treatment with film attached on artificial support. It is Description intended to achieve the specified discharge below the limit set by current regulations (NTPA 001/NTPA 002) to protect on long-term, the environment. Following the completion of the project, to validate the proposed technology will be achieved a wastewater treatment plant with a capacity of 24 m^{3}/day which will operate on the principle of dissolved air artificial flotation. During the effective collaboration within the consortium will be designed and built the following equipment: pressurized capsule, nanoparticles dosing system and lamellar settler diffusion system associated with flotation gear.



Class

NATIONAL 487

RO.242.

	ADVANCED BIOTECHNOLOGY FOR INTENSIVE –
Title	FRESHWATER AQUACULTURE WASTEWATER
	REUSE - ABAWARE
Authors	Ioana Corina MOGA ¹ , Gabriel PETRESCU ¹ , Ioan ARDELEAN ² , Nicolai CRACIUN ³
	1 - SC DFR Systems SRL;
Institution	2 - Institute of Biology, Romanian Academy;
	3 - Ecological Society Aquaterra.
Patent	
	ABAWARE's main objective is to develop an advanced

Description Description D

CONTINENTAL AUTOMOTIVE ROMANIA SRL

RO.243.	
Title	Device for detecting and/or adjusting a position of a movable element of the device
Authors	Iulian Oancea
Institution	CONTINENTAL AUTOMOTIVE ROMANIA SRL
Patent no.	EP2709120 (B1) / Patent application No. 120464017 /2012
Description	The device has a movable element which is provided with two ferromagnetic arrangements one of them being a spatially fixed element. The movable element is moved in adjustable positions relative to spatially fixed element. Either one or both ferromagnetic structures are provided with one or many magnets. The magnetic interaction between the magnetic and/or ferromagnetic/magnetic arrangements provides relative positioning and indexing due to a maximum or minimum of magnetic field overlapping. In one embodiment the device comprises electric contacting elements that can be used as a normal switch or as a position detector. Multiple constructive variants are available as follows: rotating or linear indexing in case of rheostats, cross indexing in joysticks indexing or other possible pattern movement in case of multiple position switches.

Class

8, 2, 5,

RO.244.

Title Device for e.g. providing air clearance between brake lining and brake disk of electromechanical service brake in motor car, has ring element allowing balls to be moved away or inclined from ring in released position of ring element

Authors Cristian APETREI, George POPA

Institution CONTINENTAL AUTOMOTIVE ROMANIA SRL

Patent no. DE 10 2012 214 509

The device has a main cylinder partially surrounded by a cone ring in an axial direction. The cone ring forms a cone form between the cone ring and the main cylinder, where multiple balls are fit into the cone form. A ball ring element is arranged at the cone ring such that the balls are positioned between the ball ring element and the cone ring and pushed against the

Description ball ring element and the cone ring and pushed against the cone ring in a holding position of the ball ring element. The ball ring element allows the balls to be moved away or inclined from the cone ring in a released position of the ball ring element. An independent claim is also included for a brake for a vehicle.





RO.245.

TitleDevice and method for measuring the level in a fuel tankAuthorsTirzioru, Bogdan; Turcanu, AlexandruInstitutionCONTINENTAL AUTOMOTIVE ROMANIA SRLEndutrationEndutration

Patent no. EP3136063

The invention relates to a device for measuring the filling level in a fuel tank of a motor vehicle, comprising a transmitting unit for emitting ultrasonic signals, a receiving unit for receiving the reflected ultrasonic signals, and a computing unit for determining the filling level, by evaluating the transit time of the ultrasound signals between transmission and reception, Wherein an ultrasonic signal is emitted and received for the determination of a measured

Description emitted and received for the determination of a measured value, whereby the filling level can be output as a filling level signal from the computing unit, the computing unit having a first filter and a second filter; a selection of the measured values being performed by the first filter; Second filter, a smoothing of the filling level signal can be carried out. The invention also relates to a method for operating the device according to the invention.



ELECTROPUTERE VFU PASCANI SA

RO.246.	
Title	Redesign and Reconstruction of railway vehicles
Institution	Electroputere VFU Pascani SA
Description	Starting with 2005 Electroputere VFU Pascani SA had applied the R&R process to more than 500 railway vehicles (DMUs, coaches, trams, freight wagons) with considerable results. Through this process the old vehicles (50-60 years old) are transformed in vehicles that respect today's requests regarding comfort, environment, safety, security. The main advantage is the low cost, comparing with the new constructed railway vehicles.
Class	

RO.247.

Title	Intelligent rolling system, for general and technological land transport equipment
Authors	-
Institution	Electroputere VFU Pascani SA and INMA Bucuresti
Patent no.	-
Description	Purpose of this proposed project is to develop a Intelligent rolling system, for general and technological land transport equipment. The technical challenge, project novelty is the measurement and continuous monitoring of the transported load and its correlation with adequate air pressure in the tires that equip these systems. Necessity to make such a system lies in the practical reality according to which large varieties of the transported products is high taking into account their different specific weights, situation which calls for an adjustment of tire air pressure accordingly with the transported load value.
Class	-

CEPROCIM S.A. BUCUREȘTI

RO.248.	
	Plastering mortar for reinforcement and esthetic
Title	treatment of finish plastering and mural paintings
	support
Authors	Mohanu Ileana, Mohanu Dan, Gomoiu Ioana, Paceagiu
Institution	CEDDOCIM S A BUCUDESTI
Detent no	CEI ROCINI S.A. DOCOREȘTI DO 128207/2015
I atent no.	Short description of the invention
	The invention relates to a mortar meant for the consolidation
	of finishing plastering and mural painting support of
	historical monuments, showing gaps of different stretches.
	which are located: in the <i>arriccio</i> layer; on walls and the
	vaults; inside and outside of historical monuments.
	The mortar is characterized by apparent density of 1.63 -
	1.78 g/cm ³ , compressive strength at 56 days of $3.1 - 4.0$
	MPa, freeze-thaw resistance, expressed as the number of
	cycles until a weight loss of max. 5%: 15 - 25 cycles,
D	coefficient of water vapor permeability of $0.5 - 4.7$, adhesion
Description	to support $0.1 - 0.26$ N/mm ² .
	Application Historical monuments located in different climatic
	conditions
	Advantages
	- aesthetic - granting chromatic of the lacunae to that of
	color tones of <i>in situ</i> murals,
	- compositional compatibility with the original,
	- elimination of chromatic reintegration operation
	performed by brush,
	- color stability in time,
	- shortening execution time.
Class] Diagtoning montan for mund rainting annout of historic-langements
	r ussering moriar jor murai painting support of historical monuments

Mortar samples

Models of applied mortars

RO.249.	
Title	Manufacturing process of Portland cement
	Paceagiu Jenica, Moanță Adriana, Drăgănoaia Constantin
Authors	Cosmin, Petre Ionela, Mohanu Ileana, Fechet Roxana
	Magdalena, Vlad Nicoleta
Institution	CEPROCIM S.A. BUCUREȘTI
Patent no.	RO 128292 /2014
Class	 Short description of the invention This invention proposes the use of metaconglomerate in the Portland cement clinker manufacturing in order to sustainable exploit of natural resources and environmental protect, but also to improve the quality of cement Portland by increasing of silica ratio. The metaconglomerate is a rock type consisting of quartz (40-60%), feldspar (30-40%), biotite, chlorite, muscovite (8- 12%), limonite and opaque minerals (2-5%) and calcite (3- 10%). The metacongomerate layer may appear sometimes during limestone's exploitation (a main raw material at the Portland cement clinker manufacture). Separate storage of this layer involves creating a dump in the vicinity of the limestone quarry, the occupation of areas land and transport and manipulation costs of this unwanted material. <i>Application</i> Manufacturing of Portland cement with improved quality <i>Advantages</i> by using of metaconglomerate in the Portland cement clinker manufacture is valorized the waste resulting from the stripping of limestone quarries, which allows the growth of silica ratio to 2.35- 2.45 and implicitly of calcium silicates content which contributes to the higher mechanical strengths of cement, the growth of silica module compared the reference mixture based on limestone, silica-aluminous component (i.e. clay, marl, furnace slag, fly ash etc.) and pyrite cinder, contributes to the formation of smaller quantities of liquid phase during sintering of clinker, with positive implications in regards to the refractory lining life of the clinker kiln.

RO.250.	
Title	Reducing agent Cr ⁶⁺ for Portland cement
Authors	Dumitrescu Cristina, Moanță Adriana
Institution	CEPROCIM S.A. BUCUREȘTI
Patent no.	RO 127747 /2016
Description	 Short description of the invention The invention refers to an additive as reducing agent of hexavalent chrome from Portland cement, respectively the soluble Cr⁶⁺ in water, which added to cement, decreases the Cr⁶⁺ content to maximum 2 ppm (imposed limit by HG 932/June 10, 2004) and preserves this value on the whole period of the cement standard guarantee. Also, by performing of this reducing agent, the technological disadvantages brought by ferrous sulphate used presently as reducing agent of Cr⁶⁺ are eliminated. The reducing additive of Cr⁶⁺, in accordance with the invention, is constituted of 50-70% tuff, diatomite or burnt clay and 30-50% technical FeSO₄ 7H₂O, the components being intergrinded at a fineness of about 3% residue on the sieve of 90µm. The additive is dosed in cement in proportion of 0.2-0.5%. <i>Application</i> Building materials field <i>Advantages</i> - it provides a longer guarantee term of cement, - dosed in proportion of 0.2-0.5% in cements, with content up to 14 ppm Cr⁶⁺, it assures its decreasing up to a content of maximum 2ppm, this being kept on the whole period of the cement standard guarantee and do not create problems at dosing and homogenization.
U111 00	•

RO.251.	
Title	Portland cement with addition of cement kiln dust
Authors	Moanță Adriana, Petre Ionela, Menicu Mirela Florentina
Institution	CEPROCIM S.A. BUCUREȘTI
Patent no.	Patent Application A 2011 00780/04.08.2011
Description	 Short description of the invention Electrostatic precipitators in cement manufacturing lines are designed to take delivery of the dust-laden gas from raw material grinding and clinker burning plants so as to remove the dust. The cement kiln dust (CKD) is reintroduced in clinker burning installations. Because it is rich in volatile minor compounds: alkali, sulphur, chlorine, which are partially volatilized in the burning zone and condensed again, may influence negatively clinker quality and the operation of clinker burning installation. Physical-chemical characteristics of CKD allow its reintroduction in manufacturing flow of the cement, as addition at cement grinding. The cement is obtained by simultaneous grinding of 55-67% Portland clinker, 18-30% slag, 10% CKD and gypsum, at a fineness expressed by residue on the sieve of 90 μm, of about 1.5%. As consequence of using CKD as addition at cement grinding, negative effects on obtained clinker quality and of operation the clinker burning installation which occur in the case of its introduction in the clinker burning installation are removed. <i>Application</i> A decreasing of energetic consumptions in the process of cement manufacturing, by partially replacement of the clinker, energy-intensive material, extension of sorts range of industrial by-products that may be used in cement industry, and decreasing the CO₂ emissions, by using CKD as addition to cement grinding negative effects that occur in the case of its introduction in clinker burning installation are also removed.
Class	7

S.C. METAV CERCETARE DEZVOLTARE SRL

RO.252.

Title	Hybrid technology for obtaining multicomposite layers
Authors	Aurelian Buzăianu. Petra Motoiu. Ioana Csaki
Institution	S.C. METAV CERCETARE DEZVOLTARE SRL
	Bucharest, Romania
Description	A /00033 date : 2017 /1/20
	Degree of novelty and uses

Hybrid technology combine ASP (Atmospheric Plasma Spraying) with EAW (Electric Arc Wire) of complex mixtures of Cr, Ni,Ta, Nb, Mo, W, Al, Ti metallic based elements to achieve deposition of multicomposite layers to obtain new types of chemical corrosion, abrasion and wear protective coatings for the geothermal turbines blades that will be used in medium and high enthalpy geothermal steam. Sealing the micropores that are resulting at the composite deposited layers surface is done by applying the final layers of polymer with high heat resistance.

Avantages

The method allows to achieve turbine blades protection based on deposition of multicomposite layers, and by applying it can protect turbine blades or groups of turbine blades fabricated from different types of ferritic, martensitic stainless steel, duplex steels or super alloys. In the same time, the technology lets it achieve the reparation or the restorations of the already used blades surfaces, as so achieving extension of the functioning life of these in use important components of geothermal turbines.

Class 6 - Metallurgy



S.C. PRODMED INDUSTRIAL SRL

RO.253.

Title	Procedure for Elaboration of Lead Alloys and Lead
	Using Thermal Refining
Authors	Apostoloiu Mihai Cristian, Motomancea Adrian
Institution	S.C. PRODMED INDUSTRIAL SRL Bucharest, Romania
Patent	RO 125906 B1
Description	The issue solved by this invention consists in the design of a procedure and a proper plant that allows achievement of lead and lead alloys in cost-effective and environment-friendly conditions superior to those currently used. Raw lead resulted from pyrometallurgical procedures includes a series of trace elements like: Cu,As,Sn,Fe,S, noble metals etc., that reduce to a high extent physical-chemical and technological properties of lead. Purification of lead is achieved by pyrometallurgical procedures or combined, pyro-electro-metallurgical procedures (thermal copper removal and electrolytic refining). The technological flow, used by invention, consists in the following steps: loading, gross copper removal, fine copper removal, alkaline refining, zinc removal, correction and casting, and the plant used comprises:refining bowl, mechanical agitator, transfer pump, casting device and burner.This procedure, as per invention, incurs the following benefits: - much lower thermal and electric power costs; - acquiring of a thermally refined lead with minimum 99,975% contents, that may be used in various industry branches; - in case of the design of lead alloys, it allows selective removal or preservation of alloy elements, resulting in low production costs;

Class

6 - Metallurgy







RO.254.	
Title	Integrated Modular Procedure to Obtain Lead Grades and Alloys
Authors	Apostoloiu Mihai Cristian, Motomancea Adrian
Institution	S.C. PRODMED INDUSTRIAL SRL Bucharest, Romania
Patent	RO 126410 B1
	Problems that are solved by this innovative technology for obtaining phase lead are as follows:- significantly reduced costs for thermal and electric power;
	- achieving a phase lead that, after subsequent processing, may be used both for manufacturing of lead grades with a purity between 99.940% Pb and 99.975% Pb, and also for all types of lead-based alloys:
	- very low pollution compared to all other manufacturing methods for phase lead.
	Novelty introduced by this technology consists in the following: a. Reduction of filtering equipment with more than 50% in case gas-oxygen burners are used.
Description	b. Preparation of input material is made following proprietary formulas that allow higher outputs.
	c. Execution of a technological flow for every waste type, namely: oxidic wastes (which include all types of lead-based oxidic wastes, including metallic and oxidic elements resulted following manual or mechanical stripping of used car batteries; sulfated wastes (which include all types of sulfate wastes, including sulfated or desulfated paste, in specific installations, which also results following processing of used car batteries; sulfate-oxidic wastes (like, e.g., groups resulted following stripping used car batteries that include both grill-oxidic wastes and paste-sulfate wastes). According to the invention, the optimum melting temperature is: for oxidic lead wastes 500-600°C, for sulfate lead wastes 800-900 °C, for mixed (groups) wastes 700-800°C, for desulfated paste 650-800°C.
Class	6 - Metallurgy



NEXTROM INDUSTRIES SRL

RO.255.	
Title	FOLDABLE AND PORTABLE ELECTRIC VEHICLE
Authors	Sorin SIRBU
Institution	NEXTROM INDUSTRIES SRL
Patent no.	US9567034 B2/14.02.2017 Patent application No. RO131213 (A2) / 30.06.2016 A foldable and portable electric vehicle for the transport of a single person comprises a foldable chassis with a support plate, a folding system for folding the chassis, a front driving wheel, a rear wheel, a foldable handlebar, an integrated system of command, control, monitoring and signaling, a mechanical brake on the rear wheel, a suspension on the rear wheel and a suspension on the front wheel and a steering column. Advantages -a folding chassis, including a platform for supporting a person during transport, a folding system that includes the platform and the steering column, the rear wheel, a suspension system for the front and rear wheel, a front driving wheel, a suspension system for the front drive wheel and a mechanical brake on the rear wheel; -foldable handlebars; -an integrated system of command, control, monitoring and signalization; -the control unit that is connected with the main board that has a microcontroller, sensors and a power circuit that carries power to the brushless DC electric motor from an accumulator during acceleration; -during braking operation, the same motor works as a generator, and the kinetic energy is sent to the accumulator. Applications Quickly, safely and ecological transportation of a person in urban areas. The Foldable and Portable Electric Vehicle was produced by NEXTROM INDUSTRIES SRL in several thousand units for
Class	a second real second seco
	1- foldable chassis; 2-folding system; 3-front driving wheel; 4-rear wheel;

2-toiding system,
3-front driving wheel;
4-rear wheel;
5-foldable handlebar;
6-integrated system of command, control, monitoring and signaling;
7-mechanical brake;
8-suspension on the

rear wheel; 9-suspension on the front and rear wheel; 10-steering column.

NATIONAL 500

NOLIEL SRL

RO.256.	
Title	"Magnetic device for motor torque djustment".
Authors	Mihai Cătălin Chitariu
Institution	Noliel S.R.L.
Patent no.	Patent application No. A 201500361/25.05.2015
Description	"Magnetic device for motor torque adjustment" is a device that converts the energy of the magnetic field emitted by the plurality of permanent magnets in a circular kinetic movement.
Class	2



CORNELIU GROUP Association for Research&innovation

RO.257.	
Title	THE INVERTED DINAMYC AIR FILTER - YXV Type
Authors	Corneliu Birtok Baneasa
Institution	Asociatia CORNELIUGROUP cercetare – inovare
Patent no.	Patent - 125034
Description	The inverted super absorbing filter improves the air filling coefficient of the engine by collecting and inverting the air flux by 180°. It is useful for engines using air filters set in the opposite direction of the flow of the absorbed air. It promotes environmentally friendly cars.
Class	8. Aviation, car industry and transportation

RO.258.	
Title	DEXTER'S laboratory
Authors	Students AR 817 – teacher coordinator Corneliu Birtok Baneasa
Institution	Asociatia CORNELIUGROUP cercetare – inovare
Description	 The idea is to transform the theoretical knowledge into practical applications through the creation of personalized projects destined to the study of the functioning principles of the componets, mecanism and the systems of vehicles. The engine laboratory, project: ,internal combustion engine - functional demostrative stand-the presentation of the functioning principle of the two main mecanisms": the biela mecanism – handle fixed and movable componets the mecanism of distribution of characteristics and functioning the incorporated electrical power steering project- the presentation of the power steering module and the functioning principle. All the projects are destined to the profound theoretical study through visualizing and practical operation of the projects and of the functional stands.
Class	10. Industrial and laboratory equipments

NATIONAL

S. C. VASILACHE S.N.C.

RO.259.	
Title	Heating System
Authors	Vasilache Virgilius, Vasilache Monica, Vasilache Adela
Institution	S. C. VASILACHE s.n.c.
Patent no.	Patent application No. 00641/2013
Description	The Heating System is designed to DECREASE WITH ABT. 30% THE ELECTRICITY CONSUMPTION of plastics injection machines. THE ELECTRICITY CONSUMPTION HAS A SHARE OF ABT. 75% IN THE COST OF A PLASTIC MOULDED PIECE. The Heating System is provided, equidistantly on the circumference of a plasticising cylinder (1), with longitudinal channels. The same number of rectilinear tubular heating elements (3) is introduced in each channel, each element having at its ends a threaded rod which is 90° folded to exterior of the channel; a bridge (7) connects each two consecutive threaded rods, and so the heating elements (3) being connected in parallel. Each group of heating elements is independently fed with electricity, in order to achieve a variable heating alongside the plasticising cylinder (1). The heating elements (3) are fixed by means of some collars (6) and bolts. The heating elements (3) are wrapped by a thermo-electric insulating layer, a circular housing (12) gathering all the assemble; the concave surface of the housing (12) has thermal reflecting properties. The housing (12) is tightened by means of some bolts which match some tightening loops of the housing.
Class	5



RO.260.	
Title	Lightening Tower
Authors	Vasilache Virgilius, Vasilache Monica, Vasilache Adela
Institution	S. C. VASILACHE s.n.c.
Patent no.	Patent application No. 00647/2015
Description	The Lightening Tower is designed to PORTABLY ENLIGHT OVERNIGHT THE PLACES WHICH HAVE NO ELECTRICITY NETWORK. The Lightening Tower is composed from a tower (1), consisting from a tronconic pillar (a) with its upper diameter bigger than the lower diameter. The pillar (a) continues upwards with a tronconic dome (b) with its upper diameter bigger than the lower diameter; the whole assemble has a double-walls configuration, being inflatable. Their exterior surface have very good light- reflecting properties. The pillar (a) is provided at its inferior extremity with an orifice for inflating / deflating. Some light sources (2) are placed circularly around the bottom of the pillar (a), sending their light upwards and their vertical inclination being adjustable. The light arrives on the reflecting tronconic exterior surface of the pillar (a), being reflected to the tronconic exterior surface of the dome (b) and from here being again reflected to the ground at a certain distance around the pillar (a). A number of straps (3) transversally reinforce the upper part of the dome (b), serving also for anchoring. A PHOTOVOLTAIC SYSTEM FEEDS THE LIGHT

A PHOTOVOLTAIC SYSTEM FEEDS THE LIGHT SOURCES AND THE INFLATING AIR-COMPRESSOR.


EUROPLASTIC SRL

RO.261.	
Title	TOP HEAT - The Revolutionary NANO- TECHNOLOGICAL Heating Paint
Authors	Marcel Ionescu
Institution	EUROPLASTIC SRL
Patent no.	-
Description	TOP HEAT is the revolutionary paint that transforms electricity into heat with the highest efficiency. Making use of nano-technology, with graphene nanomaterials, in a water-based dispersion, it represents the technology of the future made possible today. TOP HEAT transforms electricity into heat with maximum yields, reaching temperatures as high as 200°C and above. It uses non-hazardous low voltages, such as 12V or 30V, to provide heating for spaces and activities which require it. Imagine receiving the heat you need by electrical means with no impact on the Earth and at very cheap costs. By using a system of solar panels with photovoltaic cells, TOP HEAT becomes one of the most environmentally friendly heating solutions, with costs that move towards zero. So, yes, it is possible to eliminate the use of polluting compounds, combustion products, CO ₂ emissions and so on! The excellent applicability of the coating to very different geometries and surfaces, in combination with its high heating power, makes TOP HEAT the cheapest solution for a wide range of possible applications, outdoors and indoors, such as: walls, floors, ceiling; boilers, tanks, drums etc. Besides high heating power, TOP HEAT's other main advantages are: easy applicability, direct use of low-voltage sources (e.g. 12/30 V onboard, solar power etc.), safe and easy handling, anti-icying, anti-condensation, anti-moulding properties.
Class	2

Class

AVAI

RO.262.	
Title	Car wheelchair platform
Authors	Adrian VLAS
Institution	"Gheorghe Asachi" Technical University of Iaşi
Patent no.	-
Description	The platform can be incorporated in any car and managed using a remote-control system, allowing the driver in a wheelchair to enter the car without help from others and drive independently. This platform differs from existing lifts, due to its improved, simple to incorporate and non-expensive mechanism. The wheelchair platform is a mechanism that lifts and adapts the driver in front of the steering wheel. It represents a mechanical assembly composed of a metal structure and two platforms, which are operated by hydraulic cylinders. Also, all this mechanism is automated, making it possible to maneuver by using a electronic remote control. This system creates the opportunity for any person in a wheelchair to get into the car and drive it without any others help.
Class	8

Class



RO.263.	
Title	Trike
Authors	Adrian VLAS
Institution	"Gheorghe Asachi" Technical University of Iaşi
Patent no.	Design registration and industrial design: 15/2013.09.13 (AGEPI)
Description	The innovation is a three-wheel drive unit with rear seats for 3 people. It has a 4-cylinder internal combustion engine, VW PASSAT B4, 1800 cc, 7 1 / 100 km petrol, capable of a maximum speed of 180 km / h. The technical problem solved by the innovation lies in the modeling of a motorcycle with a car engine that gives us a much larger cylinder capacity. The advantage over existing analogs is that we can carry more people, is more stable in traffic, secure and convenience of passengers, thanks to the comfortable seat for 3 passengers, secured with safety belts and side rails. Capacity, design and exterior appearance are superior to other 3-wheel motorcycles. The motorcycle can be used for various purposes, with a trailer coupling mechanism. Thanks to the mounted suspension behind the motorcycle, increased stability was created, ensuring balance for the driver, the passengers and the trailer.
	Equipping the suspension with telescopic dampers and damping springs creates proper comfort and stability in traffic. This motorcycle can be used for many purposes: as a trailer for domestic purposes, recreation, transport of tourists, special events, ect.
Class	8

NATIONAL 507

S.C. Pharmacorp Innovation SRL

RO.264.	
Title	Product based on active yeast biomass enriched in calcium and process for obtainment
Authors	BARBULESCU Iuliana Diana, MARINESCU Simona- Ioana
Institution	S.C. PHARMACORP INNOVATION S.R.L
Patent no.	Patent demand No. A/00014/12.01.2017
Description	 Short description of your invention. The invention relates to obtaining a new product based on active yeast biomass, yeast isolated from white wine and identified as <i>Candida sp.</i> by DNA sequencing technique, enriched in calcium in concentrations of up to 18,000 mg / kg. The D1/D2 domains of the 26S and ITS1 and ITS2 regions of rDNA (including the 5.8S rRNA gene) of the strain 9 (n.3) were sequenced. Identification reference given by the depositor: <i>Candida</i> sp number: DIANA 9 (n.3). Receipt in the case of an original deposit issued pursuant to Rule 7.1 by the IDA Industrial Yeasts Collection- was obtained -Accession number given by DBVPG: 37P. The technical solution that solved the invention is to obtain a product based on active biomass yeast <i>Candida sp.</i> DBVPG 37P, enriched in calcium to be used as biofortificant in derived bakery products and to adjust calcium deficiency in the body, deficiency that can cause various diseases in the body. Applications The product based on active yeast biomass Candida sp. DBVPG37P enriched with calcium can be used to obtain derivatives bakery and food supplements. Product based on biomass active yeast <i>Candida sp.</i> DBVPG37P enriched in calcium, characterized in that the absorbed calcium is between 8200-18000 mg / kg, dry active yeast cell concentration of 1 g% and has a pleasant flavor. Product based on active biomass of yeast <i>Candida sp.</i> DBVPG37P characterized in that there is no risk to health and is presented as an active product dry by lyophilization outstanding sensory properties.

Class

3

"Alexandru cel Bun" College

RO.265.	
Title	Temperature and Atmospheric Air Pressure
11010	Measurements using a CanSat
Authors	Eusebiu BUGA ¹ , Octavian ANDRONACHE ² , Dumitrita TANASE ² , Sorin-Iulian TANASE ¹ , Violeta VASILACHE ³
	¹ "Alexandru cel Bun" College, Gura Humorului 725300,
Institution	Romania ² "Mihai Eminescu" High School, Dumbraveni 727225,
	Romania
	³ , Stefan cel Mare" University, Suceava 720229, Romania
Patent no.	-
	In this work we present several results concerning the
Description	temperature and air pressure measurements using a mini- satellite (CanSat) embedded in the volume and shape of a standard juice can (height: 11.5 cm, diameter – 6.6 cm) capable of transmitting certain information after being launched from a plane from a height of approximately 1000 m. Once launched from the plane, it will transmit data regarding the pressure and temperature of the atmospheric air during its free fall, and also telemetry data (e.g.: data concerning its position, acceleration, taking photos for analysing the terrain overground). We estimated its fall speed to vary between $8 \div 10 \text{ m} \cdot \text{s}^{-1}$.
Class	14

NiKiN Vision SRL

RO.266.Title ENHealthy Lounge ChairAuthorsCristian SANDUInstitutionNiKiN Vision SRL

We would like to introduce you a Romanian invention. Is a revolutionary product named **Healthy Lounge Chair**. As you can see, this chair is manufactured using wood, special polished, to get this amazing form. Most advances techonologies were used to create this shape, inspired by NASA researches. The main property of the chair is the zero-gravity position. **Healty Loung Chair** offer the possibility to place your body in the gravity-zero recliner position, in a way that distribute evenly your body weight and have amazing effects on your body. This techonology helps you to decrease the blood pressure, to control your blood circulation and dimminuate heart and nerves problems. The back and shoulders painsare now under your control and using **Healty Lounge Chair** you will see the results day by day.

Description

EN

But that's not all about this amazing chair! Healthy Lounge Chair is introducing a new techonology, into the construction of the product. You can observe the black bars between wood elements, here is a wonderful mineral named shungite. This is an amazing stone, and one that is beneficial to a healthy life. It is one of the only known natural material known to contain fullerenes, which are powerful anti-oxidants.

The properties of this mineral are related to shungitotherapy, a method who is used to fight against dangerous electromagnetic radiations. Shungite protect your nervous system, relieves your muscular pains and induce a well being state all over your body. So now you have the chance to change your lifestyle using a spectacular product who fit in any space and helps you to maintain your health and good feeling.

Innovative research



NATIONAL 510

Class no.

Individual Inventors

Toader BUTINCU

RO.267.	
Title	Propulsion Method and Centrifugal Traction Device
Authors	Buțincu Toader and Buțincu Niculina
Patent	Application A/00182/2017
Description	This invention refers at a new method of vehicle propulsion and presents six constructive variants of a centrifugal traction device, able to propel any kind of vehicle, without interacting, either directly or indirectly, with the surrounding material environment, when an engine is put into function. The new propulsion method uses the centrifugal forces given by some active masses placed decentered to a principal rotation axle, around which they make a revolution movement, concurrently with the rotation of those mases, at the same speed, around the shafts they are mounted on. The placement and movement in this way of the active masses make the misbalanced and multidirectional centrifugal forces that appear transform partially in unidirectional traction forces, the application point being in the device that generates them. This traction force is always radial and cannot be influenced by anything outside the device, such as: its position in space, their speed and acceleration, temperature and pressure they work at, etc. Therefore, adequately positioning some centrifugal devices on any vehicle, these may be used in all the domains of activity, for the propulsion on land, on water and in the water, in the atmosphere and in cosmos. By comparison to the usual technical solutions, used for propulsion at present, these traction forces can accelerate the movement of the vehicle up to the speed where the sum of all resistances at forward direction becomes equal to the total value of the traction forces, without being it necessary to increase the functioning regime of the driving engine, which leads to significant fuel saving. 8
Class	
RO.268.	
Title	Flying machine
Authors	Buțincu Toader
Patent	RO 126657/2014, 126658/2014 and 125765/2015
Description	These machines take off and land vertically and differ one from another, particularly because of their construction and the principle of functioning of the active components at the interaction with the air. As regards the first machine, the load-bearing capacity is obtained by means of air turbines, which may function successively NATIONAL
	511

or simultaneously, at various rotations. The second machine develops a sustentiation force subsequent to the passing of air through a complex system driven by two or more ram-jet engines. The load-bearing capacity of the third machine may be obtained principally as a result of the difference of static pressure between the lower side and the upper side of the active plates, difference caused by several air propellers. With special equipping, any of these three flying machines may take off from, respectively land on a body of water.

These machines may be used for the air transportation of persons and goods, for tourist activities, for saving people in case of calamities and/or catastrophes from hardly accessible places, for missions that are specific to the national defense and public order, for forestry exploitation, for territorial mapping, for fire extinguishing actions, for fighting against diseases and pests in agriculture and forestry etc. 8

Class

RO.269.	
Title	Hydraulic Wheel
Authors	Buțincu Toader, Butincu Niculina
Patent	Patent application no. A/00257/2014
Description	The wheel has several cups mounted on a special hub, together with which they rotate around a central cylindrical element, fixed on a shaft leaning against two supporting elements that sustain the entire wheel. The construction of the components and the modality of their assembly assure the integral utilization of the potential (gravitational) energy of water from any natural source, no matter the size of the level difference between the free surface of the water and the axis of symmetry of the hydraulic wheel. The particularity of this wheel lies in the fact that the entire quantity of water used is circulated only through the interior. It has multiple advantages because it functions slowly and uniformly, shock and noise free, it does not affect the environment, it develops a high torque, it has good reliability, the exploitation costs are negligible and do not require permanent supervision of functioning. It may be used in any domain requiring mechanical energy, directly usable or by turning it into electric, pneumatic, hydraulic etc. power.

RO.270.	
Title	Hydrostatic Water Pump
Authors	Buțincu Toader, Buțincu Niculina
Patent	Patent application no. A/00258/2014
Description	The pump has three pistons, rigidly connected one from another, by means of a common shaft, which can move rectilinearly – alternatively and simultaneously inside three cylinders: one piston and one central cylinder with large diameter, for driving the pump and the other two pistons and cylinders, with identical diameters, but a lot smaller, are placed at the ends of the principal cylinder, providing the water pumping. The access of the water inside the three cylinders is gravitational and symmetric, through pipes, which contain two disk-shaped valves, rigidly connected by means of a rod and driven by one hydraulic water cylinder, having role of command and control of the pump's functioning, by means of a hydraulic switch.

Gheorghe BORDEIANU

RO.271	
Title EN	Smart engines, M.B.G. 10
Authors	Gheorghe Bordeianu
Institution	-
Patent no.	in progress
	The invention consists in:
	1. The cylinder capacity is variable between: 1100 – 3300c.c
	2. The compression ratio is variable between: $5:1 - 33:1$, or $(5:1 - 3)$
	799:1)
	3. Fuel will have used: simples or into mixture (petrol, diesel oil,
	alcohol, water, etc)
	4. Exists the possibility to pick auto the best report with the lowest
	consumption into the time's work of engine among
	2, 400, 000, 000.00 combinations between: cylinder capacity and
	compression ratio.
	5. The gear case is in engine block and has a number 50 000 of
Description	6 The distribution system simple goes at elimination the sources of
FN	defection, when the driving belt or timing chain is brake off
	7 The piezoelectric firing is with catalyser
	8 The engine has also the possibility to introduce again the fuel's gas
	who include reduces of fuels, into cylinders.
	9. The expenses of manufacture are smaller comparatively with a
	classic engine.
	10. Expenses of maintenance and exploitation of engine are very small.
	11. The sizes and weigh at this engine is with 30-50% percentage lower
	comparatively whit a classic engine.
	12. Not required to change the manufacture line at an existent factory,
	which produce the classics engines.
	Engine prototype in first stage of fulfilment with techniques
	measurements of performance, experimentally and preliminary.
Class no.	6. Mechanical Engineering - Metallurgy

Sfartz PINCU

RO.272.	
Title	JACKET FOR FIRST AID IN RESPIRATORY FAILURE
Authors	Sfartz Pincu, Sfartz Sorin
Patent	Individual
Description	Patent application No. A/00734/12.12.2016
	The invention relates to a process and a jacket of first aid for pumping the air necessary to persons who breathe no more, are in respiratory failure and/or are located in environments with polluted air of dust, toxic aerosols, smoke or toxic gases and lack the possibility of autonomous breathing.

The air necessary for the assisted victim is pumped by an elastic cushion, which is driven by the force of the respiratory cycle of the savior. The pumping of air to the victim begins when the vest closes at the end of the expiration of the savior and ceases proportional to the degree of the openness of the vest.



NATIONAL 515

RO.273.	
	MECHANISM FOR CONVERTING ALTERNATIVELY-
Title	RECTILINIAR MOVEMENT IN ROTATIONAL
	MOVEMENT
Authors	Sfartz Pincu
Patent	Individual
Description	Patent application No. A/00486/17.06.2015
	According to the invention, the mechanism for converting a
	back and forth movement to a rotational motion is
	characterized by the fact that a rack acts directly on a gear
	that is linked to a ratchet, forming a single block that triggers
	the movement of a pawl placed on a crank fixed on the final
	shaft and rotating this shaft at an angle that is proportional
	to the stroke of the ratchet. Then, as the ratchet is moving in
	reverse, another gear idler, permanently geared with the
	ratchet, allows to maintain the same direction of movement

- of the final shaft.
- 6



RO.274.

PROCEDURE AND APPLIANCE FOR PRODUCTION Title OF ELECTRICAL ENERGY ON ACCOUNT OF THE BREATHING CYCLE Authors Sfartz Pincu

PatentIndividualDescriptionPatent application No. A/00314/4.05.2015

Procedure and portable appliance for production of electrical energy on account of the breathing cycle of humans and animals, in accordance with the application for invention, characterized by the fact that it produces electrical current, which recovered, stabilized and stored in an accumulator or consumed immediately, provides the power supply to some electrical devices which allow the detection, geographical position and communicating with people in need, such as miners, climbers, cavers, survivors, tourists, soldiers and so on.

2+12



Dorina RUSU

RO.275.	
Title	Plasma device for decontamination, cleaning and coating of cultural heritage objects based on organic materials
Authors	Viorica Frunza, Ghiocel Ioanid, Dorina Rusu, Ana Maria Vlad
Institutions	S.C. Impex Romcatel Research Design S.A, Iasi, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, "Moldova" National Complex of Museums, Iasi, Romania
Description	The main aim of this research was to evaluate the high frequesncy cold plasma as an ecological and nondestructive method, which can be used for microbiological decontamination of cultural heritage objects based on organic materials (cellulose, wood, dermal material, etc.). To do this, two high frequency cold plasma device were designed and built. In one of them the objects can be treated in the principal dicharge area between the two electrodes, while in the second one, the object to be decontaminated, is placed outside the main discharge area ("afterglow" discharde). Both setups allow the use of a specific gaseous medium (hydrogen, nitrogen, oxygen, argon or mixtures between them), as a function of the type and degree of contamination. In both cases, the microbiological decontamination tests, made by the specialists from the Faculty of Biology from Iasi, revealed that a period of max 10 min is enough for the inhibition of fungal and bacterial growth. The "afterglow" plasma treatments present the advantage of having a very low impact on the treated materials, that why, this is recommended to be used for the paper decontamination, especially for the one with an advanced degree of degradation. Both setups belongs to the Restoration and Conservation Laboratory of the Moldova National Museum Complex Iasi.

Adrian ROSCA

RO.276	
Title	The automatic wheel chock air car.
Authors	Adrian Rosca
Pantent	-
	This prototype will revolutioniz

Description

This prototype will revolutionize the whole car world. This new movement system RosMar Hreasca will allow cars equipped with it to outperform all others. It will also have impact on the auto racing industry. It is an universal system that could be applied to all cars, tractors, truck, bikes, ATVs ...etc.on Earth.



Roxana MUNTEANU

RO.277				
Title	System of Command and control for regulating de railway factory traffic			
Authors	Roxana Munteanu			
Pantent	Independent			
Description	Processing			
-	Short description of your invention.			
Class	 The system is built from a number of barriers IR and traffic lights, command and control block, alix board, FO network, a monitoring and command workstation. The systems is logging all the command or monitoring activity Made of motherboard based on atmega 461, EEPROM Integrated circuits with galvanic isolated in/out Relays bloc Convertors AC/CC for efficient at high protection taking into consideration the industrial environment where the equipment is used. The equipment can be setup / accessed via: LAN / WAN / GSM 			
	 Also firewall is included for security reason 			



Technical University "Gheorghe Asachi" of Iaşi

RESEARCH PLATFORM FOR EFFICIENT AND SUSTAINABLE ENERGY – ENERED

POS-CCE, Contract 430/ 21.12.2012-29.02.2016 Budget-10 bilion € Prof. Neculai Eugen SEGHEDIN PhD – General Manager

The platform is composed of 11 new and modernised laboratories: Aeroenergetics Laboratory containing 3 components: Component of Wind Turbines Aerodynamics, Component of Intelligent Systems for the Control of Wind Turbines Component and Wind Turbines Testing Polygon; Computer-based fluids' Engineering Laboratory; Measurement of Fluids Parameters Laboratory; Aerodynamics and Hydrodynamics Laboratory; Hydraulic and Pneumatic Turbomachines Laboratory – Hydraulic Turbines component; Cogeneration and Trigeneration Laboratory; Optimization of Biogas for Energetic Use Laboratory; Research of Non-conventional Energy Sources Laboratory – Biofuels; Non-conventional Energy Sources Laboratory; Electrical Equipment Monitoring, Diagnosis and Testing Laboratory; Engineering of the Availability of Energetic Systems Supplied by Renewable Source.

The goal of the structure is to: Produce energy from renewable sources: wind energy, hydroenergy, solar energy, biogas and biofuels; Distribute generation and intelligent electric networks; Integrate renewable sources, manage RSE production and consumption; Produce clean energy out of fossil fuels (highly efficient cogeneration/ trigeneration); Produce energetic efficiency, increase the conversion return and decrease of primary energy's intensity.



Contact: Prof. Eng. Neculai Eugen SEGHEDIN PhD, email: neculai.seghedin@tuiasi.ro



PALATUL COPIILOR

B-dul Carol I, nr. 2 Iasi ROMANIA Tel/Fax: +40.232.410802

THE PALACE OF CHILDREN, IAȘI

"The Palace of children is an educational institution which deals specific instructive- educational activities outside school classes, where children complete their knowledge and go thoroughly into some domains, develop skills according to their calling and options and where their spare time may be organized in educational programs. These free activities may be attended, according to their own choice by children under the school-age, elementary school children, middle school, vocational school and high school students as well as children coming from orphanages, irrespective of nationality, sex and religion, according to their interest, skills and preferences." (Excerpt from the Regulations of organisation and functioning of Clubs and Palaces of Children)

Founded in 1953 under the denomination of the House of Pioneers with only seven clubs, the present Palace of Children has undergone dramatic changes as far as the number of clubs and their diversity is concerned.

Nowadays the Palace of Children functions with sixty clubs focused on cultural, artistic, technical, practical, scientific, sportive and touristic domains. They appeal to the 76.154 children in kindergardens, elementary schools, middle schools, vocational schools and high schools in laşi.

The institution owns the apparatus and materials necessary for the good working of the clubs. At present, the Palace of Children has connections with similar institutions in 12 countries on 3 continents.



PALATUL COPIILOR

B-dul Carol I, nr. 2 Iasi ROMANIA Tel/Fax: +40.232.410802

PALATUL COPIILOR, IAȘI

"Palatul Copiilor este o instituție de învățământ în care se desfășoară activități instructiv-educative specifice, în afara cursurilor școlare, prin care se aprofundează și se completează cunoștințe, se dezvoltă aptitudini potrivit vocației și optiunilor copiilor, se organizează petrecerea timpului liber prin programe educative.

La activități pot participa în mod gratuit și la libera alegere, copii preșcolari și elevi din ciclul primar, gimnazial, profesional, liceal și din casele de copii, fara deosebire de nationalitate, sex și religie, corespunzator intereselor, aptitudinilor și preferințelor lor."

(Extras din Regulamentul de organizare și funcționare a cluburilor și palatelor copiilor)

Înființat în anul 1953, sub denumirea de Casa Pionierilor, având un număr de 7 cercuri, actualul Palat al Copiilor a cunoscut o dinamica puternică în ceea ce privește numărul de cercuri și diversitatea lor.

În prezent la Palatul Copiilor functionează un număr de 60 de cercuri cu profile din domeniile cultural-artistice, tehnico-știintifice, tehnico-aplicative și sportiv-turistice. Acestea se adresează celor 76,154 de copii din grădinițe, școli primare, gimnaziale, profesionale și liceale din municipiul lași.

Activitățile sunt conduse de o echipa de cadre didactice calificată și specializată pentru activitatile de timp liber, formată din profesori, ingineri, maiștri coregrafi și antrenori.

Unitatea este dotată cu aparatură și materialele necesare unei bune desfășurări a activității specifice din cercuri. În prezent, Palatul Copiilor întreține legături cu unități de profil similar din 12 țări, de pe 3 continente.





MINISTERUL EDUCAȚIEI CERCETĂRII TINERETULUI ȘI SPORTULUI

THE PALACE OF CHILDREN, IAȘI

- 1. ROBOȚI AUTONOMI DE COMPETIȚIE Josanu Rareș cl. a IX a Prof. Pantelimonescu Remus
- 2. MAȘINA AUTONOMĂ ROBOTIZATĂ Bejenaru Ștefan cl. a VIII a Artene Andrei cl. a VIII a Prof. Pantelimonescu Remus Prof. Colbu Gheorghe

3. LEVITAȚIE ELECTROMAGNETICĂ Stărică Daria cl. a XI a Motoc Smaranda cl. a IX a Prof. Pantelimonescu Remus Prof. Colbu Gheorghe

4. SISTEM ENERGETIC NECONVENȚIONAL Bujor Răzvan cl. a X a Popescu Irina cl. a VI a Prof. Pantelimonescu Remus Prof. Colbu Gheorghe

5. CASĂ DE VACANȚĂ CU ENERGIE NECONVENȚIONALĂ Szabo Tiberiu cl. a VII a Bujor Răzvan cl. a X a Prof. Pantelimonescu Remus

6. VEHICUL SPECIAL

Motoc Smaranda Popescu Irina

cl. a IX a

cl. a X a

cl. a VI a Prof. Colbu Gheorghe

Prof Ursachi Mihaela

7. UN NOU SISTEM DE DIRECȚIE LA UN AUTOMODEL CU TREI ROTI

Mihai Alexandru Spiridon cl. a VIII a Prof. Chirită Daniel

8. PLATFORMA ARDUINO UTILIZATĂ ÎN DESENUL TEHNIC Chiriță Raluca cl. a XI a Prof. Chirită Daniel

9. NAVA DE AGREMENT cl. a XI a Stupcanu Viorel Alexa Petru Prof. Stratulat Mihai, Pof Sandu Carmen

10. FORMULĂRI NANOPARTICULATE CU ELIBERARE CONTROLATĂ A PRINCIPIILOR ACTIVE DESTINATE TRATĂRII AFECTIUNILOR OFTALMOLOGICE

Stefan Popel cl. a XIII a Ioana Bălteanu cl a XIII a Prof. Gabriela Andrei ***

11. COMPOZIȚII

Bîrleanu Ioana	cl. a V a
Stoica Denisa	cl. a XII a
Muşilă Mihaela	cl. a VIII a
Prof. Colbu Dumitru-Eugen	Liceul "Oltea Doamna" Suceava

12. COMPOZIȚII

Prof. Toma M	Iădălina	Palatul Copiilor Iași
Vieru Alexandru	cl. a XII a	
Marian Maria	cl. a XII a	

13. COMPOZIȚII

Artene Andrei	cl. aVIIIa	
Motoc Saranda	cl. a IX a	
Prof. Colbu	Gheorghe	Palatul Copiilor Iaşi

Proiect educațional MUZEE ȘI ȘCOLI

Otilia Mircea

Muzeul de Istorie Roman

Proiectul educațional *Muzee și Școli* face parte din programul Valorificarea Patrimoniului Muzeal și Educație Muzeală, din categoria programe educative adresate unităților de învățământ, respectiv preșcolarilor și elevilor din ciclurile primare și gimnaziale.

Obiectivele proiectului:

- Prezentarea şi promovarea Muzeului de Istorie Roman având la bază mai multe categorii de obiecte (vase de diferite forme şi dimensiuni, monede, podoabe, accesorii vestimentare etc.);
- Prezentarea activităților desfășurate de specialiștii din muzee (arheologi, restauratori, conservatori etc.);
- Dezvoltarea relațiilor *muzee școli* prin activități practice desfășurate în unitățile de învățământ și vizite la muzee

În perioada 16 ianuarie – 05 mai 2017 proiectul s-a derulat în 31 de unități de învățământ din județele Neamț, Suceava, Galați, Bacău și Iași.

PARTENERI

COMPLEXUL MUZEAL JUDETEAN NEAMT MUZEUL DE ISTORIE ROMAN COLEGIUL TEHNOLOGIC SPIRU HARET PIATRA NEAMŢ ȘCOALA GIMNAZIALĂ ELENA CUZA PIATRA NEAMȚ SCOALA GIMNAZIALĂ NR. 2 PIATRA NEAMŢ SCOALA GIMNAZIALĂ NR. 8 PIATRA NEAMŢ SCOALA GIMNAZIALĂ IULIA HĂLĂUCESCU . COMUNA TARCĂU SCOALA GIMNAZIALĂ SLOBOZIA ROZNOV LICEUL TEHNOLOGIC GHEORGHE RUSET ROZNOVANU ROZNOV COLEGIUL DE ARTĂ CIPRIAN PORUMBESCU SUCEAVA COLEGIUL NATIONAL MIHAI EMINESCU SUCEAVA SCOALA GIMNAZIALĂ NR. 10 BACĂU SCOALA GIMNAZIALĂ MIRON COSTIN BACĂU **ŞCOALA GIMNAZIALĂ NR. 7 GALAȚI** SCOALA GIMNAZIALĂ ELENA CUZA GALAȚI

ȘCOALA GIMNAZIALĂ RĂCHITENI, JUDEȚUL IAȘI SCOALA GIMNAZIALĂ DOMNEASCĂ GRIGORE GHICA VODĂ TÂRGU NEAMT COLEGIUL NATIONAL ROMAN VODĂ ROMAN SCOALA GIMNAZIALĂ VASILE ALECSANDRI ROMAN SCOALA DE ARTĂ SERGIU CELIBIDACHE ROMAN SCOALA GIMNAZIALĂ ALEXANDRU IOAN CUZA ROMAN SCOALA GIMNAZIALĂ, COMUNA GÂDINȚI SCOALA GIMNAZIALĂ, COMUNA ION CREANGĂ SCOALA GIMNAZIALĂ NR. 1 PILDESTI SCOALA GIMNAZIALĂ NR. 1 CORDUN SCOALA GIMNAZIALĂ FĂUREI SCOALA GIMNAZIALĂ NICOLAE APOSTOL RUGINOASA FUNDAȚIA EPISCOP MELCHISEDEC ROMAN ȘCOALA GIMNAZIALĂ, COMUNA SECUIENI LICEUL TEHNOLOGIC VASILE SAV - ȘCOALA GIMNAZIALĂ CAROL I SCOALA GIMNAZIALĂ, COMUNA DULCESTI LICEUL TEHNOLOGIC ADJUDENI LICEUL CU PROGRAM SPORTIV - SCOALA GIMNAZIALĂ ROMAN MUSAT ROMAN



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