Proceedings of The 7th Edition of

EUROPEAN EXHIBITION OF CREATIVITY AND INNOVATION

Editors: Andrei Victor SANDU and Ioan Gabriel SANDU



2015

Message to EUROINVENT 2015 participants

Addressed by Her Excellency, Mrs Angela FILOTE Head of the European Commission Representation in Romania



EUROINVENT is a celebration of brilliant minds and the inventions of those people who dare to dream and change the world.

Europe's future depends on the

imagination and creativity of its people. This is the reason why in recent years Europe put a special emphasis on research and innovation and the European Union tends to become an Innovation Union. In order to make it possible, there is Horizon 2020 - the biggest EU programme on research and innovation of almost 80 billion Euro.

Innovation plays a crucial role in raising competitiveness. Research and innovation are at the core of Europe 2020 strategy for growth and jobs. Inventions stay at the basis of innovation, which represents an important pillar for regional, national and European competitiveness. The challenges of nowadays society, such as ageing of population and climate change, require new solutions based on creativity and innovation.

I seize the opportunity to congratulate the team of Europe Direct Iași for their activity and the dedication they put in their projects.

IN HONOR OF



NADA ANDRASSY

1944 – 2015

Vice President of Croatian Inventors Association

President of International Jury - EUROINVENT 2012



IN HONOR OF



VIRGILIUS JUSTIN CAPRĂ

1933 – 2015

Inventor. Professor. Engineer



Gheorghe Asachi Technical University of Iasi

The Gheorghe Asachi Technical University of Iasi (TU IASI) 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.



Contact: Str. Sf. P.Movila 3, L11, III/3 RO - 700089, Iaşi, România Tel: +40.745.438604, e-mail: euroinvent@yahoo.com web: www.afir.org.ro

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.



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 lasi 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 Iasi 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.



Contact: Blvd D. Mangeron 41A, RO - 700050, Iași, România Tel: +40.232. 230009

web: www.sim.tuiasi.ro

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

Universitatea Tehnica din lasi 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.



Contact:

Blvd. Carol I no. 11, RO - 700506, Iași, România Tel/fax: +40.232.201 662, e-mail: ijcs@uaic.ro web: www.uaic.ro

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.

ORGANIZING COMMITTEE

President:	Prof.PhD. Ion SANDU (FIR)
Vice-Presidents:	Prof.PhD. Marin CHIRAZI (UAIC)
	Prof.PhD. Norina Consuela FORNA (UMF)
	Prof.PhD. Dumitru LUCA (UAIC)
	Prof.PhD. Neculai Eugen SEGHEDIN (UTI)
	Prof.PhD. Atena Elena SIMIONESCU (UARTE)
	Prof.PhD. Petrică VIZUREANU (UTI)
Manager:	Eng. Paul MATEI (EUROPE DIRECT Iași)
Coordinator:	Eng. Andrei-Victor SANDU (FIR-UTI)

Members:

Prof.PhD.	Costica BEJINARIU (UTI)
Prof.PhD.	Octavian CIOBANU (FIR-UMF)
Prof.PhD.	Gabriel DROCHIOIU (UAIC)
Prof.PhD.	Kamel EARAR (UGAL)
Prof.PhD.	Iulian IONITA (UTI)
Prof.PhD.	Florin Alexandru LUCA (UTI)
Prof.PhD.	Liliana Rozemarie MANEA (UTI)
Prof.PhD.	Corneliu MUNTEANU (UTI)
Prof.PhD.	Vasile MEITA (Urban INCERC)
Prof.PhD.	Ioan Gabriel SANDU (FIR-UTI)
Prof.PhD.	Constantin TOFAN (UARTE)
PhD.	Viorica VASILACHE (UAIC)
PhD.	Ofelia CORBU (FIR-UTCN)

ORGANIZING COMMITTEE



Assistants:

Dragos Cristian ACHITEI Ana Maria BUDU Maria CANACHE Anca Monica CRETU Raluca CRISTACHE Claudiu CIUBOTARU Radu HANGANU Ioana HUTANU Simona ILISEI-BARNA Otilia MIRCEA Mirabela G. MINCIUNA Pantelimona MIHOC Marius MUNTEANU Vasile PELIN Manuela Cristina PERJU Daniel POTOLINCA Ioana PRUTEANU Marius PADURARU Alina SANDU Oana NECULAI Catalina STIRBU Petronela SPIRIDON Ovidiu TANASE Violeta VASILACHE Ionut Lucien ZANCEANU



SCIENTIFIC COMMITTEE

Honorary Presidents: Prof. PhD. Ion GIURMA Prof. PhD. Vasile ISAN Prof. PhD. Mihai POPESCU

President: Prof.PhD. Norina Consuela FORNA Members:

- Prof.PhD. Constantin BACIU
- Prof.PhD. Nicolae BILBA
- Prof.PhD. Mihai BRINZILA
- Prof.PhD. Dorica BOTAU
- Prof.PhD. Dumitru BULGARIU
- Prof.PhD. Ioan CARCEA
- Prof.PhD. Dan CASCAVAL
- Prof.PhD. Marin CHIRAZI
- Prof.PhD. Horia CHIRIAC
- Prof.PhD. Liviu COȘEREANU
- Prof.PhD. Valeriu DULGHERU
- Prof.PhD. Gabi DROCHIOIU
- Prof.PhD. Dragoş Lucian GORGAN
- Prof.PhD. Adrian GRAUR
- Prof.PhD. Constantin LUCA
 Prof.PhD. Tudor LUPASCU
 Prof.PhD. Ionel MANGALAGIU
 Prof.PhD. Gheorghe MANOLEA
 Prof.PhD. Gheorghe NAGIT
 Prof.PhD. Cezar OPRISAN
 Prof.PhD. Gheorghe POPA
 Prof.PhD. Gheorghe ROMANESCU
 Prof.PhD. Atena Elena SIMIONESCU
 Prof.PhD. Alexandru STANILA
 Prof.PhD. Horia Nicolai TEODORESCU
- Prof.PhD. Carmen TEODOSIU

International Conference on Innovative Research EUROINVENT – ICIR 2015

Organized by:

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

With support of:

- ▲ Ubudiyah University of Indonesia
- ▲ International Federation of Inventors' Associations IFIA

Chairman: Prof.Dr.Eng. Petrica VIZUREANU

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

Technical and Organizing Committee

Dragos Cristian ACHITEI	Catalin Andrei TUGUI
Ioan Gabriel SANDU	Bogdan ISTRATE
Manuela Cristina PERJU	Madalina Simona BALTATU
Mirabela Georgiana MINCIUNA	Marius MUNTEANU
Viorica VASILACHE	Daniel POTOLINCA

International Conference on Innovative Research EUROINVENT – ICIR 2015

Scientific Advisory Board

Prof.Dr. Ion SANDU	Alexandru Ioan Cuza University of Iasi, Romania
Prof.Dr. Kamarudin HUSSIN	Universiti of Malaysia Perlis (UniMAP)
Prof.Dr.Eng. Neculai Eugen SEGHEDIN	The "Gheorghe Asachi" Technical University of Iasi, Romania
Prof.Dr. Christian CODDET	Universite de Technologie Belfort- Montbeliard, France
Prof.Dr.Eng. Catalin POPA	Technical University of Cluj-Napoca, Romania
Prof.Dr. Antonio CANDEIAS	University of Evora, Portugal
Prof.Dr. Corneliu MUNTEANU	The "Gheorghe Asachi"Technical University of Iasi, Romania
Prof.Dr. Che Mohd Ruzaidi GHAZALI	Universiti of Malaysia Perlis (UniMAP)
Prof.Dr.Eng. Cornel SAMOILA	Transilvania University of Brasov, Romania
Prof.Dr.Eng. Mircea NICOARA	Politehnica University of Timisoara, Romania
Prof.Dr. Shih-Hsuan CHIU	National Taiwan University of Science and Technology, Taipei, Taiwan
Prof.Dr.Eng. Cristian PREDESCU	Politehnica University Bucharest, Romania
Prof.Dr. Mohd Mustafa Al Bakri ABDULLAH	Malaysian Research & Innovation Society
Prof.Dr. Gabi DROCHIOIU	Alexandru Ioan Cuza University of Iasi, Romania

EUROINVENT JOINT PROGRAM

EUROINVENT Exhibition		EUROINVENT ICIR Conference	
DAY 1 – THURSDAY MAY 14			¥ 14
8.00	Participants registration	8.00	Participants registration
11.00	Opening Ceremony		
	Welcoming Speeches	12.00	ICIR Opening Ceremony
		12.30	Keynote Speaker 1
13.00	First Jury Meeting	13.00	Keynote Speaker 2
	Tour of exhibition	13.30	Keynote Speaker 3
14.00	Media Interviews	14.00	Coffee Break
15.00	Strul Moisa - Bo	ook release &	Presentation
		16.00	Section 1
17.00	Visual Art Exhibition		
		18.00	Section 2
19.45	End of Exhibition Day	19.45	End of Conference Day
	DAY 2 – FRI	DAY MAY	15
10.00	Exhibition Start	10.00	Section 3
10.30	Jury Evaluation		
12.00	Demonstrations	12.00	Section 4
		13.45	Conference Closure
15.00	Artistic moment		
16.00	Book Award Ceremony		
18.00	Jury Final Decision		
19.45	End of Exhibition Day		
	DAY 3 - SATU	RDAY MAY	.
10.00	Exhibition Start		
12.00	Demonstrations		
15.00	Artistic moment		
16.00	Euroinvent Award ceremony	7	
19.00	Cocktail dinner		
22.00	Exhibition teardown		

EUROINVENT INTERNATIONAL JURY

Honorary President:	Kane KRAMER
President:	British Inventors Society (United Kingdom) Mohd Mustafa Al BAKRI ABDULLAH
	Universiti Malaysia Perlis (Malaysia)
Vice-Presidents:	Alireza RASTEGAR
	International Federation of Inventors' Association (IFIA)
Members:	Croatian Inventors Association (Croatia)
	Technical University of Moldova (Moldova)
	Adrian GRAUR
	Stefan Cel Mare University of Suceava (Romania)
	Tudor LUPASCU
	Institute of Chemistry of Academy of Science of Moldova (Moldova) Sorin ANDRIAN
	Grigore T.Popa University of Medicine and Pharmacy (Romani) Aurelia LUPAN
	AGEPI Moldova (R.Moldova)
	Cornel CIUPAN
	Technical University of Clui-Napoca (Romania)
	Dorica BOTAU
	Banat's USAMV "King Michael I of Romania" Timisoara (Romania)
	Stefan Cel Mare University of Suceava (Romania)
	Alina FODFA
	AGEPI Moldova (R.Moldova)
	Ionel MANGALAGIU
	Alexandru Ioan Cuza University of Iasi (Romani)
	Ion SANDU
	Romanian Inventors Forum (Romania)
	Andi Dwi PUTRA
	Association of Young Innovator and Scientist (Indonesia)
	Gabi DROCHIOIU
	Alexandru Ioan Cuza University of Iasi (Romani)
	Hazim Jabbar Al-DARAJI
	University of Baghdad (Iraq)
	Yuriv SKOMOROVSKIY
	Centre Alyumel Sevastopol (Ukraine)
	Alexandru STANILA
	"Gheorghe Asachi" Technical University of Iasi (Romania)
	Mihail Aurel TITU
	"Lucian Blaga" University of Sibiu (Romania)

Jury of Book Salon

President:	Constantin LUCA
	"Gn. Asachi" Technical University of Iasi
vicePresident:	Atena Elena SIMIONESCU
Manahama	"G.Enescu" Art University Iasi, UAP Iasi
Members:	
	"Gn.Asachi" County Library Iasi
	Minai BRANZILA
	"Alexandru Ioan Cuza" University of Iasi
	Dana LUNGU
	Al.I.Cuza Publishing House
	Diana Minaela MAKDAKE
	"Alexandru Ioan Cuza" University of Iasi
	AGEPI Moldova
	Daniela Fulga VLAD
	Radio Romania Iași
	George BONDOR
	"Alexandru Ioan Cuza" University of Iasi
	Valeriu DULGHERU
	Technical University of Moldova (Moldova)
	"G.Enescu" Art University Iasi
	"G.Enescu" Art University lasi
	"G.Enescu" Art University Iasi
	Grenescu [®] Art University lasi
	GLENescu [®] Art University lasi
Jur	y of European Visual Art Exhibition
Provident: C	opstantin TOFAN

President: Constantin TOFAN "G.Enescu" Art University Iasi, UAP Iasi Members: Valentin SAVA "G.Enescu" Art University Iasi, UAP Iasi Atena Elena SIMIONESCU "G.Enescu" Art University Iasi, UAP Iasi Mihai TARASI "G.Enescu" Art University Iasi, UAP Iasi **Dragos PATRASCU** "G.Enescu" Art University Iasi, UAP Iasi **Bogdan TEODORESCU** "G.Enescu" Art University Iasi, UAP Iasi **Cristian UNGUREANU** "G.Enescu" Art University Iasi, UAP Iasi

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 Best Design Award The Est Design Award The Exquisite Award The AgroFuture Prize The CyberLife Award The Popularity Award Special Prize



Prize of Croatia – Croatian Inventors Association Prize of Malaysia - Universiti Malaysia Perlis Prize of Turkey - Aydin University Istanbul Prize of Poland - Eurobusiness Haller Prize of Ukraine Prize of Indonesia 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 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 laşi 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 seventh edition of EUROINVENT sent invitations to inventors associations from many countries, as United Kingdom, Spain, Croatia, Poland, Bulgaria, India, Republic of Iran, Iraq, Israel, Malaysia, Indonesia, Korea, United Arab Emirates, Turkey, Poland, Portugal, Qatar, France, Ukraine, Taiwan, Thailand, Russian Federation, Republic of Moldova. 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 350 inventions and research projects from over 26 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 lasi, "Gheorghe Asachi" Technical University of laşi and "Alexandru Ioan Cuza" University of lasi and all the partners for all their support and efforts to organize the events.

Prof. Ion SANDU – Honorary President of Romanian Inventors Forum

PARTNERS & SPONSORS







URBAN INCD INCERC



OUARTZ

MATRIX





INFINITY TROPHY. TROFEE, CUPE, MEDALII, GRAVURA

PARTNERS & SPONSORS











Universitatea de Arto George Enescu Itea



Uniunea Artistilor Plastici Iasi





INTERNATIONAL PARTNERS



INTERNATIONAL PARTNERS





















INTERNATIONAL PARTNERS



Centre "AYUMEL"









Inovatorski Center Aktivni Slovenski Inovatorji







Antibiotice, 60 years of Romanian continuity and performance

What defines us

With 60 years of tradition in the manufacturing of medicinal products and active substances, Antibiotice is a significant brand in the Romanian industry, internationally recognized.

Antibiotice today

- Owns a portfolio of 148 generic drugs from 12 therapeutic groups, manufactured on 8 EU-GMP certified production lines; US-FDA approval of the aseptic filling line for powders for injection;
- Is the main producer of anti-infectives in Romania; 1 of 3 Romanian patients is treated with drug products manufactured by Antibiotice;
- Is the 1-st manufacturer in Romania in ointment and suppository production;
- Is the 4-th generic manufacturer in Romania in the production of Prescription Only Medicines;
- Exports drug products in 73 countries worldwide, in areas such as Europe, North America, South America, Middle East, Asia, Africa and Australia.

Antibiotice – the only Romanian pharmaceutical company producing active substances by biosynthesis

The quality of Antibiotice drug substance Nystatin, an antifungal drug substance used to prepare different pharmaceutical products, is proven by:

■ the European GMP Certificate;

■the FDA approval since 2002;

• the Certificate of Suitability with the European Pharmacopoeia (COS) since 2005.

The continuous improvement of technology as well as the international quality certifications acquired in time turned Antibiotice into **the world-leader manufacturer of Nystatin.**



Antibiotice

Antibiotice defines its future through research&development

For permanent renewal of portfolio in line with therapeutic trends, and for fast adaptation to internal and external market requirements, Antibiotice develops its own generic drug formulations.

The company has a modern Research Center, equipped with last generation of control equipment and apparatus, where highly qualified specialists (pharmacists, engineers, biologists, physicians) work to improve generic drug formulations and to develop new generics.

Pharmaceutical formulation research provides new drug development for all manufacturing flows of the company: tablets, capsules, powders for injections, topicals (creams, ointments, gels), suppositories and ovules for the Romanian market, and under contract, for Antibiotice partners in Europe, North America, Australia.

Pharmaceutical formulations developed are tested in terms of efficacy and safety in clinical pharmacokinetics and pharmacodynamics studies.

Clinical trials are carried out in Antibiotice clinical research unit, **Center for Drug Evaluation**, site authorized by the Ministry of Health of Romania to conduct Phase I / bioequivalence studies.

Biotechnological research is provided by a team of biologists and chemists performing the maintenance of Nystatin technology and the development of other active substances by biosynthesis.

Although known as generic manufacturer, research and innovation are representative for Antibiotice activity, which is oriented towards attracting new generic drug products in the portfolio, generics covering the field of anti-infective, cardiovascular pathology, CNS, and also for the prophylaxis of diseases with increased incidence, and for improving the quality of life.

Performance in innovation in 2014-2015

Patent for the Rosuvastatin Atb[®] formula, "Stable Pharmaceutical Composition Comprising Amorphous Rosuvastatin Calcium", number RO 129060 B1 from 28.11.2014 and EP 2805714A1 from 26.11.2014;

Patent application for Cicatrol[®] - "Topical composition for the treatment of wounds, burns and skin ulcers and process of obtaining it" no. 2011 01421, registered at OSIM.

Possibilities of cooperation

Antibiotice is open to start partnerships with scientific entities and other companies in the pharmaceutical industry, for the development and industrial implementation of new active substances and pharmaceuticals, and also for conducting clinical studies.

www.antibiotice.ro

office@antibiotice.ro office.cde@antibiotice.ro



Antibiotice, 60 de ani de continuitate și performanță românească

Ce ne definește

Cu o tradiție de 60 de ani, compania Antibiotice este un brand etalon în industria românească, cu recunoaștere internațională.

Antibiotice astăzi

- Portofoliu de 148 de medicamente generice din 12 clase terapeutice, realizate pe 8 fluxuri de fabricație distincte, cu Certificat de Bună Practică de Fabricație (EU-GMP) și certificat US-FDA pentru fluxul de beta-lactamice injectabile;
- Principalul producător de medicamente antiinfecțioase din România:
 1 din 3 pacienți români este tratat cu medicamente antiinfecțioase marca Antibiotice;
- Locul I pe segmentul Unguente și Supozitoare în România;
- Locul IV pe piața medicamentelor generice cu prescripție medicală din România;
- Exportă medicamente în 73 de țări ale lumii, din zone ca Europa, America de Nord, America de Sud, Orientul Mijlociu, Asia, Africa și Australia.

Antibiotice, singurul producător din România de substanțe active obținute prin biosinteză

Antibiotice este singura companie farmaceutica din România care are în portofoliu substanțe farmaceutice active obținute prin biosinteză.

Nistatina, produs antifungic utilizat în prepararea unor produse farmaceutice deține:

 certificat Good Manufacturing Practice,
 autorizare Food and Drug Administration (din anul 2002),

certificatul de conformitate cu Farmacopeea europeana (COS) (din mai 2005).

Perfecționarea continuă a tehnologiei și obținerea acestor autorizări internaționale au făcut ca Antibiotice să devină **lider mondial în producție de Nistatină.**





Antibiotice își definește viitorul prin cercetare

Pentru reînnoirea permanentă a portofoliului în acord cu tendințele terapeutice și/sau adaptarea rapidă la cerințele pieței interne și externe, compania Antibiotice își dezvoltă propriile formule de medicamente generice.

Centrul de Cercetare al companiei este o unitate modernă, dotată cu echipamente și aparatură de control de ultimă generație și cercetători cu diverse specialități (farmaciști, ingineri chimiști, biologi, medici).

Cercetarea de formulare farmaceutică asigură realizarea de medicamente generice noi pentru toate fluxurile de fabricație ale companiei: comprimate, capsule, produse injectabile, medicamente topice (creme, unguente, geluri), supozitoare și ovule pentru piața farmaceutică din România și sub contract, pentru partenerii Antibiotice din Europa, America de Nord, Australia.

Formulele farmaceutice dezvoltate sunt testate din punct de vedere al eficacității și siguranței prin studii clinice de farmacocinetică și farmacodinamie.

Studiile clinice se desfășoară în cadrul propriei unități de cercetare, **Centrul de Evaluare a Medicamentului**, site autorizat de către Ministerul Sănătății din România pentru a desfășura studii de fază I/ bioechivalență.

Cercetarea biotehnologică este asigurată de un colectiv de biologi și chimiști care realizează mentenanța tehnologiei de Nistatină, precum și dezvoltarea de alte substanțe active prin procedee de biosinteză.

Deși este producător de generice, cercetarea și inovația sunt parte reprezentativă din activitatea companiei, orientată spre dezvoltarea și atragerea în portofoliu a noi medicamente generice destinate tratamentului antiinfecțios, patologiei sistemului cardiovascular, pentru boli ale Sistemului nervos central (SNC) precum și pentru profilaxia unor boli cu factori de risc recunoscuți și îmbunătățirii calității vieții omului modern.

Performanțe în inovare în 2014-2015

Brevet de invenție pe formula Rosuvastatinei Atb[®], "Compoziție farmaceutică stabilă cu rosuvastatină calcică amorfă", numărul RO 129060 B1 din 28.11.2014 și EP 2805714A1 din 26.11.2014;

Cerere de brevet pentru Cicatrol[®] - "Compoziție de aplicare locală, pentru tratamentul rănilor, arsurilor și ulcerațiilor cutanate și procedeul de obținere a acesteia", nr. 2011 01421, înregistrată la OSIM.

Posibilități de colaborare

Compania Antibiotice este deschisă realizării de parteneriate cu entități științifice și cu alte companii din domeniul farmaceutic, în vederea dezvoltării și aplicarii industriale a unor noi substanțe active și produse farmaceutice, precum și pentru realizarea de studii clinice de fază I.

www.antibiotice.ro

office@antibiotice.ro office.cde@antibiotice.ro

URBAN INCD INCERC

Even though recent, the 2009 foundation of the National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development URBAN-INCERC was meant only to join the over 60 years traditions and experiences in research focused on designing buildings and their constructive details, economy of buildings, urban and territorial planning, and habitat of three institutes – NRDI Constructions and the Economy of Buildings - INCERC, NRDI Urban and Spatial Planning - URBANPROIECT and the National Research, Development and Documentation Center in Constructions, Architecture, Urbanism and Spatial Planning CDCAS, with activities focused essentially on the human habitat and its sustainable development from the overall vision of spatial development (urban and territorial planning).

The process gave birth to the only national institute in its field, with over 100 researchers and designers and a substantial material basis and a vast portfolio of research projects, national (Nucleus Program, National Research, Development and Innovation Plan, research and studies funded by the central and local administration) and international (NATO, SEE, ESPON, FP7), resulting into its national and international recognition (IAFOR, IAESTE, RED, URBACT, ENBRI, UEAtc, WFTAO, EOTA, ECI-ICE, EUROPA Accord, Global Green Award).

As an organism under the coordination of the Ministry of National Education, NRDI URBAN-INCERC is the only organism habilitated to substantiate national public policies in its field of activity, from the Strategic Territorial Development Concept and sections of the National Spatial Plan and affiliated substantiation studies to technical regulations in constructions. The institute performs studies for substantiating national strategies, policies, and regulations in urban planning and spatial development, and research on housing, regional development, inter-regional competitiveness, development of the network of settlements, polycentricity, protection of built-up areas and natural areas, zonal rehabilitation and ecological areas, and other issues.

NRDI URBAN-INCERC also ensures the technical secretariats of specialized technical committees and technical and professional attestation commissions for specialists in constructions, is an organism for certifying construction products and management systems, is a factory-inspection organisms, and habilitated to carry out continuous education activities, as well as commercial and production activities.

http://www.incd.ro/

URBAN INCD INCERC

Deși recentă, înființarea în 2009 a Institutului Național de Cercetare-Dezvoltare în Construcții, Urbanism și Dezvoltare Teritorială Durabilă URBAN-INCERC a avut doar rolul de a comasa peste 60 de ani de tradiție și experiență de cercetare în construcții și economia construcțiilor, planificare urbană și teritorială și locuire a trei institute – INCD INCERC, INCD URBANPROIECT și CDCAS, cu activități concentrate asupra habitatului uman și a dezvoltării sale durabile într-o viziune multiscalară asupra dezvoltării spațiale (urbane și teritoriale).

Din acest proces a rezultat singurul institut din aceste domenii, cu peste 100 de cercetători și proiectanți, o bază materială substanțială și un vast portofoliu de proiecte de cercetare, naționale (programul Nucleu, Planul Național de Cercetare – Dezvoltare – Inovare, studii și cercetări finanțate de administrația centrală și locală) și internațional (NATO, SEE, ESPON, FP7), ce au condus la recunoașterea națională și internațională (IAFOR, IAESTE, RED, URBACT, ENBRI, UEAtc, WFTAO, EOTA, ECI-ICE, Acordul EUROPA, Global Green Award).

Ca organism aflat în coordonarea Ministerului Educației Naționale, INCD URBAN-INCERC este singurul institut abilitat să fundamenteze politicile publice naționale din domeniul său de activitate, de la Conceptul Strategic de Dezvoltare Teritorială și secțiunile Planului de Amenajare a Teritoriului Național și studiile de fundamentare aferente la reglementările tehnice în construcții. Institutul elaborează studii de fundamentare a strategiilor, politicilor și reglementărilor naționale din domeniile urbanismului, amenajării teritoriului, locuirii, dezvoltării regionale, competitivității inter-regionale, dezvoltării rețelei de localități, policentricității, protecției mediului natural și construit, reabilitării și reconstrucției ecologice, zonelor defavorizate din punct de vedere economic și/sau social, ariilor rurale dezavantajate și altor probleme.

INCD URBAN-INCERC asigură, de asemenea, secretariatele tehnice ale comisiilor tehnice de specialitate și comisiilor de atestare profesională a specialiștilor din domeniul construcțiilor, este organism de certificare a produselor din construcții și a sistemelor de management, de inspecție în fabrici, și poate desfășura activități de formare profesională continuă, dar și activități comerciale și de producție.

http://www.incd.ro/



CERCETARE - DEZVOLTARE

experiență - inovație - soluții - valoare



OUARTZ

MATRIX

În viziunea companiei Quartz Matrix, Cercetarea și Dezvoltarea unor produse, servicii și tehnologii reprezintă o direcție prioritară.

Investind în resurse materiale și umane semnificative în cercetare și dezvoltare, compania Quartz Matrix oferă clienților săi servicii integrate și soluții de inginerie cu o valoare semnificativă pentru activitatea acestora.

Colectivul de dezvoltare Quartz Matrix este compus din Cercetători Știițifici, Ingineri de Dezvoltare Tehnologică și Ingineri Software.

Capacitatea de cercetare este atestată de decizia 9692/04.07.2008 a ANCS.

Quartz Matrix are permanent deschisă opțiunea colaborării cu parteneri de cercetare și dezvoltare pentru crearea de noi produse și servicii inovative.

DIRECȚIILE PRINCIPALE DE COMPETENȚE

- Proiectare software pe platforme Windows, deschise (Linux) sau cloud
- Comunicații de tip digital și analogic, wireless, radio, optic și cablu
- Proiectarea și dezvoltarea de arhitecturi hardware/firmware cu microcontrollere de 8-32 biti (PIC/ARM)
- · Automatizări și comunicații industriale, conducere procese și platforme SCADA
- Ingineria sistemelor energetice (bilanț și energetic, soluții de reducere consum energetic, cogenerare, integrare energii regenerabile).

PROIECTE DERULATE

- Parteneriate de cercetare proiectul "Sistem de Investigație, Asistare și Control al Afecțiunilor Neurologice bazat pe Interfața Creier-Calculator" în parteneriat cu Universitatea Tehnică Iași, Universitatea de Medicină și Farmacie Iași, Institutul de Informatică Teoretică Iași și proiectul de cercetare "Sistem complex de monitorizare a alunecărilor de teren" în parteneriat cu Universitatea Tehnică din Iași - Coordonator, Institutul Național de Cercetare Dezvoltare pentru Fizica Tehnică Iași, INCDFM București, Universitatea "Alexandru Ioan Cuza" Iași
- Contracte proprii cu Autoritatea Națională de Cercetare Științifică "Soluție inovativă de furnizare a unui sistem de management și eficiență energetică ENEF"
- Parteneriate internaționale în proiecte din programul European H2020 Proiect depus în consorțiul condus de Ferrovial Servicios Spania pentru Managementul inteligent al traficului și consumurilor energetice urbane Smart City CITEff.


ADRE Austricity Denter & Resedual

THE ROMANIAN DENTAL ASSOCIATION FOR EDUCATION



President: Prof. Univ. Dr. Norina Forna

THE ROMANIAN DENTAL ASSOCIATION FOR EDUCATION (ADRE) - member of AMR (Association of Physicians from Romania), affiliated to ICOI (International Congress of Oral Implantologists)— has the purpose to create a specialized framework to put together specialists from the dental medicine area as well as from the higher education area, based on their free will, in order to connect the Romanian education system to the European one and to achieve the curricular harmonization — in the country and abroad.

The activity of the Romanian Association for Education has as a main purpose the materialization of the following objectives:

- ✓ The joining of national curricula in dental medicine to the European education standards;
- \checkmark The achieving of grants education oriented, with practical impact and the performances growing for each specialty;
- ✓ The achieving of an interrelation between the medical assistance and the educational aspects, reflected in the continuous medical education process;
- ✓ The creation of methodological centers adjacent to the traditional university centers, with the purpose to identify the practitioners competencies degree in specialty domains of dental medicine and to promote the theoretical and practice lectures and demonstrations in those domains, improving the practitioners knowledge base;
- The organization of workshops on different curricular aspects concerning the graduate education as well as the postgraduate programs;
- ✓ The specialties diversifying in the area of dental medicine, according with the pathologies prevalence in different area of the country and the requirements regarding the increasing of competencies number;
- ✓ The collaboration between the Deans from Romania and the other competent organisms from the educational and professional territory in order to synchronize the educational aspects with the practical necessities;
- ✓ The involving of academic staff in postgraduate programs in order to optimize the process of continuous medical education; The increasing of population health status by identifying the critical areas in the country and preparing specialists in those areas;
- ✓ The organization of lectures to facilitate the obtaining of titles in the medical professional hierarchy; the organization of conferences, seminars, congresses and other activities adjacent to these; the editing of publications, catalogues or periodicals for image promotion in the medical, social and economic areas;
- ✓ The settlements of partnerships cooperation agreements with similar structures from our country or abroad.

The history of collaboration with ADEE goes back for an important number of years, and the Faculty of Dental Medicine, affiliated to ADEE and an active partner of Adre, was evaluated by ADEE in 2001, receiving good appreciation for the standards used in the didactic, research and medical assistance spheres.

ADEE organizes countless international scientific manifestations, with a profound impact in the field of dental medicineand member of European project "Adaptation of the superior dental medical education offer to the labor market needs and the knowledge - based society", contract no.: POSDRU/86/1.2/S/63699.



ASOCIATIA DENTARA ROMANA PENTRU EDUCATIE



Presedinte: Prof. Univ. Dr. Norina Forna

ASOCIAȚIA DENTARĂ ROMÂNĂ PENTRU EDUCAȚIE (ADRE) - membră AMR (Asociația Medicilor din România), afiliată ICOI (International Congress of Oral Implantologists) și ADEE (European Association for Dental Education) - are ca scop crearea unui cadru de specialiste care să reunească în rândurile sale pe baza voinței libere a fiecărui candidat, specialiști atât în domeniul medicinei dentare cât și în cel destinat învățământului superior, racordarea învățământului românesc la cel european, uniformizarea curriculară, în plan național și în plan european.

OBIECTIVE:

- ✓ Racordarea curriculelor naționale în teritoriul medicinii dentare la învățământul european;
- Realizarea de granturi în domeniul educației cu impact practic, crescând performanțele în fiecare specialitate în parte; Realizarea unei interrelații între aspectele de asistență medicală și latura educațională, reflectată în cadrul procesului de educație medicală continuă;
- Crearea de centre metodologice pe teritoriul țării, adiacente centrelor universitare cu tradiție, care să identifice gradul de pregătire al practicienilor în domeniile de specialitate ale medicinii dentare și să pledeze pentru susținerea teoretică și practică de cursuri și demonstrații practice în aceste domenii, ridicând țintit nivelul de pregătire al acestora;
- Realizarea de workshopuri pe diferite aspecte curriculare atât din cadrul pregătirii pentru licență cât și în cadrul activității postuniversitare;
- Diversificarea specialităților în domeniul medicinii dentare în acord cu necesitățile prevalenței unui anumit tip de patologie pe anumite zone ale țării sau creşterea numărului de competențe;
- Colaborarea între decanii din România şi celelalte organisme abilitate din teritoriul educațional şi profesional pentru sincronizarea aspectelor educaționale cu necesitățile practice;
- Împlicarea cadrelor didactice în activitatea postuniversitară pentru optimizarea procesului de educație medicală continuă;
- Ridicarea nivelului de sanogenitate populațională prin identificarea nivelului deficitar pe teritoriul țării și formarea de specialiști în acele teritorii;
- ✓ Realizarea de cursuri în vederea obținerii titlurilor în cadrul ierarhiei medical profesionale;
- Realizarea de conferințe, seminarii, congrese și alte activități adiacente acestora;
- Editarea de publicații, cataloage sau periodice pentru promovarea imaginii și informare în sectorul medical, social și economic;
- Încheierea de parteneriate acorduri de cooperare, cu structuri similare din țară și străinătate.

Istoricul relatiilor de colaborare cu Asociatia Dentara Europeana pentru Educatie (ADEE) reuneste un numar important de ani, mentionind faptul ca Facultatea de Medicina Dentara,afiliata ADEE, partener activ al ADRE a fost evaluata de catre ADEE in 2001 primind o buna apreciere a standardelor in sfera didactica, de cercetare si asistenta medicala.

ADRE este organizator a numeroase manifestari stiintifice internationale cu profund impact in domeniul medicine dentare si partener al proiectului european "Adaptarea ofertei învățământului medical dentar superior la nevoile pieții muncii și ale societății bazate pe cunoaștere", nr. contract: POSDRU/86/1.2/S/63699.

Publicație oficială: ROMANIAN JOURNAL OF DENTAL EDUCATION Sub redactia Prof. Dr. Norina Forna DATE CONTACT: Str. Kogalniceanu, Nr. 9, Iaşi , România Tel./Fax: 0232/218876 E-MAIL: contact@adre.ro SITE: <u>www.adre.ro</u>



With an experience of over 10 years, <u>ProtectMARK</u> is one of the most important Intellectual Property Company from the North-East region of Romania.

They are specialized in trademarks, community registered designs and geographical indications, looking forward to a patent division any time soon. In a world where novelty is everything, ProtectMARK represents their clients before the Romanian Office for Trademarks and Patents (OSIM), the Office for the Harmonization of the Internal Market (OHIM) and the World Intellectual Property Organization.

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.

Str. Petre Țuțea, nr. 5, Iași / Mobil: 0721 514264 office@protectmark.ro / www.protectmark.ro



Oficiul de Stat pentru Invenții și Mărci

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

Oficiul de Stat pentru Invenţii şi Mărci (OSIM) îşi desfaşoară activitatea ca organ de specialitate al administraţiei publice centrale, având autoritate unică pe teritoriul României în asigurarea protecţiei proprietăţii industriale, în conformitate cu legislaţia naţională în domeniu şi cu prevederile convenţiilor şi 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, științifice, programe de calculator, alte obiecte ale dreptului de autor și 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.



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.

Contact person:	Roman CHIRCA, General Director
Address:	Miorita Street, nr. 5, MD 2028, Chisinau, R. Moldova
Phone:	+373 22-88-25-66
E-mail:	aitt@aitt.md
Web:	www.aitt.md



Founded in 1968, IFIA is a worldwide nongovernmental organization of inventors' associations and other inventors' organizations aiming to connect, to support inventors internationally and to represent their common interests. Its mission is to disseminate knowledge of the innovation development and to promote inventive and entrepreneurial spirit.

IFIA Activities

IFIA promotes cooperation between inventor' associations and other inventors' organizations in different countries - connects inventors worldwide (by networks) in order to exchange experiences and mutual assistance.

Represents common interests of inventors and struggles to create better conditions for inventors all around the world, with special attention to the marginalized groups of inventors, such as independent inventors, inventors form less developed countries, minorities, such as women inventors, and last but not least, especially encourages young inventors.

Strives to establish the conditions for successful knowledge and technology transfer within the particular countries and internationally.

Organizes educational programs including seminars, conferences, and workshops regarding intellectual property rights, innovation development and technology transfer.

Supports and cooperates on international exhibitions of inventions and similar events such as invention festivals and competitions

Awards the best inventors worldwide.

Publishes news, guides, statistical and educational books.

Provides consultative services on innovation.





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 WIPA.

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



2003 – 2015 12 years of creativity

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 Iasi.

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, o2600 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.





WORLD INVENTORS ASSOCIATION (WIA)

The international association aims to unite invention associations, educational institutions, and science and research

development centers all across the world to form a common and collective identity to embrace the importance of world

intellectual property and its promotion.



ASIA INVENTION ASSOCIATION (AIA)

Established in 2010, AIA is a non-profit organization for Asian inventors registered in

the Seoul Metropolitan City in South Korea which consists of members from both local and overseas invention associations, private enterprises, schools and individual inventors from Taiwan, Iraq, UAE, Iran, Hong Kong, Malaysia, Indonesia, Thailand, Myanmar, the Philippines, etc.



KOREA INVENTION NEWS (KINEWS)

While producing informative service for inventors through publishing newspapers and media coverage, KINEWS annually organizes

a total of 6 international events (WiC, CiC, CIGIF, KIAF, WIAF and WSA) for inventors in Seoul to recognize and vitalize inventors' creative invention development, innovative research presentations, and lifetime career achievements.

Facebook Page: <u>www.facebook.com/kinews.events</u> Contact Email: <u>kinews@hanmail.net</u>

PARTNER EVENTS













CIGIF®

GREEK INNOVATION EXPO :













22 - 25th OCTOBER 2015 Barbican Exhibition Centre

http://www.britishinventionshow.com/

T +44 (0)1462 451 111 T +44 (0)1462 459 999 E info@thebis.org 215 Fairfield Hall, Stotfold, Hitchin, Hertfordshire, SG5 4FZ. UK





39 [™] INTERNATIONAL INVENTION SHOW & 10 [™] INVENTION AND PROTOTYPE SHOW AND STUDENT BUSINESS PLAN COMPETITION

NOVEMBER 06-08, 2014 OSIJEK, CROATIA

FORUM AND TRADE SHOW FOR: - INVENTORS, ENTREPRENEURS, INTELLECTUAL PROPERTY OWNERS, COLLEGE AND UNIVERSITY GROUPS, RD INSTITUTES AND SCIENTISTS

> - LONG TRADITION EXHIBITION ONE OF THE OLDEST WORLD'S INVENTION SHOWS

organised by: CROATIAN INVENTORS ASSOCIATION p.p. 261, HR-10001 Zagreb, Croatia tel. +385 1 4612-517; fax +385 1 4662-680 e-mail: hsi@inovator.hr e-mail: savez.inovatora.zagreba@zg.htnet.hr www.inova-croatia.com



We are proud to announce INOVA 2014 international co-organizer, WORLD INVENTION IN TELLECTUAL PROPERTY ASSOCIATION



ph: +7-978-7393718, +7-978-7915913 E-mail: el-voz@yandex.ru, aed-sevastopol@yandex.ru www. newtime-ayumel.com AMERICA'S LARGEST INVENTION SHOW

IELP,

EXHIBIT YOUR INVENTION AT INPEX® 2015!

AMERICA'S LARGEST INVENTION SHOW

EXHIBIT YOUR INVENTION

INPEX 2015 is a great way to present your idea to the U.S. market. Come and see what INPEX can offer you. Our staff is here to assist you in any way.

AWARDS CEREMONY

As an INPEX 2015 exhibitor, you will be with inventors from around the world who have had experiences similar to yours. Exhibit your invention to be eligible for awards in over 40 different categories.

CORPORATE PRODUCT SEARCHES

INPEX 2015 will offer exhibitors with appropriate products the opportunity to present their inventions directly to representatives from companies.

FOR MORE INFORMATION VISIT: WWW.INPEX.COM

CALL OR EMAIL TO RESERVE YOUR BOOTH: 001-412-288-1300 x4113 LBEBING@INPEX.COM









© 2015 InventHelp* | INPEX*

JUNE 16-18, 2015 MONROEVILLE CONVENTION CENTER, JUST OUTSIDE PITTSBURGH, PA, USA





Cracow, 25-26 June 2015

Program of the Show includes :

- Exhibition of innovative solutions
- · Conference: "From Idea to Profit"
- Jury evaluation
- Awards ceremony (medals & diplomas)
- "Leader of Innovation" Awards

Exhibition categories :

Agriculture and food industry Automation Biology and natural science Biotechnology Chemistry Computer science Construction industry Ecology Electricity Electronics

Energetics Engineering Industrial design Mechanics Medicine Metallurgy Security Telecommunication Transport and Others



Organizer:

Foundation for Promotion of Polish Science and Innovation "Haller Pro Inventio"

40-833 Katowice, Obroki 133, Poland Tel. +48 32 2037103, Fax +48 32 355 38 00 e-mail: intarg@haller.pl www.fundacja.haller.pl



INFOINVENT

a forum of the Intellectual property, Creativity and Innovation



XIV-th Edition 25-28 November 2015

Contacts: Tel.: (37322) 40-05-92, 40-05-93 Fax: (37322) 44-01-19 E-mail: infoinvent_agepi.gov.md

International Specialized Exhibition "**INFOINVENT**" is a forum of the specialists in intellectual property, organized every two years by the State Agency on Intellectual Property of the Republic of Moldova (AGEPI) and the International Exhibition Center "Moldexpo", in cooperation with the Agency for Innovation and Technology Transfer (AITT). The fourteenth edition of the International Exhibition "Infoinvent" will take place from 25-28 November 2015, within the premises of the International Exhibition Center "Moldexpo".

The aim of the ISE "INFOINVENT" is to support and promote innovative activity, attract investment in innovation and technology transfer activity, promote projects for implementation of inventions, new technologies and materials in the national economy, develop the regional and international scientific and technical cooperation, encourage business-science partnerships.



World Inventors Association (WIA) is a non-profit organization for international inventors that aims to unite invention associations, educational institutions, and science and research development centers all across the world to form a common and collective identity to embrace the importance of world intellectual property and its promotion. The association is continually inviting inventors from all around the world.



EVENTS SPONSORED BY WIA: CIGIF, KIAF, WIAF, CiC, WiC, WSA





KIDE

Kaohsiung International Invention & Design EXPO

DEC 4 — 6 2015 International Convention Center Kaohsiung Kaohsiung, Taiwan

Organizer	World Invention Intellectual Property Associations	Allu
Advisor	Kaohsiung City Government	Ż
Sponsor	Taiwan Invention Products Promotion Association	æ

E-mail:wiipa@wiipa.org.tw

Website: www.wiipa.org.tw



@mibamuseum tacebook.com/mibamuseum

ntions

INTERNATIONAL EXHIBITORS

Algeria, Brazil, Bulgaria, Canada, Croatia, Egypt, Greece, India, Indonesia, Iran, Iraq, Kyrgyzstan, Korea, Malaysia, Moldova, Philipines, Poland, Portugal, Russia, Qatar, Slovenia, Taiwan, Turkey, Turkmenistan, Ukraine, Vietnam, United Kingdom, United States

Algeria

DZ.1.	
Title	Inverse Problems using Neural Networks for Cracks Characterization in Materials
Authors	Salaheddine Harzallah, Mohamed Chabaat, Sekoura Benissad
Institution	Built Environmental Research Lab., Civil Engineering Faculty, University of Sciences and Technology Houari Boumediene, B.P 32 El Alia Bab Ezzouar, Algiers 16111 Algeria
Description	Inverse eddy current problem using Artificial Neural Networks (ANN) approach for the localization and the classification shape of defects is considered. The task of reconstructing the cracks and damage in the plate profile of an inspected specimen in order to estimate its material properties can be described in this research work. This is accomplished by inverting eddy current probe impedance measurements that are recorded as a function of probe position, excitation frequency or both. In eddy current nondestructive evaluation, this is widely recognized as a complex theoretical problem whose solution is likely to have a significant impact on the characterization of cracks in materials.
Class	Innovative Research

Brazil

BR.1.	
Title	Personal and professional impacts caused by the shift work schedule
Authors Institution	Patricia Barbosa Tobias, Luiz Teruo Kawamoto Júnior
Description	The shift work assuring the continuous operation of the company for 24 hours is often necessary to achieve productivity or meet the needs of clients, and those shifts can affect the personal and/or professional life of the employees. The goal of this study was to detect those impacts. Literature review and exploratory interviews were conduct for the preparation of a questionnaire and subsequent delivery to all employees of a factory of biomaterials. The results showed that the major problem was the lack of time for personal activities among workers of six-day shift work schedules per week. Still considering that query, there were unequal variances in the answers showing that there are also workers who find that kind of shift work schedule advantageous.
Class	Innovative Research

Bulgaria

BG.1.	
Title	Soil monitoring on mine sites - initial study
Authors	Ludmila Angelova, Maria Argirova, Andriana Surleva
T	University of chemical technology and metallurgy, Sofia,
Institution	Bulgaria
Description	The open cast mining generates a large amount of waste. This strongly affects the ecosystem on the mine site and environment around resulting in totally changed soil composition and state. A new type of soils, Technosols, is created by human activities. Returning to previously existing natural ecosystem after the end of mine activities is difficult and very often impossible. The Technosols are insufficient source of nutrients for growth of vegetation. They are susceptible to erosion, the adjacent soils are usually acidified, and the acidic drainage and the solubilisation of heavy metals can contaminate the waters. The heavy metals are present in soils in different fractions which may strongly affect their bioavailability, toxicity and mobility within the soil. The aim of this project is to estimate the quality and recovering notential of open cast mining soils by regular
	recovering potential of open cast mining soils by regular analysis of their characteristics. The results of initial study of a soil from an open mine in South Bulgaria are presented. AAS and ICP-OES were used after sequential extraction procedure to estimate the heavy metal distribution in geochemical fractions. Soil characteristics: acidity, exchangeable cation content, total organic carbon, effective cation exchange capacity are also presented. A determination of heavy metals association with the soil components is also envisaged. A data base of heavy metals content, their distribution and environmental fate is expected as a result of the project implementation. The data could be used to plan adequate remediation procedures after the end of the mining activity.

Class Innovative Research

-	
BG.2.	
Title	Determination of solid incineration waste composition
Authors	Andriana Surleva, Orhan Musa, Iliana Bacheva, Gabriela Atanassova, Boryana Borissova
Institution	University of Chemical Technology and Metallurgy, Sofia, Bulgaria
Description	Nowadays, the inceneration of solid waste is widely used technique to decrease the waste deposition. A number of factories created inceneration units to enlarge their activities. Last year a Bulgarian rafinery put into practise a modern system for purification of waste gases produced in the incenerator for solid waste utilisation. The system is highly effective againts SOx and NOx gazes and the emissions are below the permissible levels according to Bulgarian legislation. However, the purification process generate a large quantity of solid waste and alternative ways has to be found for its utilisation. The thorough information about waste composition and properties is strognly demanded. Althought, a number of incenerators have been created, the industrial laboratories have not been prepared to analyse such type of nonrutine samples and some difficulties have been encountered. The aim of this project is determination of waste composition and development of a methodology for analysis of solid inceneration waste. The following steps are planned: study of purification technology and development of working hypotheses on the sample composition; identification and quantification of main components. The wet titrimetric methods were applied for determination of: SO ₃ ²⁻ – iodometric; CO ₃ ²⁻ – acidimetric and SO ₄ ²⁻ - barimetric. Traces of arsenic, copper, iron and barium were also found by ICP-OES. The sample is also analysed by XDR and ionic chromatography.

Class Innovative Research

Canada

CA.1.	
Title	Physical Adhesive Patch for Wound Protection
Authors	Tyler Hojae Cheung & Will Kyungmin Song
Institution	University of Waterloo, CANADA
Patent no.	N/A
	A patch to cover and protect wounds from external environment employs a physical adhesion to stay on skin and maintain flexibility for optical comfort while maintaining appropriate durability and tension of skin to allow itself to heal without leaving scars as well as reducing pain caused during its application. Its primary application is in large surface area, low depth wounds. Secondary application is to
Description	replace staples. The anchor design is easy to create template, easy to release from mold as well pressures to pierce skin with suitable compression of the anchor. The anchor orientation is at least stress on the pillars and skin with the most uniform stress across the span of the wound. The template is made of aluminum manufactured via micro- milling as well with oxygen plasma treated with Silane coating. Hot-press was used to create prototype.
Class	4



Croatia

Represented by Croatian Inventors Association / Savez Inovatora Zagreba

HR.1.	
Title	BodyRecog
Authors	Anita Bušić, Tomislav Bronzin
Institution	LIVE GOOD j.d.o.o., CITUS d.o.o.
Patent no.	Pending
Description Class	Human Body Proportions Rocognition & Analysis System BodyRecog is an innovative software for measuring human body proportions, and the analysis of obtained measurement data – e.g. recognizing body types and body shapes. It is applicable on various technological platforms and devices. BodyRecog finds its application, among others, in: BIOMEDICAL SCIENCES and SPORT. 10
HR 2	
111(,2,	$C \otimes N$ eMotion – IT system for Face Expression and
Title	Emotion Recognition
Authors	Tomislav Bronzin
Institution	CITUS do o
Patent no	Pending
Description	 Uses a 3D sensor and mathematic algorithms to provide anthropometric measurements. Based on those measurements, C@N eMotion provides facial expression recognition C@N eMotion provides remarkable business opportunities: Adaption of content according to recognized emotions Evaluation & ranking of content according to the emotional reaction User focus tracking, for example "Last-Second-Offer" C@N eMotion offer: License C@N eMotion as a software component Use it with interactive multimedia solution wuwy CaN Motion com
Class	10

INTERNATIONAL EXHIBITS

HR.3.	
Title	ACIDOSALUS toothpaste 3-in-1
Authors	Rosa Ferincevic
Institution	MarinaLab Opus d.o.o.
Patent no.	Pending
	Purpose:
	Probiotic thoothpaste for intensive hygiene of teeth and oral
	cavity.
	Advantage
	Does not contain fluorides or artificial fragrances. Reduces
Description	the need for a cigarette. For maintenance of normal bacterial
Description	flora in the oral cavity, thus providing protection against
	caries and other bacterial and fungal infections. Ensures
	healthy gingiva and prevents its bleeding.
	Contains Sweetflag, rosemary, marjoram, Lactobacillus
	acidophilus

Class

4

HR.4.	
Title	Acidosalus baby
Authors	Rosa Ferincevic
Institution	MarinaLab Opus d.o.o.
Patent no.	Pending
	Description:
Description	Food supplement to cow's milk for infants and young children. It contains a high concentration of probiotic bacteria (10 min exp. 9cfu / mL preparation). It helps in the treatment of Rotavirus (gastroenteritis), Escherichia coli, Candida albicans, Reflux oesophagitis with various allergies and skin problems (dermatitis, rash, redness, etc.). advantage: Unique innovative formula and technology to create a probiotic with a high concentration of microorganisms that are able to naturally rid of infection by viruses, bacteria and fungi. Acidosalus baby inhabits the mucous membrane of the intestine and thereby prevents the adhesion of harmful bacteria. Purpose: In the absence of probiotic bacteria and the increased alkalinity environment, there is a multiplication of harmful bacteria and the emergence of various disturbances in INTERNATIONAL EXHIBITS
	INTERNATIONAL EXHIBITS

digestion, and the resulting infection. Acidosalus ®baby blocks the activity of enzymes involved in the conversion of nitrate to harmful, toxic and carcinogenic Nitrosoamines. Shortens the duration and intensity of diarrhea in intestinal infections. Particularly recommended for the normalization of intestinal microflora after antibiotic use and to improve immunity.

Class	4
HR.5.	
	HERBAFERTIL – Biodegradable bag with organic and
Title	inorganic fertilization fo intensive growth and
	development and rehabilitation of plants
Authors	Darija Breitenberger Maks Udov
Institution	HERBAFARM-MAGNOLLIA doo
Patent no	Pending
Description	Purpose of innovation is for planting and fertilization newly planted plants and for fertilization and revitalization of existing trees (avenues, parks and gardens), fruit trees, olive trees, vines and shrubs. It stimulates healthy plant growth and development of the root system treated plants. This innovation is for quick revitalization and recovery of trees and better fruiting of trees, fruit trees, olive trees, vines and shrubs of lack of vitality. Plants treated with the present mixture are greener, more resistant and more vital, less prone to diseases, have a healthy appearance; mixture promotes lush and longer flowering and fruiting, ensures longer presence of water and moisture in the soil (especially where there is no irrigation) and allows evaporation of excess water; it also effects the strengthening and recovery of the root system of the plant, causing the entire plant is progressing. 3
HK.6.	
Title	Device for dyeing the hair samples in one or more colors, in one application
Authors	Anamarija Medved
Institution Patent no.	Supernova d.o.o. Pending

Description	Description: Device and method for applying the sample to the hair refers to the hair coloring in one application, wherein: the pattern remains (photo, logo, name,) in one or more colors to the hair. Device and method for making pencils in one application while remaining strands of multiple colors in her hair. Advantages: -simple use -Low price -for amateurs and professionals Intended use: Cosmetic product for hair coloring designed for a wide consumption and / or professional use. 14
HR.7.	
Title Authors Institution Patent no.	NIKEL UNIQUE TRAVEL SET Mirjana Brlecic PRIRODA LIJECI d.o.o. Pending Unique and innovative Nikel travel set that came from Nikel innovative laboratory. Set contains four natural products for face and body.
Description	Shower gel with almond and honey Showering gel is natural and gentle formula and can be used for washing the face. It is Eco mild gel for daily washing of the face and body suits ECOCERT standards without eo, alkyl sulfates, betaine and parabens. Dermatological tailored to the needs of all skin types, especially for sensitive (irritated) skin and for the most sensitive skin of children. Silky Sun tanning milk with cocoa butter SPF 30 UVA / UVB! It is hydrating Sunscreen Milk Silky Sun which provides high protection from strong sunlight and sunburn. Prevents the formation of free radicals that damage the skin. Protects skin from premature aging. Suitable for delicate and sensitive skin of children. Formulation is suitable for use on the face and body, without fear of clogging pores. INTERNATIONAL EXHIBITS

Aloe Vera Gel with chamomile which calm the skin of the face and body.

- soothes your skin after waxing
- soothes your skin after sunbathing
- relieves mild burns
- relieves jellyfish burns
- with sun allergies
- relieves insect bites

Body cream with fast absorbing formula on the face acts as a refreshing moisturizer. For deep hydration and skin firming body, suitable for all skin types.

Set is suitable for plain because of 50 milliliters that is contained in each product!

Class	4
HR.8.	
Title	Integrated technical subsystem of intelligent military and protective clothing
Authors	Snjezana First Rogale, Dubravko Rogale
Institution	CEI Mikroelektronika
Patent no.	Pending
Description	An intelligent military and protective jacket has integrated technical sub-system which automatically adjusts the level of thermal insulation properties. The clothing item is a type of military personal protective equipment designed to provide thermal protection from moderate to very cold ambient temperatures. The level of thermal protection is selected automatically based on the algorithm of intelligent behavior or manually according to the subjective feeling of the wearer.
Class	12
HR.9.	
Title	MAGREG
Authors	Jakov Soldic, Josip Horvat

1 ILIC	MIGNEO
Authors	Jakov Soldic, Josip Horvat
Institution	Udruga inovatora FSB
Patent no.	Pending
Description	

Electro-magnetic accelerator and regenerative brake, with the working title MAGREG; is designed on the principle of operation of Dcelectric motors. The application is in the auto industry, with features to improve the acceleration and faster and safer stopping the vehicle, reducing fuel consumption through several phases and to reduce wear to the mechanical brake.

The conceptis based on adding a fixed coil on the car axle (rotor) and two magnetic plates of different polarity (stator), bent so that the intersection is the arc/circular clip. As a starting material for the coil is chosen normal copper, but in later experiments other materials will be explored and examined in means of ratio price/el.mag.characteristics and weight. The stator will be the usual ferromagnetic material from a pre-made engine, while the later examine will involve ferromagnetic materials acceptable new with ratio price/el.mag.characteristics and weight. It will be also considered in theory and then, if necessary, in experiment; the possibilities of applying the principle of induction motor, stepping and DCmotors. The radius of curvature of the magnetic planar plate is such that its center axis in the center of car axle, ie, each point on the panel is in the transverse plane at equal distance frome ach point of the circumference section of the shaft/impeller.

Class

8

HR.10.	
Title	INFRAREDART
Authors	Nada Ziljak
Institution	FOTOSOFT d.o.o.
Patent no.	Pending
	NADA ŽILJAK - THE ARTIST WHO PAINTS WITH
	INFRARED COLORS – HIDDEN IMAGES
	InfraredART is a new painting area where Nada Žiljak is
	making progress by taking the first steps there. The
	revolutionary quality of this luddistic research is based on
Description	the innovations. They offer the most fantastic possibilities to
	followers. From 2009 Nada Žiljak has been experimenting
	with pigments as a fundamental painting material. By
	combining knowledge on the diverse quality of pigment and
	its planned painting on canvas with a contemporary
	installation of a camera for showing the overall wholeness of
	INTERNATIONAL EXHIBITS
the picture, road signs have been made pointing the way to new painting possibilities. Acrylic on canvas, Infrared Art painting visual spectrum (400 nm - 700 nm) Infrared Art painting - hidden image near infrared (1000 nm)

Class

14

Egypt

EG.1.	
Title	Cinnamo-gesti-diabetal (Insulin Replacement Therapy
THE	for Gestational Diabetes)
Authors	Ahmed Hosni Ali, Adel Abdel-Moneim Ahmed
Institution Potent no	Faculty of Science / Beni-Suel University 201063 / Detent application No. 234/2015
r atent no.	Abstract
Class	<text><text><text><text></text></text></text></text>

Class

EG.2.	
Title	The Nano robot Dual function
Authors	Omar abdel hamid mahmoud
Institution	Academy of Scientific Research and Technology
Patent no.	1859/2013
	The abstract
Description	 The problem started when the cancer Disease became one of the top 10 most dangerous diseases found all around the world and most of people that have the cancer disease will die easily and when the blood clotting in the brain became very dangerous and more than 40% of the people have the it. We can break this problems by Nano Robot it Size Is From 0.5 micro to 1.5 micro and this Nano Robot have Nano leasers and it can break the cancer cell . Diseases can be cured without the Nano pieces of Gold or Nano pieces of silver because the nano robot have a Nano polluters to break the blood clot that is jobs can be the nano robot have bio job We can break the cancer disease when we choose a cancer cell and kill it by the Nano leasers in the Nano Robot and It can kill the damage cells in a fast time. The Brain clot the nano robot can break it by his nano players cells it can break this in a small amount of only less than 2 minutes . Finally i had Chosen this research because of the nijury of my mother's father with cancer and then suffered a stroke before his death at 3 months, so I thought in the treatment of dual function my season of my research for god and services of humanity all around the world.
Class	14

Class

14

EG.3.	
Title	Blind spot by Bluetooth
Authors	Khaled Abdul Hamid Elnems
Institution	The Egyptian Inventors Syndicate
Patent no.	Registered Patent No.: 2013.10. 501 (Egyptian Patent Office)) It is View by mobile the blind spot (vehicle rear) by
Description	Bluetooth alarm system control installed (Device in the rear sides for vehicle wheels) with self- power (charger Movement by wheels)), belonging to the vehicle safe driving device technology. Technical solution that contains in the rear sides for vehicle wheels. Advantages: only installed Bluetooth transmitter Device in the rear sides for vehicle wheels, self- power (because it is powered by moving wheels charger), no drilling, wiring, change car circuit; easy to install, can be installed by the owners themselves, without professional; low cost, the cost of less than 10 \$, more market penetration; simple to use, does not require the driver full control of the system set up; with flexible, either install a host vehicle in the accident- prone right, you can install both sides to ensure a more secure protection; probe and hosts inside the body, do not worry about rain and snow damage to the probe, extended service life.
Class	12 & 8

EG.4.	
Title	Extraction of gold from mud in front of High Dam.
Authors	Mariam Ahmed Baioumy
Institution	I.G.E.L. School
Patent no.	959869
Description	Egypt has a problem that is accumulation of mud behind the high dam and the mechanical ways failed to extract this mud. so this project developed a method to distribute this mud .this method depends on the diamagnetic property of silicon which found in mud when we expose this mud to magnetic field the mud arranged perpendicular on the magnetic field (repel with magnetic field) then we remove the mud easily. In addition water has diamagnetic property also which help

	in this process.The second step extracts gold by two methodsThe first one amalgamation (with mercury)The second one depends on difference in density (max 250 words)
Class	1-Environment - Pollution Control
EG.5.	
Title	Temosome; A novel formula for treatment of lung cancer
Authors	Sameh A. Mohammed, Amira M Abo-youssef, Heba F Salem, Mohamed A. Hamzawy
Institution Patent no	Beni-Suef University
Patent no.	Lung cancer is one of global problems characterizing with high incidence of mortality rate. Previous reports stated that the burden of the lung cancer is significantly increased owing to the increase heavy smokers and tobacco smokers. Therefore, it is expected in the future increasing the rate of lung cancer in most Arab countries especially in Egypt. Temozolomide (TMZ) is alkylating agent that is an imidazotetrazine derivative of decarbazine with broad- spectrum antitumor activity. TMZ acts as prodrug that is rapidly hydrolyzed to its active form in the body. It is mainly used for treatment of certain types of brain cancers such as malignant glioma, skin cancers such as melanoma and recently lung cancer where it works by preventing the cancer cells growth. Currently, drug formulation may enhance the anticancer activity and reduce side effects of temozolomide in order to inhibit the angiogenesis of lung cancer. Metal- based nanoparticles e.g., gold nanoparticles and lipid-based nanocarriers e.g., liposomes represent noble delivery vehicles which have unique intriguing properties allowing their use in cancer therapy. Liposomes embedded TMZ- loaded gold nanoparticles (Temosome) consider a new formula of TMZ and offers novel treatment of lung cancer. Temosome will increase efficacy of TMZ in lung cancer treatment better than temozolomide alone. Temosome encourages us to its utility in the pharmaceutical and industrial scale to become available in Egyptian market and most chest hospitals especially 57357 hospital for treatment of patients with lung cancer.

4

Greece

GR.1	
	Innovative Synergistic Valorization of Lignite Fly
Title	Ash and Steel Industry Scrap-soil as Secondary
	Resources for Compacted Ceramics
Authona	V. Karayannis, G. Papapolymerou, S. Zaoutsos, S.
Authors	Lamprakopoulos, K. Ntampegliotis and X. Spiliotis
T	Technological Education Institute of Western
Institution	Macedonia, 50100, Kozani, Greece
	. In the present research, the combined utilization of fly
	ash (FA), derived from a lignite-fed power station, along
	with scrap-soil (SS), a steel industry by-product, is
	investigated, for the development of eco-friendly
	ceramics, thus enhancing innovation and sustainability.
	The valorization of these low price and largely available
	industrial secondary resources as 100% the raw
	materials mixture in ceramic industry arises interesting
	technological, environmental and economical benefits.
	FA and SS were mixed in various proportions (0-70%wt.
	in SS), cold compacted at 20 tn load using an automated
	hydraulic press to form a series of 5 cm diameter disc-
Description EN	shaped specimens, and finally sintered at three different
	peak temperatures (1000°C, 1100°C and 1140°C) for 3h.
	Then, the specimen microstructure and physico-
	mechanical properties were characterized. According to
	the experimental results, a sintering temperature increase
	from 1000°C up to 1140°C significantly improves
	specimen densification, thus sharply enhancing the
	diametral tensile strength (DTS), from 0.5 MPa up to
	12.8 MPa respectively for a 50-50%wt. FA-SS mixture.
	Mechanical strength also varies with the SS percentage
	in the raw materials. Physico-mechanical properties
	seem to be constant for specimens containing SS up to
~	60% at 1140°C.
()]	Luss and the Discourse la

Class no.

Innovative Research

IN.1.	
	Banana Leaf Technology - A Novel eco-friendly
Title	technology to keep leaves green for 1 year without
	any chemicals to replace plastic
Authors	Tenith Adithyaa
Institution	The Hindu Higher Secondary School Watrap
Patent no.	1892/CHE/2014
	Naturally, Leaves don't stay long. When we pluck out
	leaves from plant it dries out in three days & generally
	thrown away as waste. There was no technology to
	preserve Leaves without chemicals - vain of other skilled
	artisans and plastic products harm our environment My
	lust to make a perfect replacement for plastic & paper
	resulted in this research
	This technology preserves the leaves for 1 year with
	green color and 2 years without the color. This
	technology which petert pending increases Crystability
	durability Stratabability Desistant to autrama
	Temperature excelete Denone loof notherenie fue
	Temperature, creates Banana lear pathogenic free,
	convenient to make any utensils. By preserving lears I
	manufactured Eco mendly plates, cups, wraps thus we
	can replace similar products which can reduce up to 59
Description EN	% of plastic, 18 % of paper products. These products
	were tested for its physical & chemical properties which
	showed similar properties like commercial products. My
	technology has 7 physical process makes leaves to stay
	long & gives Amazing characters & properties which
	has no substitutions.
	I received three international, 4 national awards for this
	technology. My research gives solution to a long
	standing problem & overcomes a prejudgment that
	leaves cannot be preserved without chemicals. By
	expending my research to cellular level longer lifespan
	& more Amazing properties can be attained. This can be
	a perfect writing medium. Products are 66 % cheaper;
	Waste generated is consumable by animals & annually it
	will save 30 million trees. This technology is capable of
	solving 19 challenging environment problems.
Class no	1 Environment - Pollution Control (One)

Class no.

1. Environment - Pollution Control (One)

IN.2.	
Title	Adjustable Electricity Extension Board
Authors	Tenith Adithyaa
Institution	The Hindu Higher Secondary School Watrap
Patent no.	4968/CHE/2013
Description EN	When I work on various experiments I need a lot of plug points to power my devices, which would mean a lot of wires and a big mess. I used to get very irritated with this so I thought to solve the issue and I invited this device I needed many electricity plug points to run various devices at the same time while experimenting. Using many extension cords/power strips was cumbersome; hence I developed an <i>adjustable electricity extension board</i> , in which one can put any type of electric plugs wherever space is available. Adjustable Electricity Extension is a device which will eliminate the need of power strip and it has an ability to power many device at a time comparing to the existing prior art. This device is a new type of plug and it has overcome the problems which were faced by the power strips for about centuries. This Adjustable Electricity Extension Board makes power strips almost useless to us. This device is more safe to us and comfort than the existing prior art. The device is effective up to a distance of 3 meters, and the model is ready for commercialization. I also solved a global issue by my unique design in this device. When we gone to abroad we can't power our device because they have difference shape of socket or plug, in my device any country plugs can be powered. It also has many safety measures and this device was awarded by Ex- President of India. This device has no holes for the plug like the present power strips. For that it contains long parallel slots so it allows the user to plug, many plugs at a time in every angle. The advantage over the present prior art is, this device can able to power any number of plug at the same time in one such device. We can plug multiple plugs simply slide in where they fit. This device is the future of electric outlets and power strips. This device is the future of electric outlets and power strips. This device is the future of electric outlets and power

Class no.

1. Environment - Pollution Control (One)



Indonesia

Represented by Indonesian Invention And Innovation Promotion Association (INNOPA)

ID.1.	
Title	Ubipotas (Ujung Batang Ipomoea Batatas) Hormone As Growth Catalist On Onion To Face Asia
	Economic Community (Aec)
Authors	Adrian Sjanmi Dewanto, M. Rizal Fadhillan, and Muhammad Syukron Amrulloh
Institution	Universitas Negeri Surabaya (UNESA)
Patent no.	-
Description EN	Along with the development of the horticulture world, there are so many plantation sectors that using modern technology to achieve great quality of harvest. But usually that technology brings up so many side effect, as polluted air, water, soil, even affecting plant growth. Based on that aspect we tried to create an idea to fasten the growth speed of onion naturally by using the tip of yam's stem. On this research we used it as a growth hormone to stimulate the onion to grow faster. This hormone is called UBIPOTAS (Ujung BatangIpomeabatatas) hormone. By using 3 variation of yam stem's extract and water: a. full water without extract, b. 40% : 60%, c. 60% : 40% d. only extract without water, the onions treated on the growth period 5 days, 10 days, and 15 days. The research on this UBIPOTAS Hormone resulted that the onion growth faster and more efficient on "c" treatment rather than another treatment, with the ratio of extract and water are 60% : 40%.
Class no.	3. Agriculture and Food Industry



ID.2.	
	PROCESSING WASTE ORGANIC IN TO FERTILIZER
Title	AUTOMATICALLY USING ALUR MELINGKAR
	(CIRCULAR FLOW) MODEL
Authors	Mardiyah Jusuf Hasan Mansoor and Sri Istuti Mamik
Institution	Bahana Cita Persada Malang Surya Buana
Patent no.	-
Description EN	<i>Alur Melingkar</i> (AL) model is defined as a method which employs a rotation of a substance to save energy and turn that energy into another so that the cycle of energy willconnect each other which in turncan maintain the nature balance perfectly. This model is implemented by flowing household waste into a tank using a special blender. Then, the substance is processed into solid fertilizer and the residu, in the form of neutral water,are streamed down to water plants. The circulation of the substancesis expected to continue working in balance and producing perfect products for the balance of nature such aswater to be used as an automatic plants' sprinklers, fertilizer and oxygen. <i>Alur melingkar</i> (AL) is expected to produce solid fertilizer in the form of compost containing NPK fertilizer, liquid fertilizer in the form of liquid waste containing NPK, and neutral water as the residu which can be used to irrigate hydroponics plants, aeroponics plants, paddy field and vegetables that live in the water. In terms of economic value, <i>Alur melingkar</i> (AL) is expected to give beneficial contribution to the society.
Class no.	1



Leftovers >>> Solid fertilizer >>>> Liquid fertilizer

Represented by Universitas Ubudiyah Indonesia

ID.3.	
Title	Designing SMART City to Developing Country for the Future Life
Authors	Jurnalis J Hius
Institution	Universitas Ubudiyah Indonesia
Patent no.	-
	Designing Smart City in Developing country has a different cases compared by modern country. More problem such as awareness, large population (large consumption), lower GDP and big emission are the main challenges for build and implementation Smart CITY that has the concept Sustainable City. This invention will designing Smart City's concept to a
	developing country based on the identification about problem
Description EN	regulation and the people needs. The concept will be implemented in Banda Aceh, the capital city of Aceh Province that become a victim of tsunami in 2004. Banda Aceh is one of a city in Indonesia as developing country that has vision to be Islamic Smart City. Some alteration will be submit on the design to give a good recomendation based on benchmarking with some city in modern country and developing country which had success implemented smart city concept.
Class no.	1
	Promote Best Practice of Smart City Cost Cost



ID.4.	
Title	Flood Mitigation Efforts In The Special Capital
The	Region Of Jakarta
Authors	Dadang ISKANDAR, Dede SUGANDI
Institution	Pasundan University and Indonesian University of
Description EN	Jakarta is the capital of the country, so that experience rapid growth in development. The development of less flooding that occurred in DKI Jakarta is very alarming because it happened every year. A flood is a disaster with such highly negative impacts on the loss of life and property that it has to be mitigated. In this regard, the research aims to: 1) Measure rainfall volume that causes flood, and 2) Analyze efforts of reducing flood volume caused by rainfall in the Region of Jakarta. An experimental method was applied to measure rainfall and run-off volumes stored in infiltration wells. The research was conducted in the following stages: 1) Analyzing land use, and 2) analyzing rainfall and surface runoff volumes. It is found that changes in land cover negatively affect the land's ability to absorb rainfall. Land cover formed by vegetation will be different from impermeable land cover, such as houses, offices, pavements, and hotels. Those land, so that rainfall cannot infiltrate into the soil. To reduce potential flood is by reducing surface runoff volume. Meanwhile, in order to reduce the runoff volume, an infiltration well that can accommodate 5m ³ of water can be constructed for every 100 m ² of developed area. With a number of 664,701,800 infiltration wells, as much as 3,323,509 m ³ of rainfall volume can be collected in those wells.Infiltration wells must be interconnected with drainage made of coarse material that can drain groundwater. Finally, with these infiltration wells, the Special Capital Region of Jakarta will be free of flood. and can provide soil water availability in the dry season.

Class no.

Innovative Research

Iran

Represented by Rayan Innovation Institute

IR.1.	
Title	Auto cooling filter for cars
Authors	Amirhossein Mohammadshafiee
Institution	Bellerbys College, Brighton, United Kingdom Independent School
Patent no.	-
Description EN Class no.	This filter is designed for different type of cars whether heavy or light. It is located through the cooling cycle and prevents movement of impurities and particles inside the designed cooling system. 8. Aviation, car industry and transportation
IR.2.	
Title	Bandar Abbas City Hall
Authors	YASAMAN FARAH ZADEH
Institution	Islamic Azad University, Esfahan Branch (Khorasghan)
Patent no.	-
Description EN Class no.	In local government especially in which democracy resigns, a city hall is the chief administrative building of a city. The local government may endeavor to use the city hall building to promote and enhance the quality of life of the community. 7. Buildings and Materials
IR 3	
111.01	Provision of Diverse water and air filters (daily and
Title	household usages) using simple procedures of Nano technology
Authors	Mohammad Reza Mohammad Shafiee
Institution	Islamic Azad University, Najaf Abad Branch
Patent no.	-
Description EN	Due to the presence of organic substances in the water behind dams, rivers leading to drinking or potable water refineries, and finally the need for physical and microbial filtration.
Class no.	6. Mechanical Engineering - Metallurgy

IR.4.	
Title	Designing a simple model with high efficiency to separate by-products of water disinfection by chlorine in notable water refinement
Authors Institution Patent no.	Mohammad Reza Mohammad Shafiee Islamic Azad University, Najaf Abad Branch - In this design of water refinery, during multi-stage
Description EN	sediments' precipitation with specific compounds and materials, water refinement or treatment is done in several stages of bacteria and microbial filtration.
Class no.	5. Industrial and laboratory equipments
IR.5.	
Title	Production of Platinum Anodes with Constant Voltage Pulsed Electroplating of Nano-crystalline Platinum Coatings on Niobium"
Authors	Mohammad Reza Mohammad Shafiee, Hadi Nasiri Vatan
Institution Patent no.	Islamic Azad University, Najaf Abad Branch -
Description EN	Duo to vast applications of platinum and economical aspects of its industrial applications, platinum coatings on much cheaper sub-layers such as titanium and niobium would be commodious.
Class no.	2. Energy and sustainable development
IR.6.	
Title	Elementary School, Primary and Secondary high school curriculum with research approach
Authors Institution	Mohammad Reza Mohammad Shafiee Islamic Azad University, Najaf Abad Branch
Patent no.	- During years of our rianges as working with our ortige
Description EN	teacher and professor in any field of study from primary schools to universities, we came to conclusion to suggest course syllabus in order to have effective learning in our classroom. In our proposed syllabus, every each field of study should be taught through practical activities such as learning in laboratory
Class no.	14. Other
	INTERNATIONAL EXHIBITS

IR.7.	
Title	Nano concrete plaster acoustic and anti-fire
Authors	ZAHRA ZAGHARI, FATEMH NIK ERESHT
Institution	-
Patent no.	-
	Another advantage of the new plaster is simultaneously
	hydrophobic nature and is permeable to water vapor are.
Description EN	This new product compared with conventional plasters
	are considerably better breathability and at the same time
	not wet surface.
Class no.	7. Buildings and Materials
IR.8.	
	Water Purifier and prevent rust in machining and
Title	completely remove bacteria from wastewater using
	nanoparticles of titanium
	YALDA SADAT HAGHAYEGH ZAVARE,
Authors	SEYEDEH ZAHRA HOSSEINI FARJAM, ZAHRA
÷	ZAGHARI
Institution	-
Patent no.	
Description EN	In this invention, a method of water purification and wastewater treatment offers. The main ingredient titanium dioxide nano-coating method comprises the following steps: 1) Alkokeside titanium in micro emulsions is hydrolyzed and non-organic material that is cross-linked gel titanium after the inorganic polymer
	formed
Class no.	1. Environment - Pollution Control
IR.9.	
	Nano-concrete construction with high mechanical
Title	properties and water resistance and magnetic waves
	using nanotechnology
	ZAHRA ZAGHARI, MOHAMMAD HOSSEIN
Authors	REZAEI, GHAVAM ABAD FARJAM, FATEMEH LOTFI
Institution	-
Patent no.	-
Description EN	In this concrete case, in particular, in addition to better
-	INTERNATIONAL EXHIBITS

	performance, durability and mechanical properties, high- performance concrete is versatile and has additional
	electromagnetic properties of atomic structures (is
Class no.	7. Buildings and Materials
IR.10.	
Title	Solarization of Superheat and Saturation Steam Generation cycle in MED-MSF Desalination
Authors	HAMIDREZA BABAEYAN AHMADI
Institution	-
Patent no.	
Description EN	Nowadays, use of renewable energies instead of fossil fuel is one of the most important needs of human. In this project, solar energy under title of modern energies instead of fossil fuel is used. In this method, in addition to vapor generation for use of vapor turbines, water desalination systems are used for production of fresh water.
Class no.	2. Energy and sustainable development
IR.11.	
IR.11. Title	Two independent mechanized parking for car
IR.11. Title Authors	Two independent mechanized parking for car MOHAMMAD REZAEIAAN
IR.11. Title Authors Institution Potent no	Two independent mechanized parking for car MOHAMMAD REZAEIAAN -
IR.11. Title Authors Institution Patent no.	Two independent mechanized parking for car MOHAMMAD REZAEIAAN - - Two independent mechanized parking class sedans built
IR.11. Title Authors Institution Patent no. Description EN	Two independent mechanized parking for car MOHAMMAD REZAEIAAN - - Two independent mechanized parking class sedans built in mechanics and design of the parking is possible to park the car to separate.
IR.11. Title Authors Institution Patent no. Description EN Class no.	Two independent mechanized parking for car MOHAMMAD REZAEIAAN - - Two independent mechanized parking class sedans built in mechanics and design of the parking is possible to park the car to separate. 8. Aviation, car industry and transportation
IR.11. Title Authors Institution Patent no. Description EN Class no. IR.12.	Two independent mechanized parking for car MOHAMMAD REZAEIAAN - - Two independent mechanized parking class sedans built in mechanics and design of the parking is possible to park the car to separate. 8. Aviation, car industry and transportation
IR.11. Title Authors Institution Patent no. Description EN Class no. IR.12. Title	Two independent mechanized parking for car MOHAMMAD REZAEIAAN - - Two independent mechanized parking class sedans built in mechanics and design of the parking is possible to park the car to separate. 8. Aviation, car industry and transportation CarSmart belt
IR.11. Title Authors Institution Patent no. Description EN Class no. IR.12. Title Authors	Two independent mechanized parking for car MOHAMMAD REZAEIAAN - - Two independent mechanized parking class sedans built in mechanics and design of the parking is possible to park the car to separate. 8. Aviation, car industry and transportation CarSmart belt Shahram Maghsoudi, Hassan Karimi
IR.11. Title Authors Institution Patent no. Description EN Class no. IR.12. Title Authors Institution	Two independent mechanized parking for car MOHAMMAD REZAEIAAN - - Two independent mechanized parking class sedans built in mechanics and design of the parking is possible to park the car to separate. 8. Aviation, car industry and transportation CarSmart belt Shahram Maghsoudi, Hassan Karimi University Of Applied Science And Technology Ghand Karaj
IR.11. Title Authors Institution Patent no. Description EN Class no. IR.12. Title Authors Institution Patent no.	Two independent mechanized parking for car MOHAMMAD REZAEIAAN - - Two independent mechanized parking class sedans built in mechanics and design of the parking is possible to park the car to separate. 8. Aviation, car industry and transportation CarSmart belt Shahram Maghsoudi, Hassan Karimi Universtity Of Applied Science And Technology Ghand Karaj
IR.11. Title Authors Institution Patent no. Description EN Class no. IR.12. Title Authors Institution Patent no. Description EN	Two independent mechanized parking for car MOHAMMAD REZAEIAAN - - Two independent mechanized parking class sedans built in mechanics and design of the parking is possible to park the car to separate. 8. Aviation, car industry and transportation CarSmart belt Shahram Maghsoudi, Hassan Karimi University Of Applied Science And Technology Ghand Karaj - The security and control of advanced automotive belts and remote controls and a system of fines with police camera
IR.11. Title Authors Institution Patent no. Description EN Class no. IR.12. Title Authors Institution Patent no. Description EN Class no.	Two independent mechanized parking for car MOHAMMAD REZAEIAAN - - Two independent mechanized parking class sedans built in mechanics and design of the parking is possible to park the car to separate. 8. Aviation, car industry and transportation CarSmart belt Shahram Maghsoudi, Hassan Karimi University Of Applied Science And Technology Ghand Karaj - The security and control of advanced automotive belts and remote controls and a system of fines with police camera 8. Aviation, car industry and transportation

IR.13.	
Title	Education Management & Scientific Advancement Great Evolution in Course Classification
Authors	Kanoon Farhangi Amoozesh , Kazem Ghalamchi, Mohammad Reza M.Shafiee
Institution	-
Patent no.	-
Description EN	In this enormous project, over 1200 books with different subject in any field of study are published. These published books have classified content with topic statement and mentioned notes though several examples and tests at normal, average and high levels. In addition to these, all have learning CDs, in order to have greater impact.
Class no.	Innovative Research
Class no.	Innovative Research
Class no. IR.14.	Innovative Research
Class no. IR.14. Title	Innovative Research The PGR-P (Portable Guider Robot-polimerical)
Class no. IR.14. Title Authors	Innovative Research The PGR-P (Portable Guider Robot-polimerical) MAHMOOD DAVOODPOUR
Class no. IR.14. Title Authors Institution	Innovative Research The PGR-P (Portable Guider Robot-polimerical) MAHMOOD DAVOODPOUR -
Class no. IR.14. Title Authors Institution Patent no.	Innovative Research The PGR-P (Portable Guider Robot-polimerical) MAHMOOD DAVOODPOUR
Class no. IR.14. Title Authors Institution Patent no. Description EN	Innovative Research The PGR-P (Portable Guider Robot-polimerical) MAHMOOD DAVOODPOUR This robot is the most complete robot that can be substituted against flaggers who do a simple job but are in the dangers positions specially in the high-speed line of roads and highways

Iraq

IQ.1.	
Title	The use of magnetically treated water for improve reproductive and physiological performance of birds
Authors	Prof. Dr. Hazim Jabbar Al-Daraji
Institution	University of Baghdad, Baghdad, Iraq
Patent no.	3360 on 4/12/2011
Description EN Class no.	In this patent we manufacture new device for magnetize water with different intensities of 500, 1000 or 2000 Gause. Magnetized water was supplied to the birds via tap water tubes. Resulted revealed that supply magnetizied drinking water for birds resulted in significant improvement in semen quality, egg production rate, egg quality traits, fertility and hatchability rate, blood traits, sex hormones and histological traits. By using birds as laboratory animals we can concluded that supply magnetized drinking water for human could improve reproductive performance and general physiological status of body. 3
10.2	
Title	Innovation of a new technique for evaluate histological traits, volume density and relative weight of tissues components
Authors	Prof Dr Hazim Jabhar Al-Daraii
Institution	rion Dri mazini ouobur m Duruji
	University of Baghdad Baghdad Iraq
Patent no.	University of Baghdad, Baghdad, Iraq 3440 on 24 / 9 / 2012.

Class no

efficiency for determine all features of histological traits of all body tissues.

IQ.3.	
Title	New technique for cryopreservation of avian semen
Authors	Prof. Dr. Hazim Jabbar Al-Daraji
Institution	University of Baghdad, Baghdad, Iraq
Patent no.	3311 on 27 / 3 / 2011
Description EN	This is the first trial that conducted in the world for cryopreservation of avian semen. Avian spermatozoa are characterized by having very high amount of polyunsaturated fatty acids which render these gametes are susceptible to cold shock during freezing process. So in this invention we innovated a complete system for freezing and thawing avian semen. Results revealed that the use the new system for cryopreservation of avian semen had significant results as regards spermatozoa livability, motality and normality and fertility and hatchability rates.
Class no.	3
IQ.4.	
Title	New technique for the prediction of fertility by using sperm-ovum penetration
Authors	Prof. Dr. Hazim Jabhar Al-Daraii
Institution	University of Baghdad Baghdad Iraq
Patent no	3238 on 19 / 5 / 2008
	In normal case we put the eggs of birds in the incubator and hatchery machines for specific period according the type of bird and after the complete period we would know the results of fertility and hatchability rates. So, we would lost all infertile eggs as these eggs became at this moment not edible for human and at the

Class no.	into the incubation machine for hatching or use these eggs for human consumption. This technique is rather simple and cheap and would give the results to the farmer or poultry breeder within few hours after collection bird eggs after natural mating or artificial insemination between different types of birds. 4
10.5.	
Title	Artificial insemination in pigeon
Authors	Prof. Dr. Hazim Jabbar Al-Daraji
Institution	University of Baghdad, Baghdad, Iraq
Patent no.	3564 on 2 / 4 / 2013
Description EN Class no.	This is this the first trialthat conducted in the world in the field of using artificial insemination in pigeon. In this invention we innovate new techniques and procedures for semen collection from pigeon males and artificial insemination for pigeon females in addition making wide survey for semen quality trates of pigeon males for the first time in the world. Results revealed that using these new techniques and procedures were very efficient either for semen collection from pigeon males or artificial insemination of pigeon females as indicated by significant impeovement in semen volume, mass and individual motality of spermatozoa. Livability, normal morphology of spermatozoa and crosomes, sperm egg penetration of ovum and fertility and hatchability rates.
IQ.6.	
Title	The use of synthetic L-carnitine for improve reproductive and productive performance of local ducks
Authors	Prof. Dr. Hazim Jabbar Al-Daraji
Institution	University of Baghdad, Baghdad, Iraq
Patent no.	3954 on 22 / / 2014 In this potent we menufacture sumthatic L corriting
	which is a conditionally essential amino acid that plays
Density (* 1981	an important role as a cofactor in cellular energy
Description EN	production in the mitochondrial matrix. L-carnitine aids
	in the transport of activated acyl groups across the
	mitochondrial inner membrane, and it is needed for the

oxidation of long-chain fatty acids in the mitochondria of all cells. L-carnitine, with extensive physiological roles is essential nutrient for the body health. It is concentrated in the epididymis and sperm. Despite blood-testis barrier, carnitine is also highly concentrated in testis. It plays an important role not only in initiating sperm motility, promoting sperm maturation and enhancing sperm fertilizing, but also in regulating Sertoli cell functions and protecting sperms against oxidative damage, reducing apoptosis of spermatogenic cells and inhibiting sperms aggregation. Results of this invention revealed that supplementing the diet of local duck with dfeerent levels of synthetic L-carnitine (50, 100 or 150 mg / kg of diet) resulted in significant improvement as regards semen quality and seminal plasma traits, bloood plasma testosterone, measurements of testis and volume density of seminiferous tubules and interstitial tissue of testis and blood biochemical traits of drakes and significant improvement in egg production traits, egg quality traits, blood plasms estrogen and progesterone, fertility and hatchability rates and blood biochemical traits of ducks.

3

Class no.

IQ.7.	
Title	Magnetic water to dissolve kidney stone type ureate
Authors	SABRI M.HUSSEN, OMAR H. SHIHAB
Institution	College of Science /University of Anbar -
monution	Department of chemistry.
Patent no.	4061 / Medicine, No. 41/2013
Description EN	A kidney stone is a calculus formed in the kidneys from minerals in the urine kidney stone typically leaves the body by passage in the urine stream and many stones are formed and passed without causing symptoms. If stone grow to sufficient size (usually at least 3 millimeters) they can cause blockage of the ureter. This lead to pain. Most commonly beginning in the flank or lower back and often radiating to the groin or genitals. The diagnosis of kidney stones is made on the basis of information obtained from the history, physical examination, urinalysis and radiographic studies. Ultrasound examination and blood tests may also aid in

the diagnosis.

Class no.	The patent include using of magnetic water (which prepared by applying magnetic field of known strength on quantity of water which has special physical and chemical properties (i.e, PH and content) to dissolve kidney stone type uric acid (uric acid stones are the most common cause of radiolucent kidney stone in children, several products of purine metabolism are relatively insoluble and can precipitate when urinal PH is low, these include 2- or 8- dihydroxyadenine.) Dose and uses: 250cm ³ from these magnetic water befor eating three times in day for period 3 – 7 days. This dose give excellent results (about 98%) for total cases which examined by us. (4) Medicine - Health
10.8	
12.0.	Interaction between Kaolin and Urea in Organoclav an
Title	Impact on Removing Methylene Blue from Aqueous Solution
Authors	SATTAR SALIM IBRAHIM, SABRI M. HUSSEN
Institution	University of Anbar, College of Science, Department of Chemistry.
Patent no.	-
Description EN	A study of the interactions between Iraqi clay (Kaolin) organic compound such as Urea. aims to prepare organo-clay. Through spectral studies (Fourier transform infra-red spectroscopy (FTIR) and X-Ray diffraction (XRD) since we have worked with two different particle sizes of clays (53 and 106 μ m), and with different proportions of weights. The results of FTIR of the prepared organoclay were indicated. The appearance of new bands was not found in the spectra of raw clays and organic compounds, and shifting occurred in some bands, and, which refers to the formation of the bonds (hydrogen bonds and Vander Walls forces). The results of XRD of prepared organoclay revealed the appearance of new bands due to the organic compounds. This shows clear interactions between the clays and organic compounds. Because of the many properties that characterize

the Iraqi clays which are of high flexibility, so it was a

study of the adsorption of methylen blue dye on the surface of raw clays and prepared organoclays at different concentrations (100, 125, 150 and 175 ppm) and in different temperatures (10, 20, 40 and 50 $^{\circ}$ C). The results of adsorption were very excellent, and fully removed the methylene blue dye on the surface of most prepared organoclays.

The isotherm of the Methylene blue adsorption by kaolin and organoclay was represented by applying the Langmuir and Freundlich adsorption models. It was found that the adsorption process kaolin and organoclay fits very well with the isotherm models Freundlich. Thermodynamic parameters including changes in standard free energy (ΔG°), standard entropy (ΔS°), and standard enthalpy (ΔH°) for these adsorption processes were determined and revealed that methylene blue adsorption processes are spontaneous and feasible and this is consistent with the fact that the interaction is exothermic

Class no. Innovative Research

IO.9.

Title	Effect of salty feeding on growth and survival of grass carp
Authors	Dr.Mohammed Sh. Alkhashali
Institution	University of Baghdad, Iraq
Patent no.	0542 / Patent application No.15/2013
	Grass carp at average weight of 23.5+ 2.5 g were fed on
	four salt diets with different ratios of NaCl: 1,3,5 and
	7%, then exposed abruptly to five salt concentrations:
	0.1 (tap water), 5, 10, 15 and 20 g / l. The results
	showed a positive effect of the salt feeding to raise the
	survival rates of fish, also led to the increase in the
Description EN	number and percentage of chloride cells which
•	responsible for the active transport and ionic pump in
	gills. The study also included the innovation of brief
	equation calculates the number of chloride cells in one
	gram of scraped material of epithelial layer in gill
	filaments, and has applied successfully in the current
	research.
Class no.	3

Class no.

Kyrgyzstan

KG.1.	
Title	Porcelain Mixture For Production Of Everyday Tableware
Authors	S. Jekisheva, G. Maslenikova
Institution	Kyrgyz-Russian Slavonic University
Patent no.	
Description EN	The porcelain mixture for production of everyday china, using domestic non- traditional raw materials
Class no.	-

Korea

Represented by World Inventors Association (WIA)

KR.1.	
Title	HAIRGREEN: Manufacturing Method to Create a
	Hair Growth Stimulant
Authors	LEE, TAE KYUNG
Institution	HAIRGREEN
Patent no.	10-2014-0188366
Description EN	As an anti-hair loss/hair-growth accelerating shampoo approved by Korea Food and Drug Administration, this item includes more than 30 oriental herbs as main ingredients such as rose of sharon, Cimicifuga heracleifolia Komarov, licorice root, chili pepper, wilfordi root, soybean, taraxacum herb, clove, Eclipta prostrata, milk vetch root, black soybean, jojoba oil and coconut oil. In addition to fermenting saporin - the human bio-active substance, the manufacturing method has applied all other effective ingredients as listed above to enable hair growth even more efficiently thus fludifying them to make this unique and practical shampoo.

Class no.



KR.2.	
Title	Protective Lid with Dining Utensil Holder Function
	LEE DONG HOON
Authors	LEE, DONG-HOON
Institution	DAEJIN HIGH SCHOOL
Patent no.	10-2015-0019438
Description EN	A normal disposable paper cup is fragile, light-weighted and can easily break and collapse from carelessness or fall/spill liquid contents by the case of strong wind. Thus the idea was to solve this feature and problem by applying a cap or lid for the cup surface to block contents from spilling out from the cup. The unifying ring of the lid fixes on inner wall of the cup and the encasing on top of the cup to prevent the cup-lid assembly from separating. At the same time, the lid has been designed to have grooves shaped to place dining utensils such as chopsticks for extra convenience for users.

Class no.

12



KR.3.	
Title	Clothes Hanger with Adjustable Hanging Holders for
THU	Trousers
Authors	KANG, SEUNG HO
Institution	SAMREUNG ELEMENTARY SCHOOL
Patent no.	N/A
Description EN	The idea was applied so that a normal clothes hanger was equipped with two rotary holders each fastened on both sides of its wings which would allow sliding movement along the hanger shoulder. Thus, regardless of the size and width of the clothes hanging especially trousers which are of many different shapes and sizes, the two holders can hang any kind of trousers or clothes of any lengths and sizes. Since the hanger shoulders are angled, inclined downwards, the holders on both sides would easily slide down by the weight of its hanging trouser and would fix itself at a perfect parallel position along the shoulders. With the holders on the hanger, it can hang different kinds of clothes or scarves at the same time.
Class no.	9



VD 4	
KK.4.	
Title	Versatile Handle for Equipping Kitchen Utensils
Authors	KANG, SEUNG HO
Institution	SAMREUNG ELEMENTARY SCHOOL
Patent no.	N/A
	The versatile handle is applicable for installation on
Description EN	handles of cooking pots, frying pans and just about any
	kind of cooking saucepans of various shapes. This
	INTERNATIONAL EXHIBITS

additional handle on handle is then able to equip various kitchen utensils including fish slice, scooper, ladle, soup spoon, rice paddle, whisk, etc. The versatile handle consists of [-shape rotary bracket in which adjusting bolt through its grooved hole can fix its position on the frying pan's handle. Then, the spring fastened on the bottom of the bracket opening allows tight tension of space inside the bracket to equip any utensil handles inside the versatile handle already fastened on the frying pan. This folder function applied on the frying pan or other cooking pot handles gives convenience by allowing the user to have their utensils placed hands-free on the frying pan while they are busily cooking food. Alternately, the user can have two different types of cooking utensils in use without substituting different utensils every time.



a Mathad of Culture Extract of

Class no.

KR.5.

Title	Ceriporia lacerata for the Therapy of Diabetic Diseases and Culture Extract of Ceriporia lacerata
Authors	using the same
Authors	KINI, DI OUNG CHEON
Institution	FUSEN BIO Co., Ltd.
Patent no.	N/A
Description EN	The lyophilisate derived from the culture extract of ceriporia lacerata's mycelium concentration has been made into an innovative mixture by combining it with water, ethanol, methanol, acetone, butane and ethyl
	INTERNATIONAL EXHIBITS
	100

acetate to provide complete effect towards healing diabetes. The mixture raises the elemental effect of alreadv well-known diabete today's solution. Protocatechu aldehvde. The addition of ceriporia lacerata's culture extract into this medicinal mixture solution gives an effect to propel the precautionary treatment for the diabetes as well for a healthy nutrition for general human body. This medical innovation is to prevent obese diabetic patients' life cycle and their bad habits of ending up consuming too much sugar, overeating food which becomes the cause of their clouded consciousness, blood vessel clogging and neuropathy.



Class no.

4

KR.6.	
Title	Plant Supporter on Flowerpot
Authors	AHN, JAE-MIN
Institution	BITGARAM ELEMENTARY SCHOOL
Patent no.	N/A
	It is known to be a common inconvenience and problem
Description EN	for any gardeners to grow certain plants while
-	maintaining its health and strength in its growing
	INTERNATIONAL EXHIBITS
	101

process without being damaged from environmental forces such as wind or heavy rain which could cause the plant to grow in unacceptable vertical direction and result in the plant's nutrition or effect's malfunction. Thus, around the circumferential surface of the upper part of flowerpot were grooved with numerous holes on the circular wall to allow installation of multiple rod supporters or protectors to fix any plant's trunk (body) in between the rods which would firmly hold the plant in place without causing it to lean down or fall apart from its natural growth pattern and defend against blowing wind or heavy rain. When the plant grows into a certain size bigger than usual, the gardener can simply adjust the width of the protective rods in accordance to the trunk's size because there are many other holes grooved around the flowerpot's upper walls. Adjusting the protective rods are flexible and suitable for all shapes and sizes of the plant in which it's helpful and effective to grow a much more healthy and strong plants the gardener prefers in a higher quality. This idea would also agriculturally beneficial in terms of increasing the production of healthy plants as well as lowering the possibility of growing abnormally shaped plants.

Class no.

3



KR.7.	
Title	Sunlight Blockage System using Rack Gear
Authors	HWANG, YOON SANG
Institution	INCHEON GONG HANG MIDDLE SCHOOL
Patent no.	10-2013-0039808
Description EN	A novel idea has been applied to a vertical blind to open and close in accordance to the direction of sunlight ray beaming towards the blind upon sunrise and sunset with an automatic detective sensor for sunlight systemized within the vertical blind system. A rack gear moves along both the upper and lower pins to rotate the blind which functionally operates in respect to the sunlight sensor's detections. Such effect gives economical and practical benefits for any household to automatically adjust indoor temperature level and allocates the overall energy usage. The effective vertical blind receives the operational command from the unique sunlight sensor that detects the solar magnitude of the sun ray controlling the opening or blockage of the blind shields depending on its sensitive retrieval of certain sunlight by rack gear in which it is circuited with LED light bulb that illuminates in either green or red color to indicate the functional status of the blind shields whether they are blocking or bringing in the sunlight from outside. With this automated blind system for house windows, users can enjoy sustainable warm or cool room temperatures according to their preferences and take away manual shielding or opening of the vertical blinds on windows.

Class no.

KR.8. ECO Power Transfer System & System for Title Minimizing Braking Distance using Double Pedals Authors LEE. SIWOO Institution KOREA UNIVERSITY Patent no. 10-2012-0145725 First, stick a neodymium magnet on the brake disc area on vehicle wheel and a coiled brake disc caliper on the rear. Then the electromotive force is generated when vehicle is on the move. The energy force is then stored into the battery to attain the electricity. When braking suddenly, the vehicle generates counter-electromotive effect so without a direct friction, vehicle's disc is grasped so that the braking distance be minimized with electromotive & countercan electromotive forces generated from driving, storing the energy into the battery. There is no need for alternative battery, as the battery already systemized to electromotive and counter force to 'recharge'. Because recharging period can be extended, this idea can be applied into energy generator as well. Fast response and change of action enabled **Description EN** on the motor using the electromotive/counter electromotive forces' sudden-braking and sudden-accelerating. Thus, car accident probability is minimized. The idea allows the driver to minimize the cost of gas on average effective 40%, braking/accelerating causes less than 10% efficiency. According to the invention's test result, the efficiency of the car is increased by 2.5 times. Smaller size compared to other standard equipments & systems, and also lightweight so it's easy to apply on the vehicle system of the car and as an assisting device for transferring electric power. Using electromotive force, both electrical energy and gas amount wasted can be saved, economic effect. Counter-electromotive is generated to minimize the braking distance so that the car has low possibility to crash, occur in accident. Class no.



KR.9.	
Title	Free Movement Seat for Handicapped Individuals
Authors	PARK, JOON YONG
Institution	CHANGDUK GIRLS' HIGH SCHOOL
Patent no.	10-0469772
Description EN	A sliding ball is equipped under the seat of the sitting chair so that the surface becomes movable with the ball rolling under it in which the latter part is set up with the opposing apparatus that maintains the stoppage function for the chair. The combination of frictional plate and sliding ball along with the ball bracket allows the chair to move in which the lever combines with the hinge to enable braking function to give stoppage and fixture function at a spot where the seated handicapped individual chooses to stop at. Thus, handicapped individuals who are disabled to move on their own can conveniently move around a certain area while still sitting on the seat with the rolling of the seat and stop at a certain spot they want in which the opposing apparatus part of the chair allows fixture of the ball to stop rolling.

Class no.

14: Welfare for the Handicapped



KR.10.	
Title	Closet Pole with Sliding Function
Authors	PARK, BYEONG HO
Institution	BOIN HIGH SCHOOL
Patent no.	10-0979814
Description EN	It is normally dark inside the closet thus difficult to see and distinguish which clothes are which from the long closet pole hanging all clothes sideways making it even more difficult to find the right clothing one wants to
	INTERNATIONAL EXHIBITS

wear. Thus, the idea has been applied so that the pole sticks out of the closet and into the brighter spot in the room by fixing the slider case on both sides of the closet wall where the two and three-level sliders can slide along the guide and stick out of the closet making it easier to hang, store and select certain clothing and preferred dresses. The tripled sliders are combined together with the single closet pole in which the extension allows the pole to protrude its sliders out of the closet for closer access and control for stored clothing and also for the selection of clothes.



KR.11.	
Title	Gas Stove with Trivet Angle-Adjusting System
Authors	CHOI, WOO JIN
Institution	UNJEONG HIGH SCHOOL
Patent no.	20-0355443
	This innovative gas stove is able to adjust the vertical angle
	of its trivet making it much flexible for any kitchen utensils
	including cooking pot or frying pan, etc to be placed on top
	of it and adjust its angle in accordance to the fire intensity
	and flame magnitude of the stove. An angle adjusting pin is
Description	used to combine the trivet's cut groove and the bracket, thus
EN	when the bracket is rotated, the trivet raises or lowers its
	surface angle. When the cooking pot is tilted by the
	adjusted angle of the trivet, the food content inside can then
	lean towards a specific corner to separate from each other.
	This is quite useful when trying to let all the greasy oil out
	from the meal before being dished out on food plates. With
	INTERNATIONAL EXHIBITS

the angle adjustment of the stove, cooking becomes much efficient and flexible for various purposes including filtering out unnecessary contents such as oil, meat crumble wastes, etc giving the overall effect for re-usage of vegetable or vinegar oil, and reducing the waste of natural resources.

Class no.



KR.12.	
Title	Teaching Tool for Measuring the Height of the Sun
Authors	CHOI, BYEONG UN
Institution	Vice-Principal at Kyeong An Elementary School
Patent no.	10-0979814
Description EN	This particular teaching tool allows students to learn about measuring the geological altitude/height of the sun. A dome-shaped experimental body is installed together with a protractor on its center in which both sides are fixed with rotary protractors that help to act as indicators to measure the linear line towards the sun model. Shaded area's edge can then be matched with the respective control base and derive its angle pointing towards the sun to allow numbers to be calculated for the correct altitude of the sun. Such learning material is easy, simple and safe to use for all students and provides a much realistic understanding about

how to get the measurement of sun's height from ground level. Additionally, the teaching tool can measure the height of the sun in different scenarios in accordance to the sun's displacement and different positioning and students can study how the sun's altitude changes as the earth revolves around it.

Class no.

14: Education



KR.13 Title **Back Draw Prevention System of Tissue Box** CHOL SEO JUNG Authors CHANGDUK GIRLS' HIGH SCHOOL Institution Patent no. 10-0577868 The invention was developed to be applied in tissue boxes to prevent tissue sheets from fall free inside the box. The tissue guide system has incorporated fixing equipment that fastens an elastic rubber band that compresses the stored tissue sheets inside the box with its frictional force in which the rubber band is fastened with pins on both sides of the box to enable each tissue sheet to be pulled out without extra sheets falling out along with it. This fixture system to prevent back draws of tissue sheets can easily be taken out from its original tissue box **Description EN** when all the tissue sheets have been used and can be reinstalled onto another tissue box for its continued use. The back draw prevention system of tissue papers can be installed on the narrow insertion area of the tissue box in which the tissues stored inside are compressed with high friction of rubber band to block additional tissue sheets from coming out together with the initial sheet being pulled out. The system is easy to install in and retrieve out of the tissue box for further use on new tissue boxes.

Class no.

5
Macedonia

MK.1.				
Title	New invention of insulation material that saves			
	money and energy on beneficial way			
Authors	Nikola Rujkov, Blagica Janeva			
Institution Description EN	Yahya Kemal College Until now in the insulation industry, are found insulation materials, that are insulating the moisture, the temperature and the sound. But it's so hard and till now it's not found a insulation material which ability is to has moisture, temperature, sound, and electro insulator at the same time, and at the same time all these 3 abilities to has a big results, and also that material to be able to be produce in very different size and shapes. Nowadays, scientists are trying to use everything that nature give in a big amounts, and it's easy from nature to take these materials, or easy to access to them. Also, the best one that the scientist can do is to use wasted materials(from wood, plastic, paper) or better to find a wasted material that is bad for the solid and, to make the material to be in the production. This is what I actually did, we took the wasted materials from wood- the saw dust, we change their form with a chemical and we made an insulation. Insulation that after putting in the insulation industry will make many changes and will has so many advantages, to people who is working with insulation. That's why we think that we found the best solution, to be beneficial and economical, to help to the environment, and of course to save a huge amount of amarry			
Class no.	Innovative Research			
МК.2.				
Title	Simple Solutions For A Contemporary Issue-The Excessive Use Of Costly Energy, And How It Affects Our Eco-system			
Authors	Nina Pjevac, Sara Redzepagic			
Institution	Yahya Kemal College			
Description EN	This project raises awareness of the environmental issues and presents a solution for it. The best way to do			
	INTERNATIONAL EXHIBITS			
	109			

this is to say that he can reduce the spending AND reduce pollution. We have chosen middle school and measured how much energy is spent under bad insulation conditions by calculating the bills at end of each month. We concluded that there is a loss of energy present. The most effective way to reduce the costs, to improve the conditions of the school and to save energy is by using solar panels, thermo insulation, replacement of lighting and radiators, isolating the basement and the floor. By using newer and more efficient energy reducing methods, in period of 2-3 years the money given for the energy efficient materials pay off. And not only the financial part is improved but the environment is protected which, is the thing we strive towards. Innovative Research – Pollution Control

Class no.

Title

Authors

Institution

FISH BONES USED FOR CALCIUM ADDITION

Dragan Trajchev, Mila Vilarova Yahya Kemal College

IN HUMAN BONES

In this project we use the fish bones from hake and mackerel as calcium addition in human bones. Namely, the bones which are nowadays used as marine (natural waste) are now used as prevention from many human bone illnesses. We prepare a special test meal consisted **Description EN** of baked bread rolls with enzymatically treated fish bones. The level of Ca in the human subjects was measured before and after the intake of the meal. The results were incredible.

Class	no.
-------	-----

Innovative Research - 4

MK.4.				
Title	Rich mineral water – catalyst of life			
Authors	Simona Miladinova			
Institution	Private Yahya Kemal College			
Description EN	Since the water molecule is not linear and the oxygen atom has a higher electronegativity than hydrogen atoms, it carries a slight negative charge, whereas the hydrogen atoms are slightly positive. As a result, water is a polar molecule with an electrical dipole moment. So, our project is based on accelerating property for growing INTERNATIONAL EXHIBITS			

and conducting electricity as property of one specific type of water found in Negotino (place near our town). We have been making experiments, searching for proves, investigating this circumstance and at the end we have proven our hypothesis. With examples from all needed types of water: specific type of water, water from the river Vardar, tap water (drinking water), and distillated water. Also, we needed tomato, cucumber, cauliflower seeds. These seeds have been left each in different type of water as long as we needed to collect information from their reaction in different types of water. The seeds have to use only the materials in the water for their growth, so all results obtained in the following charts are observed and detected. Within one month testing, trying out, using facts, we have prepared well-supported conclusion with proven hypothesis. The jars were exhibited on daily light and seeds' improvement was potentially observed and written in charts. According to this our goal is: Weather electrical conductivity affects positively on life in water and what is relation between electrical conductivity and elements present in water construction.

Class no.

MIZ 5

Innovative Research - 4

MIK.5.					
Title	Cornstalk – Economic and Effective Way to Insulate Buildings				
Authors	Gjorgjija Pandev,Zlatka Lisichkova				
Institution	Yahya Kemal College				
Description EN	The fact that we are surrounded with cornfields was inspiration to search corn and its properties. When we opened a cornstalk we saw a sponge like material. After consultations we knew that cornstalk contains about 80% cellulose, so it can be used as efficient insulation. The purpose of our project named as "Cornstalk – Economic and Effective Way to Insulate Buildings" is to show new, cheap, effective and economic way for insulating structures. In the same time the materials which are used are organic, healthy, and are environment friendly . After harvesting the corncobs we found that the cornstalk can't be used for feeding the livestock or as				

green fertilizer, because it is dehydrated and has lost most of the minerals. So it's milled and mixed with gypsum proportionally, obtained mixture can be fixed to the wall or wall can be made of it. Results are fantastic showing efficiency of 70 % allowing us to have warm home and full wallet.

Class no. Innovative Research

Malaysia

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

tracking, and many other similar objectives for civil engineering projects.

Class no.



MY.2.					
Title	INTEGRATED SMART TRAPPER SYSTEM				
Authors	Mohd Remy Rozainy M.A.Z., Nasran N., Nasihir K., Abustan I.				
Institution	Universiti Sains Malaysia				
Patent no.	-				
Description EN	The difference between Intedrated Smart Trapper System (InSmarts) and the other trapper system is InSmarts consists of the combination of more efficient floatable trapper with just two fibre reinforced plastic cylindrical pipe that are combined together to become one unit. The columns are made up of stainlees steel that have proper slot in curve for simple installation. So, the floatable trapper can go up and down according to the slot in curve at any water level. The rubbish or debris can be trapped at any water level with this simple trapper system. Next, the second phase is consists of communication tools such as ultrasonic sensor, collector box and smart phone. When the debris is fully trapped at certain condition, ultrasonic sensor will detect the rubbish. The sensor is using the wave signal and will spread 60 degrees opening for rubbish detection. It will detect when the accumulation of debris at static condition within 30 seconds for 1 m long model. When the detection is occurred, it will transmit the coding to the collector box for further process. The collector box is a GSM module that is commonly being used the telecommunication system. It has SIM card for a basic requirement to make sure this system is reliable. Meantime, the collector box is already coded with				

simple text such as debris level is full, system reset successful and number is registered. These three main sentences are significant for short messaging system (SMS) via our smart phone.

MY.3.				
Title	THERMOGUARD			
A 4h o o	HEAH CHENG YONG, LIEW YUN MING, MOHD			
Authors	MUSTAFA AL BAKRI, KAMARUDIN HUSSIN			
Institution	UNIVERSITI MALAYSIA PERLIS			
Patent no.	EP 2 644 583 A1			
Description EN	During a fire hazard, fire directly contacts with the building structures, causing the heat transfer into the structures in very fast moments. This leads to the substantial deterioration of strength of support structures such as cement/ concrete/ slabs due to high temperature. Moreover, the steels embedded inside the column structures will also eventually expand during the fire,			
	inducing structural failure. All these contribute to the collapse/ destroy of building in short time. ThermoGuard is invented as passive fire protection system.			
Class no.	12			



MY.4.					
Title	Remarkable Underwater Femtosecond Laser Micromachining For Medical Stent Manufacture				
Authors	NOORHAFIZA MUHAMMAD (UniMAP), MOHD				
	SHUHIDAN SALEH (UniMAP), DAVID WHITEHEAD				
	(THE UNIVERSITY OF MANCHESTER, UK), LIN LI (THE				
	UNIVERSITY OF MANCHESTER, UK)				
Institution	Universiti Malaysia Perlis				
Patent no.	Granted as NOVEL				
	COPYRIGHT REGISTRATION NUMBER (UKCS):				
	INTERNATIONAL EXHIBITS				

284686306

	This invention introduced a remarkable technique for the				
	application of water in femtosecond laser				
	micromachining. It is introduced a technique in				
	machining stents in submerged conditions using a 100-fs				
	pulsed laser. Commercially, microprofiling of medical				
	coronary stents has been dominated by the use of				
	Nd:YAG lasers with pulse lengths in the range of a few miliseconds, and material removal is based on the melt				
	ejection with a high pressure gas. As a result, recast and				
Description EN	heat affected zones are produced, and various post-				
	processing procedures are required to remove these				
	defects.				
	This invention prove that no assisting gas is required to				
	remove debris and minimize the recast during the laser				
	processing, thus resulting in significant manufacturing				
	cost saving and environmental friendly process.				
	The progressive findings from this research has been				
	acknowledged in renowned international conference and				
	journal as follows:				
Class no.	6				

-					
MY.5.					
	MULTI-PHASE SMOOTHED PARTICLE				
Title	HYDRODYNAMICS (SPH) MODELLING FOR LASER				
	MICROMACHINING				
	NOORHAFIZA MUHAMMAD (UniMAP), MOHD				
A 4 h. o o	SHUHIDAN SALEH (UniMAP), BENEDICT ROGERS				
Authors	(THE UNIVERSITY OF MANCHESTER, UK), LIN LI (THE				
	UNIVERSITY OF MANCHESTER, UK)				
Institution	Universiti Malaysia Perlis				
	PATENT SEARCH: Granted as NOVEL				
Patent no.	COPYRIGHT REGISTRATION NUMBER (UKCS):				
	28468042				
	This invention introduced a Smoothed Particle				
	Hydrodynamics (SPH) model to simulate the three-				
	phase laser micro-machining process for medical				
Description FN	coronary stant manufacture. The open source code				
Description En	Splitzing is used to model the interaction between the				
	Spriysics is used to model the interaction between the				
	laser beam and workpiece. The meshless method, SPH is				
	introduced for the first time to capture the physical				

process with high accuracy in laser micromachining applications provides an important contribution to the field of laser processing.

It is capable to model the phase changes of materials (solid, liquid, gas) during the laser processing which is found problematic to be captured with other conventional methods. The superiority of the invention is when it is able to model the wet machining with the presence of water underneath the workpiece. The advantages of the inventions are: i) Meshless; ii) Minimize time required for mesh generation; iii) Reduce cost (computing resources); iv)High accuracy; v) Able to model the physical process for micromachining; vi) Able to incorporate water to model wet machining.

This invention has high potential for laser machining industry which is useful in predicting the process parameters and product quality after laser processing.

The remarkable findings in this research has been acknowledged in renowned international conference and journal as follows:

Class no.

6

MY.6.						
Title	AS- SA- IN					
	RAMA MURTHI A/L SOORIA MOORTHI,					
	MUHAMAD	IQBAL	HAFIZ	BIN	MOHD	
Authors	RABBILASUAI),				
	SHAMSUL SHAHMI BIN SHAMSUL EFFENT					
	VIKNESWARA	VIKNESWARAN A/L CHANDRAN				
Institution	SM SAINS KUBANG PASU					
Patent no.	-					
	Roof nowadays are made of sand which are heavy and					
	are not biodegr	adable. Th	is causes	a lot of	f energy	
	needed just to carry one tile of roof and if it breaks, it					
	cannot be recycled and are thrown away just like that to					
Description FN	rot which may cause harm to those who would					
Description En	accidentally step on it. But, With our 'As-Sa-In', all of					
	this may change. Our main objective is to make a roof					
	tile which is much better than the normal roof, to invent					
	a roof tile which can be made with an affordable and a					
	reasonable price	and lastl	y a roof	tile that	can be	
	INTERNATIO	ONAL EXHI	BITS			

recycled and easily reusable

By using 'As-Sa-in", the cost needed to make one roof tile can be reduce as it is made of sugarcane waste and cement. Plus because it is made out of sugarcane waste it can be easily recycled by using the 'As-Sa-in'. Furthermore, 'As-Sa-In' has a higher tensile strength when compared to the normal roof which causes it to not easily break apart when it fall off from a high position as it contains silica from the sugacane that has been used. The roof tile that we have created does not crack easily when it expands or contract to withstand our uncertain weather in Malaysia.

Class no.

7



MY.7.	
Title	SALATEM BOX
Authors	RAMA MURTHI A/L SOORIA MOORTHI, MUHAMAD IQBAL HAFIZ BIN MOHD RABBILASUAD, SHAMSUL SHAHMI BIN SHAMSUL EFFENDY, VIKNESWARAN A/L CHANDRAN
Institution	SM SAINS KUBANG PASU
Patent no.	-
Description EN	Salatem mean safety in latin. So this box is named as salatem box as it is used for many security reasons. It is a box where we can put our valuable things such as money and necklaces as it is visible to all. If anyone tried to take that then the alarm will be activated in the other neighbours house and also to guardhouse except the victim's house. This is a good way to catch a thief without his acknowledgement. This safe box also cannot be damaged or broke because if any high pressure is

applied on the safe box it will automatically activated. Example of high pressure is like a thief want to damage the safe box, or the house is in fire or during earthquake. This system is also attached by SER BAND. SER BAND is a wrist band which is weared by all the family members in a house. The band got a button. If anyone need help for immediate they can press the button. So the alarm system will be activated. Example of emergencies are if a sick old lady get heart attack, or a small boy is going to be kidnapped or a girl is going to be raped. This invention will increase the relationship between neighbours. This is because they need to help each other so that the safety of the neighbourhood can be conserve. The alarm is also not so loud or irritating so it can't disturb the neighbours peace. They also can turn off the system for some reasonable reasons.



MY.8.	
Title	The Expandable Hanger
	Mujahidah Binti Mashhuri, Aiman Bin Faizal, Nor
Authors	Ryzah Binti Abdullah, Alfi Bin Ismail, Mohd
	Jeffery Bin Zainal
Institution	SMK Tengku Ampuan Rahimah, Klang, Malaysia
Patent no.	-
Description EN	The Expandable Hanger is a hanger which can be expand and contract to three different sizes; baby size, a normal size and a large size and made up by biodegradable polymer. This product is eco-friendly to the environment and to the people. The hanger was design to help people hanged their cloth according to their size is and to help parents to educate their children to do their own laundry.
Class no.	8

INTERNATIONAL EXHIBITS

MV 9	
Title	Gellatin From Plant
THE	Akmal Hazim Bin Ahmad Razid Harith Zahrin Bin
Authors	Hasnal Nor Hamiza Hanis Binti Tan Tawi Mohd
1 4441015	Shakir Zubavrie Bin Rozali
Institution	SM Sains Hulu Selangor
Patent no	Pending
Class no	Gelatin is a substance that is mostly used in food industry. Gelatin is commonly used as a gelling agent in the food, pharmaceutical, photography and also in cosmetics products. Gelatin is a pure protein that can be obtained from skins and bones of bovine animals through hydrolysis process. There are two types of gelatin which is type A and type B gelatin. Most of type A gelatin is derived from pig skins and type B gelatin can be obtained from bones and skins of bovine animals. These situations make most of the users especially Muslims, Hindus and also vegetarians doubt to buy the products which contain gelatin especially in food. The Muslims are forbidden to eat any food that are contains any parts of pig's body while Hindus and vegetarians are forbidden to eat any parts of bovine animals. A new type of gelatin is made from plants has been discovered as a solution for these situations. To make a gelatin from plants, it does not need any complicated materials and process. There are three steps of processes in order to make a new gelatin from plants. The first step is pretreatment process. This process is conducted to take the starch from the plants. Second step is dilution process, to make gelatin becomes two layer which is the upper layer is indilute layer and contains amylopectin. The third method is separation process. This process is to make the gelatin becomes powder by separating the amylopectin using water through the evaporation process. It is also a low cost product as it used the simple materials and the materials can be found easily at the market. Gelatin made from plants is guaranteed HALAL and can be eaten by the Muslims while the Hindus can eat this gelatin as it does not contain any parts from the bovine animals and now the vegetarians also can eat the food that contain gelatin as it is made from plants.
Class no.	3 (Agricultral and Food Industry)



MY.10.	
Title	Gummy Semashur
Authors	Lisneza Bt Roseli, Arif Danial Bin Mohd Lodfi, Akmal Hazim Bin Ahmad Razid, Afiff Bin Abdulah
Institution	SM Sains Hulu Selangor
Patent no.	Pending
Description EN	General observation shown that solid wastes around the world increases day by day. This problem is mainly caused by the disposal of waste materials such as plastic, cans, polystyrene, etc The accumulation of these waste materials can cause detrimental effect towards Mother Earth. Instead of disposing them, we should reuse them and innovate them into something useful and we came out with Gummy SEMASHUR, a useful adhesive for daily life. Our product is quite different from other commercial adhesives where we utilize polystyrene to produce an adhesive by mixing it with hydrocarbon solution and hydroxyl solution in a fixed ratio. The viscous product formed after the reaction is caused by the decomposition of polystyrene. This product is tested on various surfaces and works most of the time such as wood, rubber, fabric, paper and plastic. On top of that, this product can be manufactured in a jiffy and does not burn a hole in your pocket. You will be surprised how this product is special from others.
Class no.	1



MY.11.	
Title	Anti-Gout from Plant
Authors	Mohd Shakir Zubayrie Bin Rozali, Arif Danial Bin Mohd Lodfi, Aina Athirah Bt Ab Latip, Wee Jia Chen
Institution	SM Sains Hulu Selangor
Patent no.	Pending
Description EN	Herbal standardization is associated to the measurable and validated system used to ensure the confirmation of identity and determination of quality and purity of herbal material and products. In standardization, every batch of herbal products must have the correct amount of substance or known as chemical or biological marker to ensure the consistent quality of herbal products. Phytochemical work-up on Baeckea frustescens (BF) have successfully isolated active compound (BF 6322). This compound showed potential anti-gout properties by inhibiting xanthine oxidase enzyme activity where involved in the formation of uric acid that contributes to gout effect. Therefore, standardised extract of Baeckea frustescens (SEBF) were optimized and developed based on the presence of BF 6322 by qualification analysis together with the evaluation of anti-gout properties.
Class no.	4 Medicine – Health Care - Cosmetics

ARL Door System
Mohd Effendi Muhammad Suandi, Shayfull Zamree
Abd Rahim, Mohd Sazli Saad, Mohd Nasir Mat Saad,
Mohd Khairul Fadzly Abu Bakar, Muhamad Farizuan
Rosli, Amarul Talip, Badrul Azmi Abdul Holed, Irfan
Abd. Rahim
Universiti Malaysia Perlis
PI 201407702
The Alarm, Reminder and Locking (ARL) Door System is an innovative electronic device installed at the door

area to protect owner room from any situation such as burglary. The objective of this design is to increase the security level to secure valuable documents and items by implemented an existing mobile network technology which is more cheaper and low power consumption device that will useful to the users. This device applying Global System for Mobile communication (GSM) and Short Message Service (SMS) technology to ensure the device system will operate directly to the users through their mobile phone. The system used Arduino Uno R3 controller embedded with GSM/GPRS SIM 900 shield to activate all component which is alarm buzzer, solenoid for locking and magnetic door sensor for a purpose of the security method. The ARL door system working in three different situations that is improper door closed, automatic locking and intrusion occurance and due to this matter, it ability to perform only in one application system. Some of improvement has been develop to enhance the capability of this system to overcome the problem when intrusion occur. When someone enter the room and the system still in locking mode, the device will automatically activated because of the magnetic door sensor is reacted. The system will trigger the alarm buzzer to emit the warning sound and at the same time the GSM will transmit the caution data through SMS to inform and remind the user about that situation



MY.13.	
Title	Re-iGate
	AMARUL BIN TALIP, MOHD KHAIRUL FADZLY
	BIN ABU BAKAR, SHAYFULL ZAMREE BIN ABD
	RAHIM, MOHD NASIR BIN MAT SAAD,
Authors	MUHAMAD FARIZUAN ROSLI, MOHD EFFENDI
	MUHAMMAD SUANDI, BADRUL AZMI ABDUL
	HOLED, IRFAN ABD RAHIM, MOHD. SAZLI BIN
	SAAD
Institution	GDM-CeGeoGetech/University Malaysia Perlis
Patent no.	PI 201400773
	Re-iGate is the basic of digital communication system
	linking the information of position reports, weather
	reports, messages between users and other information
	for radio transceiver. The Re-iGate function is to
	selectively allow packets heard on RF (Radio
	Frequency) to APRS-IS and to pass all message packets
	destined for local station to RF. Basic usage requires the
Description EN	transceiver, Terminal Node Controller (TNC), Internet
	access and a connection to the internet and GPS where
	the information is sent to a receiver that will update data
	to server by using Re-iGate. Any contact and all data
	information can be found and viewed on a world map. It
	also can be used as a media send short messages to other
	users or view any activity information. Re-iGate can use
	as the work of search and rescue.
Classma	10



MY.14.	
Title	GSM Temperature Alert System to Detect Human Body Temperature
	Mohd Khairul Fadzly Bin Abu Bakar Amarul Bin Talin
	Shavfull Zamree Bin Abd Rahim, Mohd Nasir Bin Mat
Authors	Saad, Muhamad Farizuan Rosli, Mohd Effendi
	Muhammad Suandi, Badrul Azmi Abdul Holed, Irfan
	Abd Rahim, Mohd. Sazli Bin Saad
Institution	Universiti Malaysia Perlis
Patent no.	PI 201408583
	The body temperature of child is importance to
	monitor and the three goals of home care for a child with
	fever are to control the temperature, prevent
	dehydration, and monitor for serious or life-threatening
	illness. To overcome this issue, a temperature
	monitoring system for child fever body temperature is
	importance to monitor. That device will tell the user
	about the over limit temperature that can be dangerous to
	child. The operations of temperature monitoring system
Description EN	is involving mechanical and electronic components.
Description Er	According to the circuit of temperature monitoring
	system use phone battery as a power supply that send

system, use phone battery as a power supply that send voltage to the GSM auto-dialler which is 3.7V. Then, make a connection between GSM and temperature sensor so that it will send the signal to GSM auto-dialler.

By the connection, the temperature sensor will successfully send the signal to GSM auto-dialler when the sensor detects the temperature. Next, the sensor will gives signal to GSM auto-dialler and the GSM autodialler will transmit the data to mobile user

Class no.

12. Safety, protection and rescue of people



MY.15.	
Title	A New Innovation of Fire Alarm System
	Muhamad Farizuan Bin Rosli, Shayfull Zamree B Abd
	Rahim, Mohd Sazli B Saad, Mohd Nasir Bin Mat Saad,
Authors	Mohd Effendi Muhammad Suandi, Badrul Azmi Abdul
	Holed, Khairul Fadzly Bin Abu Bakar, Amarul Bin
	Talip, Irfan Bin Abd Rahim.
Institution	University Malaysia Perlis
Patent no.	PI 201402601
	At present, the use of a fire alarm is so important to warn
	the residents of the house in case of fire. The rate of
	fatalities and severe damage can be prevented if the
	warning about the fire. Therefore, the fire alarm system
	has been developed with improvements in terms of the
Description FN	relationship between consumers and the fire system. The
Description EN	technology applied in this tool is to use the concept calls
	and SMS.This technology warns the user with ease of
	system sending SMS and calling followed by a warning
	stating fires at home. This system can provide early
	warning to consumers in the face of fire and perform the
	appropriate action in the event of fire.
Class no.	12



MY.16.	
Title	Flexi-Geocrete
Authors	Meor Ahmad Faris Meor Tajuddin, Mohd Mustafa Al Bakri Abdullah, Ratnasamy Muniandy, Kamarudin Hussin, Khairul Nizar Ismail & Heah Cheng Yong
Institution	Universiti Malaysia Perlis (UniMAP)
Patent no.	-
Description EN	geopolymer is a new attractive material that has a high potential as an alternatives to be used as a binder in buildings material rather than the traditional cement
	INTERNATIONAL EXHIBITS

126

which is Ordinary Portland Cement (OPC). This invention product was produced by waste material which is from combustion of coal (fly ash). Steel fiber was added to enhance the mechanical properties of product especially the strength and also to increase the flexibility (toughness). This product was invented to use as a replacement for the OPC product especially as railroad ties (sleepers) where it need a high flexibility to absorb the vibration from the moving train. 7

Class no

___ .





MY.17.	
Title	Active vibration control of flexible beam system using smart material
Authors	Mohd Sazli Saad, Intan Zaurah Mat Darus, Hishamuddin Jamaluddin
Institution	Universiti Malaysia Perlis (UniMAP), Malaysia
Patent no.	PI 201400867
Description EN	The idea of this product is based on the active vibration control method where it can be defined as artificially generating sources that absorb the energy caused by the unwanted vibrations in order to cancel or reduce their effect on the overall system. This research product is used to study the performance of active vibration control (AVC) using smart material (piezo actuator) in attenuating the vibration of a flexible beam system. The objective of this research product is to provide a suitable experimental platform to study the behavior of structures such as flexible beam and the performance of vibration control scheme.
Class no.	5

MY.18.	
Title	Prediction of Air Pollution from Rice Straw Open Burning Using AERMOD
Authors	Norazian Mohamed Noor, Sara Yasina Yusof, Thong Chai Kanabkaew, Teerasak Poon Khaolorn
Institution	Universiti Malaysia Perlis & Wailalak University Thailand
Patent no.	Pending
Description EN	In this study, the hotspots data from Moderate-resolution Imaging Spectroradiometer (MODIS) satellite system was used to determine the locations of vegetation burning in 50 square kilometer from the center of Perlis, Malavsia in 2014. The main objective is to develop a database of emission inventory for the air pollution from open burning to facilitate the proper management of air pollution during the burning season. Two types of air pollutants were used that are Carbon Monoxide (CO) and Particulate Matter (PM10). AERMOD, a mathematical model is used to assess the air quality from the vegetation burning location (from MODIS) and created the pollution map contour, so that the study of the dispersion and the risk area of the air pollution from vegetation burning can be carried out. According to MODIS, the numbers of locations for rice straw open burning during January to May 2014 were 60 points. 21 points was located in Perlis, 30 points from Kedah and 9 points from Thailand. The most number of burning points was observed on February and half of them were from Kedah. 11 points were recorded on January and increased to the maximum points of 30 on February. However, the number of hotspots decreases after February due to the end season of paddy harvesting in northern area of Malaysia. The total of pollution emission released from paddy field open burning was 402 ton for PM10 and 1,941 ton for CO. Most of the emission was on February, with the estimated amounts of 201 ton of PM10 and 970 ton of CO. The results of pollutants. For normal case (day), the concentration of pollution (PM10, CO) at downwind area exceeded the Malaysia Ambient Air Quality Guideline (MAAOG). For the worst case (month), only PM10 concentration exceeded the MAAQG. The dispersion of air pollution and speed of the wind flown from northeast (northeast monsoon) whereas during April to May the wind flown from all directions since it's was the inter-changed monsoon.

MY.19.	
Title	IMPREGNATED WOOD FOR SPORT
The	APPLICATION
Authors	Nazmizan Bin Muhammad, Che Mohd Ruzaidi Ghazali, Mohd Mustafa Al Bakri Abdullah, Kamarudin Hussin, Alida Abdullah, Mohamed Faisol Mohamed Nor, Suriyati Mohamed Ansari, Suhizaz Sudin
Institution	Universiti Malaysia Perlis
Patent no.	Pending
	The thermoplastic impregnated treatment can be applied either on new wood or used wood included rotted wood as a replacement to the conventional impregnation
Description EN	process. This product shows the better mechanical properties and weather resistance especially water proof ability and durability.
Class no	13
MY.20.	
Title	Modification of Cellulose from Coconut Husk for Crude Oil Spill Cleaning
Authors	Marian Yeow Chee Yen, Khairunnisa binti Roslan,
rutior 5	Zaitun binti Ghazali
Institution	SMK Kota Kemuning , Malaysia
Patent no.	-
Description EN	Oil spills are one of the most famous water pollution that occurs in the world. In our work, a green, light, and highly porous material was successfully prepared from coconut husk cellulose fibers. Coconut husk is a cheaper material that can be used for oil spill cleanings as it's composed mainly of cellulose fibres that can absorb oil. The material was functionalized with methyltrimethoxysilane (MTMS) to enhance its hydrophobicity and oleophilicity. The coated cellulose achieved high absorption capacities of 7.08 g/g. Study shows the cellulose has high absorption capacity compare to other absorbents. The strong affinity of the MTMS-coated recycled cellulose to the oils makes the cellulose a good absorbent for crude oil spill cleaning.
Class no.	1

Moldova

Botanical Garden of Academy of Science Republic Moldova

MD.1.	
Title	The variety of Virginia mallow, Sida hermaphrodita
	Rusby, "ENERGO"
Authona	Alexandru TELEUŢĂ, PhD in agriculture, Victor
Authors	ŢÎŢEI, PhD in biology
Institution	Botanical Garden of Academy of Science Republic
Institution	Moldova
Patent no.	v 2013 0006 /18.02.2013
	The variety "ENERGO" has been created by individual
	selection of introduced populations of Virginia mallow (Sida
	hermaphrodita Rusby), registered in the catalogue of plant
	This grap is grown for different purposes: as a source of folder
	for animals nectar for beekeeping biomass for energy
	production. Natural fodder 104-112 t/ha annually, dry matter
	content: 19-23%. Biochemical composition of the dry matter:
	15.94% of protein, 3.99 % of fat, 32.86% of cellulose, 38.78%
	of nitrogen-free extractive substances, 8.43% of minerals.
Description EN	Nutritive value of 1kg of natural fodder: 0.21 nutritive units
Description Er	and 2.11 MJ metabolizable energy; 131.9 g/nutritive unit of
	Digestible protein. It can be given to animals fresh or as sliage.
	digestible protein Production of renewable energy: Biogas $-$
	$478 \text{ m}^3/\text{t}$ dry matter. The potential of biogas production is 11
	$000 \text{ m}^3/\text{ha}$, equivalent to 5.0-5.5 thousand m^3 of natural gas.
	Solid biofuel (briquettes and pellets) with superior calorific
	value of 18.7 MJ/kg and 1.5% of ash. Energy potential of solid
	biofuel - 380 GJ / ha. As a late melliferous plant, it provides
	30-60 kg/ha of honey. It is useful in phyto-amelioration of
Class no	eroded land and phytoremediation of contaminated land.

Class no.



MD.2.	
Title	The variety of Giant Knotweed, <i>Polygonum</i> sachalinense Fr. Schmidt "GIGANT"
Authors	Alexandru TELEUŢĂ, Victor ŢÎŢEI
Institution	Botanical Garden (Institute) of the Academy of Sciences of Moldova
Patent no.	v 2013 0009 /18.02.2013 The variety "GIGANT" has been created by individual selection of synthetic introduced populations of giant knotweed (Polygonum sachalinense Fr. Schmidt) registered in the catalogue of plant varieties of the Republic of Moldova in 2012. This crop is grown for different purposes: as a source of fodder for animals, as a medicinal plant, as a source of nectar for beekeeping, as biomass for energy production. It can be given to animals fresh or as silage. Natural fodder: 124 t/ha annually. Biochemical composition of the dry matter: 18.28% of protein, 3.80% of fat, 31.27% of cellulose, 38.78% of nitrogen-free extractive substances, 7.86% of minerals. 100 kg of silage has 20.7 nutritive units and
Description EN	215 MJ metabolizable energy for cattle. A nutritive unit has 157 g of digestible protein Production of renewable energy: Biogas: 420- 560 m ³ /t dry matter. The biogas production potential reaches 13- 17 thousand m ³ /ha/year, as well as a considerable amount of digest that can be used as fertilizer in organic agriculture. Solid biofuel (briquettes and pellets) with superior calorific value of 19.3-19.5 MJ/kg dry matter. The potential of biogas production is 390 GJ/ha/year, equivalent to 14 t of coal or 9.3 t of conventional oil. Medicinal plant: the extracts from different organs (leaves, roots, flowers) possess antioxidant activity directly proportional to the content of polyphenolic substances, higher in flower extracts. It is also a source for production of phytosanitary products used for combating plant diseases. Late melliferous plant: <i>30- 60 kg/ha honey</i> . It is useful in phyto-amelioration of eroded land and phytoremediation of contaminated land.
Class no.	3
	A STAR AL SHE

MD.3.	
Title	The variety of Peony - Paeona lactiflora; fam.
	Paeoniaceae "Ruxanda".
Authors	SÎRBU Tatiana, SFECLĂ Irina
Institution	Botanical Garden (Institute) of the Academy of Sciences
	of Moldova
Patent no.	v 2014 0029 / 05.08.2014
Description EN	Perennial rizomiferă obtained from natural polinizarea variety 'Laura Dessert'. Group of peony horticulture embattled plenary. Perennial plants rizomifere. Shrubs compact, vigorous waist of 85-100 cm. Flowers about 15 cm in diameter have a delicate aroma. Based petals are colored pink-lilac intense the center - creamy-white to bottom - creamy yellow. The plant can form 5-7 years 20-23 flower stems. Blooms in the second-third decade of May, for a period of 9-14 days. Leaves glossy, numerous, dark green; to fall - reddish. Production Manager: for cut flowers in various floral decorations in landscape planning curbs, mixbordurilor, solitary groups in parks and gardens.
Class no.	



MD.4.	
Title	The variety of Lemon Day-lily - <i>Hemerocallis x hybrida;</i> fam. Xanthorrhoeaceae " Zamfira ".
Authors	MANOLE Svetlana, SÎRBU Tatiana
Institution	Botanical Garden of Academy of Science Republic Moldova
Patent no.	v 2014 0026 / 05.08.2014
Description EN	Rizomiferă perennials, obtained by crossing varieties $\operatorname{PChiper}$ Chiper Chery x O Ciombe. Shrubs uniform narrow

leaves green. Talia their flowering is about 80 cm. Flowers simple funnel, wide open, lobes pointed petals. Flower diameter - about 12 cm. Internal petals pinkbrown, with intense cherry red spots towards the base, golden center. Petals yellow-brick external gilded with claret. Inflorescence 7-9 branches, each with five flowers. 6-9 years 20-35 plants form flower stems. Blooms in June-July. The duration of flowering - 45-55 days Production Manager: for cut flowers in various floral decorations in landscape planning curbs, solitary groups; culture can be promoted to the container.



Technical University of Moldova

MD.5.	
Title	Definition of optical parameters of quantum wells using non-destructive methods
Authors	A. Dorogan, V. Dorogan, N. Sîrbu, V. Zalomai
Institution	Laboratory of Micro-Optoelectronics/Technical University of Moldova
Patent no.	Pending patent
Description EN	Description: A digital method was developed to study the polarization dependency of reflectivity spectra of quantum wells. The method permits to determine more accurate the energy of quantum transitions and subsequent calculation of the dependencies of refractive indices and other optical functions. The method can be used to analyze the properties of different quantum layers, in order to determine the spectral dependency of the refractive index in planar waveguides with quantum wells. Applications: Characterization of the quality of structures with quantum wells.
Class no.	5, 10, 14

MD.6.	
Title	Lighting in greenhouses, with modification of flux intensity and spectrum
Authors	V. Dorogan, S. Zaporojan, T. Vieru, V. Secrieru, S. Vieru, E. Munteanu
Institution	Laboratory of Micro-Optoelectronics/Technical University of Moldova
Patent no.	Pending patent
Description EN	Description: The system consists of optical modules with light-emitting diodes with different wavelengths of the light emitted and the programmable electronic control unit based on a microcontroller. The system allows changing the intensity and spectral composition of light in the greenhouse, depending on external factors and the optimum conditions for plant growth. Using the electronic control block microcontroller extends the functionality of the system: selection of operating mode

Class no.	and a reflection of the operating parameters on the screen; memory for 10 programmable modes, depending on the individual characteristics of plants; the possibility of synchronizing lighting system in the greenhouse with day period; control of the power unit lighting modules and their operation mode. Applications: Energetics. 2
MD.7.	
Title	Method of measurement of the microwire core diameter and glass coating thickness
Authors	V. Dorogan, S. Zaporojan, T. Vieru, E. Munteanu, V. Larin, V. Pavel, S. Vieru, I. Calmicov
Institution	Laboratory of Micro-Optoelectronics/Technical
Patent no.	Pending patent
Description EN Class no.	Description: The method consists in using of two collimating sets of visible light and two collimating sets with ultraviolet light, which include: light-emitting lens, collimating lens, optical shutters of rectangular or oval shapes, focusing lens for the light photo-detectors. The emitted light flows are dissipated by microwire and generates photocurrents of different values, depending on the microwire coat thickness and core diameter. The photocurrents are amplified and filtered by differential amplification blocks, create electrical signals with different voltage values, are converted into digital values used by the calculation unit for calculation of the core diameter and the microwire coat thickness. Applications: Applied electronics, automation. 5
MD.8.	
Title	New method of recording the interference spectra of birefringent crystals
Authors	A. Dorogan, V. Dorogan, A. Tiron, N. Sîrbu
Institution	Laboratory of Micro-Optoelectronics/Technical
Patent no.	Pending patent
Description EN	Description: It was developed a system that changes the half-wave negative sign into positive one in the

i	nterference spectra of birefringent crystals. This allows
(letermining more accurately the position of interference
ł	bands and optical parameters of crystals.
1	Applications: The method is used to determine the
I	effactive index of birefringent crystals, and of any
1	Analysis of nanostructures with quantum wells and of
S	ubstrates for solar energy sources domain can be carried out using this method.
Class no.	5, 10, 14
MD.9.	

Title	REHABILITATION CLOTHES FOR BREAST
	CANCER PATIENTS
Authors	Angela SCRIPCENCO, Olga SUGAC, Jana CIRJA,
	Angela BUŞTIUC and Michaela CAZAC
Institution	Technical University of Moldova
Patent no.	Patent application – is in preparing

Hospital clothing affects the quality of medical services, psychological comfort and well-being of the patient. The aim of this study was to develop an ergonomic set of women's clothing for hospital patients from Mammology department taking into account features of the disease and its treatment specificity. Problem solving based on the analysis of the situation by pre - identifying the patients' requirements to hospital clothes, optimal completeness, types of products and materials. The new **Description EN** female hospital clothes set consist of three types of products: corsage, bridge and dressing gown. In order to facilitate medical procedures and manipulations by dressing the models have separate functional and constructive elements. In particular, for camouflage certain medical devices such as drainage bags, monitors, pumps, etc., at the side details of the corset are specifically designed discrete holes, and dressing gown has large inside pockets.



MD.10.	
Title	Industrial prototype of horizontal axle power wind turbine with wind mechanical orientation
Authors	Bostan Ion, Dulgheru Valeriu, Bostan Viorel, Sobor Ion, Vaculenco Maxim, Botnariuc Ion, Dicusara Ion, Trifan Nicolae, Ciobanu Oleg, Ciobanu Radu, Odainâi Valeriu, Guțu Marin, Gladîş Vitalie, Porcescu Gavril
Institution	Technical University of Moldova
Patent no.	671Y/ 2014, 4219/ 2013
Description EN	Aeolian turbine includes three blades rotor with aerodynamic asymmetric profile. The wind orientation of the turbine is doing through a two-wheeled windroze linked by a reducer with turbine nacelle. The power of 10 kW is produced at wind speed of 11 m/s.
Class no.	
MD.11.	
Title	Means of car transportation on water powered by car engine.
Authors	Dulgheru V., Rabei I

Technical University of Moldova Application 2015 0043 Institution

Patent no.

Car transportation and orientation of transport means on **Description EN** water is performed using motor of car.

MD.12.	
Title	Photovoltaic station with sun' self orientation
Authors	Bostan I., Dulgheru V., Dicusară I., Ciobanu O., Ciobanu R.
Institution	Technical University of Moldova
Patent no.	3975/2010; 2965/2006.
Description EN	The invention relates to the thermal power plants without fuel burning and CO2 production, namely to plants for solar energy conversion into electrical energy. The photovoltaic station with include a panel with solar cells, and mechanism for automatic sun orientation.
Class no.	
MD.13.	
Title	Small Power Wind Turbine with Vertical Axle
Authors	Bostan Ion, Vișa Ion, Dulgheru Valeriu, Ciupercă Radu, Porcescu Gavril
Institution	Technical University of Moldova
Patent no.	127909 RO, Application 20150124 MD
Description EN	speeds $V=25$ m/s a new wind working element has been designed, based on combined effect of the Darrieus and Savonius rotors. The Darreus rotor is connected to the stator, and Savonius rotor – to the rotor of the electric generator with permanent magnets.
Class no.	2
MD.14.	
Title	Ground infrastructure of space technologies national center with local and remote control for satellite tracking and attitude simulation
Authors	Bostan Ion, Secrieru Nicolae, Bostan Viorel, Candraman Sergiu, Margarint Andrei, Barbovschi Alexandru, Levineț Nicolae, Gîrșcan Adrian, Ilco Valentin, Jurat Andrei
Institution	Space Technologies National Center (NCST),
monution	Technical University of Moldova
Patent no.	-
Description EN	The developing of the infrastructure of NCST ground stations will provide a new level of operational research and satellite communication for a large number of researchers, PhD students and to enable more efficient

implementation and promotion of space technologies. This infrastructure development covers both pre-launch stage testing of performance by attitude control simulating of the satellite, satellite communication and remote control and post-launch, on orbit flight. This will serve as a platform for future connection to ground stations NCST a common European network.

Moldova State University

MD.15.	
Title	INTENSIFIED TECHNOLOGY FOR THE
THE	PRODUCTION OF HIGH CALORICITY BIOGAS
Authors	COVALIOV Victor, COVALIOVA Olga, BOBEICA Valentin, NENNO Vladimir, DUCA Gheorghe
Institution	Moldova State University
Patent no.	Patents MD # 4217, 4244, 4289.
Description EN	A new breakthrough technology is proposed, in which the natural biocatalysts are used, in order to intensify methanogenic processes and ensure 2-3-times increase in anaerobic digestion efficiency. Biomethane contents in biogas makes 89-92%, its caloricityis7600-8000 kkal/m ³ for energy cogeneration. Bioreactor allows 15- 20% increase in biomass digestion and production of stabilized sludge to be used as fertilizer, and water for irrigation. The pilot technology was implemented at the Bardar Winery Moldova
Class no.	2
MD 1/	
MD.16.	IMDROVED DIOMETHAN TECHNOLOGY AND
Title	INIT KUVED DIONIETITAN TECHNOLOGY AND ENEDCETIC DIODEACTOD
	COVALION Vistor COVALIONA Olgo NENNO
A	COVALIOV VICIOF, COVALIOVA OIga, NENNO
Autions	viauiniif, dodelica valenun ungukeanu
T	Dumitru. Maldana Stata Uninggaita
Institution Determine	Nioldova State University
Patent no.	Patenti #4244 MD-BOP1 //2015,
Description EN	bioreactor were developed for the biogas processes, which ensure the production of biogas with minimal contents in CO_2 and maimal contents in CH_4 , close to the composition of natural gas. The incorporated system of membrane re-circulation makes it possible to enhance the biomass digestion coefficient to 80 %, and to obtain the treated water in line with the irrigation
	requirements.

MD.17.

TitleChirita Arcadi, Corsac Oleg, Prilepov Vladimir,
Nasedchina Nadejda, Jidcov IuriiAuthorsState University of Moldova

Institution 4220

4220 MD 2013.02.21

A method of pixel-by-pixel holography images processing by a graphical editor for micro-object dimension measurements from the known value of fringe pattern period is proposed. A single-crystal silicon plate with the deposited bv photolithography integrated circuit elements was used as an object at the hologram recording. The hologram recording was carried out at the object illumination by fringe pattern having the period d=3 μ m. The object images reconstructed on the screen and photographed by a digital camera are shown in Fig.1.

The images were processed by a graphical editor to allow determining pixel-by-pixel distribution of the grey scale along Patent no. to the frame. Fig.1c shows the pixels brightness distribution (from 0 to 255 of the grey scale) where the alternation of maxima and minima corresponds to the beforehand known fringe pattern period d=3 μ m. By dividing the value of the d=3 µm period to the pixels number between the maxima (or minima), we found that 1 µm of the object dimension corresponds to 3 pixels of its image (Fig.1c). This allows determination of the dimensions of integrated circuit elements at pixel by pixel scanning of the object in graphical editor. For example, the zoomed fragment of image with dimensions 150x150 pixels (what corresponding 50x50 µm of real object size) is shown in Fig. 1b and it is possible to measure the dimensions of selected micro-object.

Description EN

5 Industrial and laboratory equipments



MD.18.	
Title	Oil drops on the water remote sensing with coherent fringe projection
Authors	Arcadi Chirita, Nickolai Kukhtarev, Tatiana Kukhtareva, Sonia C. Gallegos, John C. Stennis State University of Moldova, Moldova Republic
Institution	Alabama A&M University, AL 35762, USA Applied Science and Technology Project Office
	(ASTPO)
Patent no.	Space Center, MS 39529, USA 4995 MD 2015.03.03 We suggest the optical method for remote sensing of oil drops
Description EN	on the water surface. The plane-wave laser beam illuminates glass plate (with wedge angle 1,2 ") with a semi-transparent back plane. As a result, the interference pattern of reflected signals from the front and back surfaces of the plates with knowing period d illuminates the analyzed object. Also, the reflected beams are plane waves, and their period of interference pattern does not change with distance. Figure 1 shows an image of the water surface with a drop of oil defined by the known period of fringe pattern $d = 3$ mm. The image was processed by a graphical editor to determine the pixel-by- pixel distribution of the grey scale along the frame. Figure 1 shows the pixels brightness distribution (from 0 to 255 of the grey scale) where the alternation of maxima and minima corresponds to the a priori known fringe pattern period d=3 mm. By dividing the value of the d=3 mm period by the number of pixels between the maxima (or minima), we found that 1 mm of the real object dimension corresponds to ~20 pixels of the image. This approach allows determination of the dimensions of motor oil drop at pixel by pixel scanning of the object in graphical editor. The measured diameter of oil drop is 7,1 mm. Each marine ship leaves its oil traces on the water surface and we can measure the dimensions of these pollutions from a long distance. 5 Industrial and laboratory equipments



MD.19.

Title	A PROCESS FOR THE PURIFICATION OF AIR FROM IODINE
Authors	GUTSANU Vasile, COPUSCIU Iulia.
Institution	State University of Moldova
Patent no.	MD 4324
Description EN	Is proposed a process for purifying air from iodine. The air, containing iodine, passes through a column with sorbent. Sorbent is a cross-linked ionic polymer containing strongly basic groups, previously modified with Bi (III) compounds. The polymer is a high tonnage commercial product of the chemical industry. Air purification process occurs in flux. The process can be used to manufacture antigas mask
Class no.	1

MD.20.	
Title	PROCESS OF REMOVING NITRATES AND NITRITES FROM WATER
Authors	GUTSANU Vasile, BULICANU Vladimir
Institution	State University of Moldova
Patent no.	MD 4318
Description EN	We propose a method of removing nitrate and nitrite ions from water. The method is based on selective sorption of nitrate and nitrite ions by sorbent AV-17 (Cr). The sorbent consist of ultra fine particles of chromium (III) compounds in the phase of ionic crosslinked polymer, a commercial product of high tonnage of chemical industry. AV-17 polymer is allowed for use in the food industry. Water purification process occurs in dynamic conditions with a good hydrodynamic.

Class no.

1

MD.21.

TitleNEW TECHNOLOGIES OF CULTIVATION OF
GREEN MICROALGAE DUNALIELLA SALINA –

	SUPERPRODUCER OF B-CAROTEN
	ZOSIM Liliana, BULIMAGA Valentina, BIVOL
Authors	Cezara, PISOVA Maria, ELENCIUC Daniela,
	BATÎR Ludmila, DJUR Svetlana, RUDIC Valeriu
Institution	State University of Moldova, Institute of Mycrobiology
	and Biotechnology ASM
Patent no.	MD3625 Patent publication data 2009.08.31.
Description EN	The elaboration of the new technologies of obtaining of Dunalilella biomass – a source of bioactive substances, in particular β -caroten with antioxidant and immunomodulatory effect. The proposedecofriendly technologies with minimal costs arebased on reusing of residual water from spirulinaproduction for obtaining of dunaliellabiomass with the high predicted content of β - caroten, as well as iron or germanium. Thedunaliellabiomass will serve as a natural source of natural antioxidantswith destroying effect of oxidative stress in thehuman body and for obtaining of anticancer remedies.
Class no.	3

MD.22.

Title	Cyanophyte algae Cylindrospermum licheniforme
	(Bory) Kütz a new biotechnological object
Authors	Trofim Alina, Şalaru Vasile, Zosim Liliana, Şalaru Victor
Institution	Moldova State Universite
Patent no.	Hot A BI nr.8023 din 2015.01.27
	Cyanophyte algae Cylindrospermum licheniforme
	(Bory) Kutz. which is proposed as a source of
	biologically active substances and biotechnological
	material can be used as a biological stimulator, which is
	due to biochemical peculiarities of strain, in particular
Description EN	the synthesis of biochemical substances of particular
-	value: proteins - 30.52% - 38.40%; lipids - 19.34% -
	20.90%; sugars - 28.84% -30.57%. Algae biomass of
	Cylindrospermum licheniforme (Bory) Kutz. species can
	be used in microbiological industry for the production of
	sugars with subsequent use in future in various fields.
Class no.	3


MD.23.			
Title	Standalone street lighting system		
Authors	Tamara Potlog, Dumitru Duca, Petru Dumitriu		
Institution	Moldova State University		
Patent no.	3112(MD)		
Description EN Class no.	Standalone street-lighting system based on the CdTe photovoltaic module and LED lamp. Polycrystalline CdTe PV cells fabricated at Moldova State University were proven to be the most favorable type for street lighting system in comparison with Si, due to its low cost, and its higher efficiency. The use of the LED light is energy efficient, consume less energy, have a lifespan of up to 10 years of continuous operation and low maintenance costs. In order to maximize energy collection and conversion, CdTe single cells are connected in series and parallel and housed in a module in order to obtain necessary power 2		
MD.24.			
Title	Device for gases ionization		
Authors	Craciun Alexandru, Podubni Octavian, Craciun Maxim, Albert Boris		
Institution	State University of Moldova		
Patent no.	754 (MD)/2014		
Description EN	Due to intense ionization of exhaust gases the neutralization of CO_x , NO_x as well as SOx takes place		
Class no.	1, 12		
	INTERNATIONAL EXHIBITS		

MD.25.				
Title	Effective nutritional supplement Spirulina plus			
Authors	V.Ruduc, V. Prodius			
Institution	Institute of Microbiology and Biotehnologi of Academy of Sciences of Moldova; OOO "Gidrofit" Moldova			
Patent no.	MD-4122			
	Effective supplement Spirulina plus			
	For oral use as a dietary supplement- as additional source of amino acids, vitamins, organic minerals and			
Description EN	other. Frozen juice of Spirulina is a 100% natural plant product without additives or conservants. Safe for health and has wide range of useful components. It strengthens the immune and the nervous system.			
Class no.	4			

"N.Testemiteanu" State Medical and Pharmaceutical University

MD.26.			
Title	Entomologic drug with anti-inflammatory and antioxidant action		
Authors	Ghicavîi Victor, Ciuhrii Mircea, Bacinschi Nicolae, Ciuhrii Nicolae, Ghicavii Vitalie,		
Institution	Department of Pharmacology and Clinical pharmacology		
Patent no.	No. 2788 G2		
Description EN	The essence of the invention consists on that the entomological drug obtained from the larvae of the order Lepidoptera insects, denus Lymantria possess complex immunomodulator, anti- inflammatory, antioxidant and vasoprotective actions. The drug is easy to use. Biologically active components of the drug reduce the formation of phospholipase A2 and releasing of arachidonic acid with decreasing synthesis of misoprostol and leukotriene (inhibit 5-lipoxygenase). The drug also normalizes the tone and peristalsis of lower urinary segments and improves urination. By the pathogenic and non specific mechanisms, this drug improves urodynamic parameters and patients state with benign prostatic hyperplasia and chronic		
Class no.	4		
MD.27.			
Title	Drug for algodismenorea treatment		
Authors	Ghicavîi Victor; Barkan Rafael;		
Institution	Department of Pharmacology and Clinical pharmacology		
Patent no.	No. 3644 G2		
Description EN	The essence of the invention consists in the use of S- ethylisothiouronium diethylphosphate as an analgesic drug for the treatment of primary and secondary algodismenorea. S- ethylisothiouronium diethylphosphate is administered in suppositories in dose of 100 mg once a day for 35 days. The result of the invention consists on that the local use of this drug in suppositories, contributes to the disappearance of pain syndrome after the secondary administration in more than 95% of cases. 4		

MD.28.			
Title	Method of prophylaxis of complications of oncological pathologies radiotherapy.		
Authors	Ghcavii Victor, Gavriluta Vadim,		
Institution	Department of Pharmacology and Clinical pharmacology		
Patent no.	MD 501Z		
Description EN	The invention consists in that once a day after meals for 15 days from the beginning of the course of radiation therapy is administered intramuscularly 5 ml of 5% ascorbic acid and peroral capsule (33000) of retinol, a capsule (0.2 g) of tocopherol and one tablet (0.2 g) metiluracil. Concomitantly administered peroral nutmeg oil, one tablespoon (15 ml) 2 times a day, from 2 3 days before beginning the course of radiotherapy and continued throughout radiotherapy. The use of "Nucosan" in association proposed during radiotherapy cure, clearly diminist the degree of expression of the early		
Class no.	4		
MD.29.			
Title	Medicinal preparation for the treatment of		
Authors	inflammation of the external and the middle ear MANIUC Mihail, VALICA Vladimir, PARII Sergiu, UNCU Livia, ABABII Polina, NICOLAI Eugeniu, STEFARTA Roman		
Institution	State University of Medicine and Pharmacy "Nicolae		
Institution	Testemițanu" of the Republic of Moldova		
Patent no.	No. MD 4291 B1 The invention relates to medicine nerticularly to		
Description EN	pharmacology and otorhinolaryngology and can be used in the treatment of acute and chronic otitis. Summary of the invention is that the combination drug preparation containing 50 ml active substance ciprofloxacin hydrochloride - 0.148 0.152 g, basil essential oil - 0.198 0.202 g, loratadine 0.009 0.015 g, 0.009 dexamethasone 0.015 g ingredients: polysorbate 20 to 1.990 2.010 g polyethylene glycol 400 to 4.990 5.010 g, nipagin g - 0.019 0.020 g, citrate buffer pH 7.8 to 0.010 0,020 g and distilled water - the rest. The result is to obtain a combined medicinal preparation		
Class no.	4 - Medicine - Health Care - Cosmetics		

Institute of Emergency Medicine (IEM)

MD.30.

	DIAGNOSIS OF ACUTE MESENTERIC ISCHEMIA:			
Title	INFORMATIVITY SEROLOGICAL MARKERS AND			
	INSTRUMENTAL METHODS.			
Authors	GHIDIRIM Gh., MIŞIN I., CRĂCIUN I.			
	INSTITUTE OF EMERGENCY MEDICINE (IEM)			
Institution	UNIVERSITY OF MEDICINE AND PHARMACY "N.			
	TESTEMITANU"			
Patent no.	OŞ Nr.3894 /18.03. 2014			
	For the first time were evaluated the standard tests,			
	thrombogenesis and fibrinolysis markers (D-dimer, plasminogen,			
	S-FMC), immune tests (IMA, IL-1β, IL-8, IL-10, IL-18, procalcitonin) in the AMI diagnosis. Is presented the analysis depending on the AMI type, (arterial vs. venous, embolic vs.			
	thrombotic), time factor from the disease onset, as well as AMI extension. It was proven that MSCT+A should be considered as a first-line AMI diagnostic procedure. For the first time was studied			
	the morphological aspect of PI and was established that falciform			
	(II type) PI is always associated with transmural intestinal			
Description	necrosis, and the presence of FGPS and solid organs infarction			
EN	represent poor prognostic imaging signs.			
	The particularities of modification of thrombogenesis and			
	fibrinolysis markers' plasmatic concentration in case of AMI was presented. For the first time the clinical significance of immune tests in case of AMI was studied. For the first time was proved the morphological base of PI as an AMI imagistic sign and was demonstrated its pathogenesis for this pathology. Was determined the informativity of standard serological			
	indexes, thrombogenesis and fibrinolysis markers, immune tests,			
	MSCT+A in the AMI diagnosis; were elaborated the			
	methodological ant technical aspects of DCS in case of AMI.			
Class no.	4. Medicine - Health Care - Cosmetics			
MD.31.				
Title	SURGERY IN ACUTE MESENTERIC ISCHEMIA: TECHNICAL ASPECTS AND DELAYED RESULTS.			

AuthorsGHIDIRIM Gh., MIŞIN I., CRĂCIUN I.
INSTITUTE OF EMERGENCY MEDICINE (IEM)InstitutionUNIVERSITY OF MEDICINE AND PHARMACY "N.
TESTEMITANU"

Patent no. OS Nr.3895 19.03. 2014

Acute mesenteric ischemia (AMI) remains one of the most complex and controversial problems of emergency abdominal surgery. In that scientific research were presented the results of assessing of the effectiveness of different surgical methods of treatment of this pathology, and, as well, were developed the rationale technical principles for the surgical procedures in case of AMI, based upon DCS and second look principles were practice. The Description elaborated and used in dailv practical recommendations for optimal time interval and type of delayed EN intestinal anastomosis are presented. As a result of the present study new diagnostic and treatment procedures for AMI were introduced for the patients' management in the 4 surgical and endoscopy departments of the Institute of Emergency Medicine (Chisinau, Republic of Moldova), as well as in the training curricula at the Surgical Department N.1 "Nicolae Anestiadi" for the PI UMP "Nicolae Testemitanu".

Class no. 4. Medicine - Health Care – Cosmetics

MD.32.

Title	3 MATHEMATICAL MODELS BASED ON SYSTEM
	COMPONENTS PROTEASES / ANTIPROTEASES TO
	DETERMINE SURVIVAL RATE AND THE RATE OF
	OCCURRENCE OF ALI /ARDS OF TRAUMA PATIENTS.
	ARNAUT O., CIOBANU Gh., SAULEA A., ŞANDRU S.,
Authors	CLIM A., COBÂLEȚCHI S., BALTAGA R., VOVC V.,
	LOZOVANU Svet.
	INSTITUTE OF EMERGENCY MEDICINE (IEM)
Institution	UNIVERSITY OF MEDICINE AND PHARMACY "N.
	TESTEMITANU"
Potont no	OŞ Nr.3877 - 05.03. 2014, Nr.3878 - 05.03. 2014, Nr.3879 -
i atent no.	05.03.2014
	ALI/ARDS is a severe complication of a variety diseases,
Description	including polytrauma, which, in turn, remains a leading cause of
	death in the age up to 40 years. ALI / ARDS is a negative factor
EN	for prognosis, increases the lethality and duration of treatment of
	patients in intensive care, beiing a predictor of MODS.
	Mathematical models were created based on various parameters
	······································

of the system of proteases / antiproteases. Models created are able to determine the likelihood of ALI / ARDS in multiple trauma and refers to the intensive care unit.

Totaly were developed 10 mathematical models based on six parameters from proteases /antiproteases system. These models have the ability to determine the of ALI/ARDS probability in polytraumapatients and can be applied in medicine, especially in the intensive care unit. Using these models allows us to predict the of ALI/ARDS probability based on pathophysiological mechanisms. Thus, we offer the opportunity to monitor the patient at different stages of medical care. This, in turn, gives a develop chance effective methods of to prophylaxy/pathophysiological treatment of ALI/ARDS in polytraumaand as a result to reduce lethality and duration of treatment in this patients group.

Class no. 4. Medicine - Health Care – Cosmetics

MD.33.

SURGICAL CORRECTION OF LATE COMPLICATIONS OF PERMANENT VASCULAR Title ACCESS WITH THE USE OF VASCULAR PROSTHESES.

Authors VASILIEV A., MIŞIN I., TĂNASE A., MASTAK D. INSTITUTE OF EMERGENCY MEDICINE (IEM) UNIVERSITY OF MEDICINE AND PHARMACY "N. TESTEMITANU"

 Patent no. OŞ Nr.3797 22.10. 2013 The method relates to medicine and is intended to form new vascular access graft using PTFE as a result of depletion of reserves and keeping AVP-existent vascular reconstruction FAV PTFE graft is resulting in the reduction of possible locations of native FAV, and in many patients use PTFE grafts are single and / or final way of continuing treatment.

EN The use of synthetic vascular grafts polytetrafluoroethylene (PTFE) is one of the complications of surgical correction methods AVP. The particularity of using this material is possibility to organize puncture channel by connective tissue, which prevents bleeding from puncture holes.

Class no. 4. Medicine - Health Care – Cosmetics

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

MD.34.				
Title	NEW ANTIOXIDANT COMPLEXES FROM THE BIOMASS OF CYANOBACTERIUM Nostoc linckia			
Authors	Rudic V., Cucicova C., Arîcu A., Cepoi L., Rudi L., Secara E., Valuța A., Barbă A., Miscu V., Vlad P., Chiriac T., Codreanu S.			
Institution	Academy of Sciences of Moldova, Institute of Chemistry of the Academy of Sciences of Moldova,			
Patent no	MD 4327 R1			
Description EN	Is proposed the complex technology for obtaining new antioxidant complexes, uses the biomass of cyanobacterium <i>Nostoc linckia</i> with high antioxidant potential, cultivated in the presence of coordinative N-(Δ 8,13 bicyclohomofarnesenoy- lamino)carbazole and N-(Δ 8,13-bicyclohomofarnesenoyl)-3- amino-1,2,4-triazole compounds. Applications: Biotechnology and Pharmaceutical producing			
Class no.	companies; Human health; Animal health. 3 - Agriculture and Food Industry 4 - Medicine - Health Care - Cosmetics			
MD.35.				
MD.35. Title	NEW NUTRACEUTICALS Imunobior® AND Aterobior®			
MD.35. Title Authors	NEW NUTRACEUTICALS <i>Imunobior</i> ® AND <i>Aterobior</i> ® Rudic V., Balutel B., Bogdan V., Gulea A., Cazacu D., Chiriac T., Djur S., Rudi L., Cepoi L. Institute of Microbiology and Biotechnology of the			
MD.35. Title Authors Institution	NEW NUTRACEUTICALS Imunobior® AND Aterobior® Rudic V., Balutel B., Bogdan V., Gulea A., Cazacu D., Chiriac T., Djur S., Rudi L., Cepoi L. Institute of Microbiology and Biotechnology of the Academy of Sciences of Moldova, ICS EUROFARMACO SA, the company of ROPHARMA group EICOTEHFARM SRL			
MD.35. Title Authors Institution Patent no.	NEW NUTRACEUTICALS Imunobior® AND Aterobior® Rudic V., Balutel B., Bogdan V., Gulea A., Cazacu D., Chiriac T., Djur S., Rudi L., Cepoi L. Institute of Microbiology and Biotechnology of the Academy of Sciences of Moldova, ICS EUROFARMACO SA, the company of ROPHARMA group, FICOTEHFARM SRL MD 4122 C1 2012.02.29; MD 130 Z2010.01.31;			
MD.35. Title Authors Institution Patent no. Description EN	NEW NUTRACEUTICALS Imunobior® AND Aterobior® Rudic V., Balutel B., Bogdan V., Gulea A., Cazacu D., Chiriac T., Djur S., Rudi L., Cepoi L. Institute of Microbiology and Biotechnology of the Academy of Sciences of Moldova, ICS EUROFARMACO SA, the company of ROPHARMA group, FICOTEHFARM SRL MD 4122 C1 2012.02.29; MD 130 Z2010.01.31; There are proposed new natural nutraceuticals: Imnobior® – on the basis of zinc-enriched spirulina biomass, designed for improving immune and preimmune protection function of the body and Aterobior® – on the basis of selenium-enriched spirulina biomass, intended for regulating metabolic functions, normalizes the protective function Applications: Biotechnology and Pharmaceutical producing companies; Human health; Animal health.			

MD.36.			
Title	The method of obtaining an enzyme preparation of β- glucosidase with the use of the micromycete strain Aspergillus niger		
Authors	Deseatnic-Ciloci Alexandra, Tiurina Janetta, Clapco Steliana, Labliuc Svetlana, Bivol Cezara, Dvornina Elena, Grumeza Maria		
Institution	Academy of Sciences of Republic of Moldova Institute of Microbiology and Biotechnology		
Patent no.	a 2014 0079; The invention relates to microbiological biotechnology in		
Description EN	 The invention relates to microbiological biotechnology, in particular to a process of obtaining a hydrolytic enzyme preparation with β-glucosidase activity and may be used in oenology for enhancing the flavor of the variety of quality wines, in microbiological, oleaginous, food and pharmaceutical industries. The process, according to the invention, consists in: Submerged batch cultivation of <i>Aspergillus niger</i> CNMN FD 10 micromycete strain for 7 days under continuous stirring at a temperature of 28-30°C on the selected growing medium; further separation of the cultural liquid from biomass by mechanical filtration and centrifugation; Acidification of the filtrate of cultural liquid to pH value 3.0; Cold sedimentation (at 4-5°C) of the enzyme complex from cultural liquid and ethanol is 1:2. Technical result of the invention consists in obtaining a partially purified enzyme preparation with high activity of β- 		
Class no.	3. Agriculture and Food Industry		

MD.37.

1110.07.		
Title	Nutrient medium for the cultivation of fungal strain Aspergillus niger 33-19 CNMN FD 02 producer of amylase	
	Deseatnic A., Stratan M., Coropceanu E., Bologa O.,	
Authors	Rija A., Clapco S., Tiurin J., Labliuc S., Rudic V.,	
	Bulhac I	
	Academy of Sciences of Republic of Moldova	
Institution	Institute of Microbiology and Biotechnology	
	Institute of Chemistry	
Patent no.	Patent: MD 3943, 2008	
Description EN	The invention relates to microbiological biotechnology, in	

particular, to a nutrient medium for cultivation of *Aspergillus niger* 33-19 CNMN FD 02 fungal strain and may be used in microbiological industry for the obtaining of amylolytic enzyme.

The process consists in elaboration of a new nutrient medium for submerged cultivation of *Aspergillus niger* 33-19 CNMN FD 02 fungal strain – producer of amylase, which in addition to proximate components of the medium contains as stimulator some coordinative compounds of Co (III) with dimethylglioxime and fluorine anions in extern sphere.

The technical result of the invention consist in the increase of the biosynthesis of amylolytic enzyme with 23.8-27.8% compared to nearest solution and in the reduction with 24 h of the producer growing duration.

Class no. 3. Agriculture and Food Industry

MD.38.

Title	New proceeding for obtaining β-glucans from yeasts				
The	with application of millimetric waves				
Authona	Usatîi Agafia, Chiselita Natalia, Efremova Nadejda,				
Authors	Molodoi Elena, Fulga Ludmila.				
Academy of Sciences of Republic of Moldova					
Institution	Institute of Microbiology and Biotechnology				
Patent no.	Patent No. MD 4329, BOPI 2/2015				
	The invention relates to microbiological biotechnology, in				
	particular to a process for cultivation of yeast strain				
	Saccharomyces cerevisiae CNMN-Y-20, and may be used in				
	microbiological, food and pharmaceutical industries. The				
	process, according to the invention, consists in that the yeast				
	are cultivated on beer wort for 24 hours, at a temperature of				
-	25°C, then are irradiated with millimetric waves with the				
Description EN	frequency of 53.3 GHz, emitted continuously for 20 minutes,				
	after which the yeast culture, with the concentration of $2x106$				
	cells/mi, is transferred to a YPD or kieder sterile nutrient medium in an amount of 5 yells/ and is sultivated submarged				
	under continuous stirring conditions of 200 rpm at a				
	temperature of 25° C for 120 hours				
	Technical results of inventions consist in increase of B-glucans				
	biosynthesis by 17 5-25 7% compared to the prototype				
Class no	3 Agriculture and Food Industry				
C.400 110.					

Academy of Sciences of Republic of Moldova Institute of Chemistry

MD.39.			
Title	Dyes for thermoplastic polymers		
Authors	Cocu Maria, Manole Stefan		
Institution	Academy of Sciences of Moldova, Institute of Chemistry		
Patent no.	Patent no 4279 C1; Decision of patent granting no 7998/12.12.2014		
Description EN	no 7998/12.12.2014 The invention relates to organic dyes, namely to the use of new coordinative compounds of vanadil(II) as a dye for thermoplastic polymers. These compounds: 9-(1',2'-naftil)-4-metil-7-tiometil-5,6,8-triazanona-2,4,6,8-tetraenato(-)-1',2-diolato(-)- $O^{1'},O^{2},N^{5},N^{8}$ -vanadil(II) and (8-(1',2'-naphthyl))-1-fenil-3-methyl-6-thio-methyl-4,5,7-triazanona-1,3,5,7-tetraenato-1,1'-diolato(-)- $O^{1}, O^{1'}, N^{4}, N^{7}$ -vanadil(II) have been synthesized by template condensa-tion of acetylacetone S-methylisothiosemicarbazone with 1-hydroxy-2-naphthaldehyde. The color of compounds have a high photostability (7 points), thermostability (>250°) and intensity of color that give a low consumption (0.006 to 0.010 g medium tone, 0.020-0,100 g to 100g polysterene intense tone and 0.010 to 0.005 g medium tone and 0,008-0,015 g intense tone for 100g polyethylene). Compounds stained polystyrene and polyethylene in claret – brick color. Due to their colorific capacities, together with other useful properties, such as large thermostability and photostability, the proposed complexes are deemed better than known		
Class no.	9		
MD.40.			
Title	A new cobalt(III) is(dimethylglyoximato)chloro(isonicotinoyl- hydrazone-2-hydroxy-1-naphthaldehyde) compound [Co ^{III} (DmgH) ₂ (H ₂ L)Cl] and cultivation procedure of microcolace. <i>Beamburidium crucutum</i>		
	Cusina Liudmila Pudia Valariu Draganaga Diana Canai		
Authors	Liliana, Bulhac Ion, Rudi Liudmila, Miscu Vera, Chiriac Tatiana,		
Institution Patent no. Description	Academy of Sciences of Moldova Institute of Chemistry Decision of patent granting no 7857 on 07.07.2014 The invention deals with a new coordination compound		

cobalt(III) belonging to dioximates cobalt (III) (isonicotinovlhvdrazone-2bis(dimethylglyoximato) chloro hydroxy-1-naphthaldehyde) with formulation [Co^{III}(DmgH)₂(H₂L)Cl] and its usage as a stimulator of lipogenesis and of the fatty eicosapentaenoic acid biosynthesis in the cultivation process of microalgae *Porphyridium cruentum*. The synthesis procedure of the claimed compound is simple in execution, the starting materials are easily available, the yield is 82%

The technical result of the invention is obtaining of *Porphyridium cruentum* biomass with a higher content of lipids – from 23.6 to 25%, and the amount of eicosapentaenoic acid of 5.15 - 5.2 times higher than the nearest solution. Administration of the described compound from the first day of cultivation stimulates lipids and eicosapentaenoic acid accumulation in the microalgae biomass.

The microalgae biomass *Porphyridium cruentum* is a source of omega-3 fatty and eicosapentaenoic acids, that is why an opportunity to stimulate the biosynthesis of eicosapentaenoic acid in the biomass is of great relevancy to algae biotechnology.

4

Antimicrobial and antioxidant cream for

the treatment of inflammatory skin diseases

Class no.

EN

MD.41.

Title

1100	the treatment of minuminutory	shin uiseuses	
Authors	Gonța Alexandru, Lupascu Lucian, Țâmbaliuc Nina, Lupascu Tudor		
Institution	Institute of Chemistry		
Patent no.	Patent no 4290 C1		
Description EN	The invention relates to the field of pharmaceutics, particularly to an antimicrobial and antioxidant cream for the treatment of inflammatory skin diseases. According to the invention, the claimed cream contains: enotanin treated with hydrogen peroxide, cocoa butter, wax, cetyl alcohol, ceteareth 20, isopropyl myristate, glycerin, purified water, taken in the following ratio, mass %: enotanin treated with hydrogen peroxide 1.52.0 cocoa butter 12.014.0 wax 16.018.0		

	ceteareth 20	1.52.0
	isopropyl myristate	8.010.,0
	glycerin	22.024.0
	purified water	24.026.0
Class no.	4	
MD.42.		
Title	Process for groundwater treatme iron (II) and manga	ent from hydrogen sulfide. nese (II) ions
Authors	Lupascu Tudor, Ciobanu Mihail, Be	otan Victor, Cater Raisa
Institution	Institute of Chemistry	
Patent no.	Brevet no 4288 C1	
	The invention relates to a process for	r groundwater treatment from
	hydrogen sulfide, iron (II) and manga	anese (II) ions.
	The process, according to the	invention, comprises water
Description	treatment with hydrogen peroxide, a	at a ratio of 1.84.0 ml per
EN	10 liters of water, at a temperature	of 1015°C and stirring for
	10 min, subsequent adjustment of pl	H to 9.510.25 with sodium

1

hydroxide solution with stirring for 20 min, and filtration through a sand filter, fraction 0.8...1.3 mm, at a speed of 7 m/h.. Class no.

MD 43

MD.43.	
Title	11,12-Bis-p-tolyl-piridazonil-drim-5(6),8(9)-diene-7-one with antifungal and antibacterial properties.
Authors	Arîcu Aculina, Mangalagiu Ionel, Ciocârlan Alexandru, Lungu Lidia, Zbancioc Gheorgiță, Vornicu Nicoleta
Institution	Academy of Sciences of Moldova Institute of Chemistry
Patent no.	Application no a 2015 0024 date 2015.03.05
	The invention concerns to the field of chemistry, namely 11,12-bis-p-tolyl-piridazonil-drim-5(6),8(9)-diene-7-one, a new compound with hybrid terpenic and azaheterocyclic skeleton, that can be used as antifungal and antibacterial agent. According to the invention. 11.12-Bis-p-tolyl-
Description	piridazonil-drim-5(6).8(9)-diene-7-one exhibits excellent
EN	antibacterial and antifungal properties at minimum inhibitory concentration (MIC) values ranging from 0,005 μ g / mL and 0.032 μ g / mL. The scientific idea of the present invention consist in utilization of natural terpenoids for preparation of chiral polyfunctional "hybrid" derivatives possessing useful properties and in such a way for new rational drug design applications.
Class no.	1
	INTERNATIONAL EXHIBITS

MD.44.	
Title	Technology of activated carbons prepared from local raw materials
Authors	Lupascu Tudor, Rusanovschii Vladimir, Boţan Victor, Boroveţki Oleg
Institution	Academy of Sciences of Moldova Institute of Chemistry SRL "Ecosorbent"
Patent no.	Patents no 1985, 3482,3602
Description EN	The technology of activated carbon (AC) prepared from local raw materials - stone peaches, plums, apricots, nut shells, apple wood is based on patent claims set forth in 1985, 3482, 3602, the holder of which is the Institute of Chemistry of ASM. During the AC preparation, its properties can be adjusted by an appropriate selection of the raw material and the activation process, varying the duration and the conditions of activation. In the 2014 year this technology was implemented in practice at the specialized factory in the Stefan Voda town by LLC "Ecosorbent". The conducted investigations revealed the enhanced capabilities of the specific surface and sorption volume of obtained activated carbons. The technology is effective, autothermal, which is based on the fact that the process of carbonizing the raw material is followed in the same static oven by the activation process of charcoal. The obtained gases during carbonization are burned in the starting stage of the process of carbonization.
Class no.	9
MD.45.	
Title	Antimicrobial and antioxidant cream for the treatment of inflammatory skin diseases
Authors	Gonța Alexandru, Lupașcu Lucian, Țîmbaliuc Nina, Lupașcu Tudor, Tofan Valentin and Diug Octavian
Institution	ACADEMY OF SCIENCES OF REPUBLIC OF MOLODVA /INSTITUTE of CHEMISTRY and FARMAPRIM Ltd
Patent no.	MD 4290
Description EN	The invention relates to the field of pharmaceutics, particularly to an antimicrobial and antioxidant cream for the treatment of inflammatory skin diseases. According to the invention, the claimed cream contains: enotanin treated with hydrogen peroxide, cocoa butter, wax, cetyl alcohol, ceteareth 20, isopropyl

myristate, glycerin and purified water.

Advantageously is the use of the chemically modified enotannins with hydrogen peroxide(Enoxil), containing a mixture of phenolic acids, aldehydes, peroxides and flavanol products instead of untreated enotannin. By mixing with specific cosmeceutical carriers (cream form with 2% Enoxil), resulting cream produces better therapeutic properties along with good bioavailability of the product. Pharmaceutical product with an increase of 28.74% of the antioxidant properties, posses bactericidal properties against S.aureus bacteria and bacteriostatic properties against E.Coli.

Class no. 4. Medicine-Health Care-Cosmetics





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

MD.46.	
Title	Variety of <i>Silybum marianum</i> L. (milk thistle) Argintiu
Authors	Gonceariuc Maria, Balmus Zinaida, Jacota Anatolie
Institution	Institute of Genetics, Physiology and Plant Protection Academy of Sciences of Moldova
Patent no.	MD 141 2013.10.31
Description EN	Early-ripening cultivar named Argintiu homologated in Moldova in 2004 and patented in 2013. The cultivar is resistant to drought, while simultaneous maturation of fruits, in the majority of inflorescences, contributes to mechanical harvesting. The average fruit producing capacity (<i>Fructus Cardui Marianus</i>) of the Argintiu variety 900-1000 kg/ha under unfertilized conditions of cultivation. Applications: 1. Agriculture (seed production). 2. Medicine (treatment of liver diseases) Advantages: Cultivation, harvesting mechanization. Early variety resistant to drought disease
Class no	3
MD.47.	
Title	Procedure of microclonale multiplication of grapevine
Authors	Smerea Svetlana, Andronic Larisa
Institution	Institute of Genetics, Physiology and Plant Protection of the Academy of Sciences of Moldova
Patent no.	/05 from 19.04.2013, NID BOPI no.12, 2013
Description EN	The invention relates to agricultural biotechnology and can be used for microclonal propagation of grapevine in order to increase the rate of <i>in vitro</i> reproduction of
	INTERNATIONAL EXHIBITS

plantlets derived from one clone.

	The result of the invention is to increasing the rate of
	1.53 to 3.26 times after first cycles of in vitro
	subcultivation for Vitis vinifera varieties, as a result of
	irradiation with millimeter waves of low intensity of the
	apexes with positive response in 2-3 weeks after the
	inoculation. This allow to the production of a major
	number of seedlings in a short period of time, reducing
	the cost of this procedure.
	Applications:
	The obtained material was provided for the foundation
	of grapevine nurseries for production of healthy planting
	stocks.
	Patent application: act no 2 from July 19, 2013,
	Research-and-Practical Institute for Horticulture and
	Food Technologies, Chisinau, Republic of Moldova.
Class no.	3. Agriculture and Food Industry
MD.48.	
Title	Due and une of a measuring the star and of a sure the second
The	Procedure of presowing treatment of carrot seeds
Authors	Borovskaia Alla, Botnari Vasile, Nedova Irina,
Authors	Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei
Authors	Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of
Authors Institution	Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova
Authors Institution Patent no.	Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830
Authors Institution Patent no.	Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention,
Authors Institution Patent no.	Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention, involve the presowing treatment of carrot seeds for 15
Authors Institution Patent no.	Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention, involve the presowing treatment of carrot seeds for 15 minutes in 0.005% solution of furostanol glycosides,
Authors Institution Patent no.	Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention, involve the presowing treatment of carrot seeds for 15 minutes in 0.005% solution of furostanol glycosides, extracted from native plants of <i>Hyoscyamus niger</i> L.
Authors Institution Patent no.	Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention, involve the presowing treatment of carrot seeds for 15 minutes in 0.005% solution of furostanol glycosides, extracted from native plants of <i>Hyoscyamus niger</i> L. The result consist in increasing of the vigor and field
Authors Institution Patent no. Description EN	Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention, involve the presowing treatment of carrot seeds for 15 minutes in 0.005% solution of furostanol glycosides, extracted from native plants of <i>Hyoscyamus niger</i> L. The result consist in increasing of the vigor and field germination of carrot seeds, that conducted to the
Authors Institution Patent no. Description EN	 Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention, involve the presowing treatment of carrot seeds for 15 minutes in 0.005% solution of furostanol glycosides, extracted from native plants of <i>Hyoscyamus niger</i> L. The result consist in increasing of the vigor and field germination of carrot seeds, that conducted to the reduction of the period between planting and emergence
Authors Institution Patent no. Description EN	 Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention, involve the presowing treatment of carrot seeds for 15 minutes in 0.005% solution of furostanol glycosides, extracted from native plants of <i>Hyoscyamus niger</i> L. The result consist in increasing of the vigor and field germination of carrot seeds, that conducted to the reduction of the period between planting and emergence of shoots, uniform growth of the plant at initial stages,
Authors Institution Patent no. Description EN	 Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention, involve the presowing treatment of carrot seeds for 15 minutes in 0.005% solution of furostanol glycosides, extracted from native plants of <i>Hyoscyamus niger</i> L. The result consist in increasing of the vigor and field germination of carrot seeds, that conducted to the reduction of the period between planting and emergence of shoots, uniform growth of the plant at initial stages, providing the improvement of rooting.
Authors Institution Patent no. Description EN	 Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention, involve the presowing treatment of carrot seeds for 15 minutes in 0.005% solution of furostanol glycosides, extracted from native plants of <i>Hyoscyamus niger</i> L. The result consist in increasing of the vigor and field germination of carrot seeds, that conducted to the reduction of the period between planting and emergence of shoots, uniform growth of the plant at initial stages, providing the improvement of rooting. The invention relates to crop production, in particular to provide the period between plant at the protection of the period between plant at the period peri
Authors Institution Patent no. Description EN	 Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention, involve the presowing treatment of carrot seeds for 15 minutes in 0.005% solution of furostanol glycosides, extracted from native plants of <i>Hyoscyamus niger</i> L. The result consist in increasing of the vigor and field germination of carrot seeds, that conducted to the reduction of the period between planting and emergence of shoots, uniform growth of the plant at initial stages, providing the improvement of rooting. The invention relates to crop production, in particular to vegetable production, and can be used for carrots
Authors Institution Patent no. Description EN	 Procedure of presowing treatment of carrot seeds Borovskaia Alla, Botnari Vasile, Nedova Irina, Vasilachi Iuliana, Gumaniuc Alexei Institute of Genetics, Physiology and Plant Protection of the Academy of Science of Moldova MD 830 The proposed procedure, according to the invention, involve the presowing treatment of carrot seeds for 15 minutes in 0.005% solution of furostanol glycosides, extracted from native plants of <i>Hyoscyamus niger</i> L. The result consist in increasing of the vigor and field germination of carrot seeds, that conducted to the reduction of the period between planting and emergence of shoots, uniform growth of the plant at initial stages, providing the improvement of rooting. The invention relates to crop production, in particular to vegetable production, and can be used for carrots growing in the farms and industrial conditions.

MD.49.	
Title	A new growth and development regulator for grane
Authors	Kirilov Alexandru, Kintea Pavel
Institution	Academy of Sciences of Moldova/Institute of Genetics, Physiology and Protection of Plants
Patent no.	MD 767 Z 2014.12.31
Description EN	A new natural biologically active substance named <i>Chamaedrosid</i> , that belongs to the class of phenolic glycosides, ecologically friendly is proposed, along with a technology of its application to enhance yield quantity and quality in grape. The product employment contributes to increase of plants yielding capacity by 1534%, berry sugar content by 13% and decrease in acid content by 0,51%.
Class no.	3
MD.50.	
Title	Method of beet (Béta vulgáris L. var. conditiva Alef.)
Authors	plants cultivation <i>Ştefîrță Anastasia¹, Bulhac Ion², Botnari Vasile¹,</i> <i>Melenciuc Mihai¹, Buceaceia Svetlana¹, Bologa Olga²,</i> <i>Ciobănică Olga², Coropceanu Eduard².</i> ¹ Institute of Genetics, Physiology and Plant
Institution	Protection of Academy of Sciences of Moldova, ² Institute of Chemistry of Academy of Sciences of Moldova
Patent no.	Patent application No. 813/MD - BOPI 9/2014
Description EN	Method of beet (<i>Béta vulgáris</i> L. var. <i>conditiva Alef.</i>) plants cultivation include treatment of the seeds before sowing (soaking during 2 hours in proportion 1:1seeds/solution) and plants during vegetative growth (in two phases: leaves touching in rows and leaves touching between rows) with 0.0001 %m/v aqueous solution of complex mixture "Composite", which contains trace elements iron, cobalt, zinc, magnesium, boron, vitamin PP and nitrate anion in the report: 4: 4: 4: 4: 0.72: 16: 19.6%, and the iron, cobalt and boron are included in the biologically active form coordination compounds - nitrate µ3-oxo-hexaacetato-tri-aqua) iron (III) trihydrate and tetrafluoroborate respectively bis

(dimethylglyoximato) di (nicotinamide) cobalt (III) dihidtat, with a consumption of 200-250 1/ ha.

Class no.



MD.51.	
Title	New tomato cultivare Mary Gratefully
Authors	Mihnea Nadejda, Grati Vasile, Lupașcu Galina, Botnari Vasile, Macovei Milania
Institution	Institute of Genetics, Physiology and Plant Protection
Patent no.	MD 149 2014.04.30
Description EN	The fruits of the variety <i>Mary Gratefully</i> are medium sized weighing 80-100 g, round shaped. The fruits contain 4,6-5,3% of dry matter, 3,94.21% of sugars, 24,930,3 mg/% of vitamin C, 0,280.38% of acidity. The variety is early ripening with a vegetation period is 106-113 days. In the transplant culture, the variety ensures a yield of 58.066.0 t/ha, while the standard fruit yield is high (92.0%). The varieties are recommended for cultivation through both seeds and seedling transplants with a density of 45-50 thousand plants per ha. The cultivare <i>Mary Gratefully</i> is productive with high tasting qualities, resistant to cold and drought.
Class no.	3. Agriculture and Food Industry



MD.52.		
Titla	Process of increasing of winter wheat plant resistance to	
The	Fusarium oxysporum	
Authors	Mașcenco N., Lupașcu G., Guriev A., Barbă A., Gorincioi E.,	
Truthor 5	Gavzer S.	
Institution	Institute of Genetics, Physiology and Plant Protection of the	
Institution	Academy of Sciences of Moldova	
Patent no.	819 Y, MD	
Description EN	Process of increasing of winter wheat plant resistance to <i>Fusarium oxysporum</i> by treating the grains with glycosidic substances characterized in that are used summary iridoid glycosides-genistifoliosides, obtained from <i>Linaria genistifolia</i> (L.) Mill plant that increase the grains level of germination and the length of embryonic root with 35,0 and 30,4%, comparative with the infected plants. Application: plant protection	
Class no	3	
Clubb Ho.	5	
100 00		
MD.53.		
Title	Variety of Salvia sclarea L. (Sage) Ambra Plus	
Authors	Gonceariuc Maria, Balmus Zinaida, Cotelea Ludmila	
	Academy of Sciences of Moldova	
Institution	Institute of Genetics, Physiology and Plant	
	Protection	
Patent no.	MD 142 2013.10.31	
	New variety of Sage (<i>Salvia sclarea</i> L.), Ambra Plus, distinguished by large, 62.0 cm long, highly branched, compact, higher yield of row material – 29.9t/ha (first	

Class no.

high quality perfume). 3. Agriculture and Food Industry; 4. <u>Medicine – Health Care - Cosmetics</u>



MD.54.	
Title	Iulihirsutian tomato variety
Authors	Sîromeatnicov Iulia, Jacotă Anatolie, Botnari Vasile, Cotenco Eugenia, Ciobanu Renata, Chirilova Eleonora
Institution	Institute of Genetics, Physiology and Plant Protection Academy of Sciences of Moldova
Patent no.	Patent of plants variety (positive decision) №191 of 2015.01.15.
Description EN	Iulihirsutian tomato variety was obtained as a result of spontaneous hybridization between the Solanum lycopersicum hirsutum var glabratum CH Mull. with small green fruit with glandular hairs and the Prizior variety (<i>Solanum lycopersicum</i> L.) with red medium-sized fruit, reproduced by in vitro culture of embryos and undeveloped ovules. The fruit is round and flat <i>with the weigh</i> 87-100 g, without the wrinkled peduncle, with fleshy pericarp and interior pulp. The vegetation period is 115 - 118 days, it is the early variety. Fruits with high taste qualities, the <i>dry matter content of</i> the <i>fruits</i> oscillated from 5.02 to 7.2%, sugars from 4.08 to 6.0%, ascorbic acid from 28.41 to 49.4 mg /%, titratable acidity 0,33-0,0,35mg /%. <i>The total harvest of</i>

tomato is 54,4-61,6 t/ha and *commodities* - 52,9-57,3 t/ha. The share of commodities is 94 62%. The variety is productive, resistant to drought. It is recommended for fresh consumption and processing. Applications - Agriculture

Class no.



MD.55.	
Title	Procedure of obtaining of grapevine plantlets free of Grapevine leaf roll virus
Authors	Smerea Svetlana, Andronic Larisa
Institution	Institute of Genetics, Physiology and Plant Protection of the Academy of Sciences of Moldova
Patent no.	847 from 18.04.2014, MD BOPI no.12, 2014
Description EN	Result of the invention consist in the eradication of Grapevine leaf roll virus (serotype 1) through the salvation via the <i>in vitro</i> culture of immature embryos and their conversion into plantlets, which conduct to the production of initial material for improving the stenospermocarpic genotypes: embryos recovery and obtaining of healthy hybrid populations of plants with different degree of seedless. Saving immature embryos by <i>in vitro</i> culture allows to the production of new grapes seedless genotypes in a short period of time. In addition, the <i>in vitro</i> culture of immature embryos permits the recovery up to 85% of seeds. Applications : The descendants obtained through <i>in vitro</i> techniques were used for the foundation of hybrids nursery and initiation of efficient programs for grapevine improvement.

Patent application: November 24, 2014, Research-and-Practical Institute for Horticulture and Food Technologies, Chisinau, Republic of Moldova3. Agriculture and Food Industry

MD.56.	
Title	Process for cultivation of grapevine seedlings
Authors	Veliksar Sofia, Toma Simion, Lemanova Natalia
Institution	Institute of Genetics, Physiology and Plant Protection ASM
Patent no.	MD 652 Z 2014.02.28
Description EN	The invention relates to agriculture, namely to a process for cultivation 0f grapevine seedlings. The process, according to the invention, includes soil application before planting of a suspension of bacterial strains <i>Azotobacter chroococcum</i> CNMN-AzB-01 and <i>Pseudomonas fluorescens</i> CNMN-PsB-04 with a titer of 10^7 CFU / ml at a volume of its consummation of 100 ml per 1 kg of soil, extraroot treatment 0f shoots after the formation of 5 true leaves and in 3 and 6 weeks after the first treatment with a 0.15 % aqueous solution of a complex of trace elements Mn, Fe, Zn, B, Mo, Co, and a 0.1% aqueous solution of biopreparation obtained in the cultivation of strain <i>Pseudomonas</i> Sp.PS-17, taken in the ratio of 1:1, at the same time the treatment is carried out with a total consummation of 0.30.5 L/bush. The result consist in increasing the root system and shoot growth, as well as increasing the quality of seedlings.

Class no.

Class no.



MD.57.	
Title	Process of treating of tomato seeds
Authors	Lupașcu Galina, Grigorcea Sofia, Lupașcu Lucian
Institution	Institute of Genetics, Physiology and Plant Protection of the Academy of Sciences of Moldova Institute of Chemistry of the Academy of Sciences of Moldova
Patent no.	702 Y, MD 12/2013
Description EN	The invention consists in the treating of tomato seeds before sowing for the stimulation of their germination and the growth of plants roots in fungal infections conditions. The process of seeds treating before sowing consist in that the seeds are soaked in an aqueous solution of soluble enotannins with a concentration of 5×10^{-5} 5×10^{-3} %, during 4 hours, then dried at a temperature of 22°C for 24 hours. This process is technological simple, effective and allows the use of the natural substance Enoxil for the stimulation of tomato plants growth in fungal infections conditions.
Class no.	3





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

MD.58.	
Title	Process for feeding bee-families
Authors	Derjanschi Valeriu, Vrabie Elvira, Ciochina Valentina, Furdui Teodor
Institution	The Institute of Physiology and Sanocreatology of the Academy of Sciences of Moldova
Patent no.	Patent 4284 MD
Description EN	The invention relates to beekeeping and can be used to stimulate the growth of bee-families. According to the invention, the process for feeding bee-families consists in that it is used a mixture containing whey and sugar, in the mass ratio of 1:1, which is administered in spring, 100150 ml per frame covered with bees, once every 3 days, during 34 weeks.
Class no.	3

Academy of Sciences of Republic of Moldova Institute of Zoology

MD.59.	
Title	Feed for phytophagous fish fry
Authors	Usatîi M., Dadu Ana, Chiselița Natalia, Usatîi Agafia;
Institution	Institute of Zoology of ASM
Patent no.	MD – 717 Y
Description EN	The invention relates to pisciculture, namely to a feed for phytophagous fish fry. The feed, according to the invention, comprises, in mass %: fishmeal 3035, dry wine yeast 3040, flour from grape pomace 1530, milk powder 7.57.9, b-glucan from wine sediment yeast 0.10.5, methionine 1.0 and vitamin-mineral premix 1.0. The result consists in increasing the survival rate and body weight of fry.
Class no.	3

Institute of Crop Science "Porumbeni"

Republic of Moldova

MD.60.	
Title	Hibrid of corn, Porumbeni 294 MRf
Authors	V. Mîrza., V. Maticiuc., N.Vanicovici., G.Pritula ., A. Vereşceac., E.Partas., V. Pojoga ., S. Mistreţ., V. Ştirbu., G.Lebediuc ., I.Frunze, S.Bruma, E.Rotari, A.Meleca, G.Ciobanu.
Institution	INSTITUT OF CROP SCIENCE "PORUMBENI"
Patent	In patenting
Description EN	Early-medium single cross modifications hibrid of maize, FAO300. The kernel is dent, yellow, with an average content of 9,6% protein, 4.1% oil and 6707% starch, weight of 1000 kernel is 330-345 g. Potential productivity 9-10 t/ha, silage yield is 40-50 t/ha. High resistant to drought, lodging and breaking of the strains. Hibrid make two ear on plant. Tolerant to diseases and pests. Registered in Moldova for grain and silage use.
Class no.	3

MD.61.	
Title	Hibrid of corn, Porumbeni 378 MRf
	V. Mîrza., V. Maticiuc., N.Vanicovici., G.Pritula ., A.
Authors	Vereșceac., E.Partas., V. Pojoga ., S. Mistreț., V. Știrbu.,
	G.Lebediuc ., I.Frunze, S.Bruma, M.Dreglea, A.Meleca
Institution	INSTITUT OF CROP SCIENCE"PORUMBENI"
Patent	In patenting
	Medium three-way cross hibrid of maize, FAO380. The
	kernel is dent, yellow, with an average content of 10,2%
	protein, 4.7% oil and 70.5% starch, weight of 1000
Description EN	kernel is 280-290 g. Potential productivity 10-11 t/ha,
-	silage yield is 40-50 t/ha. Resistant to drought and
	lodging. Tolerant to diseases and pests. Registered in
	Moldova for grain and silage use
Class no.	3
Institution Patent Description EN Class no.	INSTITUT OF CROP SCIENCE"PORUMBENI" In patenting Medium three-way cross hibrid of maize, FAO380. Th kernel is dent, yellow, with an average content of 10,2 protein, 4.7% oil and 70.5% starch, weight of 100 kernel is 280-290 g. Potential productivity 10-11 t/h silage yield is 40-50 t/ha. Resistant to drought an lodging. Tolerant to diseases and pests. Registered Moldova for grain and silage use 3

MD.62.	
Title	Hibrid of corn, Porumbeni 374 MRf
	V.Ciobanu., E.Partas., V.Gribincea., V.Maticiuc., V.
Authors	Poioga C.Gutanu V.Stirbu V.Micu I.Frunze
1 tutnor 5	S Bruma
T	S.DIUIIIA. INSTITUT OF COOD SCIENCE"PODUMDENII"
Institution	INSTITUT OF CROP SCIENCE "PORUMBENI"
Patent	In patenting
Description EN	Early-medium single cross modifications hibrid of maize, FAO380. The kernel is dent, yellow, with an average content of 9,6% protein, 4.1% oil and 6707% starch, weight of 1000 kernel is 330-345 g. Potential productivity 9-10 t/ha, silage yield is 40-50 t/ha. High resistant to drought, lodging and breaking of the strains. Hibrid make two ear on plant. Tolerant to diseases and pests. Registered in Moldova for grain and silage use.
Class no.	3
MD.63.	
Title	Hibrid of corn, Porumbeni 395 MRf
	V Mîrza V Maticiuc N Vanicovici G Pritula A
Authors	Veresceac E Partas V Poioga S Mistret V Stirbu
rutiors	G Labediue I Frunza S Bruma
T /*/ /*	OLEUCIUC, I.FIUIZE, S.DIUIIIA.
Institution	INSTITUT OF CROP SCIENCE"PORUMBENI"
Patent	In patenting
	Medium single cross hibrid of maize, FAO400. The
Description EN	kernel is dent, yellow, with an average content of 11,3% protein, 4.8% oil and 70.2% starch, weight of 1000 kernel is 320-330 g. Potential productivity 13-14 t/ha, silage yield is 40-50 t/ha. Resistant to drought and lodging, also to spring cool conditions Responsive to high yield environment and irrigation. Tolerant to diseases and pests. Registered in Moldova for grain and silage use

Agency for Innovation and Technology Transfer Republic of Moldova

MD.64.	
Title	HEATING BOILER
Authors	ANASTASOV SERGHEI
Institution	Goliat-Vita SRL Company
Patent	Patent application No. 829
	The invention's aim is to increase the energy efficiency and to develop an efficient space heating and power generation system.
Description EN	The idea is to create complementary equipment: a 4- stage burner, wherein the aqueous emulsion, which consists from 15% of the waste oil and 85% of water, and becoming hydrogen fuel for immediate combustion.
Class no.	2



Institute of Agricultural Technique "Mecagro" Republic of Moldova

MD.65.	
Title	Shredder for vegetable biomass
Authors	Ion Hăbășescu, Valerian Cerempei, Anatolii Golomoz, Ion Munteanu
Institution	Institute of Agricultural Technique "Mecagro"
Patent	874
Description EN	The invention relates to the biomass processing equipment and can be used in zootechny for shredding of hey, used in the production of mixed feeds. The problem that solve give the possibility to shredding the bales of straw with a high humidity (up to 30%)
-	with an accessible granulometric degree of ground produce and to chop and others types of vegetable biomass (corn, sunflower stems, Jerusalem artichoke stems and others).
Classes	2

Class no.

3



Philipines

PH.1.	
	Biofertilizer using Bioactive Rhizobacteria for Plant
Title	Growth Promotion and Biocontrol of Fusarium
	oxysporum in Cavendish Banana
Authors	Gerrah C. Ungab, Mark Christian R. Estorpe, Nicole
Authors	Ashley D. Corro
Institution	AGUSAN DEL SUR NATIONAL HIGH SCHOOL
Patent no.	N/A
Description EN	Banana is considered as one of the most important crops being exported around the globe. In terms of gross value of production, bananas are the world's fourth most important food crop after rice, wheat and maize. Presently, one of the four major diseases threatening the global banana production is Fusarium wilt or Panama disease caused by a fungus, <i>Fusarium oxysporum f.sp. cubense</i> (Foc). As this disease cause serious and expanding threat to banana, farmers and producers struggled to overcome this problem. Controlling Fusarium is often carried out using antifungal treatments that may also threatened normal microflora in the soil and often cause fungal tolerance to the antifungal drug. This innovation screened and tested Rhizobacteria as growth promoting agent and as biocontrol agent of Panama Disease in Cavendish Banana. The formulated bacterial biofertilizer and biocon proved to be efficient in controlling Panama disease and promotes growth in tissue cultured Cavendish Banana.

Class no.



РН.2.	
	Palm Oil Based Plastic and Plant Pigments:
Title	Synergistic Approach for Plastic Biodegradation and
	UVC Protection
Authona	Bianca M. Estavas, Laiza Mae E.Maniquez, Reynald D.
Authors	Barniso
Institution	AGUSAN DEL SUR NATIONAL HIGH SCHOOL
Patent no.	Not Applied / Patent application No. : N.A.
	Environmentally, plastic is a growing disaster.
	Most plastics are made from petroleum, a non-renewable
	resource extracted and processed using energy-intensive
	techniques that destroy fragile ecosystems. This invention
	substituted the hydrocarbon (styrene) with Palm oil in
	plastic production. It aims to investigate the feasibility of
	producing biodegradable plastic by substituting
	biodegradable polymer (Palm oil) to hydrocarbon
	(styrene). The inclusion of Plant pigments to the
Description	substituted polymer is also carried out to reinforce its
EN	capacity to block UV radiation. Experiment results
	showed that the substituted plastic has more flexual
	strength (2000kg load) compared the styrene-based
	plastics which break at 1682Kg load on average. The
	bioplastics showed signs of biodegradation while the
	styrene-based plastics did not show biodegradation. In
	terms of flammability and reaction to chemicals, it is
	comparable to the standard plastic. Furthermore, the
	Palm-Oil based plastics are capable of blocking UVC
	radiation because of its added pigments.
(loce no	7 (Matarial Sajanaa)

Class no.

7 (Material Science)



Figure 1. Palm-Oil based plastics

РН.3.	
	Bioplastic from Bacterial Cell: Isolation, Screening,
Title	and Identification of PHA (Polyhydroxyalkanoates)
	Producing Bacteria from Palm Oil Sludge
A 41	Rex Belli O. Peji, Akin G. Ponce, Jay Marie V.
Authors	Lumantas
Institution	AGUSAN DEL SUR NATIONAL HIGH SCHOOL
Patent no.	Not Applied / Patent application No. : N.A.
	Biodegradable plastics can be categorized into three
	main types: photodegradable, starch-linked and bacterial
	plastics. Polyhydroxyalkanoates (PHAs) are Bacterial
	plastics. They are natural polyester produced by some
	bacteria, a class of biobased polymer with properties that
	look like the physical and chemical properties of synthetic
	plastics. It is deemed potential alternative to synthetic
	plastics since it also exhibit plastic-like characteristics. The
	quality that sets PHAs apart from conventional plastics is
	its complete blodegradability in the environment. Bioplastic
	such as PHAs as plastic substitute is an excellent option – a clean alternative with no emissions of greenbouse gases
	since it is completely degradable and does not produce
	harmful hy-products <i>Bacilli</i> were isolated from Palm Oil
	Sludge Bacterial isolates: PPS1B12 PPS1B18 PPS1B19
Description EN	NPS1B12, and NPS2B13 produce an average of 0.1645mg,
I I I I	0.2620mg, 0.1659mg, 0.033mg, and 0.0056mg of PHA in
	every 10mL liquid media. Results of the 16S rRNA
	sequence shows that the best PHA producers PPS1B18 and
	PPS1B19 are both strains of B. subtilis, a known PHA
	producer. The isolates PPS1B12, NPS1B12, and NPS2B13
	are identified as Sphingomonas echinoides, Morganella
	morganii, and Providencia sp., respectively. This is the first
	documentation of the potential of S. echinoides, M.
	<i>morganil</i> , and <i>Providencia sp.</i> as PHA producers.
	in uns times when environmental protection is of
	environmentally plausible solution to existing problems on
	nlastic wastes is in order. The use of PHA as Riodeoradable
	Plastic material can be of great help in reducing non-
	biodegradable plastic use.
Class no.	7 (Material Science)

Active Compound(s) from Crude Extracts of
Euphorbia milli var splendens: Potent Antibiotic
against Antibiotic Resistant Pathogens
Lestyll D. Basan, Noerine Christie G. Oclarit
AGUSAN DEL SUR NATIONAL HIGH SCHOOL
Not Applied / Patent application No. : N.A.
Active Compound(s) from Crude Extracts of Euphorbia milli var splendens: Potent Antibiotic aims to source out novel drugs from Euphorbia Extract against antibiotic resistant pathogens. It generally aimed to isolate the bioactive compounds and test its activity as antibiotic against Methicillin-resistant <i>Staphylococcus aureus, Escherichia coli B-1195 St', Km',</i> <i>Spec', Ap'</i> and Salmonella sp. #47 P', Str ⁷ , Cn', Er'. Crude acidified methanol extracts were fractionated using n- Hexane, Ethyl Acetate and Butanol; and screened for anti- microbial activity against the antibiotic resistant microorganisms using filter paper disc diffusion assay. The antimicrobial indexes of the extracts were compared with the standard antibacterial drugs, Vancomyin. Data analysis revealed that Euphorbia milli var. splendens was able to inhibit the growth of pathogenic bacteria at higher zones of inhibition compared to Vancomycin which is the commercial drug used as broad spectrum antibiotic. Among set-ups, Leaves Ethyl Acetate Fraction and the Aqueous Extract Fraction exhibit greater zone of inhibition compared with the positive control; while the rest of the experimental groups show the same effect against the test organisms compared with the positive vancomyin. Bioautography tests also show that there is a bioactive compound found in the leaves ethyl acetate and butanol fraction. The use of natural products for disease control is a trend in the 21 st century. This suggested the high potential of developing antimicrobials from natural products for market. The project reports the possibility of extracting broad–spectrum antimicrobial that can be used as antibiotic in inhibiting pathogenic infections from Euphorbia milli var. splendens. 4 (Medicine)
T (mount)



Bioauthography Plate Showing an Active Spot against MRSA



Poland

Represented by Eurobusiness-Haller

PL.1.	
Title	Novel bacterial strains, plasmid pSinA, method for producing bacterial strains capable of chemolithotrophic arsenite oxidation and strains
Authors	produced by this method, as well as their applications Lukasz Drewniak, Aleksandra Sklodowska, Monika Radlinska, Martyna Ciezkowska
Institution	Faculty of Biology, University of Warsaw
Patent no.	Polish Patent No. P.399833
Description EN	The invention provides novel strains <i>Agrobacterium</i> <i>tumefaciens</i> KKP 2039p and <i>Paracoccus alcaliphilus</i> KKP 2040p, plasmid pSinA and its functional derivative, method for producing bacterial strains capable of chemolithotrophic arsenite oxidation and novel bacterial strains produced by this method. The invention also relates to the composition, comprising the novel bacterial strain or plasmid pSinA and the application of these novel strains, as well as the method of bioaugmentation of arsenic-polluted environment, particularly the method for the removal of arsenic from waters. In the light of the described state of the art, the aim of this invention is to overcome the indicated inconveniences and to provide novel bacterial strains, plasmid, and methods enabling the introduction of a plasmid into a bacterial strain, especially an indigenous strain, in order to produce stable, improved strains, capable of oxidizing arsenites, which, moreover are characterized by an increased resistance to other heavy metals. Such strains may be simultaneously deprived of undesirable marker genes, such as antibiotic resistance genes. The aim of the invention is also to provide novel bacterial strains capable of oxidizing arsenites, but not accumulating arsenic, compositions comprising them, and their applications. 1. Environment - Pollution Control

PL.2.	
Title	Plasmids, strains comprising them, composition, application thereof, and method for the removal of arsenic from mineral resources, raw materials industry waste and contaminated soils
Authors	Lukasz Drewniak, Aleksandra Sklodowska, Monika Radlinska, Robert Stasiuk
Institution	Faculty of Biology, University of Warsaw
Patent no.	Polish Patent No. P.404376/ WO2014203046
Description EN Class no.	The object of the invention is the plasmid pSheB, particularity a plasmid comprising a fragment of pSheB including the <i>arr</i> module and functional derivatives thereof, and strains containing such a plasmid, preferably the <i>Shewanella</i> sp. strain, deposited as KKP 2045p, which are capable of removing arsenic by dissolution of minerals and reduction of arsenates to arsenites. The invention also relates to the method for selective removal of arsenic from mineral resources, raw materials industry waste, or the soil, in which the dissimilatory arsenate reduction step is carried out using a bacterial strain according to the invention and/or a composition according to the invention. Preferably, the dissimilatory arsenate reduction step is carried out under neutral or slightly alkaline conditions. Preferably, the mineral resources are copper deposits. 1. Environment - Pollution Control
PL.3.	

Title	Method of biofunctionalization of textile materials
Authors	Jadwiga Sójka-Ledakowicz, Jerzy Chruściel,
	Marcin H. Kudzin, Magdalena Kiwała
Institution	Textile Research Institute (IW)
Patent no.	Polish application no. P.411473 of 7.03.2015
Description EN	A subject of invention is a method of biofunctionalization of textile materials (e.g. nonwovens), providing antibacterial and antifungal properties, by means of copper silicate, preferably in a form of hydrate, used in an amount of 0.5-3 wt. %, which is mixed with plasticizer and polymer ingredients,

and heated up to melting of polymer, then a melted composition is extruded by a *melt-blown* technique in a stream of a hot air. Polypropylene (PP) and its copolymers. polv(lactic acid) (PLA). polyhydroxyalkanates (PHA), polyethylene (PE) and/or their mixtures are applied as polymer components. As plasticizers are used liquid compounds, preferably oligomers of ethylene glycol or propylene glycol, copolymers of ethylene oxide and propylene oxide, paraffin oil, oligoesters of silicic acid, polycarbonate diol or polycaprolactone diol, in amounts of 1.5-15 wt. % with respect to a weight of polymer or polymers mixture, preferably 2.5-5 wt.%. The obtained nonwovens containing ≥ 0.5 wt.% CuSiO₃ show a very good antimicrobial activity against colonies of gramnegative bacteria (Escherchia coli) and gram-positive bacteria (Staphylococcus aureus) and fungi(Candida albicans).

Class no.

9. Chemical and Textile Industry

PL.4.	
Title	ESKONzO II - "The system of the remote management of devices and the communication of people with disabilities as part of the ESKONzO system".
Authors	Sławomir Kozok, Tomasz Kropiwnicki, Franciszek Kucharski, Jacek Kluba, Krzysztof Smyczek The King John III Schiecki Secondary School no 6 in
Institution	Jastrzebie-Zdroj
Patent no.	Know-how The presented system includes a remote control
Description EN	electronic circuit to control the power of arbitrarily selected electrical devices. It has also got a software on a PC for managing the work of the system. What is more, the system contains a module for communication via SMS.
	This project is the result of various observations made on the needs of disabled people and, above all the careers of those people. The physically disabled are often dependent on other people's help in performing basic activities. This becomes a problem especially INTERNATIONAL EXHIBITS
during night hours, and the situation is quite frequent due to the altered circadian functioning of people with disabilities in relation to able-bodied people.

This issue has been repeatedly reported by caregivers and family members of people who have installed the ESKONZO system (The Electronic System for Communication of the Disabled with the Surrounding), which was created by the students of the School No. 6 in order to improve the living conditions of people with disabilities. In the original version this system contained a manipulator to control the computer which could be used by a person with limited motor function, e.g. by mouth, and a program to communicate with the environment by means of the standard commands and messages.

Thus, the natural way to solve the problem was to expand the existing system with some additional features. In this way the present arrangement was created.

Class no.

10. Information Technology and Communication

PL.5.	
Title	Method of processing of the pig manure slurry
Authors	Agnieszka MAKARA, Zygmunt KOWALSKI Jozef HOFFMANN, Krystyna HOFFMANN
Institution	Cracow University of Technology, Faculty Chemical and Engineering Technology
Patent no.	Polish patent application P. 400741
Description EN	Short description of your invention. (max 250 words) The subject of invent is the method of processing of the pig manure slurry. The slurry is separated into solid (SF) and liquid (LF) fractions. The tests comprised mineralization of pig manure components with use of phosphoric and sulphuric acids and super phosphate, heat treatment and subsequent filtration with use of pressure filter. The manure slurry was neutralized with lime milk at two stages of the treatment. As a result of filtration, light straw collared filtrate and sediment were obtained. The advantage of worked out technology is the method of incorporation in organic phase of the manure of 40-
	INTERNATIONAL EXHIBITS

59% of crystalline phase (contained mostly calcium phosphates). All these resulted in high filtration rate with used pressure filters over 1000 $L/m^2/h$ and good quality of filtrate. Despite strong variations in COD (10.000-80,000 mg/L), in SS (10,000–20,000 mg/L), the method was able to maintain an overall average pollutant removal performance >90% for the COD, ~99% of P and > 99% for the SS from filtrate in comparison to their content in the pig manure. The worked out method is useful for elimination of odours from post filtration sediment and filtrate and phosphorus, calcium. magnesium from the filtrate.

Final result of further studies will be obtaining of mineral and organic fertilizer containing nitrogen, phosphorus, potassium, calcium and sulphur compounds, and microelements of universal nature from filtered sludge. Treated filtrate could be used for artificial rain irrigation of crops or eventually as raw material for production of liquid fertilizer.

Class no.



PL.6.	
Title	The New Photosensitizers for the Photopolymerization Processes and New Photoinitiating Systems for Processes of Cationic, Free-radical and Hybrid Photopolymerization
Authors	Joanna Ortyl, Anna Chachaj-Brekiesz, Iwona Kamińska Cracow University of Technology Faculty of Chemical
Institution	Engineering and Technology and Jagiellonian University, Faculty of Chemistry
Patent no.	Patent Application P.410073 from 06-11-2014
Description EN	The subject of this invention is a set of new, highly efficient Photoinitiating Systems based on
	INTERNATIONAL EXHIBITS

photosensitizers, for cationic, free-radical and hybrid photopolymerization processes of monomers. The photoinduced polymerization of monomers is gaining popularity as an environmentally friendly and safe method for production of protective polymer coatings on various surfaces. It is applied for photocurable solventfree paints, lacquers, inks, and other coating materials, wherever fast drying or setting is important. The basic advantage of the photopolymerization over other methods used for preparation of polymer coatings is its speed. Photocurable compositions are transformed from a liquid state into a fully crosslinked solid within seconds or even fractions of a second without emission of any volatile solvents into atmosphere. The newly developed photoinitiating systems are an alternative method to increase the initiation efficiency of photopolymerization processes, when medium pressure mercury lamps are used as the UV light sources. The photoinduced polymerization of monomers is gaining popularity as an environmentally friendly and safe method for production of protective polymer coatings on various surfaces. It is applied for photocurable solventfree paints, lacquers, inks, dental fillings and other coating materials, wherever fast drying or setting is important.



9. Chemical and Textile Industry 11. Printing and advertising



PL.7.	
Title	The probe for rock caverns scanning .
Authors	Adam Szade, Tadeusz Smoła, Adam Ramowski, Marcin Wisior, Henryk Passia
Institution	Central Mining Institute
Patent no.	Patent application no 1/2015/NCS-2
Description EN	The probe for rock caverns scanning it's a original measuring procedure and modern, portable measuring set draw up for needs of Underground Coal Gasification (UCG) process. By using holes and technological pipelines of UCG process it permit the consistent printing of a line representation the resultant cavern, and on the investingation data it permit to evaluate process range and ewaluation and to calculate the comprehension; of this area. The probe is based on combining the 2D laser scanner, and cameras with background lighting, 360° inertial unit, temperature sensor, processor, transmission of signals and data system. The probe is interfacing with cables: powering and signal with the position of steering, control and registration set in research roadway at the intake of the technological hole to UCG georeactor. The probe is position, move and rotate in pipeline and cavern by blasting poles attached to a handle with centering and rotary items. The probe may be use in inventory or rescue surveys of hard accessible caverns in rocks, not only associated with the exploitation of the hard coal.

PL.8.	
Title	CART - Creative Application to Remedy Traffics
Authors	Rafał Kasprzyk, Krzysztof Szkółka, Paweł Giętkowski,
	Tomasz Poławski, Mariusz Pyżanowski
Institution	Cybernetics Faculty
	Military University of Technology

Patent no.

- CART (*Creative Application to Remedy Traffics*) system will improve capacity of road infrastructure and smoothness of traffic in cities. CART allows decisionmakers for conscious and effective planning of road connections and creating strategies in case of emergencies. For drivers CART will it make easier to find the best routes by augmenting path finding algorithms with simulation results.
- Description EN CART has enormous practical potential in city centers such as London, Warsaw, where there are a lot of traffic jams and it is hard to identify the source of trouble CART is designed to improve the city roads infrastructure. System advises on where to build roads, put crossroads and roundabouts. The outcome produced by CART can also tell where and why there is heavy traffic on particular roads and what to do to unload it.

Class

8,10



Portugal

РТ.1.	
Title	Novel complementary multi-technique protocol of investigation of gilded samples from cultural heritage assets
Authors	Irina Crina Anca Sandu, Manuel FC. Pereira, Ana Margarida Cardoso, Luís Dias, José Mirão, António Candeias
Institution	University of Èvora
Description EN	 The present research focuses on the application of different analytical techniques on gilded samples from cultural heritage objects aiming to the material characterization of their multi-layered structure and imaging of the distribution of inorganic and organic constituents. The analytical techniques applied were: stereomicroscopy (SM), optical microscopy (OM) coupled with fluorescent staining test (Sypro Ruby), scanning electron microscopy coupled with energy dispersive X-ray spectrometry (SEM-EDS), X-ray diffraction (XRD), micro-computerized tomography (μCT), μRaman and imaging μFTIR spectroscopies. The real samples were taken from several objects studied during the Gilt-Teller project (www.gilt-teller.pt), mainly altarpieces with gilded and polychrome decorations and polychrome sculptures. The advantages of the multi-technique complementary approach are the following: From the same sample (micro-fragment) several cross-sections can be obtained and analyzed using OM (Vis-UV+staining), SEM-EDS, μRaman and imaging μFTIR; On the same cross-section multi-elemental and molecular identification of inorganic (inerts, fillers, pigments, leafs) and organic (binders, sizes and varnishes) materials is possible and is coupled with imaging using fluorescent stain, SEM-EDS and imaging μFTIR; The identification of mineral/crystalline phases in grounds, bole or paint layers using XRD and μRaman can be complemented with imaging uFTIR; The static stratigraphic images obtained with OM and SEM-EDS can be further complemented with dynamic imaging using μCT rendering in 3 directions.
Class no.	Innovative Research

РТ.2.	
Title	Novel green biocides for Cultural Heritage
Authors	Mara Silva, António Candeias, Ana Teresa Caldeira
Institution	Evora University – HERCULES Lab
Description	Evora University – THEKC OLES Lab The importance of the control of biodegradation processes in cultural and built heritage context has been recently acknowledged as one of the key strategies for their safeguard and has increased in the last few years. However, public concern to reduce the use of general chemical pesticides as biocides and also to limit some diseases difficult to control by other strategies impose novel approaches. This PhD project aims to find a group of new active cyclic lipopeptide compounds by using some <i>Bacillus</i> sp. Strains. Previous studies showed that cultures of these microorganisms have strong antimicrobial activity due to the production of newly cyclic lipopeptides. In this PhD it will be evaluated the growth of the inhibitory activities of these produced cyclic lipopeptides by screening heritage biodeteriogenic microorganisms with special emphasis on their mode of action.
EN	The main objectives are:
	 To screen new products from microbial origin with antimicrobial activity against cultural heritage biodeteriogenic agents. To understand and optimize the production of the bacterial antimicrobial compounds under physiological stress conditions To develop new strategies for screening and identification of relevant compounds with antimicrobial activity and the structural characterization of the family of the active compounds. To study the increase of activity using some derivarizations in active compounds. To access the biocide activity of the produced cyclic lipopeptides in conservation of cultural and built heritage
Class no.	X. Innovative Research

Antifungal ativity of biocides against *Cladosporium* sp. using paper disk diffusion assay: A- Control; B- In the presence of 10 μL of *Bacillus* sp. cell free CCM 1052 culture Broth

PT.3. Title Identification of Microorganisms thriving in cultural heritage – a novel *in-situ* approach

Authors Marina Gonzalez, António Candeias, Ana Teresa Caldeira

Institution Evora University – HERCULES Lab

Biodeterioration of tangible Cultural Heritage have not received, until recently, the attention that it deserves. For developing effective conservation strategies, it is crucial to ascertain the microbial communities thriving in these objects and their activity. Advances in microbiology are imperative to *provide more in depth understanding*, being a particular need to introduce molecular *in situ* methods.

Fluorescence *In Situ* Hybridisation technique has demonstrated to be a powerful *in situ* analysis tool in other fields. However, its potential application in biodeterioration assessment of cultural assets has not been yet investigated in depth. This project, attempts to contribute to the knowledge of the role played by microorganisms into biodeterioration, by adapting and improving FISH technique for identification of microorganisms thriving in tangible Heritage.

Therefore, principal objectives of this postdoc project are to:

- 1. Develop a method to apply multiple FISH technique for direct detection of various microorganisms of interest simultaneously in suspensions of mixed populations.
- To apply the multiple FISH method for detecting, identifying and visualising directl various microorganisms in biodeteriorated cultural heritage samples and compare and complement the results with those obtained by other techniques.

The ultimate aim is the development of an easy-to-use kit, to be used also by non-specialist in the field, such as conservators and curators, to detect, identify and visualize the microorganisms of interest.

Class no.

Description

EN





Example application of FISH probes for the *in-situ* identification of fungii in ancient mortars. a,d – visible light; b,e – combined visible and UV light; c,f - UV light

Qatar

QA.1.	
Title	Water Production from Humidity
Authors	Adnan Fahad Al Ramzani Al Naimi
Institution	Agri-Green
Authors Institution Patent no. Description EN	Adnan Fahad Al Ramzani Al Naimi Agri-Green GC- 2010-16757 / 27/09/2010 - Cooperation Council For The Arab States of the Gulf (GCC) Agri-Green is an eco-friendly invented device that is able to produce water from the suspended humidity in the air. This invention is designed to be a rescuer and will provide solution to the water scarcity, desertification and water toxicity problems affecting most of the countries of the world. Aside from water production which is the world's upcoming global problem, Agri-Green can produce cold air which can be used to cool Greenhouses, family gardens, Football Stadiums, Horse's Stables, large halls and labour accommodation without using fossil fuel. Agri-Green uses renewable energy (sun and wind) and does not utilize fossil fuel. It is a clean development mechanism, preventing emission of harmful and toxic gases into the atmosphere. Aside from creating clean and healthy environment, it improves agricultural production, by making water available anytime to farmers and entrepreneurs, thereby increasing agricultural production and strengthening food security programs of any country experiencing water scarcity, desertification and water toxicity problems. Agri-Green uses eco-friendly technology and is able to reduce operating expenses of any business enterprises. It is economical in all standards thus increasing the income while reducing the emission of greenhouse gases and protecting the environment from the negative effects of climate change. Agri-Green is able to revitalize dairy farms, poultry farms and other agricultural projects with minimum production expense, thereby increasing marinal profit of any agricultural
	enterprise. The use of Agri-Green invented machine can reduce the long term harmful effect of desalination plants to
	marine life.
Class no.	1, 2 & 3



Russia

RU.1.	
Title	Energy Concentration Devices
Authors	V. Goch, V. Selishchev
	Centre of Living Systems Reseach of Ukrainian
Institution	Academy of Sciences: Centre "AYUMEL"
	(Sevastopol) and "TSEL" LTD (Moscow)
Patent no.	Patents of Ukraine, Eurasian Patents (2009, 2011)
	Generation of high positive energetic zones by means of
	device configuration effect which combines golden
	section and Reich accumulator effect (phenomena). ECD
Description EN	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. Other

RU.2.	
Title	Individual innovative intelligence level tester
Authors	A.Gromova, D. Khudainazarova
Institution	-
Patent no.	Patent RU 2522992 2014.
Description EN	The invention relates to computing, in particular to devices for psychological measurement of intelligence. The tester operation is based on the measurement of three components of a vector model of innovative intelligence: analytical, creative and practical intelligence. The tester consists of the following units: control 1, sensors 2, response encoding 3, preliminary scoring 4, individual factor calculation 5, composite factor calculation 6, display 7 and synchronization 8. The tester is provided with P-bit and W-bit source data inputs. The control 1 and synchronization 8 units along with other units and corresponding interconnections enable testing of an arbitrary number of subjects, real-time variation of the content of tests and processing of

test results

Class no.

14. Other

RU.3.	
Title	Anticicatricial Material
Authors	Vladimir Levchenko
Institution	Lomonosov Moscow State University
Patent no.	-
Description EN	For the first time absolutely biocompatible medical coating received in Russia not having analogues in the world. The invention concerns biology and medicine area and can be used for manufacture of anticicatricial materials (plasters, sponges, grids and other means quickly of wound healing actions). At drawing of a medical coating on dressing means (bandage, plasters, sponges and etc.), there is an increase in their bactericidal properties, accelerated of burn and donor wounds by formation of optimum conditions for an endocellular exchange of products of growth to an exception (decrease) in possibility of formation of hems. The patent of the Russian Federation № 2310475.
Class no.	4
RU.4.	
Title	Cyanobacteria - new materials for wastewater treatment
Authors	I. Zinicovscaia, L. Cepoi, T. Chiriac, A. Valuta, T. Mitina, M.V. Frontasyeva, S.S. Pavlov, S.F.Gundorina Loint Institute for Nuclear Pagagraph Dubng Puggia
Institution	The Institute of Chemistry of the Academy of Sciences of Moldova Institute of Microbiology and Biotechnology of the Academy of Science of Moldova
	neurony of second of monova

removed from the wastewaters as determined by AAS. The samples of dry microalgae biomass after exposure to wastewater were subject to nondestructive instrumental neutron activation analysis. A total of 21 elements (Na, Mg, Al, Cl, K, Ca, Sc, Cr, Mn, Fe, Ni, Co, Cu, Zn, As, Br, Rb, Sb, Ba, Ce, and Cs) were determined in the microbial cells. In addition to Cr and Ni, adsorption of such metals as Ba, Cu, Fe, Ni, and Zn was observed. Fourier Transform Infrared technique allowed revealing changes in the chemical structure of microalga biomass after interaction with wastewater. The IR spectra point to the presence of surface functional groups like OH, NH₂, NH-CH₂, (NHC(O)_{amid}), P=O, S=O and their involvement in the adsorption process. The result obtained indicates the applicability of the studied microalgae for complex purification of industrial wastewater.

Biotechnology of wastewater treatments using microorganisms for removal of heavy metals offers an alternative to conventional techniques due to its low cost and high efficiency. The results on the use of microalga Spirulina platensis and Nostoc linkia for the removal of chromium and nickel from wastewater of galvanic industry are reported. Two complementary analytical techniques: atomic absorption spectrometry (AAS) and epithermal neutron activation analysis (ENAA) – were used in this study. During one hour experiment 90% of chromium and 60% of nickel were removed from the wastewaters as determined by AAS. The samples of dry microalgae biomass after exposure to wastewater were subject to nondestructive instrumental neutron activation analysis. A total of 21 elements (Na, Mg, Al, Cl, K, Ca, Sc, Cr, Mn, Fe, Ni, Co, Cu, Zn, As, Br, Rb, Sb, Ba, Ce, and Cs) were determined in the microbial cells. In addition to Cr and Ni, adsorption of such metals as Ba, Cu, Fe, Ni. and Zn was observed. Fourier Transform Infrared technique allowed revealing changes in the chemical structure of microalga biomass after interaction with wastewater. The IR spectra point to the presence of surface functional groups like OH, NH₂, NH-CH₂, (NHC(O)_{amid}), P=O, S=O and their involvement in the adsorption process. The result obtained indicates the applicability of the studied microalgae for complex purification of industrial wastewater.

Class no

Slovenia

SI.1.	
Title	Rotary plow for machines with low chassis and belt transmission
Authors	Edo Karničnik
Institution	-
Patent	SI23975A
	Subject of the invention is a device and a method for transmitting of power to the rotary plow. The technical solution is functional, technologically suitable for the manufacture, economical, safe for people and environment as well as solid and reliable. The attachment is designed to be used on the machines with low chassis and belt transmission. An integral part of the invention is a special panel, which in combination with the gearbox housing, enables various heights and the usage of the rotary plow on the side of the machine (left or right) in such a way that the wheels run on the groove
Description EN	and thereby prevent possible damage of the chassis. The invention solves technical problems:
	- it enables you to attach the rotary plow to the attachment and together with the supporting frame to the machine;
	- transmission of the power from the machine to the rotary
	plow and a possibility for a broader use of the machine through the year, including plowing and loosening the soil.
	The invention provides several options for reducing the speed
	of the machine on a rotary plow and an appropriate selection of
C1	the diameters of the straps allows any transmission ratio.
Class no.	,

SI.2.	
Title	Self-propelled machine for landscape gardening
Authors	Ivan Gregorič
Institution	-
patent	SI24192A
1	Self-propelled machine in three speeds performs a variety of
	works:
	- Hedge design
	- Grass and undergrowth mowing
	- Digging and hoeing
	- Branches cutting to a height of 3 m
	- Loosening and aeration of lawns
	- Cleaning and removal of moss
	- Leaf blower
	- Lawn edger
Description EN	- Surface cleaning
	Self-propelled machine can easily overcome the slope up to
	50° angle. Management is because of many automatic
	functions very easy, e.g.: automatic control of the front wheels,
	automatically adjusting suspension to any ground, automatic
	operation of hydraulic brakes, automatic adjustment of engine.
	Benefits for worker: more efficient, faster work because the
	worker is not afflicted by the weight of the machine and
	affected by motor vibrations, noise or exhaust gases. The
	machine has been tested for use of 28 different attachments
	and various functions.
Class no	3

ss n



Slovak Republic

SK.1.	
	The Rationalization of Production of Ring-Shaped
Title	Drop Forgings using Computer Simulation of
	Closed-Die Forging Process
Authors	Mária Kapustová
Institution	Slovak University of Technology in Bratislava
Description EN	The rationalization of ring-shaped drop forgings production may be considered from different points of view. Important aspects of evaluation and selection of optimal production alternative are material and energy savings and issue of forging tool life. This contribution describes advanced technology of closed die forging without flash, which represents an effective method of manufacture of ring-shaped drop forging from steel alloy type 16MnCr5. This proposed method offers a cheaper possibility of production of mentioned forging piece resulting from saving of batch material. At present drop forgings with this shape are produced by an uneffective method, i.e. die forging with flash, which brings a considerable material loss. Simulation software determined for simulation of bulk forming processes have an important position at development of new advanced technologies of drop forgings production. A simulation program MSC.SuperForge described in this contribution was used in order to verify correct plastic flow of material in closed die cavity.
Class no.	Innovative Research

Taiwan

Represented by WIIPA

TW.1.	
Title	A Buoy-Type Design To Stimulate Fish Attacks On The Lures
Authors	Hsia, Tai-Chang, Liu, Hsin-Yun, Su, Chih-Ching, Huang, Yu-Tung, Hua, Chung-Shing
Institution	Chienkuo Technology University
Patent no.	I451838
Description EN	Fishing, long a traditional sport, has become more popular in recent years. This study uses TRIZ method to conduct a trend analysis of fishing lure improvement. The author produces a buoy-type design a floating lure that incorporates the buoy. Since the lure can move by itself, fishermen do not need to constantly move the line, improving fishing performance.
Class no.	13



TW.2.	
Title	An Event Sign-in Guidance and Management System
Authors	Sun-Li Wu, Hui-Min Wang, Yin-Jun Lin, Wen-Feng Hou
Institution	Kao Yuan University
Patent no.	M483497
	This patent work is about an event sign-in guidance system which enables the organizer to mail in advance to all the attendees their notices or ID cards that bear bar
Description EN	codes. When each attendee arrives, the notice or ID card will be scanned and processed with the computer. As soon as his or her identity is confirmed, the attendee will be led to the sign-in sheet where an LED light is on. This
	INTERNATIONAL EXHIBITS

would definitely facilitate to speed up the procedure. 10

Class no.



TW.3.	
Title	Combined Tunnel Rescue Vehicle
Authors	Fa-Shian Chang, Chien-Yuan Tseng, I-Fan Shih, Yi- Wen Huang, Li-Fan Huang
Institution	Cheng Shiu University Foxconn Technology Group
Patent no.	<u>M495863</u>
Description EN	rescue vehicles, has combined with easy disassembly, easy handling, storage does not occupy space. It can be based on the firefighting, disaster relief mission needs, combined with the camera, environmental detectors, gas
Description EN	relative position of each module can be based on the needs replacement, significantly increasing the use of flexible and selective, effectively achieve modular efficiency, according to the disaster scene required combinations tasks tunnel rescue vehicles.
Class no	13



TW.4.	
Title	In-Light – Intelligent Street Lighting Monitoring System
Authors	Chi-Cheng Chuang, Ying-Hsun Lai, Kuan-Yu Chen
Institution	Institute for Information Industry
Patent no.	(TW)101132288, (USA)13/659,094, (China)201310050604.2
	The invention called Intelligent Street Lighting Monitoring System (ISLMS) is different from traditional street monitoring service required to install sensing device on every street light. It only needs to install one
Description EN	monitoring box nearby power cabinet to monitor up to 100 or more street lights. And ISLMS applied the main claimed patent the multiple street lights diagnosis technology to detect one of street light fault event in street circle according historical information and multi- dimensional factor. The invention approach the reduced 50% cost down than traditional street light monitoring service approach the market demand and provide the real time detection to improve the 60% response time of fail event
C1	10

Class no.



TW.5.	
Title	Multifunctional Luggage
Authors	Hsu, Sheng-Yuan, Hong, Rui-Li, Chang, Yu-Chi, Zhou, Yi-Zhong
Institution	Chienkuo Technology University
Patent no.	-
Description EN	Traditional Luggage only has single function. Multifunctional luggage has included trolley for other luggage and rotated the handle it can become a chair for user to seat, and to be a Flatbed truck for moving huge

Class no.

goods. 13



TW.6.	
Title	Multi-Functional Recharge Investigation Robot
Authors	Fa-Shian Chang, Chien-Yuan Tseng, Shih Hsu, Wei-Sheng Wang
Institution	Cheng Shiu University Foxconn Technology Group
Patent no.	M495905
Description EN	The present invention is a multi-functional recharge investigation robot; esp one with a retractable outside the interlocking device and equipped with a complex set of crawler and mobile devices round the umbrella, and can be set up lights, cameras, infrared sensors and other investigators with instruments, and can be loaded with the supplies of the robot body to apply to a variety of disasters or other personnel difficult exploratory investigation into rescue robot module narrow space.

Class no.

13



TW.7.	
Title	The Intelligent Nursing Call Sensor System
Authors	Wen-Chieh, Lin, Min-Shih, Chen, Wei-Ting, Lyu, Hsiu- Ching, Lin, Yu-Chi, Lin
Institution	Kao Yuan University
Patent no.	M439954
Description EN	Inside this nursing call system there also has equipped an IP-PBX system and regional network to integrate both call bell at the patient bed side and modified mobile e-nursing cart together.
Class no	4

Class no.



TW.8.	
Title	Unmanned Ground Vehicle
Authors	Fa-Shian Chang, Chien-Yuan Tseng, Chih-Feng Liu, Kai-Yi Cho, Jhu-Wei Ji
Institution	Cheng Shiu University Foxconn Technology Group
Description EN	M478018
Class no.	This Multi-Functional UGV is equipped with a heavy duty robot arm that allows an operator to remove bombs, hazardous chemical/contagious substances, and safe IDE. The modular design of the robot arm allows for many types of utility probes to be chosen from and mounted for different applications (such as mine

detecting, radioactive substance detection, containment substance sampling, etc.).



Using TRIZ To Design An Autonomous Sinking Lure

Hsia, Tai-Chang, Liu, Hsin-Yun, Huang, Yu-Tung, Hua,

To Enhance Fish Catch Rates

Chienkuo Technology University

Chung-Shing

TW.9.

Title

Authors

Class no.

Institution Description EN

I 445497 Fishermen who use lures must constantly reel the fishing line in and out to make the lure move back and forth, stimulate fish attacks on the lure, and increase catch rates. This study uses the TRIZ method to construct a technical contradiction matrix and performs a function and attributes analysis. Based on the depth at which the targeted fish swims, produces an autonomous sinking lure. Since the lure can move by itself, fishermen do not need to constantly move the line, improving fishing performance.

13



Thailand

ТН.1.	
Title	Small-scale Industrial Production for Thai Neem-
The	based Biopesticides
Authors	Unchalee SANGUANPONG
Institution	Rajamangala University of Technology Thanyaburi
Patent no.	Patent application No. 3043/2010
Description EN	As raw material Thai neem seeds (<i>Azadirachta indica</i> var. <i>siamensis</i> (Valeton)) are used in small-scale industrial production at pilot plant of Rajamangala University of Technology Thanyaburi in Patumtani province, Thailand. The process involves a long chain of operations and various equipment. The steps are seed decorticating, crushing, oil expel, agitation, sedimentation and evaporation. By moving-bed contacting extraction technique, defatted neem cake will be extracted with methanol in an agitated-extraction vessel. After decantation of crude cake in mixing-settling tank, the neem solution is drained out, then filtered and proceeded to the next procedure. The solution will be further evaporated until a specific volume, the so-called-concentrated alcoholic neem-based extract. The described processing requires a set of special equipment, such as seed decorticator, pulverizer, oil expeller, agitated-extraction vessel, and evaporator. Before packing in containers, the content of azadiracthin is monitored per batch by using HPLC and adjusted in the formulation to a standard value. Furthermore the concentrate is also formulated for specific purpose as different "Ready-To-Use" products (RITNEEM, RITNEEM-O 1, RITNEEM-O II). Eventually, the product will be bottled and shipped to the consumer. The capacity of pilot plant is 25 ton/year within 250 working days.
Class no.	3



Tunisia

TN.1. Title RF energy harvesting for charging mobile phone Authors Mohamed zied chaari Institution Patent no. TN2014/0399 As a result, outdoor enthusiasts, travelers and tourists, and people who utilize portable electronic devices often experience battery depletion of their devices before they find a time or means to charge their device. The present invention provides, to charging or provide direct operating power to an external portable appliance such as, for example, a mobile phone or any electronic device. The invention will show all the activities **Description EN** addressed to design a wideband system to recover wideband energy from electromagnetic sources present around us. An energy harvesting circuit includes one or more multiband antenna to detect many RF signals. We can to charging the battery of mobile phone by the Energy harvesting in the environment.

Class no.

2



Turkey

Represented by TROBOTIC & Aydin Istanbul University

TR.1.	
Title	Smart Laundry Basket
Authors	SAEID DADASHZADEH, MARYAM DADASHZADEH
Institution	TROBOTIC INVENTION GROUP
	Pending
	A digital Laundry Basket is accurate in measuring the weight of Discarded clothes into the washing machine on the digital
	according to inform The user
Description EN	Options: 1 - precision Digital weighing system
	2 - The magnetic anti-odour
	3 – lights, mix and max, alarm
	4 - different designs
	5 - pin panel, for cleaning against dirt
Class no.	12



TR.2.	
Title	Device for extracting useful food products from the waste of fruit juice manufacturing companies
Authors	Mehran Khosravani-Alireza Salimi-Amirhosein Ghodsi
Institution	
Patentn no. Description EN	Patent no : 70475 in the process of producing natural juice after squeezing the citrus, three layers remain. these layers are: pulp , white, and orange layers. Due to the problem of automatic extraction of citrus remains from each other, allowing more efficient use of residual product after dehydration, was not possible till now. Our team designed a device , which is capable of separating orange layers of citrus, such as orange, tangerine and other citrus from the pulp and white layer and the remains can be used in various applications.

Class no.



Turkmenistan

TM.1.	
Title	INNOVATIONS IN DECORATIONS
Authors	MENGLI Enterprise
Institution	MENGLI Enterprise Turkmenistan, Ashgabat
Patent no.	Pending
Description EN	Innovations in window decoration, design of interior, art- metal. New method of material combination for resolution idea of art-product.
Class no.	11. Printing and advertising

Ukraine

Represented by Centre "AYUMEL"

UA.1.	
Title	Watch with pictographic composition
Authors	V. Goch, M. Goncharenko, L. Kruchinin, Yu. Skomorovskyy, S. Serova, A. Karpin, A. Sergienko, N. Chornobay
	Contro of Living Systems Descent of Ukrainian
Institution	Academy of Sciences: Centre "AYUMEL" and Dep.
Institution	of Valeology of V. Karazin Kharkov National
	University
Patent no.	Pending UA 2012
	Produced special multistratum watch face with
Description EN	pictographic composition and effect of one' functional state harmonization.
Class no.	14. Other

UA.2.		
Title	Wind-Driven Electrical Plant	
Authors	O. Onipko, S. Vasilenko, A. Onipko	
Institution	Ukrainian Academy of Sciences	
Patent no.	Pending UA 2009, 2010	
Description EN	Wind-driven electric plant has been developed for electric power supply of apartments, houses, communities with low, medium and normal wind potential	
Class no.	2. Energy and sustainable development	

United Kingdom

UK.1.		
Title	Low Cost Design for Energy Harvesting from Heat to Sound	
Authors	Irfan Abd. Rahim, Mohd Zarhamdy Mohd Zain, Norshah Afizi Bin Shuaib	
Institution	The University of Manchester Universiti Malaysia Perlis (UniMAP) Malaysia	
Patent no.	PI 201409979	
Description EN	Thermoacoustic Heat Engine probably the most efficient energy source for electronic devices for the next 10 year ahead that require small amount of electrical energy to operate. This product was to produce electricity from heat to sound, from the Thermoacoustic Heat Engine (TAHE). Application the standing wave system by conducting a Fluid Structure Interaction (FSI) is simuated by using a Thermoacoustic system's software named DeltaEC for better uderstanding on the fundamental of TAHE standing wave product system. Some characteristics or parameters in the system that were studied in order to design and development the product from the fundamental knowledge of TAHE standing wave system.	
Class no.	2	
UK.2.		
Title	Roadside Wind & Pressure Energy Harvester Norshah Afizi Bin Shuaib, Irfan Bin Abd Rahim, Shayfull Zamree Bin Abd Rahim, Mohd Nasir Bin Mat	
Authors	Saad, Amarul Bin Talip, Mohd Khairul Fadzly Bin Abu Bakar, Mohd Sazli Bin Saad, Badrul Azmi Bin Abdul	

Holed, Muhamad Farizuan Bin Rosli, Mohd Effendi Bin Muhammad Suandi
 Institution Patent no. PI 201408377
 Description EN This product is invented to harvest an amount of energy from a potential and new energy farm- the road. By

right, there are huge effort been put on technologies to collect energy from flowing wind, water (hydro) and sun (solar). However, a very little emphasis been stressed to seek an energy generation from moving things around us, such as vehicles. Literature studies indicated that the most common method to harvest energy from a moving vehicle on the road is by using the piezoelectric surface which converts mechanical damping energy into electrical energy. But now, we are looking for another altenative.

This product consists of a 'force sweeper' or called collector which will led to a common vertical turbine blade. As the Conservation of Energy based on the Bernoulli's theorem applies,

$$\frac{p_1}{\rho} + gz_1 + \frac{1}{2}u_1^2 = \frac{p_2}{\rho} + gz_2 + \frac{1}{2}u_2^2$$

Point 1 indicates the surface of a speeding vehicle and Point 2 represents the collector and the turbine itself which velocity = 0, and due to an enhanced velocity from Point 1, the turbine will be rotating as the wind reached its cut-in velocity.





Velocity Profile of a Sedan Car



Velocity Profile of a Tanker



Velocity Profile of a Bus

United States of America

US.1.		
Title	CandyLipz Xtreme Lip-Shaper® System	
Authors	Thienna Ho, Ph.D.	
Institution	CandyLipz LLC.	
Patent no.	Global Patent Pending	
Description EN	The CandyLipz lip plumper creates fuller lips by using a 3,500-year-old Chinese 'cupping' method known as air suction with a built-in advanced lip-shaper technology. This exclusive lip-shaper technology allows the CandyLipz lip plumper to shape, contour, and enhance the appearance of lips instantly and beautifully. The lip-shaper can create single-lobed and double-lobed lower lips. Users may work on the upper or lower lip together or separately. The lip-shaper has been engineered to raise the arches of the Cupid's bow and creates the pouty lips look and lifting the corners of the mouth. It takes just 2 minutes to apply to the lips and the look lasts for 2 hours. The suction lip plumper is used hands-free so multitasking is a breeze. It is small, cute and portable – disguised as an apple so users look like they are eating an apple while using the lip pump. Users get to control their own lip size from subtle to extreme!	
Class no.		
and the second s	CANDYLIPZ VISUAL DESIGNS	
service Labed Dear	to Moder Allow Upper Single-lobed Weber Lip Elingment September double-lobed	

NATIONAL EXHIBITORS

Universities Research Institutes Companies Individuals

University POLITEHNICA of Bucharest

RO.1.	
	MILL KNIFE FOR ASPHALT CUTTING/STRIPPING
Title EN	THAT HAS WEAR SELF PROTECTION AND AUTO
	BLOCK WHEN SPINNING
	Emilia BINCHICIU, Victor GEANTĂ, Ionelia
Authors	VOICULESCU, Radu ȘTEFĂNOIU, Răzvan Florin
	IOVĂNAȘ, Horia BINCHICIU, Aurelia BINCHICIU
Institution	SC SUDOTIM AS SRL Timisoara
Patent no.	Patent application No. A-00375/28.05.2012
Description EN	The MILLING KNIFE comprises a support made of steel low alloyed with chromium, which is consolidated, at the conical surface level, with an system that avoid blocking during rotation around its axis, produced by welding process, WIG or flame welding, in the form of layers realized by a matrix of steel low alloyed with chromium, in which are embedded melted tungsten carbide particles. In the working area, a conical body made from tungsten carbide is brazed using soldering alloy. THE MANUFACTURING PROCESS is performed in several stages: obtaining the knife holder, made by a low alloy steel, from a bars product; hardening the holder to around 55 HRC by heat treatment and quenching in oil; machining the knife holder to the final dimension; attainment by sintering of the reinforcing mill body, using tungsten carbide; brazing in the knife holder of the reinforcing mill body; obtaining of the reinforcing layers, that have the role of self-protection system; slow cooling of the assembly. ARPLICA PLUITY DOMAIN : asthemoving mechanica

Class no.

7&6



Acknowledgements: The research work was financially supported by the Romanian National Program for Research in the framework of the Project No. PCCA 188/2012 – High performance materials and techonologies fated for the realization of the knifes of mill for asphalt – MATFREZ.

RO.2.	
Title EN	TUBULAR ROD WITH COMPOSITE CORE AND IT'S MANUFACTURING PROCESS
Authors	Emilia BINCHICIU, Ionelia VOICULESCU, Horia BINCHICIU, Victor GEANTĂ, Radu ȘTEFĂNOIU, Aurelia BINCHICIU
Institution	SC SUDOTIM AS SRL Timişoara
Patent no.	Patent application No. A-00396/01.06.2012
Description EN	 TUBULAR ROD WITH COMPOSITE CORE allows coating by welding process, WIG or flame welding, of rough composites layers. The rod consists in a soft steel sheath that has a composite core realized from two distinct layers, made of wolfram carbide and an alloying-compensation system. THE MANUFACTURING PROCESS consists in: shaping of sheath in U-shape, using a band of steel low alloyed with chromium (1), uniform dosage of the first layer of reinforcing material, as wolfram carbide granules (2), dosage and homogenization of the alloying-compensation system (3), dosing and deposition of the second layer of alloying-compensation system over the first layer (4), shaping and closing of the sheath, compacting of the composite core and cutting of the tubular rods at the specified length.

layers with high hardness.

Class no.



Acknowledgements: The research work was financially supported by the Romanian National Program for Research - Funding Application for Joint Applied Research Projects PN-II-PT-PCCA-2013 in the framework of the Project No. 25_DPST/20.08.2013 – Excavator component reinforced with high entropy alloys – HEATEETH.

п	\mathbf{n}		
к		•	
1.	J	•	٠

Title EN AIR-ARC GOUGING ROD AND MANUFACTURING PROCESS

Authors Ionelia VOICULESCU, Emilia BINCHICIU, Victor GEANTĂ, Horia BINCHICIU, Radu ȘTEFĂNOIU, Aurelia BINCHICIU

Institution SC SUDOTIM AS SRL Timişoara

Patent no. Patent application No. A-00545/22.07.2013

AIR-ARC GOUGING ELECTRODES are covered rods, made from carbon steel pipes with thin laminated walls, and then coated with special extruded layer.

THE MANUFACTURING PROCESS of the gouging electrodes consists in the following steps: cutting of the pipes

Description EN at the specified length; filling with stearin of the pipe ends; cleaning the stearin excess; preparing the covering mixture, the dosing and homogenization of the constituents; deposition by extruding of the covering on the rod; heat drying and packaging of the electrodes.

APPLICABILITY DOMAIN: metallurgical processing, welding reparations.

Class no.

2, 5, 7, 6



Acknowledgements: The research work was financially supported by the Romanian National Program for Research in the framework of the Project No. PCCA 170/2012 – "Microalloyed steels with nanoparticles and high toughness - ToughNanoMicrAl".

RO.4.

Title EN

Authors Institution RODS USED TO WELD HIGH RESISTANCE TO BREAKAGE STEELS, WITH HIGH DEPOSITION YIELD EVEN IN RADIOACTIVE ENVIROMENTS Emilia BINCHICIU, Ionelia VOICULESCU, Horia BINCHICIU, Victor GEANTĂ, Radu ȘTEFĂNOIU SC SUDOTIM AS SRL Timisoara

Patent no.Patent application No. A-00659/05.09.2013BASICWELDING ELECTRODE used to weld steel
structures, characterized by high tensile strength, with high
deposition efficiency. This electrode is designed for arc
welding, being realized by low alloyed manganese steel,
refined with titanium, that allow the obtaining of low
diffusible hydrogen content, in order to ensure good
exploitation properties, including for the radioactive
environments.

The electrode consists in a low manganese alloyed steel core, that is covered with a special layer made by: specific percentage of marble, fluorine, titanium dioxide, FeSi, FeMn, FeTi, softener and binders.

APPLICABILITY DOMAIN: welding of the steel structures characterized by high tensile strength, including for radioactive environments.

Class no.

EN



Acknowledgements: The research work was financially supported by the Romanian National Program for Research -Funding Application for Joint Applied Research Projects PN-II-PT-PCCA-2013-4 in the framework of the Project No. PCCA 243/2014 – "Advanced metallic materials for 4R new generation nuclear power plant – NUCLEARMAT".

RO.5.	
Title EN	Composite materials for disk brake systems
Authors	BUZÂIANU AURELIAN, MOLDOVAN PETRU, POPESCU GABRIELA
Institution	University Politehnica Bucharest
Patent no.	RO123029-B1
Description EN	The invention relates to composite materials destined for disk braking systems of various types of vehicles, which are included into the rotors made of friction sectors, as A-type materials based on aluminum matrix composite reinforced with silicon carbide ceramic particles and in stators made of friction sectors, as B-type materials based on aluminum matrix composite reinforced with aluminum oxide ceramic particles, which is used for manufacturing friction stators.
Class no.	6, 7, 8

RO.6.

10.0.		
	Upgrading and Life Cycle Extensions of Geothermal	
Title EN	Energetic Pumps and Turbines by Thermal Spray Process	
	and Multi Composite Technology	
	Ioana CSÁKI, Steluta SERGHIUTA, Aurelian Buzaianu,	
Authors	Petra MOTOIU, Kolbrun Ragnarstottir, Sæmundur	
	Guðlaugsson, Daniel Guðmundsson	
Institution	University Politehnica Bucharest	
Description EN	In Europe a few number of countries are involved in geothermal exploration, exploitation and progress geothermal development projects. Corrosion turbine damage, particularly of blades, discs and rotors, has been recognized as a leading cause of reduced availability in the power plant. The bilateral and synergetic GEOTUR project is dedicate to complementarities scientific Romania - Iceland research cooperating on the global green energy development, improving capacity at national and regional level and synchronizing the effort to obtain more access of geothermal energy. The aim of the project is to develop new material classes, methods and models suitable to fabricate, monitor, evaluate and predict the performance and overall energy efficiency of novel thermal barrier coatings (TBC _s) in turbines geothermal systems.	
We will try to determine the influence of the coating microstructure on the mechanical, tribological behaviour and thermal fatigue of the system (coating + substrate);

We are investigating the adhesion between the sprayed layer and the substrate and we try to provide a better understand of controlling mechanisms for wear and corrosion behaviour of these coatings.

Acknowledgement

The research leading to these results has received funding from EEA Research Programmed operated by the Romania Ministry of National Education under the EEA Financial Mechanism 2009-2014 Joint Research Project Iceland – Romania and Project **GEOTUR** Contract No.16SEE/30.06.2014.

Class no.

Innovative Research

Carol Davila University of Medicine and Pharmacy

RO.7.Title ENRectal cancer treatment - a new approachAuthorsStudent Alina Mihaela Prodan, Mircea Beuran
Carol Davila University of Medicine and Pharmacy,
Bucharest, Romania
Emergency Hospital Floreasca, Bucharest, Romania
National Institute of Materials Physics, Magurele

Functionalized magnetic nanoparticles (MNPs) are of great interest for a wide range of biomedical applications such as drug and gene delivery, magnetic resonance imaging, magnetic separation and hyperthermia. Lately, MNPs resulted from Arrhenius-Néel relaxation have been used in a therapy recently approved for clinical use. This new therapy is also known as thermotherapy. On the other hand, due to their magnetic properties, these nanoparticles provide a good platform for chemotherapy drugs delivery directly to the cancer cells, after applying an external magnetic field.

The two types of functionalized biocompatible magnetic nanoparticles used in formulations are magnetite (Fe₃O₄) and maghemite (γ -Fe₂O₃). An important advantage of magnetite and maghemite is their superparamagnetism exhibited at nanoscale. This property facilitates the stability and individual dispersion of the particles after the external magnetic field has been applied. As a result, magnetite and maghemite could be efficiently used in cancer therapy.

The goal of this research program is to synthesize a magnetic fluid with encapsulated dextran-coated magnetite nanoparticles (DMNPs) for possible use in colorectal cancer therapy. The biocompatibility of DMNPs will also be examined in this study. The main purpose of this research is to develop magnetic nanomaterials such as magnetite and/or maghemite able to deliver chemotherapeutic drugs like 5 Floro-Uracil (5-FU) to the cancerous rectal tissue using an external magnetic field. The tumor diameter, biological changes and histopathological analysis will be carried out in order to analyze the effect of these nanoparticles.

Class no.

Description

EN

Innovative Research

RO.8.	
Title EN	A Peritoneal Dialysis Catheter – Fixing and Sealing Deice
Authors	during Surgery Dan MITOIU ¹ , Cristiana DAVID ^{2,3} , Ileana PERIDE ^{2,3} , Alexandru CIOCÂLTEU ^{2,3} , Ionel Alexandru CHECHERIȚĂ
Institution	Department of Surgery, "St. John" Emergency Clinical Hospital, Bucharest; ² Department of Nephrology and Dialysis, "St. John" Emergency Clinical Hospital, Bucharest; ³ Clinical Department No. 3, "Carol Davila"
Patent	University of Medicine and Pharmacy Bucharest Invention patent request no. A201400428, registered with no. 1042229/29.10.2014 Introduction. Peritoneal dialysis (PD) represents a renal
Description EN	replacement technique which keeps alive over 200.000 end-stage renal disease patients around the world. It is a continuous home- based therapy with some undeniable advantages compared to hemodialysis – better hemodynamic stability, steady-state metabolic control and lower costs. The limitations of this method are mostly due to peritonitis and mechanical complications requiring surgery in most cases; the development of encapsulated peritonitis is a major life threat. Surgical interventions in PD individuals are a major challenge because of the peritoneal adhesions and risk of compromising the catheter implant site [1-4]. Objectives. Our invention refers to a device used for fixing and sealing the Tenckhoff peritoneal catheter during any surgical intervention performed to a PD patient. The device allows laparoscopic surgery and reduces to zero the risk of pericatheter fluid leakage, both during surgery and in the postoperative period. Method description. The device for fixing and sealing the Tenckhoff peritoneal catheter, according to the invention patent request no. A201400428, registered with no. 1042229/29.10.2014, is mounted around the catheter and it is composed of: a suction cup that has a tapered internal circular channel that can achieve negative pressure on the patient's abdominal wall, during the laparoscopic surgery; the channel is connected to a vacuum pump which maintains negative pressure in the suction cup room; the atraumatic wall sealing is ensured by a gasket. Both installation and operation of the device are simple: after anesthesia the free-end of Tenckhoff catheter is inserted through the device that was perfectly sealed by the negative pressure produced by the specific pump (Figure); pneumoperitoneum can be now created without any concerns about adverse effects of increased abdominal pressure in a PD patient. Advantages of the innovative device. No perioperative leakage of dialysis liquid in PD subjects

performing surgery. Allows the creation of pneumoperitoneum without adverse effects; thus, we can increase the frequency of laparoscopic peritoneal cavity exploration in search of peritoneal collections and prevent encapsulated peritoneal sclerosis development. Cheap and easy to perform as a device. Allows easy and repeated use.

Class no.



University of Agronomic Science and Veterinary Medicine Bucharest

RO.9.	
Title EN	GIS2 - <i>In vitro</i> simulation system of the human colon in three stages
Authors	Emanuel Vamanu
Institution	University of Agronomic Science and Veterinary Medicine - Faculty of Biotechnology
Patent no.	Patent application No. A/01174/17.11.2011
Description EN	The present invention consists in a method of <i>in vitro</i> testing, in three phases, of the effect of probiotic products during the transit through the human colon. The method comprises realisation of <i>in vitro</i> simulation system, preparation of the culture medium with a composition similar to that of the colon, preparing the fecal sample for microbiota development, continuous fermentation for the stabilization of specific microbiota for 48 hours. Simulation in ascending colon lasts for4 hours, in transverse colon the sample is stationary for 5 hours, and 4 hours in descending colon. The effect verification will be realized by microbiological analysis, to determine the ratio of different strains in each colon segment.

Class no.

I



Technical University of Cluj-Napoca, România

RO.10.	
Title EN	The pozzoolanic activity level of powder waste glass vs. other powders
Authors	Ofelia CORBU, Andrei Victor SANDU, Mohd Mustafa Al Bakri ABDULLAH
Institution	Technical University of Cluj-Napoca, România
Description EN	In order to streamline the mixes of concrete with powder waste glass as small as ≤ 0.250 mm, a postdoctoral program objective was to test the activity rate of its pozzoolanic reaction, through various methods and by comparing it with other powders reactions in a standardized cement composition. The first method was to determine the compressive strength of cement mortars, partially substituted by glass powder, silica fume, ash and clay. The second method was determining the chemical composition of the powder with fluorescence X-ray, XRF type. The third method, was based on fragments of mortar studied and subjected to microscopic observations – SEM determination to investigate the microstructure of materials. The research demonstrates the very good opportunity provided by the use of glass powder (GP) in composition with the cement. This way, the stored waste glass can be used as raw material, saving valuable non-renewable natural resources and protecting the environment
Class no.	Innovative Research
	Cement: Ash¶ GPSt¶ Silica fum e¶ St¶ Clay¶



Acknowledgements. This paper was supported by the Post-Doctoral Program POSDRU/159/1.5/S/137516, project cofunded from European Social Fund through the Human Resources Sectorial Operational Program 2007-2013.

RO.11.

Title ENCrumb Rubber From Tires Embedded Into A Composite
Material

Authors Gabriela POPITA, Ofelia-Cornelia CORBU, Cristina ROȘU, Antoanela POPOVICI

Institution Technical University of Cluj-Napoca, România

The aim of the study is to demonstrate that the crumb rubber can be successfully incorporated in cement matrix and the resulted composite material can be proposed as construction material. For the production of the proposed composite, the following composition was prepared: cement, sand, rubber crumb with 0.5 mm size, distilled water and additive. The used cement was the white cement CEM II/A-L 52.5 N (Lafarge, Romania) and the additive was Glenium 27. Subsequent, leachability tests for heavy metals (Cr, Ni, Pb, Cd, Cu, Zn, Fe) were carried out. The results shown that a very small concentration of heavy metals passed into the leachate, if the rubber crumb is embedded in the cement matrix. Also strength (flexural and compressive strength) tests were carried out. The medium flexural strength of the composite containing crumb Description rubber was 1 N/mm², and were placed it into the masonry EN mortar class. The comparison of the obtained results for the compressive strength of the proposed composite was made with the specified values in the Standard SR EN 998-1:2001 for plastering mortars, thus with the average value Rc=2.22 N/mm², the composite falls in class CS II mortar plaster (Rc standard for CS II is between 1.5-5).

Applications

The composite material can be safely used for manufacturing of different decorative jointed elements, at competitive costs with traditional materials. The composite has good workability and allows for use: sound dampening material, sound absorbing, embroidered decorative elements for building facades, interior decorations, decorative elements for parks and gardens (flower pots, flower pots, columns, plates.)

Class no.

Innovative Research - 7. Buildings and Materials



RO.12.	
Title EN	INDUSTRIAL TANNED LEATHER WASTE EMBEDDED IN COMPOSITE MATERIAL
Authors	Gabriela POPITA, Ofelia-Cornelia CORBU, Cristina ROȘU, Dorin MANCIULA, Antoanela POPOVICI
Institution Description EN	Technical University of Cluj-Napoca, România The aim of the study is to demonstrate that the tanned leather waste can be successfully incorporated in cement matrix and the resulted composite material can be proposed as construction material. Leather waste came from footwear industry. For the production of the proposed composite, the following composition was prepared: cement, sand, tanned leather, distilled water and additive. The cement was the white cement CEM II/A-L 52.5 N (Lafarge, Romania) and the additive was Glenium 27. Due to the leather waste elasticity sand was used for leather grinding. Total chromium leachability from tanned leather waste in aqueous solution was done. The results shown that a very small concentration of chromium passed into the leachate, if the leather waste is embedded in the cement matrix. Also strength (flexural and compressive strength) tests were carried out. Characteristic flexural strength falls (by calculation) between 0.2-2 N/mm ² , from standards. Compared to these standards, the medium flexural strength of the composite with tanned leather content was 2.86 N/mm ² , and placed it into the masonry mortar class. The comparison of the obtained results for the compressive strength of the proposed composite was made with the specified values of the Standard SR EN 998-1:2001 for plastering mortars, thus with the average value Rc=10.69 N/mm ² , the composite falls in class CS IV mortar plaster (Rc standard for CS IV is > 6). Applications The composite material can be safely used for manufacturing of different decorative jointed elements, at competitive costs with traditional materials. The composite has good workability and allows for use: sound dampening material, sound absorbing, embroidered decorative elements for building facades, interior decorations, decorative elements for parks and gardens (flower pots, flower pots, columns, plates.)
Class no.	Innovative Research - 7. Buildings and Materials



RO.13.

Design systems for residential buildings with low energy Title EN consumption in exploitation

Authors Moga Ligia

Institution Technical University of Clui-Napoca, România

The main objective of the postdoc research consists in defining a standard type building with low energy consumptions based on optimized energy solutions for the building envelope and using innovative technology for building service equipment. The secondary objectives of the project target the following: ensure energy efficiency of the building, ensure comfortable indoor climate and reduce the environmental impact of the building. The postdoc project is based on six research stages.

Energy efficient design is a high priority in the national energy strategy of European countries considering the latest requirements of the European Directive on the Energy Performance of Buildings. According to the World Business Council for Sustainable Development, buildings account for up to 40% of energy use in most countries being responsible of about 36% from the total CO₂ emissions at the European Union level. The Description residential sector is responsible for a significant quantity of energy consumptions from the total amount of consumptions on a worldwide level. In residential building most of the energy consumptions are given mainly by heating, domestic hot water and lighting. Zero energy consumption design strategy of buildings and energy retrofit activities of existing building stock offer great opportunities for reducing global energy consumptions and greenhouse gas emissions. Up to this point several studies have investigated the influence of building design on the energy performance of a building placed in the four climatic zones existing in Romania. Also the effects of different types of building envelope components (e.g. walls, windows, roofs) on the energy performance of a building were investigated.

> The postdoc project is funded by the European Social Fund Program POSDRU, DMI 1.5, ID 137516-PARTING.



Class no.

EN

Innovative Research - 7. Buildings and Materials

RO.14.	
Title EN	Nonconventional algorithm for frequency analysis
Authors	Eva-H. Dulf, Radu A. Munteanu, Clement Festila, Radu
Authors	Munteanu
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application No. A00894/2014
Description EN	The goal of the patent is to offer simple algorithm for frequency analysis. Due to the importance of the electrical, electronic, mechanical system analysis, were built complex and expensive frequency analyzers, using the mathematical principle of correlation. The output signals are the real and imaginary part of the complex frequency response. The most intricate elements, affecting directly the accuracy of the results are the signal multipliers. The proposed method avoids these multipliers, offering a simple, cheap and easy to implement analyzes method, based on relays, whose intelligent switching is based on an original algorithm, conceived by the authors. The operation principle is the following. A generator excites the analyzed process with a sinusoidal signal having constant amplitude and controlled frequency and develops two auxiliary rectangular signals, the first one synchronized with the system input and the second one with a delay of quarter of the sinusoidal period. The process output signal is applied to two relays, controlled by these rectangular signals. The relay's outputs are conducted to low pass filters, whose outputs represents the real and imaginary parts of the frequency response, multiplied by proper constants. Despite the simplicity of the proposed method, the results present good accuracy compared with theoretical results of frequency analysis. The possible application areas are: system identification; analysis and design in industrial robotics, military equipments, aerospace; evaluation of audio devices, etc.



RO.15.	
Title EN	Magnetic Gear With Transmission Ratio in Steps
Authors	FODOREAN Daniel
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application No. A/00869/17.11.2014
Description EN	For conventional high-power gears, getting a high transmission ratio (1/16 for example) can only be achieved by linking (cascading) multiple gears; this involves an increased volume and weight, and consequently a decrease of the overall power density and efficiency for the transmission. The present invention, the magnetic gear (MG) with transmission ratio in steps, proposes a light and more compact high transmission ratio gear, with improved power density and efficiency. The variation of the transmission ratio can be obtained through guiding the outside-supplementary ferromagnetic poles (of different levels – L2, L3, L4) within the active parts of the MG (having the L1 base-level ferromagnetic poles). This invention can be adapted for any configuration of MGs. Application: Electric vehicles, Wind/hydro-power generation

Class no.



RO.16.

Title EN	Method and laparoscopic instrument for accurate position identification of colon tumour
Authors	Bogdan Mocan, Vasile Bintintan
Institution	Technical University of Cluj-Napoca & "Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca
Patent no.	Patent application No. 20604/19.09.2014
Description EN	The invention relates to a method and a laparoscopic instrument which facilitates the accurate position of a tumor in the colon tract in the abdominal laparoscopic surgery and also with

possible applications in open surgery. Precise location of a rectal tumor is required to decide the appropriate line of distal resection but current methods like bimanual palpation is approximatively and very subjective, lacking the needed "surgical" precision.

This invention and the method should be used solely by the surgeon, eliminating the need for additional personnel and precise timing (like endoscopic dying); it should also be precise, reliable and repetitive.

The principles for precise identification of tumor location is that the tumor will be made "visible" for the laparoscopic instrument by placing sensing trackers close to its margins. Thus, during preoperative phase a colonoscopy is performed to locate the tumor in the colon tract and marking of its upper and lower poles using tumor demarcation elements (metal clips), elements that are not mobile and retain their position in the colon for a period 3 to7 days.

In the surgical phase, the laparoscopic instrument will enter through one of the trocars already used for tumor dissection and by scanning the colon or rectum area where we estimate that the tumor is, we accurately identify the exact location of the upper and lower pole of the tumor by identifying the sensing trackers already mounted.

Applications: abdominal laparoscopic surgery; open surgery; thoracoscopic approach for identifying accurate position of a tumor in the colon tract.

Class no.



Fig 1. Schematic representation of the invention:

1. sensing element, 2. long stalk (36 cm) for use in laparoscopic surgery, 3. visual signal for stand-by position, 4. visual signal when tumor found, 5. module for command and for the energy source, 6. display, 7. ergonomic area for instrument holding, 8. metalic cover for the command and energy source module, 9. cover, 10. loud-

speaker

NATIONAL

RO.17. Sound absorbent composite material and obtaining Title EN process Authors Tiuc Ancuta Elena; Rusu Tiberiu; Nemes Ovidiu **Technical University of Cluj-Napoca** Institution Patent no. Patent application No. a 2013 00336/30.04.2013 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 Description According to the invention the process consists in EN 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 7

Class no





Class no.



RO.20.	
Title EN	Internal Combustion Rotary Engine
Authors	Cornel CIUPAN, Mihai CIUPAN, Emilia CIUPAN
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application No. EP13153780/03.02.2013
	The present invention solves the technical problems by
	developing a simple and efficient internal combustion rotary
	engine, with low vibration levels, that can operate efficiently at
	speeds over 10.000 rpm. providing a power-to-weight ratio
	higher than that of all known engines and that can be designed
	and manufactured for a wide range of power and applications.
	The invention describes an internal combustion rotary engine
	designed for the operation of vehicles or certain tools.
	machinery, and equipment.
	Internal combustion rotary engine comprising of a volumetric
Description	blade rotary compressor (1), a volumetric blade rotary engine
EN	(2) consisting of a housing (12), which holds rotor (13), which
	is equipped with some slots (13a) on which blades (14) are
	mounted Housing (12) is built inside with a complex bore
	consists of two cylindrical bore (12a), (12b), concentric with
	rotor (13). The compressed air or mixed fuel is taken in by the
	constant volume chambers (a0) and (b0) through the engine
	supply channel (AM) located in the secondary bore (12b) area
	The constant volume chambers (a0) and (b0) go to the ignition
	channel (I) the ignited gas acting upon the blades and thus
	produces useful work.
	r

Class no. 2. Energy and sustainable development



RO.21.	
Title EN	High power radiofrequency generator, used in cancer treatment study
Authors	Dan Pantis
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application No. A/10031/2014
	High power radiofrequency generator (up to 3150 V/m), in
Description	5-25 MHz band, destinated to study the effects of
ĒŇ	electromagnetic field on tumor cells, with or without
	nanoparticles (functionalised carbon nanotubes)
Class no.	5

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

RO.22.	
Title EN	Mesenchymal stem cells derived from adipose tissue seeded on 3D printed polylactic acid scaffold for osteoregeneration
Authors	Ilea Aranka ¹ , Sorițău Olga ² , Virág Piroska ² , Fischer Eva ² , Boșca Bianca ³ , Cenariu Mihai ⁴ , Peștean Cosmin ⁵ , Codea Răzvan ⁵ , Popa Cătălin ⁶ , Buhățel Dan ¹ , Țiriac Mihai ¹ , Câmpian Radu Septimiu ¹ ¹ UMF Clui-Napoca, Faculty of Dentistry, Department of
	Oral Rehabilitation, Oral Health and Dental Office
	Management
	² IOCN, Laboratory of Radiotherapy, Radiobiology and
	Tumor biology
	³ UMF Cluj-Napoca, Faculty of Medicine, Department of
Institution	Histology
monution	⁴ USAMV, Faculty of Veterinary Medicine, Department of
	Napoca
	⁵ USAMV. Faculty of Veterinary Medicine. Department of
	Anaesthesiology and Resuscitation, Cluj-Napoca
	⁶ UTCN, Faculty of Materials Engineering and the
	Environment, Department of Materials Science and
Patent no	-
i atent no.	Abstract
	Mesenchyme stem cells derived from adipose tissue (ADSCs) can be differentiated into various tissues such as bone, cartilage or nerve tissue. Given that ADSCs can be easily isolated from the adipose tissue and quickly grown in the laboratory, they represents a easy source for the
Description FN	regeneration of bone in the area of oro-maxillo-facial
E1N	they need to be differentiated <i>in vitro</i> , under growth factors
	actions, like BMP ₂ and /or TGF- β_1 . The three-dimensional
	growth of ADSCs was ensured by a polylactic acid scaffold
	(PLA), 3D printed as a dental root form (see Fig. 1). In order
	PKH26 fluorescence (see Fig 2) ADSCs were grown
	NATIONAL

properly both the scaffold surface and in the internal network of channels. This system formed by ADSCs and the PLA scaffold was implanted in postextractional alveoli of 6 Vietnamese pigs, and after that was monitored bone regeneration compared to control socket.

Applications

The purpose of this study is to preserve the postextractional socket dimensions as close as possible to the previous. The clinical application is the possibility of having the time of tooth extraction the patient's own ADSCs, grown on a scaffold of PLA, printed as the tooth root form like which will be extracted (previously achieving a CBCT examination).

Advantages

Implantation of the patient's own mesenchymal stem cell. The possibility of applying ADSCs-scaffold system immediately after extraction.

Source of stem cells is easy to be harvested, without leaving defects of the donor bed.

Class no.



University of Craiova

RO.23.	
Title EN	Contributions on the knee endoprosthesis design and optimisation
Authors	Dan Calafeteanu, Ph.D student; Daniela Tarnita, prof. coordinator,
Institution	University of Craiova
Patent no.	-
Description EN	Stating from the virtual model of the human knee joint, and from classical knee prosthesis, often used in total knee arthroplasty, we developed three-dimensional models of prosthetic components: femoral component, tibial component and polyethylene insert. Using Ansys Workbench 15.07 software, the stress and displacements maps are obtained for healthy knee, for knee joint affected by osteoarthritis and for the analyzed knee-prosthesis assemblies. Two loading force are considered: 800N and 2400N. For each loading force, five cases of varus tilt are considered. For each of these prosthesis-knee assemblies, two cases were considered: an antero-posterior slope of 0 ⁰ and 5 ⁰ , respectively. The Finite Element Method is used to obtain the diagrams and the maximum values of von Mises stress and displacements. The findings of this study suggest that the tibial component inclination of 5 ^o is favourable. The main advantage of the numerical simulations and FEM analysis consists in the fact they can be done in order to evaluate the biomechanical behaviour of human joints without an invasive intervention. A finite element analysis of the normal and prosthetic knee model will help us to develop an improved device for rehabilitation movements of patients suffering diseases. For future work we'll propose to use the parameterized virtual models of the knee prosthesis to perform changes in their shapes and dimensions in order to optimize the implant and improve the range of movement and, generally, the biomechanics of the prosthetic knee. Applications: Orthopedics, Knee endoproshesis, knee rehabilitation Advantages: Optimizing of the knee endoprosthesis, Improving the knee rehabilitation and the knee biomechanics 4



Fig. 1. a) Human knee joint with prosthesis –Local view of node and element network; b) Isometric view of prosthesis mesh network



Fig. 2. Von Mises stress (Top view – up line; Bottom view – down line) in polyethylene insert (A), tibial prosthesis (B) and femoral prosthesis (C) for knee joint-prosthesis assembly for an angle of 176°- with 5° antero-posterior slope.

"Alexandru Ioan Cuza" University of Iasi

RO.24.	
Title EN	New polifunctional nitrogen derivatives (heterocycles / podants) as smart versatile building blocks for multiple tasks
Authors	Dorina Mantu, Vasilichia Antoci, Roxana Puscasu, Ionel.I. Mangalagiu [*]
Institution	"Al.I.Cuza" University of Iasi, Romania
Description EN	Synthesis of new nitrogen podants type having in molecule only a π -reach nitrogen heterocycle connected via different spacers with the receptor (anthracene) is presented. The ability of podants to function as abamesensor logic actes
EIN	(fluorophore-spacer-fluorophore-spacer-receptor systems) and antimicrobial agents was tested.
Class	Innovative Research
	$ \begin{array}{c} \vdots \\ \downarrow \\ \downarrow \\ \downarrow \\ \oplus \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$

No fluorescence

Salts

υv

υv

PET; not allowed

violet Fluorescence

Ylides

RO.25.	
Title EN	A theoretical framework regarding the assessment of the Environmental Fraud Risk
Authors	Ioan-Bogdan Robu ¹ , Ionut Viorel Herghiligiu ²
Institution	¹ "Alexandru Ioan Cuza" University of Iasi ² "Gheorghe Asachi" Technical University of Iasi
Description EN	Sustainable development is based on ensuring the harmonization of relations between the three main parts: the economic, the social and the environment. Prioritization in obtaining benefits from the economic and social plans has led to "imbalances" within organizations. Such imbalances have allowed the manifestation of disturbing activities regarding the environment protection and the occurrence of environmental frauds. The purpose of this project idea is to assess and analysis the environmental fraud risk based on specific financial, social and environmental factors that can be classified into three major categories, determinants of fraud risk: pressures, opportunities and NATIONAL
	238

rationalization.

The objective of this project idea is the foundation of a theoretical model of environmental fraud risk, useful for different categories of stakeholders (organizations, capital providers, regulating and monitoring agencies, public and NGOs) in the assessment and analysis of this type of risk. Once the determinants of environmental fraud risk have been identified and quantified, the project aims at obtaining **a profile of an organization that is subjected to environmental fraud**.

To obtain the classification models of organizations in different environmental fraud risk groups, discriminant analysis is proposed for using, based on fraud determinants. When estimating the environmental fraud risk in an organization, at a certain moment and time, logistic regression analysis and survival analysis based on Cox regression models are used within organizations.

Class

Innovative Research



RO.26. Title EN

N HELCOMETER BAR WITH EXTENSOR SYSTEM

Authors Hagiu Bogdan Alexandru, Oprean Alexandru, Radu Iacob,

Adrian Cojocaru, Ionuț Corneliu Vizitiu

Institution Alexandru Ioan Cuza University of Iasi

Patent no. Pending

The invention relates to a helcometer bar with extensor system that can be used in the fitness and rehabilitation exercises for musculo-skeletal disorders. The object of the invention consists of two types of helcometer bar with extensor system, in wich the bar used has two sliding handles, possibly ergonomically shaped. The handles are connected by two extension springs keep them at a minimum distance of the center bar in the variant designed for vertical helcometer, or fixing at the extremities to the variant intended for horizontally helcometer.

Class

13

RO.27.	
Title EN	Forensic check of travel documents
Authors	Daniel POTOLINCĂ ¹ , Ion SANDU ² , Cristi Ioan NEGRU ³ , Viorica VASILACHE ² , Gheorghe POPA ⁴
Institution	 ¹⁾ Alexandru Ioan Cuza University of Iasi, Faculty of Geography and Geology, Boulevard Carol I nr. 20A, Corp B, 700505-RO, Iasi, Romania; ²⁾ Alexandru Ioan Cuza University of Iasi, Arheoinvest Interdisciplinary Platform, 22 Boulevard Carol I, Corp G- Demisol, 700506, Iasi, Romania; ³⁾ Iasi Teritorial Inspectorate of Border Police, 3-5 George Cojbuc str., Iasi, Romania; ⁴⁾ Alexandru Ioan Cuza Police Academy, Str Privighetorilor, Nr. 1A, Sector 1, Cod 014031, Bucharest, Romania.
Description EN Class	The research focuses on the counterfeiting of travel documents by identifying the safety elements. In this purpose, there are presented both new materials and manufacturing procedures of theses documents and the actual procedures of counterfeiting. There are also presented the specific methods of identifying and are analyzed some case studies faced to their afferent specimens.
DO 27 DIG	
RO.27.BIS	
Title EN	biostructural alteration of enzyme activity
Authors	Olga Pintilie ¹ , Marius Zaharia ² , Adelina Cosma ² , Gabi Drochioiu ² , Viorica Vasilache ^{1,3} , Ion Sandu ^{1,3*} ¹ Department of Geography and Geology, Al. I. Cuza
Institution	University of Iaşi, 11 Carol I, Iasi-700506, Romania ² Department of Chemistry, Al. I. Cuza University of Iasi, 11 Carol I, Iasi 700506, Romania, ³ Alexandru Ioan Cuza University of Iasi, ARHEOINVEST Interdisciplinary Platform, Laboratory of Scientific Investigation and Conservation of Cultural Heritage, 22 Carol LPhy Corp G, 700506, Iagi Pomania
Description EN	One of the main global issues today is represented by the need of protecting the environment and human health. This requires prevention and monitoring the pollutant contamination of our environment and alimentary products

Most pesticides with toxic potential present multiple harmful effects, affecting most tissues and organs and interfering with the enzymatic processes that ensure a proper organism Toxicity and metabolizing functioning. are strongly dependent on diet factors, like the chemical composition of aliments and the protein source nature. This work provides the enzyme activity modification, of seed plant during the irrational use of pesticides that can cause the extinct of some plant species and in consequence the disorder of the equilibrium between flora and fauna. In consequence, this study investigates the effect of dinitrophenolic pesticides on the viability of plants demonstrated by enzymatic activity studies

Acknowledgments: The financial support within the Partnership Project Metafore PN-II-PT-PCCA-2013-4-1149 (Contract 107/2014) is gratefully acknowledged. Olga Pintilie is grateful to the strategic grant POSDRU/159/1.5/S/133652.

Class

14

"Gheorghe Asachi" Technical University of Iasi

RO.28.	
Title EN	Method for separation of methylbenzylamine
Authors	Dan Caşcaval ¹ , Anca Irina Galaction ² , Lenuța Kloetzer ¹ , Alexandra Cristina Blaga ¹
Institution	¹ , Gheorghe Asachi" Technical University of Iasi ² "Grigore T. Popa" University of Medicine and Pharmacy Iasi
Patent No. Description EN	Patent application No. A/00701/19.09.2014 Methylbenzylamine (MBA) is a chiral amine that represents a key building block for many pharmaceutical and cosmetic compounds having also applications in proteomics and genomics research field. Industrial production of methylbenzylamine is based on chemical synthesis but recent studies focused on microbial and enzymatic production. The most efficient method for MBA production is represented by enzymatic processes using transaminases which allow the production of (S) - MBA either by direct asymmetric synthesis from pro-chiral ketones or by kinetic resolution of racemic amines. The patent presents a method for separation of methylbenzylamine from aqueous phases resulted from chemical or enzymatic synthesis. The method consists on reactive extraction of MBA from aqueous phase by using an organic phase consisted by h-heptane as solvent and 20 g/l di(2-ethylhexyl)phosphoric acid (D2EHPA) as extractant. MBA is further reextracted with a solution of hydrochloric acid. The yield obtained for MBA separation from aqueous phase was 97 - 98.5 % highlighting the increase of the separation cost.
Class no.	9

RO.29.	
Title EN	Method For Selective Separation Of Cinnamic Acid
Authors	Dan Caşcaval ¹ , Anca Irina Galaction ² , Alexandra Cristina Blaga ¹
Institution	¹ , Gheorghe Asachi" Technical University of Iasi ² "Grigore T. Popa" University of Medicine and Pharmacy Iasi
Patent No. Description	RO 127015 B1/2014 The cinnamic acid, also known as phenylacrylic acid, is a

NATIONAL

EN natural compound derived from phenylalanine, the main vegetable sources being cinnamon, resin of Liquidambar tree, storax, balsam of tolu, balsam of Peru. This acid, as well as its derivatives, constitutes important metabolic blocks in the formation of lignins 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 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. 4,9

Class no.

RO.30.	
Title EN	Equipment for Extraction and Transport through Liquid Membranes (Pertraction)
Authors	Anca Irina Galaction ¹ , Dan Caşcaval ² , Lenuța Kloetzer ² , Alexandra Tucaliuc ² ¹ "Grigore T. Popa" University of Medicine and Pharmacy of
Institution	Iași ² "Gheorghe Asachi" Technical University of Iasi
Patent No.	RO119690 B1/2005 The equipment could be used for separation of the bioactive compounds, with pronounced chemical and thermal lability, by extraction and transport through liquid membranes, without or with addition of a carrier (free or facilitated pertraction). This equipment does not require the use of tensides for stabilizing the
Description EN	liquid membrane, thus increasing the purity of the pertracted compounds. The pertraction equipment allows obtaining and easily maintaining the solvent layer between the two aqueous phases (free liquid membrane) and consists on a U-shaped glass pipe with three compartments for feed and stripping phases, and for liquid membrane, respectively.
	ΝΑΤΙΟΝΑΙ

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. 5.9

Class no.

RO.31.	
Title EN	Method For Separation Of Acetophenone
Authors	Anca-Irina Galaction ¹ , Dan Cascaval ² , Madalina Postaru ¹ , Alexandra Cristina Blaga ²
Institution	Iasi ² "Gheorghe Asachi" Technical University of Iasi
Patent No.	Patent demand No. A/00711/22.09.2014

Acetophenone is an aromatic ketone having important applications in chemical industry (as raw material for production of resins used in adhesives, inks, and coating manufacture), food and perfumery industries (as precursor of cherry, jasmine, almond or strawberry fragrances), pharmaceuticals production, and as reagent for various synthesis at laboratory scale. For removing acetophenone from the fermentation, enzymatic or chemical synthesis media, several methods have been tested: vacuum distillation, physical extraction, separation through membranes or hollow-fiber membranes, selective inclusion in β -cvclodextrin, and capillary electrophoresis.

Description EN

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

> According to the invention, this method consists on the extraction of acetophenone from aqueous solution with n-heptane containing 20 g/l lauryl tri-alkyl-methylamine. Acetophenone is recovered from the obtained extract by re-extraction with a solution of sodium hydroxide. Finally, the overall efficiency of separation of acetophenone related to the initial aqueous solution is 93 to 98.5%.

9

Class no.

RO.32.

Title EN H-CARE project promoting the food supplements in health care sector Gabriela Ciobanu Simona Barna Constantin Luca Maria Hari

Authors Gabriela Ciobanu, Simona Barna, Constantin Luca, Maria Harja and Anca Mihaela Mocanu

Institution "Gheorghe Asachi" Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection

The project "Launching of Sector Skills Alliance for Training & Apprenticeship of Health Care and Food Supplements Salespersons – H-CARE" no. 540170-LLP-1-2013-1-TR-LEONARDO-LM is funding from the European Commission -Lifelong Learning Programme. The project aims to educate in the field of food supplements. Among the food supplements that help in bone regeneration are distinguish products based on hydroxyapatite. The main purpose of the research in this study is Description to obtain calcium hydroxyapatite with applications as food EN supplement in health care sector. Synthesis of stoichiometric hydroxyapatite, as nanocrystalline powder was performed by precipitation reactions from solution, using different sources of calcium and phosphorus. To characterize structural and textural apatite materials obtained, the physical and chemical methods were used (i.e., X-ray diffraction (XRD) and scanning electron microscopy (SEM) coupled with EDX spectroscopy (energy dispersive X-ray spectroscopy).

Class no. Innovative Research

RO.33.

Title EN	A theoretical framework regarding the Environmental management system as organizational complex process
Authors	Ionut Viorel HERGHILIGIU, Luminita Mihaela LUPU
Institution	"Gheorghe Asachi" Technical University of Iasi
Description EN	Organizations' preoccupations and commitment in the environmental issues have become a real variable in all the scenarios of the present competitive context. Thus, the Environmental management system (EMS) implementation/ integration represents an important "strategic move" which can bring along benefits on average and long term, and can become that advantage leverage in front of the rivalry. Taking also into account the organizations complexity and diversity, it can be certainly state that the "synergic relation" NATIONAL

between an organization and the EMS will be a crucial element in its future development.

Therefore the improvement of understanding the EMS implementation/ integration should be a priority for the organizational managers, given that this process brings benefits to the organization.

So the **EMS approach as a complex process** represents an **original** demarche - that **doesn't exist in the specialty literature** - of understanding in a simple, unified and synthetic manner this organizational change phenomenon. Therefore as a synthesis of this work the EMS it can be considered as **a complex process composed from a system of activities/ practices identified in a holistic and systematic manner so that it can be monitored, evaluated and analyzed continuously to improve the organization environmental performances**. In the same context, this complex process that mediates the transformation of inputs (human resources, equipment, materials, logistics resources, financial resources, and so on) into outputs (improved environmental performances) is determined by the specific organizational barriers that influence transformations at the existing subsystems levels.

Class no. Innovative Research

RO.34.

Title ENAutomation and control system for the electrospinning
process

Authors Valentin Buliga

Institution Technical University "Gheorghe Asachi" of Iasi – Romania The automation and control system of the electrospinning process implies two components: the mechanical equipment (hardware) and the software application through which the commands are sent to the hardware.

The electrospinning process implies a number of parameters which modify and optimize the properties of the obtained nanofibers.

Descriptionnanofibers.ENThe parameters that can be read and/or controlled through the
system can be divided into three classes as follows:

• ambient parameters: temperature and humidity in the processing chamber;

• process parameters: applied voltage, solution flow rate, distance between the capillary and collector (horizontal movement), movement speed of the nozzle, speed and position

of the collector (rotation and vertical movement).

By controlling the horizontal, vertical and rotate movements, the aim is to obtain a 3D movement to optimize the deposition of the nanofiber layers.

Using the computer by attaching the hardware equipment and installing the software application, the electrospinning process can be automated and controlled by controlling the parameters mentioned above.

Class no.



RO.35.

Title ENInfluence of the addition of the nanoweb layer in comfort of
protective clothing

Authors Ancuta – Vasilica APETREI

- Institution Technical University "Gheorghe Asachi" of Iasi – Romania Today the design of the dentist gowns for daily use takes into consideration aspects such as protection, comfort and The main purpose of the fabric used for appearance. manufacturing the dentist gown is to prevent the penetration of microbes and liquids (blood and saliva included), as well as providing the required comfort (the garment should allow freedom of movement, prevent heat build-up and create an aseptic barrier). By using the electrospinning process a nanofiber Description layer was attached to the fabric, thus enabling us to improve the EN resistance of the gowns to external contamination factors. The main objective is to use the obtained samples in creating a new fabric for dentist gowns. The gown produced will address protection issues and, at the same time, guarantee comfort according to the established standards and therefore create a blouse that is more appropriate to the needs of the final customer.
- Class no. Innovative Research



RO.36.	
Title EN	Double Wind Turbine
Authors	Alexandru Stanila, Oana Neculai, Ionut-Ovidiu Toma, Alexandru Vlad, Buterchi Marius, David Robert, Sîsîiac Ionuț, Adrian-Georgian Neculai, Gina Cuzuban
Institution	Faculty of Civil Engineering and Building Services, Technical University "Gheorghe Asachi" of Iasi
Patent no.	in progress
Description EN	We present you the execution concept of a double wind turbine that exploits low speed air currents. The base principle is represented by the wind concentrator with double direction. This concentrator increases the rotation speed of the wind turbine by 6 to 10 times.
Class no.	2



RO.37.	
Title EN	Savior Passive Dome
	Alexandru Stanila, Oana Neculai, Ana-Maria Toma, Alexandru
Authors	Vlad, Mocanu Basalic Cosmin, Mocanu Basalic Elena,
	Procovanu Marinela, Siritanu Adrian

Institution Faculty of Civil Engineering and Building Services , Technical University "Gheorghe Asachi" of Iasi

Patent no. in progress

Natural disasters occur all over the world and often without warning. On the basis of each aid and rescue activities, regardless of the type of activity - medical aid, providing shelter, meals, organizing the evacuation of people affected by natural disasters - is a shelter.

"Savior Passive Dome" is a concept of portable building, which can be installed in less than 6 hours, and able to cover all the needs of these way situations, from a command center, or a mobile hospital, to temporary shelter and even dining room.

Description Key features of the dome:

- Base made of carbon fiber reinforced polymers;
 - Stainless steel helical anchors that allow anchoring the dome in any field;
 - The outer membrane of tarpaulin, for waterproofing and UV protection;
 - Transport and easy assembly due to the easily assembled "slices".
 - Velcro connectors for quick and safe assemblage of the walls;
 - Walls filled with polyurethane foam for insulation and reinforcement structure.

Class no.

DO 20

EN



KU.30.	
Title EN	Hotel Eulion
	Alexandru Stanila, Oana Neculai, Ana-Maria Toma, Alexandru
Authors	Vlad, Adrian-Georgian Neculai, Balan Anca Elena, Adomnita
	Nicu, Grigore Alis Mihaela, Amariei Gabriel
Institution	Faculty of Civil Engineering and Building Services ,

Technical University "Gheorghe Asachi" of Iasi

Patent no.

in progress

Description EN

Class no.

Hotel Eulion is a special construction, whose form is designed to direct and focus air flow in mountain areas, on a wind power plant with magnetic levitation. The wind turbine is located in a functional floor. The purpose of the invention is a passive mountain hotel for extreme sports.



RO.39. Title EN Ideal House Alexandru Stanila, Oana Neculai, Ionut-Ovidiu Toma, Adrian-Georgian Neculai, Alexandru Vlad, Malina Florina Nemut, Authors Raluca Fecioru, Branoaea Marius, Boureanu Alexis Teodor, Nica Geanina Mihaela Faculty of Civil Engineering and Building Services, Institution Technical University "Gheorghe Asachi" of Iasi Patent no. in progress The invention represents a universal modulated space, with an area of minimum 45sqm, which expands from a piece that is transportable, in an either auto, railway or maritime manner. The advantages of this invention come from its structural concept: fast mounting / demounting time, cheap price and general reduced costs. In addition, all used materials can be Description completely recuperated after being used for constructing this EN modulated space. It can be used for comm34cial spaces, banks, renting facilities, site deposits, cantinas, restaurants and also for individual dwellings for emergency situations, holyday houses, provisory or permanent houses.

Class no.

7

RO.40.	
Title EN	Structural Modules
	Alexandru Stanila, Oana Neculai, Ionut-Ovidiu Toma,
Authors	Alexandru Vlad, Raluca Fecioru, Florina Malina Nemut, Miron
	Adrian Maricel, Prisacaru Andrei, Negura Iulian
Institution	Faculty of Civil Engineering and Building Services ,
	Technical University "Gheorghe Asachi" of Iasi
Patent no.	in progress
Description EN	The invention is based on the concept of realizing structural
	prefab modules that can be used for fast and efficient execution
	of multiple-floor reinforced concrete buildings.
	The advantages of this invention come from its realization
	concept, by creating them in factories (which makes them
	precise and well-built) and then assembling them on site. There
	will be enormous decreases in man work on the site, leading to
	lower costs per square meter, as compared to classical
	technologies.

Class no.



RO.41.

FlexyBrick - innovative infill solution for reinforced Title EN concrete frame structures

Authors Vladut Iftode, Ioana Olteanu

Faculty of Civil Engineering and Building Services, Institution Technical University "Gheorghe Asachi" of Iaşi, Romania Applied for patent no. A00575/29.07.2014 Patent no.

Reinforced concrete frame structures are used all around the world as flexible structural systems. They are filled with several Description materials which bring additional stiffness to the structure. EN Flexybrick is a new concept for the infill solution made of

polyurethane. These bricks are light-weight, have increase thermal insulation characteristics and if properly reinforced also has increased mechanical characteristics. Several samples of Flexybrick were compared with masonry and autoclaved concrete in compressions and 3 point bending. The results were similar. Another important advantage is represented by their low price, mainly obtained from the necessary labour reduction.

Class no.



RO.42.

Title ENPhysical-Structural characterization of AISI 321 Steel
Subjected to Thermal Fatigue

Authors Mirabela Georgiana Minciună, Petrică Vizureanu, Dragoş Cristian Achiței

Institution Gheorghe Asachi Technical University from Iasi

Faculty of Materials Science and Engineering

This study presents aspects concerning to the structural modifications induced by temperature variations for AISI 321 steel.

The modifications of structure and proprieties can be induced by heat treatments applied to semi-products before or after the obtaining of final parts, but also by heating at regimes which respect the exploitation conditions of part.

Description EN In the experiments, it is applied quenching to put into solution, with modification of final treatment temperature and maintaining time, aiming the dissolution of complex carbides and in this mode an easy processing.

> The treatment parameters were chosen, after the determination of alloying elements by AISI 321 samples, by optic spectrometry.

> The dilatometric analysis aimed to highlight the structural modifications, specific to thermal fatigue phenomenon, due to temperatures variations.

Class no.

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

RO.43. Study regarding the effect of different sport drinks on Title EN dental enamel Cosmin Arnauteanu, Sorin Andrian, Gianina Iovan, Andrei Authors Georgescu, Simona Stoleriu "Gr.T.Popa" University of Medicine and Pharmacy, Institution **Faculty of Dental Medicine** The aim of the study was to compare the surface morphology and the relative variation of calcium and phosphorus ions concentration in enamel after the contact with different commercial sport drinks. In the study were selected 14 healthy premolars that were cut in two halves. On each half a 3x3 mm enamel window was preserved. The sections were split in 4 groups. In control group 7 samples were immersed in artificial saliva (AFNOR NF S90-701). In the three study groups the samples were immersed in Gatorade Citron (Pepsi Cola Co.), 5-hour Energy (Living Essentials), Powerade Chery (Coca Cola Co.) for four times during an hour. Description fourteen days. The samples were analyzed using a scanning EN electron microscope and an EDX detector. SEM evaluation showed erosion aspects of enamel after immersion in the tested beverages. The highest relative variation of calcium and phosphorus ions concentration was recorded after the samples immersion in Gatorade (10% and 8% ions loss), followed by Powerade (9% and 6% ions loss) and 5-hour Energy (5% and 3% ions loss). All the three sport drinks tested in this study showed erosive effect on dental enamel. Gatorade was the most aggressive beverage, followed by Powerade and 5-hour Energy.

Class

Innovative Research - 4

RO.44.

Title EN Authors Institution

Computerized systems for the planning of preimplantary and implantary surgical preparation (laser vs. classic) Doriana Agop Forna, Eugenia Popescu

"Gr.T.Popa" University of Medicine and Pharmacy

According to the ADA Council on Scientific Affairs and the McGill Consensus Statement, the implantary therapy occupies an important place in the today medical practice, which represents a standard of care, especially in the clinical situations related to the therapy of the accelerated bone resorption.

The modern implanto-prosthetic rehabilitation is governed by the computerised planning, characterized by a certain number of advantages compared to the classical therapy. The 3D images that are given by the computer provide us with an overview of great finesse of the radiological scanning and of the remaining teeth. Applying virtual implants on a 3D image, the clinician has the opportunity to determine the need for bone augumentation. Also it is possible to achieve the translucent 3D image with the possibility of rotation in all directions. Working with the 3D images the clinician may decide to change the angle of the preoperative implant in order to prevent the interference with an important anatomical structure.

The treatment planning process includes the following steps: determining the accuracy of CT study; the film's setup verification in order to confirm that the axial image is parallel to the occlusal plan; the localization of the emergency axis and the implant placement; watching the cross-section implants (the implant should be placed in the transverse image in order to check the position of the platform, the restorative evaluation, the console and the emergency profile); verification of the implant parallelism and of the adjacent teeth using the panoramic image; watching the implants and the scan devices in 3D.

In this way the parallelism of implants is confirmed, the vital structures are evaluated and the fixing screws are inserted where necessary.

This PhD thesis aims: to develop a practical guide on how to use the computerized 3D planning during the surgical preimplantary and implantary training. These in conjunction with the use of laser or classical therapies gives a certain note originality and an important practical impact. The identification of specific therapeutic algorithm of surgical perimplantary and implantary training according to the particularity of each clinical case represents the novelty items in carrying out these studies.

The objectives of the thesis are materialized by: Evaluating the incidence and prevalence of prosthetic and surgical

Description EN

> NATIONAL 254

pathology which benefits of implanto-prosthetic rehabilitation; computerized planning of perimplantary surgical preparations; Computerized planning of the implantary surgical preparations; the Individualization of the laser therapy in preimplantary and implantary stages: the Reduction of the errors' occurrence rate in the implanto-prosthetic rehabilitation through developing therapeutic protocols and preventive strategies developed in this research. The developed studies will be relevant starting points in the practical materialization of the computerised planning systems introduction in the preimplantary and implantary surgical training. planning that will give a high degree of accuracy both for the preparation of the treatment plan as well as for carrying out its therapeutic algorithm.

An important practical impact will have the individualized therapeutic protocols in agreement with the particularity of the clinical case, with reconstructive techniques. The computerized planning offers the possibility of quantification of each parameter taken into account and also of the choosing of the election solution reducing the rate of malpractice in the practical work.

Class Innovative Research

RO.45.

Title ENLASERTERAPHY IN RELAXATION OF MUSCLE
OF STOMATOGNATIC SYSTEM
LAURA CHECHERIȚĂ, OVIDIU STAMATIN
Gr.T. Popa Medicine and Pharmacy University of Iasi

Description EN The treatment of stomatognathic system dysfunctions encompasses a complex of therapeutic methods, both medicinal, and non-medicinal, which complete one another. The medicinal myorelaxing treatment has as selection indication the central myorelaxants that produce the lowering of the tonus by the inhibiting action of intercalary mesencephalic neuron. The lasertheraphy is more and more frequent used in the treatment of stomatognathic system dysfunctions, in order to obtain a muscular pronounced relaxation to ensure the normal joint functionality and to educate the normal mandible movements.

Class Innovative Research - 4

RO.46.	
Title EN	Patient monitoring-candidate for dental implant
Authors	Florin Manuel Rosu, Norina Consuela Forna
Title EN Authors Institution Description EN	 Patient monitoring-candidate for dental implant Florin Manuel Rosu, Norina Consuela Forna Gr.T. Popa Medicine and Pharmacy University of Iasi Needs of dental surgery always faced with the problem of combating pain during surgery and in the postoperative period. Pain, despite the beneficial role of signal against the threat of injury, in excessive intensity is a feared enemy that needs to be fought. In practice in the field of oral implantology and reconstructive techniques, long time inhalosedation occupies a primordial role, taking advantage of simple handling and low risk for both patient and doctor, which made it a common maneuver . Originality aspects of the study concerns the close link between general medicine and dental implant candidate for patient monitoring involving overall preparation of the body, general anesthesia, monitoring and management of these complex integrative therapeutic acts. The main purpose is the avoidance of risk maneuvers during the course of implantation, prefaced their execution in different situations of impaired general anesthesia in accordance with the type of reconstruction of the prosthetic field and implantation procedures; Quantification of clinical and laboratory outcomes in patients implanted in agreement with the general health.
	of the Faculty of Dental Medicine of Iasi, social cases. Starting from a standard study applicable to any type of general intervention, comparing it with oro-maxillo-facial sphere and implantation technique, the choice of general anesthesia is essential. The factors studied are linked to the overall condition of the various disorders which influences the type of anesthesia. Evaluations concern age factor, correlated with immunity and body's response to anesthetics. Confounders and potential errors are represented by patients responding positively to any type of anesthesia, events that may manifest as allerring that can go up to anesthesia hock with
Class	cardiocirculatory and respiratory affectation. Innovative Research - 4

RO.47.	
Title EN	Biomechanical considerations of removable dentures
Authors	Ștefaniu (Caraș) Cibela, Norina Consuela Forna
Institution	Gr.T. Popa Medicine and Pharmacy University of Iasi
Description EN	Support structures for partial prosthesis (teeth, alveolar ridge) are living tissues and are subject to the action of forces. In order to maintain the integrity of these structures, the practitioner should take into account the direction, duration, and frequency of application of forces, as well as the intensity, the magnitude of the force. Bone component to be considered is the bone supporting abutments and the alveolar crest bone covered with mucous. If destructive forces can be minimized, then the support structures will be able to take and transmit force without physiological or pathological changes. For better distribution and uniformity of the forces that develop in the partial denture they can be targeted, distributed and minimized by judicious choice of design, the position of the elements of the prosthesis and occlusion obtaining individualized clinical situations. Studies in practice have an important role in long-term therapeutic success.
Class	Innovative Research - 4

RO.48. Title EN Graft system of implant-prosthetic rehabilitation Authors Institution Description EN

Tătaru Călin Iacob. Norina Consuela Forna Gr.T. Popa Medicine and Pharmacy University of Iasi

Currently, implant procedures increasingly take into account not only the functionality, and aesthetics. In 40% of cases with implants, clinicians include regenerative techniques to rebuild bone and soft tissue. Use of membranes and bone is today one of the standard therapeutic approaches. In the past, alveolar ridge augmentation was mainly based on autologous or allogeneic bone transplants.

Highlights are all anatomical and physiological aspects of normal jaw bone, unaffected by pathological processes (mainly edentulous) and also the opportunity to resolve the atrophy effects by different therapeutic methods (endosseous implants inserted in different clinical situations, modern methods for bone augmentation).

The ideal would be to keep the volume of edentulous alveolar ridge. This ideal can not be achieved in most cases. Very few dentists have the training and equipping or the material in order to achieve this goal. Taking into account the objective conditions and the ability to preserve alveolar bone, there are various ways of edentulous alveolar ridge reconstruction to succeed endosseous implants and restoration of functions. This study aims

individualisation of these systems graft, in a first stage achieved by a forecasting system for graft prosthesis according to the variant chosen. The originality of the study derives from the development of a practical guide of management of grafting, important for practice. Identification of specific therapeutic algorithm in agreement with clinical situation and chosen therapeutic approach of this complex problem.

Class

Innovative Research - 4

RO.49.

Predictability of prosthetic implant treatment success of Title EN edentulous patients

Călin Alexandru, Norina Consuela Forna Authors

Institution Gr.T. Popa Medicine and Pharmacy University of Iasi

Dental implantology has become now widely recognized as a specialty, as a medical profession, as well as a large number of patients benefiting from this therapeutic solution .Achievements in last decades have given implantology, besides continuously scientific improved technical skills. fundamentals on the interrelations of implant between allopathic and humans, and the clinical experience gained through observation and study of patients allowed us to establish the most rigorous criteria regarding Description EN indications and contraindications of implants. We put great emphasis on general contraindications of endosseous implantation. which are very important both on terms of success and therapeutic measure of the patient's life. In this context this study on the predictability of implant prosthetic therapy finds its insertion in order to reduce malpractice cases that have a complex etiology, the results of this research with several levels of education will find this a useful practical guide to success in implant-prosthetic therapy. Innovative Research - 4

Class

RO.50.

Title EN	Study on pre and pro prosthetic preparation for implantation and prosthetic rehabilitation
Authors	Cioloca Holban Catalina, Norina Consuela Forna
Institution	Gr.T. Popa Medicine and Pharmacy University of Iasi
	With the improvement of the general health of the population in countries with a high standard of economic and social development and increasing longevity in the general population, materials with
Description	biomedical applications elicit a strong interest. There is currently an
EŇ	increased demand for materials that can be implanted in the human body. The range of applications is extremely broad, from total prosthesis systems for controlled drug release and tissue regeneration assisted systems.

Any material for surgical implantation in the body should not be toxic to cells in proximity (locally) or systemically. In addition, it is not sufficient that an inert biomaterial in relation to the environment in which it is placed, it must determine a positive response from him. Accelerated generation of extracellular matrix tissue is the result of hard or soft increased cell productivity. If hard tissue implants used are preferred bioactive material which causes bone formation and attachment of the implant to the newly formed bone. The major importance tissue-implant interface have chemical or micro-mechanical phenomena and the relationship between surface morphology and chemical composition.

An important feature is the longevity of the implant. Corrosion and degradation are of great importance especially if they are responsable for the generation of toxic species at the implant site .For example, wear resistant surfaces to be used in situations where it exerts forces responsible for this phenomenon. In addition, any residue which may result from the result of the process of attrition should be non-toxic. There are situations where controlled degradation is a goal. For instance, resorption of inorganic materials enables the controlled release of ionic or molecular species stimulating regeneration of tissue. If the implant material can be resorbed to avoid further surgery to remove it. Organic molecules can also be delivered benefits through degradable matrices. Pre and pro prosthetic preparation for implant application has essential role in the final therapeutic success, these steps are particularly important to be detailed by implementing practical guidelines.

Class

Innovative Research - 4

Title EN	The Identification of the Obesity Risk Factors at Young
	Children
Authors	Laura Mihaela Trandafir
Institution	Gr.T. Popa Medicine and Pharmacy University of Iasi
Description EN	Child obesity is the most common nutritional disease with a continuously increasing prevalence. Given the numerous health risks associated with childhood obesity, the identification of dietary risk factors in early life is very important to prevent the long-term complications. The aim of this study was to identify the risk factors in the first years of life for development of obesity in infants and toddlers. Methods: This study included 32 children (age range from 6 - 36 months), who are selected from all children admitted in our clinic for different diseases in two years. All patients were evaluated for: weight and height at birth, duration of breastfeeding, moment and type of complementary feeding, age at onset of over-nutrition, family history of obesity and behavior feeding, socioeconomic
	NATIONAL

status of parents, daily food intake (protein and caloric). Weight, length, weight-for length, and BMI for age and sex were noted at 6, 12, 18, 24, 30 and 36 months of age.

Results: In the study group 62.5% of patients were boys. 7 patients had a family history of obesity and 3 of them had both parents obese. Breastfeeding was noted in 31.25% of patients. Early diversification was found in 62.5% of cases. Improper diversification (hyper-caloric diet with a lower content in vegetables and fruits) was found in 68.75% of cases.

This study sustains the importance of nutritional screening at the moment of hospitalization for proper identification of overweight or obese children and early nutritional interventions. The formula feeding, early complementary feeding and improper nutrition of infants and toddlers are risk factors for over-nutrition development. It is necessary to educate parents for eating healthy behaviors of children in order to prevent obesity on a long-term.

Keywords: obesity, breastfeeding, children.

Class

Innovative Research - 4

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

RO.52.	
Title EN	New Plant Variety for <i>Phaseolus aureus</i> Roxb. species
Authors	Creola BREZEANU ^{1,2} , Petre Marian BREZEANU ² , Teodor ROBU ¹ (coordinator)
Institution	Sciences and Veterinary Medicine Iaşi; ² Vegetable Research and Development Station Bacau
Patent no.	195/02.04.2015 – Aproval Cerificate for Plant Variety issued by The State Institute for Variety Testing and Registration Early variety
Description EN	 Type of growing – dwarf; Yellow flowers; The pod: length (including style) small size, circular shape in cross section, green at technological maturity, white yellowish at physiological maturity; Seeds - reddish brown seed MMM 91 g; Potential seed yield – 2.0 t ha⁻¹ Resistant to <i>Xanthomonas campestris</i> pv. <i>phaseoli</i> and <i>Colletotrichum lindemuthianum</i>. Suitable to cultivation in organic system thanks to its strong resistance to pathogen attack. Applications Food industry – thanks to its high protein content it can be use as a valuable protein resource. It can be consumed in different ways, similar to common bean but especially as
	 sprouts (germinated seeds) because of its strong antioxidant potential (high content in polyphenols). 1. Environmental protection – significant source of nitrogen, low requirements for cultural inputs.
Class	3



NATIONAL 261

RO.53.	
	The Singularity of Public Relations in the Field of
Title EN	Environmental Protection, Sustainable Development and
	Ecology
Authors	Vasilica Onofrei, Alexandru Dragos Robu
Institution	University of Agricultural Sciences and Veterinary Medicine, Faculty of Agriculture,
Description EN	The relevance and the objectivity of an analysis, no matter the field the object of the research heads for is given by its profoundness and the extent to which factors or elements that determined its evolution are identified. This study focuses on the specific manifestation of public relations in the field of sustainable development, environmental protection and ecology. We will demonstrate the diversity of the application areas of public relations, as well as the necessity of applying public relations in the field of environmental protection, sustainable development and ecology. This system exists and can occur both at a central and a local level, but there is needed a reconsideration, an introduction to the forefront of a new vision of public relations and their application. The environmental agents are called to resize or to center things more precisely so that they regain their full value, so that the role of public relations can gain new values. In the context of a more and more obvious focus of many specialists from various fields on the problem of public relations, in a sort of appreciated and hope-giving frenzy, this study can support even modestly the effort of re- systematization of some points of view or clarify some aspects that are more difficult to get in touch with, sometimes because of objective reasons. Innovative Research

RO.54. Research on the impact of some organic products on the production and quality of some aromatic and medicinal Title EN species from different families (Lamiaceae, Umbeliferae, Asteraceae, Valerianaceae etc.) Vasilica Onofrei, Teodor ROBU Authors University of Agricultural Sciences and Veterinary Medicine, Institution Faculty of Agriculture, The medicinal herbs and the botanical families chosens, delicate and that port and that flavor, have accompanied the man from the most ancient times to the present, having more uses and meanings. Some I had been cured and beautified his body, his mind, as mentioned himself etimologia scientific names of such plants. Of course, their importance is very high in therapy naturista, cosmetic industry, food processing, chimico-pharmaceutics. Finally, I propose the diversity of usability of the species studied, bringing their modest contribution by opening new approach perspectives. For these reasons, volunteer plants as the main source of insurance with raw materials proves insufficient, making it necessary to take in the culture and the spread of certain species of medicinal and aromatic plants and increasing existing surfaces which, either do not meet in volunteer Description plants, or are to be found in small amounts. EN The purpose of research undertaken is the influence of environment-friendly products fertilizers to certain species

of environment-friendly products fertilizers to certain species and medicinal herbs. Achievement of the aim pursued is going to be carried out on the basis of a work plan consistent and supported by a methodology of modern research approach which takes adequate.

Related objectives to achieve the intended purpose are shown below.

1. Establish appropriate technologies area testing for the species concerned

2. Determination of the most efficient fertilizers growing ecological species concerned

3. Carrying out an environment-friendly technologies to suit the conditions in the area of Iasi.

Class Innovative Research

RO.55.	
Title EN	Promoting Breeding of New Mung Bean Genotypes for Sustainable Agriculture and Food Security
Authors	Creola Brezeanu ^{1,2a} , Teodor Robu ^{1b*} , Petre M. Brezeanu ^{2c*} , Silvica Ambarus ^{2d}
Institution	¹ "Ion Ionescu de la Brad" University of Agricultural Sciences and Veterinary Medicine Iași, Faculty of Agriculture, ² Vagetable Research and Development Station Rasau
Description EN Class	² Vegetable Research and Development Station Bacau Improvement and exploitation of species and new varieties are key factors in improving and developing of agriculture and economy in general. New plant varieties with higher nutritional quality and production yields, disease and pest resistant, able to perform in suboptimal conditions (drought, less fertile soil, low intake of fertilizers and pesticides) and suitable to ecological system are increasingly required by farmers and consumers. In our country there are no approved or patented varieties for <i>Phaseolus aureus</i> species. The present work presents the results of a rigorous program designed to improve the species potential use, to obtain genotypes with shorts periods of vegetation and superior qualitative and agronomic features, suitable to perform in conventional and ecological system in our climate condition. Our developed genotypes exhibit superior value, in term of yield, vegetation period, protein content, oil content and sprouting capacity.

RO.56.

Title EN	Pre-breeding for diversification of primary gene pool in order to enhance the genetic pepper resources
	Petre M. BREZEANU ^{Ta} , Creola BREZEANU ^{1,2b*} ,
Authors	Silvica AMBARUS ^{**} , Teodor ROBU ^{**} , Elena Maria DRAGHICI ^{3e}
	¹ Vegetable Research and Development Station Bacau
	² "Ion Ionescu de la Brad" University of Agricultural
Institution	Sciences and Veterinary Medicine Iași, Faculty of Agriculture,
	³ University of Agricultural Sciences and Veterinary
	NATIONAL

Medicine Bucuresti, Faculty of Horticulture,

Exploitation of new and diverse sources of variation is needed for the genetic enhancement of Capsicum annuum L. species. Variety is an important factor of production and has to be in accordance with consumer needs. This study represents a screening of physiology and biochemistry of pepper, particular the Romanian cultivars. The investigated parameters were selected because of their importance in pepper quality, with the final purpose to identify the most valuable resources to be used in breeding as staring material. In this purpose, the study focused on the phenological observation. biometrical measurements and also Description physiological processes that occur in fruits during their EN growth and development, which included the following characteristics: total dry content and water content; content in soluble glucides and titratable acidity, content in β carotene and anthocians, content in ascorbic acid, all parameters investigated are related with fruit quality. The most valuable cultivars, regarding nutritional quality were: Creola, characterised by 7.90% content in dry substance, TA 0.343 mg g⁻¹ malic acid, AA 200.4 mg g⁻¹, and carotenes 23.452 mg g⁻¹; Lider , 7.80 % content in dry substance, TA 0.344 mg g⁻¹ malic acid, AA 200.2 mg g⁻¹ and carotenes 23.47 mg g⁻¹; Cornel content in dry substance 7.40%, TA 0.331 mg g⁻¹, AA 199.2 mg g⁻¹ and carotenes 23.0 mg g⁻¹. Innovative Research Class

RO.57.

Title EN	Studies on the Sources of Pollution from Livestock Activities in the North-East Region
Authors	Alexandru Dragoş ROBU, Ioan GÎLCĂ
Institution	"Ion Ionescu de la Brad" University of Agricultural Sciences and Veterinary Medicine Iasi.
Description EN	An important consequence in any breeding activity is the production of large quantities of waste. These quantities of waste consist in manure from all species of animals, scrap of crops left from feeding, secondary production of crops unconsumed by animals, solid dung and fluid or semi-fluid manure. If these are managed and treated properly, they may be quality fertilizing material for the vegetable crops. Otherwise, in their initial untreated condition, they are negative polluting matter for soil, having also negative effects on crops, besides the positive ones. According to the studies conducted by specialized institutions,

about 80% of livestock farms throughout the country belong to
small agricultural holdings, owned by individuals of family farms.
Because these kind of units lack the necessary technical and
financial resources for its transformation, manure coming from the
livestock is not trated, instead being randomly distributed on the
edges of arable land, edge of the villages, or waterways, causing
pollution to soil, and both groundwater and surface water.
The study aims to analyze the current situation in Romania and
especially in the North-East Region concerning the causes of
pollution from livestock.
Innovative Research

RO.58.

Class

Title EN	New derivatives of <i>para</i> -chloro- <i>ortho</i> -sulphonamido-
Authors	Pintilie Lucia, Nita Sultana, Panteli Irina Minerva, Oniscu Corneliu ROBU Teodor , TROFIN Alina
Institution	National Institute For Chemical-Pharmaceutical Research& Development _ICCF Bucharest
Patent no.	Pending Patent : No. A/00948 /26.09.2011 The invention relates to derivatives of <i>para</i> -chloro- <i>ortho</i> -sulphonamic phenoxyacetic acid used as growth stimulators in plants and to a process for preparing the same.According to the invention, the derivatives are the 2((4"-methyl- piperidino)-sulphonyl)-4-chloro-phenoxyacetic acid and the 2-(niperidino-sulphonyl)-4-chloro-phenoxyacetic acid
Description EN	As claimed by the invention, the process consists of the hydrolysis reaction of the ethyl esters of the <i>para</i> -chloro- <i>ortho</i> -sulphonamide-phenoxyacetic acid in a basic medium, at an ester : NaOH molar ratio of 1 : 2.5 at reflux, for 1 h. Applications -Research and Development; -Manufacture of chemicals and chemical products; - Agriculture.
Class	3
	$\begin{array}{c} O-CH_2-CO_2H\\ SO_2-N \\ R_2 \end{array}$

ĊΓ

RO.59.	
Title FN	New derivatives of ortho-chloro-para-sulphonamido-
THE LIV	phenoxyacetic acid and process for preparing the same
Authors	Pintilie Lucia, Nita Sultana, Panteli Irina Minerva, Oniscu
Authors	Corneliu, ROBU Teodor, TROFIN Alina
Institution	National Institute For Chemical-Pharmaceutical
institution	Research&Development –ICCF Bucharest
Patent no.	Pending Patent : No. A/00949 /26.09.2011
	The invention relates to ortho-chloro-para-sulphonamido-
	phenoxyacetic acid derivatives having herbicidal properties
	and to a process for preparing the same. The claimed ortho-
	chloro-para-sulphonamido-phenoxyacetic acid derivatives
	have the structure represented by the general formula I where
	R ₁ and R ₂ represent a heterocycle selected from substituted
	or non-substituted piperidine, piperazine, pyrrolidine or
Description	morpholine.
EN	The process claimed by the invention comprises the
	hydrolysis of the corresponding ethyl esters of <i>ortho</i> -chloro-
	para-sulphonamido-phenoxyacetic acids in basic medium, in
	the presence of sodium hydroxide, at an ester:NaOH molar
	ratio of 1:2.5, for 1 h.
	Applications
	-Research and Development;
	-Manufacture of chemicals and chemical products;
	- Agriculture.
Class	3
	O-CH ₂ -CO ₂ H
	Cl

3	
О-СН2-СО2	H
, ci	
()	
$\int_{SO_2-N}^{R_1} R_1$	
R_2	
$SO_2 - N < \frac{R_1}{R_2}$	

I

RO.60.	
Title EN	Novel quinolone derivatives with antimicrobial activity and process for preparing the same
Authors	Pintilie Lucia, Negut Catalina, Oniscu Corneliu, Caproiu Miron Teodor, Nechifor Mihai
Institution	National Institute For Chemical-Pharmaceutical Research&Development –ICCF Bucharest
Patent no. Description	Granted Patent : No. RO125300-B1 The invention relates to quinoline derivatives and to a

NATIONAL

EN process for preparing the same. According to the invention, the quinoline derivatives are defined by the general formula wherein R_1 = ethyl, isopropyl, R_6 = hydrogen, chlorine, fluorine, methyl, R_7 = 3-methyl-piperidinyl, 4-methyl-piperidinyl, 3-methyl-piperazinyl, 4-methyl-piperazinyl, morpholinyl, R_8 = hydrogen, chlorine, methyl and exhibits antimicrobial activity, being employed in the treatment of infections caused by gram-positive and gram-negative pathogenic germs.

Applications

- Research and Development;
- Manufacture of chemicals and chemical products;
- Manufacture of basic pharmaceutical products and
- pharmaceutical preparations;,
- Human health activities.

Class Invention Classification : 4



RO.61.	
Title EN	Repair hand cream
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 cream is made from 100% natural ingredients, no preservatives and no parabens, and as flavoring we used volatile oil extracted from <i>Artemisia annua</i> . This product has a moisturizing effect for dry skin.
Class	4



NATIONAL 268

RO.62.	
Title EN	Lip balm
Authors	Roxana Alexandrina CLINCIU-RADU, Elena PATROLEA, Teodor ROBU (coordinator)
Institution	University of Agricultural Sciences and Veterinary
Institution	Medicine "Ion Ionescu de la Brad" Iași
	This lip balm is made from 100% natural ingredients, no
Decerintian	preservatives and no parabens, and as flavoring we used
Description	volatile oil extracted from Artemisia annua.
EIN	This product has the ability to soothe and heal inflammation
	and cracks, ideal for use in cold season.
Class	4
	3

RO.63.	
Title EN	Natural soap with <i>Monarda didyma</i>
Authors	Elena PATROLEA, Roxana Alexandrina CLINCIU-RADU, Teodor ROBU (coordinator)
Institution	University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iasi
Description EN	This soap is made from 100% natural ingredients, no preservatives and no parabens, and as flavoring we used volatile oil extracted from <i>Monarda didyma</i> .
Class	4



RO.64.	
Title EN	Spice for steaks
Authors	Roxana Alexandrina CLINCIU-RADU, Elena PATROLEA,
	Teodor ROBU (coordinator)
Institution	University of Agricultural Sciences and Veterinary
	Medicine "Ion Ionescu de la Brad" Iași
	This spice was made by drying and grinding certain spicy
Description	plants: Zingiber officinale, Anethum graveolens, Petroselium
EŃ	Hortense, Ocimum basilicum, Cuminum ciminum, Satureja
	hortensis.
Class	4



RO.65.	
Title EN	ANTISTRES
Authors	Teodor ROBU, Alexandru Dragos ROBU
Institution	University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iași
Description	This tea was made from: <i>Abies Turioni, Equium vulgare,</i> <i>Galium aparine, Hipericum perforatum, Melilotus oficinalis,</i> <i>Origanum vulgare, Tilia sp.</i>
EN	Properties: insomnia, asthenic neurosis, cardiac neurosis, nervous excitation, extrasystoles, palpitations, anxiety, restlessness, anxiety, hypertension etc.
Class	3

RO.66.						
Title EN	COLESTE	R - 1	LOW			
Authors	Teodor ROE	BU,	Alexandrina Ro	xana CLIN	ICIU I	RADU
Institution	University	of	Agricultural	Sciences	and	Veterinary
			NATIONAL			

Description EN Class	Medicine "Ion Ionescu de la Brad" Iasi This tea was made from: Vaccinium myrtillus L., Polygonum aviculare, Sambucus L., Morus, Betula pendula, Taraxacum officinale This tea is very good for detoxification and weight loss Uses: cholesterol reduction, obesity, cellulite. 3
RO.67.	
Title EN	TEA HEPATIC-BIL
Authors	Teodor ROBU, Creola BREZEANU, Alexandrina, Roxana CLINCIU
Institution	University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iasi
Description EN	This tea was made from: Achilea millefolium, Artemisia absintium, Cichorium intybus, Calendula oficinalis, Mentha piperita, Taraxacum officinale, Plantago lanceolata, Tussilago farfara, Chelidonium majus L, Hypericum perforatum, Convolvulus arvensis. Applications – Uses: hepatoprotective, biliary colic, inflamation of the bile, biliary dyskinesia, biliary calculus Direction for use: Infusion

Class

2	3		

RO.68.	
Title EN	LAXINA
Authors	MILICA C-tin, Teodor ROBU
Institution	University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iași
Description EN	This tea was made from: Achillea millefolium, Artemisia absintium, Calendula officinalis, Convolvulus vulgaris, Cichorium inthybus, Fraxinus excelsior, Satureja hortensis, Foeniculum vulgare, Melissa offricinalis, Plantago sp, Robinia pseudacacia, Rosa canina.
CI	Properties: constipation

"Lucian Blaga" University of Sibiu

RO.69.	
Title EN	PORTABLE HYDRO-ELECTRICAL TURBINE WITH DEFORMABLE PADDLES
	Țîțu Aurel Mihail, Oprean Constantin, Bondrea Ioan,
Authors	Mărginean Ion, Moldovan Alexandru-Marcel, Bogorin-
	Predescu Marcel
Institution	"Lucian Blaga" University of Sibiu
Patent no.	Patent application No. A 2012 00846
Description EN	The invention refers to a floating construction which can be easily transported and being placed on a nearby stream, anchored to the shores, produces electric energy for the necessities of one house, the construction being done at accessible costs compared to those for windmills and solar panels currently used for individual households. The kinetic energy is taken from the stream directly, linearly, with the help of a textile belt extended as a chain track, being foreseen with deformable textile pockets as hydraulic paddles, the linear movement required by the water being converted into rotation movement and engaging an electric generator.
Class no.	2



RO.70.

Title EN	POLYSACCHARIDE BIOFILM WITH ANTIMICROBIAL ACTION
Authors	Mironescu Monica, Mironescu Ion Dan, Oprean Letiția, Georgescu Cecilia, Țițu Aurel Mihail
Institution	"Lucian Blaga" University of Sibiu
Patent no.	Patent application No. A 2012 00001

	The invention refers to a polysaccharide biofilm with
	antimicrobial action, for the food industry. The biofilm is based
	on the extracellular polysaccharide (EPS) synthesized by arheea
	highly halophilus H. mediterranei and salt contained in the
	cultivation of a microorganism environment and has the effect
	of destroying or inhibiting infection agent like Escherichia coli,
	Staphylococcus aureus, Pseudomonas aeruginosa, Salmonella,
Description	combined with conservation action. The biofilm is used as such
EN	on the foods that are typically preserved by salting, such as fish.
EN	For the application of biofilm, fish dip directly into liquid and
	lasts a short time. Afterwards, the fish is refrigerated (for short
	storage) or is frozen (for long duration storage). Before using in
	food, the fish needs to be washed with water to remove biofilm
	(made up of salts and polysaccharide, both water soluble) such
	as on the product there is nothing left of the biofilm applied.
	Fish can be eaten as it is or processed, for various other
	products.
Class no.	3

Class no.

RO.71.	
Title EN	THERMAL NECROSIS TUMOUR SYSTEM
Authors	Sabău Dan, Sabău Alexandru Dan, Dumitra Anca Maria, Sabău Mariana
Institution	"Lucian Blaga" University of Sibiu
Patent no.	Patent application No. A 2013 00011
Description EN	The invention relates to a method and a device for termonecrosis that uses electric current produced by an electrocautery with intensity control of the unipolar or bipolar electric version in equipping any surgery service. The present invention solve the problem of macroscopic mechanical destructuring tissue, strongly and targeted attack the neoplastic cell, reputed as sensitive to hyperthermia so the circumference (circumsphere) dependent on duration and intensity of vaporization heat flow and implies a usual equipment in a surgical service and avoid complications redoubtable as bile leak and haemorrhage. The advantage of using the device according to the method, is associated with a method of intraoperative imaging (ultrasonography) that can detect invisible, deep nodules and laparoscopically invisible. And can assess the thermal sensor along with the officiency of the method.
C1	

Class no.

4

RO.72.

PROCEDURE OF OXIDATIVE STABILIZATION OF
FISH OIL BY AN ADDITION OF CRUDE
ANTHOCYANIN EXTRACT FROM BILBERRY
Oancea Rodica Simona, Stoia Mihaela, Oprean Letiția
"Lucian Blaga" University of Sibiu
Patent application No. A 2013 00410
The invention is applicable to the field of fish oil
supplements, rich in polyunsaturated fatty acids, for which it
ensures protection against oxidative degradation during
storage, by an addition of low amounts of natural extract of
bilberry, with antioxidant properties, without addition of any
synthetic antioxidant.
4

RO.73.	
Title EN	DEVICE FOR TURNING HEMISPHERICAL HEADS
	Ţîțu Aurel Mihail, Oprean Constantin, Cioară Silviu
Authors	Constantin, CioarăGheorghe Romeo, Durdun Emilia,
	Rachieru Nicoleta, Sabău Dan,
Institution	"Lucian Blaga" University of Sibiu
Patent no.	Patent application No. A 2013 00013
Description EN	The invention relates to a turning device for turning the ends of the hemispherical end pieces of the rod type, such as supporting rods of the head restraint in some cars. The device consists of a body in which there are radially fixed, tangentially to the work piece, by clamping by means of screws, two prismatic shaped turning tools, their conic front being sharpened by grinding, axially positioned by a screw so that the cutting edge of each turning tool to be placed in the median plane of the rod to be processed. The device performs the primary rotary movement and does not require further adjustments, other than initial one. For the purpose of simultaneous turning of both ends of the hemispherical supporting rods of the head restraint of some car are used two identical devices, the axial advance movement being realised by the workpiece.
Class no	

Class no.

5

RO.74.	
Title EN	DEVICE FOR SHARPENING PRISMATIC TURNING TOOLS BY CYLINDRICAL GRINDING
Authors	Ţîţu Aurel Mihail , Oprean Constantin, Cioară Silviu 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
Description EN	The invention relates to a device for sharpening prismatic turning tools by cylindrical grinding, intended to be used, for example, in devices for turning hemispherical heads rod-type pieces. The device has a simple construction, low cost and allows sharpening prismatic shaped turning tools by cylindrical grinding, using universal grinding machine tools for cylindrical grinding.
Class no.	5

RO.75.

KU .75.	
Title EN	COMPOSITION WITH DOUBLE ACTION AND THE METHOD OF ITS APPLICATION
Authors	Barbu Constantin Horia , Sand Camelia, Oprean Letiția, Pop Mihai Radu
Institution	"Lucian Blaga" University of Sibiu
Patent no.	123076 / 30.09.2010
Description EN	The invention refers to a method and a product having the role of foliar fertilizer and reducing the amount of toxic heavy metals absorbed by plants from contaminated soils. The method and the product, according to the invention, removes the danger of ingress of heavy metals in plants grown on polluted soils, leading at the same time to achieve a spore harvest. The method and the product are applicable to plants whose edible parts are located above the ground (cabbage, lettuce, cauliflower, grapes, tomatoes, fruit trees, clover, alfalfa, etc.). The method for reducing the amount of heavy metals in plants is based on competition between manganese, on the one hand, and cadmium and lead, on the other hand, due to the similar structure and properties that make for no selective absorption, due to the concentration gradient, preferably manganese to the detriment of the two toxic metals. The introduction of potassium in the composition of the product ensures a higher ionic strength of

the solution, at the same time the plants benefiting from the effect of potassium fertilizer. The proposed method foliar application refers to a product in the form of a diluted aqueous solutions containing urea, salts of manganese EDTA-Na2 (for solubilising and stabilizing Mn salts) and a non-ionic detergent accessible (for reduction of the surface tension and improve stickiness and the degree of coverage of the product on the plant), aimed at both increasing the production plants and reducing levels of toxic heavy metals (Cd and Pb) from the edible aerial parts of plants grown on polluted soils.

Class no.

3

Stefan cel Mare University of Suceava

RO.76.	
Title EN	Electrochemical micromotor
Authors	Dorel CERNIOMAZU, Adrian GRAUR, Ilie NIȚAN, Mariana MILICI, Dan MILICI, Ilie ROMANIUC, Constantin UNGUREANU, Elena-Daniela OLARIU, Ovidiu ȚANȚA, Mihaela POIENAR
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent applications No.: A/00804/2013; A/00800/2013; A/00803/2013.
Description EN	Electrochemical micromotor is made of an electrochemical actuator, which comprises an electrolyser composed of two metal electrodes (Pt and Cu) mounted in an insulating support and which electrolyser is immersed in an electrolyte contained in a cylindrical reservoir that is closed by a metal mount, laterally provided with an elastic chamber (bellows). Bellows is integral with a sliding rod, provided on the free end with a ratchet in contact with the ratchet wheel attached to a rotating shaft. Advantages: low speed of rotation, low energy consumption.
Class no.	2: Energy and sustainable development

RO.77.

Title EN	Magnetostrictive vibromotor with rolling rotor and with eccentric rotor
Authors	Mariana MILICI, Dan MILICI, Cristina PRODAN, Mihai RAȚĂ, Dorel CERNOMAZU
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent application No. : A/00259/2012; A/00300/2012
Description EN	The invention relates to an magnetostrictive vibromotor with eccentric rotor for obtaining low speeds to a few revolutions per minute at great couples, under-frequency power supply without using mechanical gearboxes. Advantages: design simplicity, high reliability, etc.
Class no.	2: Energy and sustainable development

NU. /0.	
Title EN	Electrostrictive polymers vibromotors
Authors	Dorel CERNOMAZU, Ilie ROMANIUC, Mihai RAŢĂ, Dan MILICI, Mariana Rodica MILICI, Ilie NIŢAN, Elena- Daniela OLARIU, Constantin UNGUREANU, Mihaela POIENAR
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent application No. A/00770; A/00771; A/00772; A/00773; A/00774/24.10.2013
Description EN	Electrochemical vibromotors with electrostrictive polymer are characterized in that the electrostrictive polymer with several lamellas rolled who come into contact simultaneously on the inner surface of a rotor cup that you put in rotation also, the transmission by friction with constant ratio. The stator of threephase electrochemical vibromotor with electrostrictive polymer is constituted from three monophase electrostrictive vibration motors connected in "Y" and prescribed each one on the output with a rolled blade. Electrochemical vibromotor with electrostrictive polymer and switching of rotation direction is constituted from a parallelepiped common electrode, which has mounted on the free faces some electrostrictive polymer active plates and on the first faces pair of opposite sides the rolled blade are rolled "clockwise" and on the second pair are rolled "counterclockwise" so depending on the pair of rolled blades activated via a switch, the rotor will rotate according to the convention established by standards, "clockwise" or "counterclockwise" <i>Advantages</i> : lack influence of external magnet fields; high efficiency; constructive simplicity etc



Figure 1. Electrostrictive polymers vibromotors: a) three phase electrochemical vibromotors b) three-phase model with switching of rotation direction

1 – electrode; 2 –electroinsulating hub; 3 – shaft; 5a, 5b, 5c, 5'a, 5'b, 5'c – electrostrictive polymers plates;6a, 6b, 6c, 6'a, 6'b, 6'c –mobile electrode; 8a, 8b, 8c, 8'a, 8'b, 8'c – rolled blade; 9 – disk-shaped rotors; 10 – tripolar switch

RO.79.	
Title EN	ELECTROCHEMICAL PUMP WITH LIQUID
Authors	CERNOMAZU Dorel, PRODAN Cristina, SAVU Elena, MILICI Mariana, RAȚĂ Mihai, MILICI Dan
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent No: RO127325B1/2014
Description EN	The invention relates to an electrochemical pump with liquid. According to the invention, the pump comprises a cylindrical mounting made of resin-impregnated fabric laminate, provided at the lower part with an impervious tightening cover on which there is attached, inside the mounting, an induction heating element made of induction coil supplied from a voltage source, having a ferrite core and a frontal yoke of massive electrotechnical solid steel provided with several outer concentrical circular ribs in contact with an active liquid, namely peroxide, placed inside a sylphon, the sylphon in its turn being included inside a cylindrical cavity made of acrylic glass which is tightly fixed and integral with the cylindrical mounting, inside the cavity there being a liquid; to be circulated which is pushed outside as drops through a pipe provided at the upper part of the cylindrical cavity.

it

RO.80.	
Title EN	System for Monitoring Mechanical Vibrations
Authors	Călin CIUFUDEAN, Corneliu BUZDUGA, Călin TĂRĂBUȚĂ
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent Application A/00744/2009
Description EN	The invention relates to a system for monitoring mechanical vibrations to which drivers are subjected. According to the invention, the system comprises a data acquisition module (MA4) with four inputs to which there are connected four vibration sensors (SV). The module (MA4) communicates by means of using an USB interface with a computer (PC) running an application which carries out some graphs allowing the visualization and memorization of the vibration amplitude.
Class no.	12. Safety, protection and rescue of people
RO.81.	
Title EN	Device for measuring and testing the human anticipation.
Authors	Moroșan Larionescu Virgil Adrian, Lazăr Andreea Gabriela
Institution	"Ştefan cel Mare"University Suceava.
Patent no.	Patent application No. A00309/2014
Description EN	Invention is about a measuring device and a speed prediction and reaction testing, having a framework that is used to support lots of balls made to fall in this, being ordered by a computer system, on a platform disposed in the lower part of the pillar. The platform has some inclined planes at the upper part to the pillar, which can be positioned in many ways, making the balls that fall on this, rebound in a different case.
Class no.	14: Other
RO.82. Title EN	Electromagnetic motors wheel drive
Authors	Radu PENTIUC, Lorin CANTEMIR, Leon MANDICI, George MAHALU, Dorel CERNOMAZU
Institution	"Stafan cal Mara"University Suceava
	ștelan cel Mare University Suceava.

Patent no.	Patent No. RO114390
Description EN	Wheel actuators is mounted on an axle, the center of which is attached together with this an induced in the form of circular crown plate of electrically conductive material, plated over solid wheel center. Inductor is silicon sheet, arranged around a bearing boxes, backed by a driving axle bearing.
Class no.	5: Industrial and laboratory equipments

VEN ELECTROCHEMIC

. .

RO.83.

Title EN	MAGNETICALLY DRIVEN ELECTROCHEMICAL MICROPUMP WITH LIQUID
Authors	MILICI Mariana, SAVU Elena, PRODAN Cristina, MILICI Dan, RAȚĂ Mihai, CERNOMAZU Dorel
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent application No. 127320A2/2012
Description EN	The invention relates to a magnetically driven electrochemical micropump meant to circulate low quantities of liquid. According to the invention, the micropump comprises a cylindrical housing provided with a cavity wherein there is placed a liquid subjected to circulation which is discharged by the pressure exerted by a swimmer which is integral with an annular armature made of ferromagnetic material driven by means of an annular magnet placed outside the housing, whereto the internal pressure necessary to discharge the liquid circulating outside through a microchannel is controlled by means of a microvalve placed at the upper part of the cavity.
Class no.	2: Energy and sustainable development
RO.84.	
Title EN	System for Avoiding Traffic Blocking of Special Appliance Vehicles
Authors	Călin CIUFUDEAN, Corneliu BUZDUGA, Casian IBĂNESCU, Bogdan DRELCIUC
Institution	"Stefan cel Mare"University Suceava.

Description EN	This invention refers to an automatic system which ensures free and safe way for special appliance vehicles (ambulances, fire engines, police cars, s.a.) in urban traffic, especially in cross roads. This automated system also ensures the safety of all vehicles in traffic, and the safety of pedestrians. Our system has a friendly user interface, has a low electric energy consumption and low volume and that makes it a safe and proper guiding instrument for all special appliance vehicles.
Class no.	12. Safety, protection and rescue of people
RO.85.	
Title EN	Electromechanical converter with disk-shaped rolling rotor
Authors	Ungureanu Constantin, Graur Adrian
Institution	University Stefan cel Mare of Suceava
	The invention relates to an electromechanical converter with rolling rotor and axial air gap, with the fixed position of the axis of rotation in the plane of the stator and which may have various
Description EN	applications, one of which is related by the sun tracking of the photovoltaic cell panels. The stator consists of 12 magnetic poles and fed successively through a pulse distributor. The rotating magnetic field acting on the disk-type rotor and due to the rolling path contact is obtained on the central axis a low rotational speed and high torque. Applications: photovoltaic tracking systems, positioning systems, etc. Advantages: small rotational speed obtained without the use of mechanical gears, constructive simplicity and low cost manufacturing, no contact elements (slip rings, brushes).



Banat University of Agricultural Science and Veterinary Medicine, Timisoara

RO.86.	
Title EN	Functional BIO GERM PASTA
Authors	Alexa Ersilia, Botau Dorica, Rivis Adrian, Mirzu Ionela
Authors	Luminita, Pirvulescu Panfil, Ciulca Sorin
	Banat's University of Agricultural Sciences and
Institution	Veterinary Medicine "King Michael I of Romania"
	Timisoara
Patent no.	Mark M 2014 06523, 14.10.1014
Description EN	The Functional BIO GERM PASTA is a bio food intended for people interested in healthy eating. Health benefits of the product is due by germinated wheat with antioxidant properties and high content of iron and <i>Momordica charantia</i> extract recompized as having hyperby apple
Class no	recognized as naving hypogrycenne role.
Class no.	5
RO.87.	
Title EN	Method for stimulating the production and quality of maize
	by exposing seeds to a low magnetic field
	Imbrea Florin, Marincovic Branko, Pirsan Paul, David
Authors	Gheorghe, Tabara Valeriu, Imbrea Ilinca, Popescu Cosmin
	Alin, Palicica Radu, Botos Lucian
	Banat's University of Agricultural Sciences and
Institution	Veterinary Medicine "King Michael I of Romania"
	Timisoara
Patent no	Application RO A 00593 / 22.06.2011
Description EN	Experimenting new cultivation technologies in maize is an important step towards optimizing the yielding potential of a crop that ranks second worldwide and first in Romania. The apparatuses required for the seed treatment consists of a generator of electromagnetic waves and a battery 50 Ah. Thus, prior to sowing the seeds of maize are exposed to 10 minutes of low electromagnetic field, consisting of wavelengths of a frequency from 15 to 23.5 Hz. After the treatment the seeds to be sown within 7 days after the treatment, because the effect is reduced after 7 days and after 10 days disappears. Using low frequency radiations to stimulate yield and quality in maize results in increases in yield ranging between 10 and 15% compared to the classical variant as well as an improvement of the quality indicators (protein content, starch, and fats).
Class no.	3
	NATIONAL

RO.88.	
Title EN	AUTOMATED INSTALLATION FOR BIOGAS PRODUCTION
Authors	Vintilă Teodor
	Banat's University of Agricultural Sciences and
Institution	Veterinary Medicine "King Michael I of Romania"
	Timisoara
Patent no.	Patent application: A 2013 00067, 18.01.2013
Description EN	The invention represents an automated system for biogas production by anaerobic digestion of organic materials with applications in agriculture, especially on small or medium size farms. The substrate is fed by a front loader into the mixing tank, chopped and mixed with water, by a chopper-pump immersed and mobile in the tank, the suspension is pumped into the horizontal fermenter in which the anaerobic digestion and biogas production occurs. The suspension in the digester is mixed by recirculation of biogas. The whole assembly is controlled by temperature, pressure and concentration of methane sensors, connect to a PLC where is installed a dedicated software for the automatic control of processes.
Class no.	2
RO.89.	
Title EN	Evaluation of the productive potential, the capacity of phytoremediation and adaptability to the hydric stress of some <i>Salix</i> genotypes, in improper stations for agricultural crops (Project PNII 111/2014)
Authors	Corneanu Mihaela, Hernea Cornelia, Hollerbach William, Soare Marin, Nețoiu Constantin
	Banat's University of Agricultural Sciences and
Institution	Veterinary Medicine "King Michael I of Romania"
Description EN	Timişoara Due to the world energetic crisis the regenerable resources of energy, represented by vegetal biomass from SRC cultures (short rotation coppice) are a sustainable option. The project objectives are, on the one hand, the testing of the plant development, under extreme conditions (hydric stress, polluted soil), of the Swedish origin genotypes admitted for cultivation in Romania, in comparison with the Romanian clones and hybrids, as well as the gathering of local germplasm, with resistance to

abiotic and biotic stress, for the breeding of existing asssortment. In the first year of the project, were established 7 comparative cultures, with 14 genotypes, in improper stations for agriculture (closed ash pits-2, sandy soil-2, salty soil-1, control -2) and were collected 40 spontaneous genotypes (12 species). Also was established a collection of genitors and was performed a preliminary genetic and pest tolerance characterisation. There are four partners in the project: BUSAVM Timişoara – coordinator; Rebina Agrar SA- P1, University of Craiova – P2, ICAS Bucureşti-P3 and the project is funded by UEFISCDI Bucureşti.

Class no.

Innovative Research

DO	00	
KU	.90.	

Title EN	Identification and characterization of Fusarium species
	infecting wheat in Timis County
Authors	Botau Dorica, Bozac Petru, Popescu Sorina, Boldura Oana, Alexa Ersilia
Institution	Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" Timişoara
Description EN	The aim of our research is to identify the main <i>Fusarium</i> species involved in wheat fusariosis in Timiş County, the distribution of toxigenic strains or local chemotypes, to observe a relation with climatic conditions, and to detect and quantify the toxins produced by isolated species. Molecular techniques have allowed the identification of infectious profile species from Timiş County, that is: <i>F.graminearum</i> 75,86%, <i>F.proliferatum</i> 8,62%, <i>F.equiseti</i> 5.17%, <i>F.avenaceum</i> 1,72%, <i>F.verticilloides</i> 1,72%, <i>F.subglutinans</i> 1,72%, <i>F.andyiaze</i> 1,72%, <i>F.cerealis</i> 1,72%, <i>F.solani</i> 1,72%. Sequencing of TEF region allowed us to identify morphologically uncertain colonies as <i>F.andyaze</i> , species known as pathogenic for sorghum. Regarding the identification and characterization of <i>F.graminearum</i> chemotypes, DON chemotype being the dominant one, with a frequency of 85.71% and NIV chemotype with a frequency of 4.76%. The identification of NIV chemotype in <i>F.graminearum</i> species is a first report in our country. <i>The</i> dominance of <i>F.graminearum</i> species is supported by favorable climatic conditions existing in Timis County.
Class no.	Innovative Research

RO.91.	
Title EN	OBTAINING AND CHARACTERIZATION OF
	GLUTEN FREE PASTA FORTIFIED WITH BANANA
A 4 h	Radoi Bogdan, Alexa Ersilia, Botau Dorica, Trasca
Authors	Teodor
	Banat's University of Agricultural Sciences and
Institution	Veterinary Medicine "King Michael I of Romania"
	Timișoara
	Gluten-free products are intended for people with celiac disease
	intended for this population segment are obtained from grain of
	which proteins are not gluten generators. Rice is the grain
Description	matrix used successfully both in celiac diet but also in pasta
EN	obtaining technology. This paper aims to obtain gluten-free
	pasta fortified with bananas. The fortification of pasta with fruits
	with rice containing bioactive principles of dried fruit banana is
	an opportunity to obtain a novel dietary food product with
	nutraceutical high potential.
Class no.	Innovative Research
RO.92.	
Title EN	Variability of Allium sativum L. landraces - valuable
Authors	Sărac Ioan, Ponescu Sorina, Botau Dorica
1 unior 5	Banat's University of Agricultural Sciences and
Institution	Veterinary Medicine "King Michael I of Romania"
	Timișoara
	Local gene pool is a source of valuable germplasm,
	due to the resistance genes which confers a high adaptability to
	These forms synthesize large amounts of active metabolites or
	nutritional components, making them an inexhaustible source
Description	for breeding, to obtain valuable varieties of horticultural
EN	varieties.
	sativum L landraces was studied based on yield parameters the
	resistance to biotic stress and the content of special nutrients.
	The results led to identification of Cenad landrace as very
	valuable which is recommended for a new breeding program.
Class no.	Innovative Research

RO.93.	
Title EN	STUDIES REGARDING OF VARIABILITY IN THE <i>PINUS NIGRA</i> SPECIES
Authors	Madosa Emilian, Sotiropoulos Ioannis, Ciulca Sorin, Petrescu Irina, Velicevici Giancarla, Ciulca Adriana
Institution	Banat's University of Agricultural Sciences and Medicine Veterinary "Regele Mihai I al Romaniei" Timisoara
Description EN	The aim of studies was to assess the phenotypic and genotypic variability of populations of black pine in Southern Banat and Central Greece. The objectives of this study are: study of phenotypic variability and study of variability within and among population using ISSR markers. Biologic material was constituted of two Greek populations of Black pine (<i>Pinus nigra ssp nigra var nigra</i>); one from South of Ano Polidrosos village, in Mount Parnassos and one from the Island Evia, and of two Black pine (<i>Pinus nigra ssp nigra var banatica</i>) landraces from Southern Banat of Herculane from National Park Domogled- Valea Cernei and from Sviniţa village from Natural Park of Porţile de Fier. Phenotypic variability among the genotypes studied was significantly high and differed from one population to another even for population from the same country. ISSR markers are recommended for polymorphism emphasizing in Black pine populations and optimal for genotypes differentiation. The findings on the genetic and phenotypic variability on the studied material, support further studies on the Black pine of Banat, which could be part of a distinct variety.
Class no.	Innovative Research

"Victor Babes" University of Medicine and Farmacy Timisoara

RO.94.	
Title EN	TOOTH PASTE COMPOSITION
Authors	Jumanca Daniela, Galuscan Atena, Florita Serban, Podariu
	Angela, Florita Zeno, Dehelean Cristina, Borcan Florin.
Institution	University of Medicine and Farmacy "Victor Babes"
Patent no.	RO127805 /28.02.2014 OSIM
Description EN	The degree of innovation of the tooth paste consists of the incorporation of bethulin into polyester urethane nanocapsules (extracted from Birch bark), with many with anti-inflammatory, antibacterial and antitumoral proprieties. The biodisponibility of the therapeutic substance i.e. birch sap extract, it has been incorporated into polyester urethane nanocapsules thus being more easily transported to its action site. The tooth paste is characterized with a low contain of tesioactive substances, all organic substances are biocompatible and biodegradable; the abrasive agent is a mixture of nanoparticles that increase nanosealing of pits and fissures and has a low level of wather. The tooth paste with bethulyn nanocapsules is recommended in prophylaxis of all oral cavity diseases
C	including fissures and scratches on enamel, parodontal diseases and tumors.
UIA55 IIU.	T. Medicine meatin Care and Cosmetics
"Alexandru Ioan Cuza" Police Academy of Bucharest

RO.95.	
	Criminal Investigation of Copyright and Related Rights
Title EN	Infringements in the context of law harmonization within
	the European Union
Authors	Toma Cosmin COJANU, Gheorghe POPA
Institution	<u>",Titu Maiorescu" University – Bucharest</u>
Description EN	continuously evolved throughout the history. Nevertheless, nowadays' impact is stronger than ever, since the free flow of information and digital technology gave rise to new methods of mass infringement. A comprehensive system of protection requires not only legislative provisions, but also effective means of enforcing rights and recovering the losses incurred from any actual infringement. According to the 2015 Special 301 Report on Copyright Protection and Enforcement, Romania is no longer on the International Intellectual Property Alliance's Watch List. Have we succeeded in identifying a clear and effective penal policy to enforce copyright, in the context of law harmonization within the European Union? Part of the answer is shaped in the first part of the project by a thorough research of the criminal phenomenon dynamics, as well as of the judicial attitude evolution. Further on, the project shifts focus on the national substantive law, whose development has been consistently located in the sphere of secondary or tertiary legislation. In the broader framework of comparative law, which could be summed up rather by ,,diversity in unity", we find that copyright law in Europe has essentially remained national law, despite almost 25 years of harmonization. In this context, and given the importance of copyright protection to the preservation of knowledge and culture in the digital context, certain normative changes become necessary in order to ensure effective legal consecration forms so that intellectual creations contribute to the achievement of spiritual and material progress of modern society. Innovative research

RO.96.	
Title EN	Dividing Wall Column for Propylene Oxide Separation
Authors	Florin Oprea, Elena-Mirela Fendu, Marilena Nicolae, Alexandru Dragomir
Institution	Petroleum-Gas University of Ploiești
Patent no.	Patent application No. A/00541 July 2014 OSIM
Description EN	New process for propylene oxide (PO) separation using dividing wall column (DWC). The removal of volatiles from propylene oxide needs high energy consumption. PO is obtained by hydrochlorination of propylene followed by saponification of the reaction mixture. Finally, the lighter compounds (volatile), as well as the heavier, are removed. Normally, this separation involves the use of two distillation columns. Prior to the current proposal, two successive romanian patents proposed (1) separation column using a product side and then (2) a thermal integration with saponification column. Previous patents also have solved the problem of substantially reducing of the volatiles content of the final PO, that allowed the manufacturer to mantain on the market Previous patented processes (with the same group of authors) have significant operating cost savings (up to 1.5 million euros/year). Further reductions are possible through the use of innovative distillation systems. One of the most modern solutions is dividing wall column leading to savings in capital costs by up to 30%, with similar reductions in operating costs by reducing consumption of steam and cooling water. For PO purification, according with this patent, the reduction of the operation cost is about 1.5 millions euros/year for existing capacity of industrial plant. The economy will grow with 50% by increasing plant capacity.
CIASS IIU.	7

Petroleum-Gas University of Ploiești

Apollonia University of Iasi, Romania

RO.97.	
Title EN	Layered double hydroxides (LDHs) type materials used in waters treatment
Authors	Simona Nichitus, Gabriela Calin,
Institution	Apollonia University of Iasi, Romania
Description EN	Layered double hydroxides (LDHs) or LDHs matrices used for water treatment have been reviewed in this article. These aggregated nanoparticles can be obtained by sol-gel, hydrothermal or coprecipitation method, therefore their shape, size, properties (such as magnetic, acido-bazic, redox, texture and assembly) and applications are tailored as a function of synthesis method and process parameters respectively. Among other materials used in water treatment we chose layered double hydroxides generally named LDHs or in particular case hydrotalcites (MgAlLDHs). During calcination layered structure is destroyed giving rise to new structures like mixed oxides partially crystallized. LDHs and calcined LDHs type materials were able to uptake selected products. An important issue for removal of undesirable species for human health was M2+/M3+ cation ratio. Results show a better uptake of anionic compounds for thermally activated LDHs due to their "memory effect". A large variety of LDHs was investigated in order to demonstrate their adsorption capacity for anionic compounds, cations, gas compounds even microorganisms. Nowadays one of the attractive issues of nanoscience is both the synthesis of these nanostructures and the assembly and organization way but the interest of scientists is to find new properties and applications in order to protect the environment. These cost effective, eco-friendly materials revealed new opportunities for waste water treatment.

Class no.

Innovative Research

"Mircea cel Bătrân" Naval Academy of Constanța

RO.98.	
Title EN	Meteorological Quadcopter-MeQ1
Authors	Melinte Alexandru-Fabian
Institution	"Mircea cel Bătrân" Naval Academy of Constanța
Description EN	The device accordingly to invention requests is a flying meteorological station which can be sent in the atmosphere to collect and transmit data to a computer by wireless, considering the temperature of the air, the humidity and the pressure at certain points. It uses an Arduino board, a few transistors for collecting the information, the wireless device to send them to the land and a quadcopter to fly the whole station. The software is based on the Arduino board's soft so it can be whenever updated or even changed as wished.
EIN	Possible applications:1. Meteorological observations in a multitude of locations of the atmosphere;2. The data received from the device could be used to create a graphical representation of the parameters or to predict the weather.3. A GPS transistor could be attached to the device so we could know the exact position where the observation is made.
Class no.	8

RO.99.	
Title EN	Unmanned Surface Vehicle-The Great
Authors	Prof. Vasile Dobref, Mihailovici Dragos, Avram Daniel
Institution	Naval Academy"Mircea Cel Batran"
Description EN	Project "The Great" represents a small unmanned surface ship which was made for searching ,observation and sending information from the water surface. Few of its advantages are: controlable from distance, colleting and sending information like video images and measurments (sea and air temperature ,umidity ,wind speed, distances,etc). The ingenuosity of this project represents the simplicity of its construction, the low costs and the variety of missions in which "The Great" can be used. Unmanned surface vehicle are very useful nowadays because it can replace normal size ships and can reach places inaccessible for them.
Class no.	8



RO.100.

Title EN	Mobile surface device for preventing gas leakage aboard ships: F-BOT v1.2
Authors	Pohonțu Alexandru
Institution	"Mircea cel Bătrân" Naval Academy of Constanța
Description EN	F-BOT is an automated homemade system that can be used in different circumstances and situations such as preventing gas leakage aboard warships, by using flammable gases sensors, or surface search and rescue operations. It is controlled by a regular TV infrared remote and sends images to a computer using a smartphone via Wi-Fi
	NATIONAL

connection.

The device can also be used in "autopilot" mode, and manages to cover a patrol area, at regular intervals of time, without collide with any obstacles appearing in its path.

Class no.



RO.101.

Title EN	Encryption device and algorithm for secure naval communication : RDM-CRYPT v1.0
Authors	Pohonțu Alexandru
Institution	"Mircea cel Bătrân" Naval Academy of Constanța
	RDM-CRYPT is an automatic system used for encrypting secret data into decimal values.
	The device runs on a microcontroller, and main advantage of using it is that after uploading the main code, it cannot be recovered because of the compile process. This helps to keep
Description EN	safe the encrypting algorithm by not allowing to read the main code. It also includes a card module and requires a micro SD card whit a specific pass key stored into it, in order to protect the device against an eventual hack. The main code is written in "Processing" programming language, and the device generates different random codes every time a text is being encrypted
Class no.	8



"Nicolae Bălcescu" Land Forces Academy Sibiu, Romania

RO.102.	
Title EN	Tracked mini-robot with electric actioning obtained from
	solar energy capture with a load of explosives attached
Authors	Silviu-Mihai PETRIŞOR, Cosmin Iulian GRIGORAŞ,
	Ghiță BARSAN, Dănuț Eugeniu MOȘTEANU
Institution	"Nicolae Balcescu" Land Forces Academy Sibiu,
Detent Ne	Komania
Patent No.	a 2013 00684/16.09.2013
Description EN Class no.	This technological product feters to a tracted initiation of the autonomous displacement and electric actioning obtained by means of the solar cells encapsulated in panels and attached to the mechanical structure of the mini-robot and with a compartment destined for the storage of the explosive necessary for the demining/reclamation disposed on the base platform, possessing four degrees of mobility (without the opening or closing of the fingers corresponding to the prehension device), a simple, compact mechanical structure and formed of modular components, the joining of the constituent modules (the base of the mini-robot and the modular robotic arm, respectively) being performed at the level of the rotation joints by means of flanges and retaining screws, using in its structure materials resistant to hazardous environments. The technological product has applicability both in the military – applicative area (by improving the detection, reclamation/demining capacity of UXOs and IEDs in view of protecting the human factor operating in theatres of operations, the mechatronics components operating in conflict areas, as well as the environment), but also in the educational area (by the formation within bachelor and master degree studies of highly educated and specialized human resources able to deal with the diversity of current missions and challenges).
Class no.	12



Fig. 1 Functional prototype - Tracked mini-robot with electric actioning obtained from solar energy capture with a load of explosives attached

Transilvania University of Brasov

RO.103.	
Title EN	RELab platform
Authors	Petru A. COTFAS, Daniel T. COTFAS
Institution	Transilvania University of Brasov
Description EN	Renewable Energy Laboratory - RELab for the NI ELVIS_II, myDAQ and myRIO is a modular board ideal for illustrating the concepts and driving principles of the solar cells, wind turbines and solar collectors. Virtual instrumentation introduces users with the help of more than 22 lab works into the fascinating world of the function and characterization of the solar cells, wind turbines and solar collectors. The lab works implemented allow the use of the board from undergraduate level, to university level and even postgraduate and PhD. The RELab version for myDAQ and myRIO, called miniRELab, can be used anywhere anytime. Using a laptop, the miniRELab can be used outside based on natural sunlight and natural wind and inside based artificial light and wind sources. The most important solar cell, wind turbine and solar collector parameters are determined using various methods from the specialty literature. Among the determined parameters, the following can be enumerated: open circuit voltage, short circuit current, maximum power, fill factor, cell efficiency, shunt and series resistance, ideality factor of the diode, the efficiency of the wind turbine depending on: the number, shape and attack angle of the blades on the wind speed and the inclination angle. Based on NI ELVIS_II platform together with RELab board the impedance spectroscopy can be used for solar cells characterization. Users can take advantage of the open RELab driver to develop new applications for the three renewable energy sources characterization.
	(<u>n</u> up://sine.ni.com/cs/app/doc/p/id/cs-15465)
Class no.	Innovative Kesearch

NATIONAL 296

Romanian Inventors Forum

RO.104.	
Title EN	Dumbbell-flexor system
Authors	Hagiu Bogdan-Alexandru
Institution	Romanian Inventors Forum
Institution	Alexandru Ioan Cuza University of Iasi
Patent no.	Pending
Description EN	The invention relates to a dumbbell-flexor system that combines an additional weights dumbbell with a flexion of the fingers device. The dumbbell-flexor can be used for the recovery of patients who have suffered trauma to the hand or forearm, or sequelae after stroke. The fact that the combination of elastic and gravitational resistance can achieve increasing of the strength and muscle mass by using small weights can be useful not only for recovery, but also for bodybuilding programs.
Class no.	



RO.105.	
Title EN	ECOLOGICAL TOOTHPASTE
Authors	Kamel EARAR, Andrei Victor SANDU, Mădălina Nicoleta
Authors	MATEI, Tudor LUPASCU, Ion SANDU
Institution	Romanian Inventors Forum
Patent no.	Pending
Description EN	The invention refers to an ecological toothpaste with multiple implications in cleaning the oral cavity. This is a creamy paste, made from concentrated aqueous dispersions based on extracts of herbs (basil / lavender, rosemary), fruit (pineapple) and seeds of buckthorn, flax, hay, jasmine, blended in proportions technological defined with very fine crumb of rice, egg shell, spirulina, sodium bicarbonate and NaCl. The paste is applied with a toothbrush and is used to clean and improve the health and aesthetic appearance of teeth. The application brings a number of advantages, among which: • Protecting and strengthening teeth • Protection of gums • Teeth Whitening • Prevent bacteria • Reduce plaque plate • Reducing dental stains • Stabilization of pH in the mouth • Maintaining a fresh breath
Class no.	4
RO.106.	
Title EN	TREATMENT OF SURFACE AND UNDERGROUND WATER WITH CERAMICS
Authors	Ion SANDU, Monica Anca CRETU, Tudor LUPASCU, Joseph SIELIECHI, Andrei Victor SANDU, Innocent KAOUME, Viorica VASILACHE, Ioan Gabriel SANDU
Institution	Romanian Inventors Forum
Patent no.	Pending
Description EN	The invention relates to the use of industrial and traditional made ceramics with caustic module between 1.2 and 2.8, with three sizes to make groundwater and surface water potable by using existing treatment plants The process speculates both acid-base effect of retaining desirable cations and anions, and the redox and redoxitic type by retaining toxic ions and molecular structures (chlorine, ammonia, hydrogen sulfide, sulfur colloidal, Hg (I), As (III), Al (III), Fe (III), Mn (II / III) etc.).
	- Provides an advanced water purification capacity while preserving
	NATIONAL

the structural and physico-chemical and mineralogical properties;

- Obtain a superior organoleptic properties of plain water which can be used by man and animals, without the risk of rapid contamination;
- Water by passing through the porous ceramic, in addition to the removal of all cations and anions susceptible to ion exchange by adsorption or removal of traces of ClO_2 , will restructure the oligomer set (pentahidrol and hexahidrol), which have antimicrobial effects for long periods of storage, good resistance to contamination;
- Can be applied to technologies where disinfection is done with Cl₂, as it allows removing its traces by adsorption and degassing;
- Eliminates the doping processes of active carbon with ceramic materials or ferric hydroxide powders;
- Allow exploitation of burnt brick resulted from the manufacturing process and disposal of more expensive materials such as silica, zeolite, bentonite, kaolin, fluoridina, diatomite or Kieselguhr.

1

Class no.

RO.107.

Title EN	Dynamic Halochamber with changeable system for saline aerosols
Authors	SANDU I., STIRBU C., CANACHE M., CHIRAZI, M., STIRBU C., SANDU A.V., VASILACHE V., LUPASCU T.,
Institution	Romanian Inventors Forum
Patent no.	Pending
Description EN	The inventions refer to a system of halochambers with continuous generation of saline aerosols based on changeable diafragms (filters), with porous granules made of different salts according to application (prevention, therapy, clean air, sportsman improvement) The structural-functional characteristics of the diafragms(filters) correlated with the microclimate factors, air flow and room size, allows to obtain optimal concentration levels.
Class no.	4

Romanian Inventors Forum Bacău Brench

RO.108.

Title

PROCESS AND PUMP FOR BLOOD CIRCULATION SFARTZ PINCU Authors Institution

Patent no.

Description

Patent application No. A00219/23.03.2015

The invention refers to a process and a pump for blood circulation in human and animal bodies, in order to create a supplementary blood supply to organs suffering from circulatory failure or requiring an increase in blood supply, in cases of a more rapid healing or even in the case of total replacement of the heart

According to the invention, the process and the pumps for blood circulation are characterized by the fact that the drive of a blood pump placed inside the body is achieved at the expense of the energy of the respiratory cycle, which in its phase of air inspiration into the lungs causes an increase of the body circumference. The reaction force required to achieve the movement which drives the blood pump is obtained with a corset placed outside the body and applied over the abdominal-thoracic area, in the place where the growth of the circumference is maximum and where

under the skin will be placed the pump.

The pump has a special construction, especially destined for this drive process.

This invention eliminates the patient's dependence on an outside source of energy, eliminating also the passing of electrical conductors or tubes through the skin when using the expansion energy of some motive fluids

12



NATIONAL 300

RO.109.	
Title	Intelligent irigation system
Authors	Mihai Laschi
Institution	Romanian Inventors Forum, Bacău Brench
Patent no.	Pending, 119535 This project proposes the development of modules for measuring and data transmission systems implement automatic irrigation. The communication data stream transmission is supported by the existing infrastructure in electric power irrigation systems. The main aim is to ensure water resources, soil and biological requirements when existing crops require. The system architecture is designed to be implemented in existing irrigation systems, both circular and
Description	 displacement of the linear displacement or drip. The main objectives are: Eliminate the effects of prolonged drought; Ensuring the necessary water flow to the optimal timing of plants; Eliminating waste water; Reduce the overall costs The ultimate goal is to impose specific rules and thresholds modern agriculture and environmental protection aimed at increasing agricultural productivity while maintaining a low degree of pollution.

RO.110.	
Title	Ecologic Agrarian Structure
Authors	Vasile Roman
Institution	Romanian Inventors Forum, Bacău Brench
Patent no.	Pending
	The technology gives the opportunity to integrate
	resources:
	- Exploiting sludge fermentation - as fertilizer
Description	- Make the manure and waste
Description	- Irrigation and land drainage
	- Obtaining organic crops
	- Energy independence
	- Increased profitability
	- Systematization of territorial area
	the second se

1000

National Institute of Materials Physics Magurele, Romania

RO.111.

- A MgB2-based superconducting material machinable by
cutting tools, and a magnetic field concentrator / storage
device
- Authors Gheorghe Virgil Aldica, Mihail Burdusel, Vladimir Cioca, Petre Badica
- Institution National Institute of Materials Physics

Patent no. Patent application No. A/00832/2013

The present invention relates to the production by Spark Plasma Sintering technique of a superconducting material based on MgB₂ that is machinable by using cutting tools, and to a magnetic field cryogenic concentrator / storage device (Fig. 1). The invention solves the problem of limitations in obtaining the desired form of the material and offers new advantages in the construction of a magnetic field concentrator / storage device according to the specific Description requirements of different applications that use these devices. EN Along with the typical integration requirements of different components in a system / device, for the operation of the system / device it is necessary to control the shape of the superconducting parts that trap the magnetic field to avoid unwanted magnetic flux jumps due to thermo magnetic effects: for characteristic sizes and shapes the thermo magnetic effects can be stabilized.

Class no.



NATIONAL 303

RO.112.

Title ENMethod for preparing a photosensitive structure of
TiO₂/GaAs

Authors Cernea Marin, Ghita Rodica, Negrila Constantin-Catalin

Institution National Institute of Materials Physics, P.O.Box MG-7,

- Magurele, Bucharest
- Patent no. Patent OSIM No. 123 630/2015

The present invention relates to a method for obtaining a TiO₂ thin film photosensitive structure on GaAs substrate. According to the invention, the process consists of the deposition on a GaAs monocrystalline substrate of a thin layer of TiO₂ by the sol-gel method, followed by heat treatment at 800 °C for 2 hours. Then, electrodes of Au-Ge and Au are deposited by evaporation in vacuum on GaAs surface and on TiO₂ surface, respectively. Indium wires are Description EN sticking on the surfaces Au-Ge/GaAs and Au/TiO₂ in air at 200-250 °C. Finally, the whole structure is encapsulated on TO39 tribrach, with glass lid. The obtained structure has a M/S/S/M form with a resistive character and at illumination due to the photo-carriers generation the TiO₂/GaAs becomes photosensitive. The basic application of this structure obtained by a chemical procedure is that of a photo-detector.

Class no.





Image of a photosensitive structure of TiO₂/GaAs

RO.113.	
Title EN	Rapid thermal annealing device (RaThAn)
Authors	G. Dobrescu, M. Cioca, L. Culea, P. Soare, L. Pintilie
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Description EN	The device is used for rapid thermal annealing of thin films from materials with ferroelectric and pyroelectric properties. It is designed to reach temperatures as high as $1200 ^{0}$ C in very short time, with heating rate of the order of 50-100 0 C/sec.
Class no.	5

RO.114.

NO.114.	
Title EN	PROCESS FOR OBTAINING PREDEFINED MICRONIC AREAS OF ZINC OXIDE STRUCTURES THROUGH AUTOCATALYTIC DEPOSITION
Authors	Florica Camelia-Florina, Preda Nicoleta-Roxana, Enculescu Maria-Monica, Evanghelidis Alexandru-Ionuț, Costaș Liliana-Andreea, Oancea Mihaela, Busuioc Cristina, Matei Elena, Enculescu Ionuț-Marius
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Patent no.	Patent pending
Description EN	The device is used for rapid thermal annealing of thin A process through which micron-sized semiconducting patterns can be obtained, by using easily scaled chemical and physical methods.
Class no.	10

RO.115.

Title EN	ELECTROCHROMIC DEVICE BASED ON TRANSPARENT AND FLEXIBLE ELECTRODES OBTAINED THROUGH ELECTROSPINNING AND POLYANILINE ELECTRODEPOSITION
Authors	Matei Elena, Busuioc Cristina, Evanghelidis Alexandru- Ionuț, Enculescu Maria-Monica, Preda Nicoleta-Roxana, Florica Camelia-Florina, Costaș Liliana-Andreea, Oancea

	Mihaela, Enculescu Ionuț-Marius
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Patent no.	Patent pending patent
Description EN	A flexible and transparent display based on the electrochromic properties of polyaniline and on electrospun electrodes
Class no.	10

RO.116.

PROCESS FOR OBTAINING NETWORK-LIKE
NANOSTRUCTURED FILMS FORMED OF
MONODISPERSE ZINC OXIDE STRUCTURES
Preda Nicoleta-Roxana, Florica Camelia-Florina, Enculescu
Maria-Monica, Zgură Irina-Ionela, Socol Marcela,
Evanghelidis Alexandru-Ionut, Costaș Liliana-Andreea,
Oancea Mihaela, Busuioc Cristina, Matei Elena, Enculescu
Ionuț-Marius
National Institute of Materials Physics, P.O.Box MG-7,
Magurele, Bucharest
Patent pending patent
Nanostructured zinc oxide films, with large active surface,
obtained through a cheap chemical method
10

RO.117.

	THERMOCHROMIC DEVICE BASED ON
Title EN Authors	TRANSPARENT AND FLEXIBLE ELECTRODES
	OBTAINED THROUGH ELECTROSPINNING
	Busuioc Cristina, Evanghelidis Alexandru-Ionuț, Enculescu
	Maria-Monica, Matei Elena, Preda Nicoleta-Roxana, Florica
	Florina-Camelia, Costaș Liliana-Andreea, Oancea Mihaela,
	Enculescu Ionuț-Marius
Institution	National Institute of Materials Physics, P.O.Box MG-7,
Institution	Magurele, Bucharest
Patent no.	Partent pending
Description	Flexible and transparent device based on thermochromic
ĒŇ	dyes and metallic microfibres microheaters.
Class no.	9, 10, 11

RO.118.	
Title EN	W-metal laminates produced by FAST
Authors	Magdalena Galatanu, George Ruiu, Monica Enculescu, Mihai Cioca, Andrei Galatanu
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Project	Eurofusion, WPMAT-HHFM, EU'H2020 GA633053
Description EN	W-metal laminates and other similar multi-metal layered composites are an innovative way to combine basic materials properties to create improved functionalities. We have developed an efficient technology to produce such materials in a very short time, thus avoiding detrimental processes due to recrystallization, or diffusion driven elements mixing. The technology can be adapted to various shapes and can be up
Class no.	scaled to industrial use 5, 7, 8

RO.119.

Title EN	Nanoparticles with luminescent properties-PostDoc Research
----------	--

Authors PhD. Ciobanu Steluta Carmen

Institution University Politehnica of Bucharest/ National Institute of Materials Physics

Hydroxyapatite (HAp), is one of the most studied member of the apatite family, due to its remarkable biocompatibility, bioactivity and osteoconductivity. Being the most important inorganic component of bones and teeth, HAp has the general formula, $Ca_{10}(PO_4)_6(OH)_2$ and constitutes 65% of the total mineral content of the human. One of the most important properties of hydroxyapatite is the ability to incorporate a wide variety of substitutions for Ca^{2+} , PO_4^{3-} and/or OH⁻ ions due to the flexibility of the apatite structure. The lanthanides (Ce, Eu, Sm etc.) are unique among the elements, barring the actinides, in resembling each other Description so markedly in their chemical properties. The aim of the EN postdoctoral research is to study the influence of SBF (simulated body fluid) on the physico-chemical and biological properties of europium doped hydroxyapatite. Another objective is to evaluate the cytotoxicity, biocompatibility and antimicrobial activity of cerium and samarium doped hydroxyapatite luminescent nanoparticles. The luminescence of lanthanide doped hydroxyapatite will be investigated in order to see if this nanoparticles could be used as luminescent probe in biomedical applications.

Class no.

Innovative Research

RO.120.

Description EN

Title ENPhysico-chemical and ultrasonic characterization of
ceramic materials used for biomedical applicationsAuthorsPhD. Student Cristina Liana Popa, Prof. Stefan Antohe
Prof. Mounsif Ech-Cherif El-Kettani

Institution University of Bucharest/ University of Le Havre/National Institute of Materials Physics

> A major problem that modern medicine encounters is finding new materials which could be integrated in the human body without being rejected by the host tissue. Therefore, much attention has been directed toward the development of nanotechnology. One of the major issues of orthopedic surgeries is the risk of postoperative infections and the possibility of implant rejection.

Hydroxyapatite is one of the most suitable materials for bone restoraton due to its outstanding properties such as osteoconductivity and excellent in vivo resorption. Thanks to its good biocompatibility, hydroxyappatite is used as coating for many orthopedic and dental implants. However, it was remarked that patients with hydroxyapatite coated implants are more likely to contact postoperative bacterial infections. A solution to this problem would be doping hydroxyapatite with different elements with antibacterial properties. Zinc is a good candidate to be used as doping material due to its role in the proper functioning of bone metabolism.

The aim of this research program is to synthesise and study the physico-chemical properties of zinc doped hydroxyapatite(Zn:HAp) and of zinc doped hydroxyapatite embeded biopolymer in various matrices The biocompatibility and antimicrobial activity will also be conducted in this study. In vivo evaluation of Zn:HAp nanoparticles toxicity are important for different pharmaceutical and biomedical applications. Furthermore, I intend to use and alternative, non-destructive method to study porous materials using ultrasound. This method is currently used to characterize raw solid materials or dispersions. It is also used to diagnose osteoporosis.

Class no. Innovative Research

RO.121.

Class no.

Structure of electro-optical superlens performed with
micro- or nanostructured plasmonic guide for imaging
with resolution below the diffraction limitAuthorsC. Cotîrlan-Simioniuc, A. S. Manea, C. Logofătu

Institution National Institute for Materials Physics

Patent application No. A/00050/2015 Patent The proposed structure for ultrathin and flat electro-optical superlens gives the opportunity to overcome the diffraction limit using high-spatial resolution optical information contained in evanescent waves or surface waves. Superlens includes a micro- or nanostructured waveguide with a configuration built on a semiconductor substrate, a layer of metallic elements in the form of H, intermediate dielectric lavers and a surface laver of graphene. The surface Description reflectivity is modulated by the conversion of surface waves EN into propagation waves or vice versa, depending on the orientation of the metallic elements of the waveguide structure and electric polarization, in order to obtain freeaberration thermal images with enhanced contrast.

Applications: optoelectronic surface plasmon couplers and thermal imaging systems / thermal microscopy.



National Institute of Research & Development for Technical Physics, Iasi

I

DO 122	
NU.122.	Invention Titles Motellie magnetic motorial with controlled
Title EN	Curie temperature and processes for preparing the same
Authors	CHIRIAC Horia, LUPU Nicoleta
Institution	National Institute of Research & Development for Technical Physics
Patent no.	Patent application No. a 2013 00949 / 03.12.2013
Description EN	The invention relates to a metallic magnetic material with addition of biocompatible elements, with quasi-amorphous structure and controlled Curie temperature and to the processes for preparing the same. According to the invention, the material composition is expressed as atomic percentage: Fe = 5967% , Nb = 0.11% , B = 20% , a biocompatible material: Ti, Ta or Mn = 1220% , the Curie temperature in the range of 070 degrees C (Figure), a magnetic saturation induction of $0.051.1$ T, and strong magnetic response upon application of a high-frequency alternating magnetic field. The processes for preparing the claimed material directly as strips, micro/nano threads coated with glass or micro/nanometric powders consist in quickly cooling the mixtures of the previously-mentioned compositions under well-controlled conditions, under high vacuum of at least 10^{-4} mbar or helium or argon controlled atmosphere, for oxidation preventing purposes. This magnetic material can be used for biomedicale sensors, as well as for controlled induction of hyperthermia.
Image/ Photo	80 Fe _m , Ti Nb ₂ , B _m ribbons 10 10 10 10 10 11 12 13 14 15 16 17 18 19 20 10 10 10 10 10 10 10 10 10 1

Figure: Curie temperature dependence of the Ti content (x) for Fe $_{79.7}$. xTi_xNb $_{0.3}$ B magnetic material

RO.123.	
Title EN	ELECTROMAGNETIC TRANSDUCER FOR EVALUATION OF STRUCTURE AND INTEGRITY OF
	COMPOSITE MATERIALS WITH CARBON FIBRE- REINFORCED POLYMERIC MATRIX
Authors	R. Grimberg, A. Savin
Institution	National Institute of R&D for Technical Physics
Patent no.	RO126245-A0/2011
Description EN	The invention relates to an electromagnetic transducer for the evaluation of the structure and integrity of composite materials with carbon fiber-reinforced polymeric matrix. According to the invention, the transducer as claimed is an absolute emission-reception transducer, the emission part comprises an emitting coil and an alternating magnetic field flux concentrator made by the constant-pitch winding of a thin foil of metallic material on a truncated cone-shaped dielectric material, the emitting coil being supplied with alternating current of a frequency corresponding to the frequency for which the flux concentrator material exhibits the maximal magnetic permeability, the emitted field being reflected by the carbon fibers of the composite material, some evanescent waves occurring as a consequence of diffraction and being very quickly attenuated by distance, while, the use of a lens consisting of two metallic materials on truncated cone-shaped dielectric support, with their bases arranged face to face at a small distance from each other, results in the concentration of the said evanescent waves, without substantial attenuation, on the surface of a receiving coil at whose terminals an induced electromotive voltage occurs, the amplitude and phase whereof depend on the structure of carbon fiber reinforcement of the composite material.

Class no. 5. Industrial and laboratory equipment

Image/ Photo



"Petru Poni"

Institute of Macromolecular Chemistry Iasi

RO.124.	
Title EN	METHOD AND COMPOSITION FOR OBTAINING STRATIFIED COMPOSITES
Authors	Elena Paslaru, Silvestru Bogdanel Munteanu, Raluca Dumitriu, Cornelia Vasile
Institution	"Petru Poni" Institute of Macromolecular Chemistry, IASI, ROMAIA
	The invention relates to method of obtaining dual-bioactive material based on polyethylene coated with chitosan and vitamin E as antimicrobial and antioxidative agents, respectively. The bioactive mixture was immobilized onto polyethylene (PE) surface using electrospraying as coating technique. Covalent bonding of the antibacterial/antioxidant layer was achieved with different coupling agents through amide bonds when 1-ethyl-3-[3-dimethylaminopropyl]carbodiimide hydrochloride (EDC) and N-hydroxysuccinimide (NHS) coupling route was chosen or carbamate linkage in the case when using carbonyldiimidazole (CDI) coupling agent.
Description EN	The method consists into two stages: 1) activation/functionalization of the polyethylene substrate by corona discharge plasma and 2) the chemical immobilization of the chitosan / vitamin E mixture onto the functionalized PE using the two different coupling systems, EDC and NHS (7:1 molar ratio), and CDI (20 mM concentration in ethanol). Electrospraying was used as the coating method in the following optima experimental conditions: 6 cm was the distance between the needle tin and the

collector, 0.2 mL / h was the flow rate and 27 kV voltages. The obtained material shows dual bioactive character, having both antibacterial (against *Salmonella enteritidis, Escherichia coli* si *Listeria monocytogenes* bacteria) and antioxidative properties, which are maintained even after subjecting the samples to desorption in harsh environment. The properties of these new obtained materials further recommend them for biomedical and/or food packaging applications.

Acknowledgments: This work was done with the financial support provided by IAEA through the RC-17689-R0 project.

Class no.

(Chitosan/Vitamin E) Spinning solution

RO.125.	
Title EN	Textile Fibers Responsive to Temperature and pH Changes
Authors	Sdrobis Anamaria, Ioanid Emil Ghiocel, Vasile Cornelia
Institution	"Petru Poni" Institute of MacromolecularChemistry, Iasi, Romania RO 127204 A2
Description EN	The invention relates to obtaining double responsive materials by plasma-assisted grafting reaction of cellulose/chitin mix fibers with N-izopropylacrylamide (NIPAAm) and poly (N-izopropylacrylamide) (PNIPAAm). The process of grafting cellulose/chitin mix fibers according to the invention consists in two steps: the cellulose/chitin mix fibers have been pre-treated for 15 minutes in high frequency plasma which was created inside of a glass reactor, using a 0.4 mbar vacuum. Inside the reactor were two electrodes connected to a source of high frequency of 1.3 MHz and a 100 W power in discharge. After activating, the fibers were removed from the treatment chamber and immersed in the solution (10 % wt) of N-isopropylacrylamide) (PNIPAAm) or poly(N-isopropylacrylamide) (PNIPAAm), which were previously activated with a mix of two chemical activators, NHS (N-hydroxysuccinimide) and EDC (1-(3-dimethylaminopropyl)-3-ethylcarbodiimide). Using these coupling agents the monomer or the polymer are covalently binding of active centers implemented by plasma exposure. Following such treatment procedure results dual responsive materials having a transition temperature of 32-33 °C and a critical pH of 4.3. Such treatment could be transferred to practical technologies, particularly in textile with special applications e.g. in medical domain. Acknowledgments: This work was done with the financial support provided by IAEA through the RC-17689-R0 project.

Class no.

4

RO.126.	
	PROCESS AND COMPOSITION FOR PRODUCING NOVEL
Title EN	POLYETHYLENE MATERIALS HAVING
	ANTIMICROBIAL AND OXIDATION PREVENTING
	PROPERTIES FOR FOOD PACKAGING
Authors	Raluca N. Darie, Catalina N. Cheaburu, Gina M. Pricope, Doina
	Constantinescu, Cornelia Vasile
Institution	Petru Poni Institute of Macromolecular Chemistry
	RO128630-A2/30 Jul 2013
	Patent application No. RO000807 /2011
	The invention relates to a material exhibiting antimicrobial and
	oxidation preventive properties, for food packaging, and to a
	process for producing the same. According to the invention, the
	material consists of 9296% low density polyethylene, 4 - 8%
	chitosan polymer or a composite thereof and 0.5 % vitamin E, the
	percentage being expressed by mass percentage. The process, as
	claimed by the invention, consists in melt-processing the starting
	materials at a temperature of 115 degrees C, for 10 min, followed
	by pressing at a pressure of 200 bar, to result in a material as
D	homogeneous semitransparent films having the thickness of
Description	0.10.2 mm, the oxidation inducing period of 2./54.69 min, the
EN	elasticity module of 156251 MPa, breaking resistance of 7.49.5
	MPa, and the degree of gram positive and gram negative bacteria
	minibition, after 48 if of acting, of 59100% for <i>Listera</i>
	monocytogenes, 01 14100% for Escherichia coll and 01 25100%
	101 Salmonella enlerials.
	<u>Applications.</u> 1000 packaging
	Acknowledgements

Romanian - EEA Research Programme operated by MEN under the EEA Financial Mechanism 2009-2014 and Project ACTIBIOSAFE, Contract No 1SEE/30.06.2014 is kindly acknowledged.

Class no.



Growth inhibition of *Listeria monocytogenes* and *Salmonella enteritidis*; a,c aspect of bacteria on LDPE; b, d aspect of film LDPE containing LDPE/Chitosan and Vitamin E (without bacteria grown on surface)

RO.127.	
Title EN	Method and composition for obtaining polyurethane bioactive surfaces (biocompatible and antimicrobial), by electrospinning/electrospraying, for medical and pharmaceutical use
Authors	B.S. Munteanu, E. Pâslaru (Stoleru), D. Bejenaru (Macocinschi), D. Filip, C. Vasile
Institution	Petru Poni Institute of Macromolecular Chemistry
	Patent application No. A/00651/2014
Description EN	The present invention refers to a method for obtaining polyurethane/natural biopolymers/silver (PU/BP Ag)-based bioactive surfaces (biocompatible and antimicrobial) by electrospinning/electrospraying for biomedical applications. Polyurethane films (PU) were coated by electrospinning/electrospraying of two types of formulations in N,N-dimethyl formamide solutions with the following contents: 9 g polyurethane (PU) + 0.9 g hydrolyzed collagen (HC) + 0.09 g K-elastin (KEL) + 0.01 g hyaluronic acid (HA) and 9 g PU + 0.9 g HC + 0.09 g KEL + 0.01 g chondroitin sulfate (CS) respectively, with incorporated silver nanoparticles (AgNPs). The biocomposites inhibit the growth of pathogenic bacteria such as: <i>Salmonella typhymurium, Escherichia coli</i> and <i>Listeria monocytogenes</i> . Acknowledgments: The authors acknowledge the financial support given by Romanian UEFISCDI through research project BIONA NOMED no $164/2012$

Class no.



Antimicrobial test against *Salmonella typhymurium* ATCC 14028 (XLD medium): A- Reference; B- PU-HA 0.2%Ag; C- PU-HA 0.5%Ag; D - PU-HA 1%Ag (B, C, D cast membranes).

RO.128.				
	PROCESS	FOR	PREPARING	NOVEL
	SUPERABSOF	RBING	HYDROGELS	BASED ON
Title EN	XANTHAN A	ND LIGN	IN FROM ANNU	JAL PLANTS,
	WITH APPLI	CABILIT	Y IN MEDICINE	AND FOOD
	INDUSTRY			
Authors	Irina Elena Rasc	hip, Corn	elia Vasile	
Institution	"Petru Poni" II	nstitute of	Macromolecular C	Chemistry
	RO129066A2/2	012		v

According to the invention, the process consists in mixing 70% xanthan with 30% lignin, while continuously stirring, after which there are admixed sodium hydroxide, water and polypropylene diglycidyl ether, the resulting mixture being then subjected to reticulation for 8 h, at a temperature of 80 degrees C, followed by repeatedly washing with hot and cold Description water and drying by lyophilization, finally resulting in a transparent gel having a maximal swelling degree of 2302%. The vanillin release from these matrices evidenced that the hydrogel crosslinked with PPDGE present a release percent of 28% during 24h, the rest untill 100% will be released once the support is degraded.

Applications

The invention relates to a process for preparing hydrogels to be used in medicine and food industry.

Class no.

EN





SEM micrograph of the 70X/30L powders swelled in water.

2D and 3D Height AFM images of the 70X/30L samples.

Acknowledgements: The authors acknowledge the financial support from UEFISCDI through the research project BIONANOMED 164/2012

RO.129.			
Title EN	Process for preparing a bicomponent hydrogel		
Authors	R.P. Dumitriu, C. Vasile		
Institution	"Petru Poni" Institute of Macromolecular Chemistry		
Authors Institution Description EN	R.P. Dumitriu, C. Vasile "Petru Poni" Institute of Macromolecular Chemistry OSIM Patent Number: RO123511-B1 /28.02.2013 This invention deals with a process for obtaining new stimuli-responsive bicomponent hydrogels based on natural and synthetic polymers, for application in the medical or pharmaceutical filed. The obtained hydrogels contain poly(N-isopropylacrylamide) and sodium alginate covalently cross-linked with <i>N</i> , <i>N</i> ⁻ methylenebisacrylamide with the aim of combining the unique characteristics of the two polymers within new materials, with responsive properties towards both pH and temperature. These new stimuli-responsive hydrogels, which possess performant properties such as biocompatibility, biodegradability, improved chemical and mechanical stability of the system by forming the crosslinked polymeric network can be included in the smart materials		
	field, being good candidates for application as 3D scaffolds		
	for tissue engineering or as sustained drug delivery systems.		
	Acknowledgements: The authors gratefully acknowledge		
	the financial support of Romanian ANCS through research		
	project PN-II-PT-PCCA-2011-3.2-0979 BIONANOMED		
	(UEFISCDI no. 164/2012).		
	4		

Class no.

4



Aspect of hydrogels with different compositions

RO.130.	
	ACTIBIOSAFE - EEA Research Programme – Project
	presentation: IMPROVING FOOD SAFETY
Title EN	THROUGH THE DEVELOPMENT AND
	IMPLEMENTATION OF ACTIVE AND
	BIODEGRADABLE FOOD PACKAGING SYSTEMS
Authors	C. Vasile – project director.
	Research teams:
	NATIONAL
	317

Institution	 R. N. Darie-Nita, B.S. Munteanu, M. Brebu, E. Stoleru, E. Părpăriță, A. Irimia, L. Profire, O. Dragostin, D. Pamfil, R.Dumitriu Romanian Academy, "Petru Poni" Institute of Macromolecular Chemistry, Physical Chemistry of Polymers Department, "Gr.T. Popa" Medicine and Pharmacy University, and "Al. I. Cuza" University, Faculty of Physics, Iasi, Romania J. T. Rosnes, M. Sivertsvik, T. Løvdal- NOFIMA AS, Stavenger, Norway M. Râpă, E. Grosu - S.C. ICPAO SA, Mediaş, Romania L. Moldovan, G. Pantea, S.C. Rodax SA, Bucharest, Romania A. C. Miteluţ, M. E. Popa, E. E. Tănase, A. L. Mihai, M. C. Drăghici - University of Biotechnology, Bucharest, Romania "Patru Poni" Institute of Macromolocular Chemistry
institution	A CTIDIOS A EE project contributes to reduce alteration of
Description EN	ACTIBIOSAFE project contributes to reduce alteration of the food and food contamination risks by developing active and biodegradable packaging systems, which will deliver a new approach for the sustainable processing of bioplastics and will provide a functional packaging solution for food, as well as other applications. Active packaging properties will be achieved through the use of chitosan and other bioactive natural substances that will contribute to antimicrobial and antioxidant characteristics in order to extend the shelf-life of the packaged goods and consequently to diminish the use of preservatives on food formulations. These features of food packaging contribute to improvement the level of consumers' awareness and their capacity to make healthy choices and the prevention of chronic diseases. Also, development and implementation of active food packaging envisage environment protection with respect to the decrease in fossil resources and need to reduce the amount of disposable packaging materials. The solutions implemented for achieving these objectives concern materials, processes and technologies. Moreover, specific project orientations will be implemented.
	Acknowledgements:

The research leading to these results has received funding from Romanian - EEA Research Programme operated by MEN under the EEA Financial Mecanism 2009 - 2014 and project contract no. 1SEE/2014.

RO.131.	
Title EN	New biomaterials responsive to external stimuli
Authors	Daniela Pamfil, Dr. CS I Cornelia Vasile
Institution	Romanian Academy "Petru Poni" Institute of Macromolecular Chemistry

Introduction: Polymeric systems capable of responding to external stimuli offer great promise in the development of novel biomaterials for different medical applications. Hydrogel materials are a particularly important class of biomaterials amenable to the development of smart triggers for bio-responsive drug release. Natural collagen hydrogels have structural similarity with the physiological extracellular matrix, promote cell migration, proliferation and adhesion and offer bio-safe profiles, no toxicity and no chronic inflammatory response.

Objectives: Doctoral thesis mainly aims the chemical modification of collagen with substituted modified anhydrides followed by obtaining novel hybrid hydrogels in order to increase the solubility, reactivity and thermal resistance and to obtain materials with applications in medical and pharmaceutical fields such as wound care products, drug delivery systems, constituents of hybrid-type organs (tissue engineering), as well as multi stimuli-sensitive systems.

Description EN *Abstract:* Chemical hydrogels were obtained by free radical polymerization/crosslinking of substituted anhydride-modified collagen with 2-hydroxyethyl methacrylate in the presence of N, N, N', N'-tetramethyl ethylene diamine. Substituted anhydride-modified collagens have been previously synthesized by reaction of soluble collagen with dimethyl maleic or citraconic anhydride. The structure and physico-chemical properties of the obtained hydrogels were investigated. Having in view final applications, thermal properties have been investigated by differential scanning calorimetry in dried and hydrated state. Also, *in vitro* drug release tests from polymer matrices were carried out.

Future developments: Biomaterials will be evaluated for their toxicity and biocompatibility and *in vivo* drug release tests to prove their potential applicability in tissue engineering and/or wound dressing.

Acknowledgements: The authors gratefully acknowledge the financial support of Romanian ANCS through research project PN-II-PT-PCCA-2011-3.2-0979 BIONANOMED (UEFISCDI no. 164/2012).



Class no.

Institute of Biological Research, Iasi

RO.132.				
Title EN	Biostimulation procedure of pepper crop			
	Iurea Dorina, Chintea Pavel, Mangalagiu Ionel, Munteanu			
Authors	Neculai, Istrate Mihai, Cotenco Eugenia, Iurea Roxana-			
	Ionela, Iurea Pavel			
	Institute of Biological Research, Iasi/ Al. I. Cuza			
Institution	University, Iasi/ Institute of Genetics and Plant			
	Physiology, Chisinau/			
Patent no.	Patent Md, No. 342/2010			
	The invention relates to agriculture, especially vegetable			
	growing and may be used for pepper cultivation.			
	The process, according to the invention consists in treating			
	the foliage of pepper plants before flowering, after flowering			
	and fruit setting stage with steroid glycoside Tomatoside			
D	aqueous solution in concentrations of $0.001\% - 0.08\%$, with			
Description	a total consumption of 0.25 to 0.30 L / plant.			
EN	Result consists in optimizing the physiological processes in			
	plants, leading to increased production up to early 23 to 28%			
	and total production by up to 14%. Crop quality is not			
	impaired in any way after applying Tomatoside to the			
	product.			
	Applications: Agriculture - vegetable growing			
Class no.	3			
RO.133.				
Title EN	Method of treating grapes vine			
	Iurea D. Dorina, Mangalagiu Ionel, Munteanu Neculai,			
Authors	Mustea Mihai, Chintea Pavel, Chirilov Alexandru, Contenco			
	Eugenia, Iurea Pavel, Iurea Roxana-Ionela			
	Institute of Biological Research, Iasi/ Al. I. Cuza			
Institution	University, Iasi/ Gh. Asachi Technical University of Iasi/			
	Institute of Genetics and Plant Physiology, Chisinau			
Patent no.	Patent Md, No. 235/2010			
	The invention is related to the bioorganic chemistry, in			
	particular to steroidic glycoside [Tomatozid - (5α – furostan			
Decemintion	- 3 β , 22, 26 -triol -3 (O- β -D-glucopyranosyl (1- 2) - β -D -			
EN	glucopyranosyl (1- 4) - β –D- galactopyranosyd – 26 –O- β –			
E1N	D-glucopyranosyd)], biological active compounds of			
	potential interest in agriculture (horticulture).			
	The problem that the invention is solving resides in broading			
	NATIONAL			

area of natural bioactive agents used for grape vine growth and development regulator, through the discovery of a new class of steroidic compound of vegetal origin, with significantly antiviral and biostimulator properties.

This new compound is much cheaper then other products known up to now, non-toxic, easy to be obtained, highly effective in minor concentration and doesn't manifest side effects.

Applications: agriculture (horticulture).

Class no.

3

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

RO.134.			
Title	Sun protection gel and process for preparing the same and use thereof		
Authors	Rodica-Mariana Ion, Alexandrina Nuta, Ana-Alexandra Sorescu, Ioana Raluca Bunghez		
Institution	ICECHIM, Bucharest		
Patent no.	Patent application No. 00767/2014		
Description	The present invention relates to the preparation of a gel based on new sunscreen compounds with 5,6- benzocumarines-3-substituted structures as antioxidants. The obtained gel is used for the protection of the skin against cell damage processes induced by free radicals arising from exposure to sunlight, as well as for the repair of certain diseases by photodynamic effect of the skin (suppurative wounds, burns, etc.). The photosensitizing agent of the invention has a number of advantages such as accessibility, lack of toxicity and biological compatibility and high photodynamic activity. The topical cream is stable over time and stored in the dark pharmaceutical containers, filled under sterile conditions known to those skilled in the pharmaceutical field. According to this patent, this cream by penetrating the surface of the skin has effective antioxidants, preventing the skin protection against UV radiation and minimizing the damages caused by photodecomposition exogenous material while applying the cosmetic or pharmaceutical purposes.		
Class	4		



RO.135.	
Title	COMPOSITE BIOMATERIAL AND PROCEDURE OF
THE	ITS OBTAINING
Authors	Rodica-Mariana Ion, Nelu Ion, Anca Aurora Poinescu, Cristiana
1 Author 5	Radulescu, Calin Dinu Oros
Institution	ICECHIM, Bucharest/Valahia University, Targoviste
Patent no.	Patent application No. A 00356/2014
	This invention relates to a new composition containing
	hydroxyapatite reinforced with strontium titanate (HAp - SrTiO ₃),
	with the improved physico-chemical and mechanical properties, as
	a biological material compatible with the environment, with
	applications for implants and tissue engineering, and use in the
	development of bone substitutes able to replace all or part of the
	composite biomaterial has no solubility in physiological simulant
	fluid (SBF) and the metal ions present in the two components of the
	composite biomaterial does not go into solution and no allergenic
	effects, carcinogenic and cytotoxic are observed. Also, Sr does not
	dissociate from strontium titanate to replace Ca in HAp, but
	remains stuck in its structure.
Decomintion	The invention has the following advantages:
Description	1. A new method of preparing by solid-phase reaction for a
	biomaterial consisting of SrTiO3 and HAp.
	2. A simple and efficient process for preparing a composite
	biomaterial with superior features solid phase reactions.
	3. A simple and efficient process for preparing a composite
	A A substantial reduction of time in the stan of propering composite
	4. A substantial reduction of time in the step of preparing composite biomaterial based on HAn and SrTiO3
	5 A biomaterial with a uniform porosity (pore diameter 100-200
	nm) necessary for the osseointegration of the implant.
	6. The replacement of the titanium composite biomaterial composed
	of hydroxyapatite and strontium titanate, carried out in order to
	increase the biocompatibility of the resulting composition is well-
	known that strontium is used medications for arthritis.

Class





RO.136.	
Title	Process for obtaining of an elastomeric composite for the protection of the metallic surfaces submergeded in marine water
Authors	Marin Laurentiu, Marin Catalina Daniela, Velea Sanda, Patriche Neculai, Talpes Marilena, Tenciu Magdalena, Nicolaev Simion, Piescu Victoria
Institution Description	ICECHIM, Bucharest Patent application No.A/00497/2011

The Patent Application nr. A/00497/2011 contains the scientific informations with the references about obtaining of an elastomeric composite based on nitrilic rubber wich is used in anticorosive and antifouling protections of the submerged in marine water metallic surfaces. The novelty of the procedure is the modification of the elastomeric composition (receipe). The elements of the receipe – an cluster of special peroxides and an organosulphur element, ensure reticulation (volcanization) of the elastomeric matrix of the composite under sea water effect, based on an Fenton reaction mechanism.

Class





Off shore oil pipe – Midia Harbour – industrial experimentations with the elastomeric composition
National Research & Development Institute for Textile and Leather

RO.137.	
Title	Three-element electrostatic charge deccay electrode
Authors	Razvan Scarlat, Codrin Donciu, Emilia Visileanu, Eftalea Carpus
Institution	The National Research & Development Institute for Textiles and Leather
Patent no.	Patent application RO No. A/00897/21.11.2014
Description	The invention relates to an electrode for measuring the discharge of textile materials preloaded with static electricity. The structure of the discharge electrode allows its use for determining the drainage capacity of the electrostatic charge of textile materials with different structures on the two sides. The electrode consists of a metal arm on which are mounted two conductive elements and an insulator from polycarbonate by means of a rod gripping system. Depending on the manner of placement of the sealing element between the conductive elements and the test sample, can be separately analyzed the drainage capacity of the electrostatic charge of each side of the material.
Class	9

RO.138.

Title	Technological line for conductive yarns processing on			
The	knitting machines			
	Emilia Visileanu; Constandin Stefan; Eftalea Carpus;			
Authors	Razvan Scarlat; Alexandra Ene; Carmen Mihai; Mariana			
	Pislaru; Gheorghe Enache			
Institution	The National Research & Development Institute for			
	Textiles and Leather			
Patent no.	Patent application Ro No. A/00898/21.11.2014			
	The invention relates to a technological line for conductive yarns			
	processing on knitting machines, mainly made of: metal frame,			
	bobbins carrier, yarn control device.			
	This line performs:			
	- reduction of the number of conductive yarn inflection points			
Description	through forming obtuse angles by the knitting machine guiding/ control elements;			
	- reduction of the number of conductive yarn contact points by			
	knitting machine guiding/ control elements;			
	- preserving of the conductive yarns quality characteristics;			
	- simple set up and operation.			
Class	9			
	ΝΑΤΙΟΝΑΙ			

National Research & Development Institute for Textile and Leather Division Leather and Footwear Research Institute (ICPI)

RO.139.	
	LAYERED COMPOSITE BASED ON
Title	POLYPROPYLENE REINFORCED WITH TREATED
	GLASS FIBRE FABRIC
Authors	Sonmez Maria, Alexandrescu Laurentia, Georgescu Mihai, Nituica Mihaela, Ficai Denisa, Ficai Anton, Avadanei Lidia
Institution	National Research and Development Institute for Textiles and Leather (INCDTP) - Division Leather and Footwear Research Institute (ICPI)
Patent no.	Patent application No. A/00793/2014
Description	The invention relates to a layered composite material based on polypropylene reinforced with boro-silicate E glass fiber fabric treated with different types of organosilanes. The technical problem to be solved by the invention consists in making layered composites based on polypropylene, maleic anhydride grafted polypropylene as compatibilizer, reinforced with glass fiber fabric functionalized with various silane coupling agents, which are processed on a twin screw extruder-granulator and turned into finished products under controlled temperature and pressure conditions that meet those characteristics necessary for specific applications such as energy absorption, shock resistance, temperature and bending deformation, high rigidity, chemical resistance, low molding shrinkage, low density, low anisotropy. The products obtained are in the form of layered granules and plates with advanced physical and mechanical properties, density above
	1g/cm ³ , low-cost, resistant to aggressive chemical agents, etc. Polymer composites are characterized by the fact that they represent a mixture of the following composition: 100 parts by weight of polypropylene homopolymer or copolymer with 1-3 parts by weight maleic anhydride grafted polypropylene with the following technical features (Mw~9200, Mn~3.900, the percentage of maleic anhydride being 8-10wt.%), 5 parts by weight functionalization agents (aminopropyltrimethoxysilane, aminopropyltriethoxysilane, dichlorodimethylsilane and polydichlorodisilane) per 100 parts by weight of the fabric. The material is intended for development of layered plates for use in various industries such as automobile construction (frames for batteries), chemical industry (pressure vessels and storage containers for aggressive chemical solvents) etc.

Class 9. Chemical and Textile Industry



RO.140. INTELLIGENT SYSTEM FOR MONITORING Title LEVELS OF TOXIC EMISSIONS RESULTING FROM INDUSTRIAL PROCESSING Hanchevici Adrian-Bogdan, Albu Florica-Luminita, Authors Coara Gheorghe National Research and Development Institute for Textiles Institution and Leather (INCDTP) - Division Leather and Footwear Research Institute (ICPI) Patent application RO No. A00176/ 14.03.2012 Patent no. The invention proposes an intelligent monitoring system for toxic emissions resulted from industrial processing. The intelligent monitoring system, according to the patent, has specific sensors for certain pollutants and an acoustic alarm system which is activated automatically when the noxious emissions exceed the maximum value allowed. The monitoring system is intended to be a real-time one, in order to signal out any exceeding of the imposed limits. The new intelligent monitoring system has the following advantages: • The system can operate with an unlimited number of sensors; • Specific sensors can be added for other pollutants; Description Any time can be removed/added sensors as they operate independently of each other: • The software application which runs on the process computer is modularized so that changes which should be made when a sensor is removed/added to system are minimal; • Sensors and related acquisition boards are directly connected to AC power, ensuring continuous operation and continuous monitoring: • Connection between modules (acquisition boards, computer process switches) is made by using UTP cable (not wireless). So, the effect of disruptive industrial environment on communications is minimized and the communication security is improved (no user

from outside the company can intercept/decrypt data packets).Class1. Environment - Pollution Control



The basic structure of the intelligent monitoring system

Military Equipment and Technologies Research Agency Armaments Test & Evaluation and Scientific Research Centre

RO.141.			
Title	Performance parameters monitoring device during parachuting		
Authors	Ciobanu Ionuţ, Cristian Aura, Gherghina Ionică, Șuteu Daniel, Țigleanu Laura Military Equipment and Technologies Research Agency		
Institution Patent no.			
Description	 The device is useful to the following activities: Parachutists training; Automatic and semi-automatic regulating subsystems of modern parachutes composition; Checking the parachute and operator performance; The use obtained data in the research design process; Calibration of different equipment in the mentioned 		
Class	area. 8		
RO.142.			
Title	Balloons for Ground Surveillance (AST)		
Authors	Coșereanu Liviu, Țurcanu Daniel, Munteanu Radu, Predoi Cristian, Lepădatu Gheorghe Military Equipment and Tachnologies Pescarch Aganay		
Institution			
Patent no.	-		
Description	The aerostat system is designed for early detection of threats against major objectives. It consists of a static observation balloon, which can brings real-time information from the field via an infrared or classic video camera. The balloon raised above the ground it is practically invisible from long distances, but can transmits interested area information.		
Class	8		
RO.143.			
Title	Vertical takeoff and landing Stabilized Platform with Multiple Applications		
Authors	Coșereanu Liviu, Predoi Cristian, Dumitru Mihai, Vasilescu Gheorghe Lepădatu Gheorghe		
Institution	Military Equipment and Technologies Research Agency		

-
The development of unmanned aircraft (UAV) capable of vertical takeoff and landing maneuver (VTOL) and hovering flight is an area of interest for the military and civilian research component. This paper focuses on a quadrotor type miniUAV, and proposes a solution to implement a mathematical model for a quadrotor used in a simulation environment Matlab (Simulink).
8
Mini UAV System for Very short Surveillance
Alexei Adrian, Gherghina Ionică, Mazăre Camelia, Munteanu Laura, Suciu Ioana
Military Equipment and Technologies Research Agency
-
from about 10 km, weights 5 kg and can transmits infrared images. From 150-200 m height becomes invisible and produces no noise, running on batteries. Can be ground remoted or followed a set route. It is equipped with a parachute and can land whenever desired, on any terrain.
8
Technological Demonstrator - Target System for firing and setting equipment
Gustil Dumitru, Năcioiu Nicolae, Bălăuță Dan, Drăguș Liviu, Stanciu Florin
Military Equipment and Technologies Research Agency
The presented system can be controlled from the ground, can fly either defined a priori or pseudo-elected trajectory, in order to be used as target in specific training The system is also useful for other activities, such as:

National Institute for Research and Development in Electrical Engineering ICPE-CA

RO.146.	
Title	Process of obtaining a resorbable material from beta -
THE	tricalcium phosphate
Authors	Grigore Florentina, Velciu Georgeta, Lungu Magdalena-
	Valentina, Isakiris violeta
Institution	Flactrical Engineering ICPE_CA
Patent no.	Patent application No. A/00374 19 04 2011
Description	The invention relates to a process for obtaining a resorbable material from beta - tricalcium phosphate (β -TCP), with regenerative properties used in maxillofacial surgery and orthopedic like bone substitution material. The problem solved by the invention consists in development of a cheap process, efficient and environmentally friendly for preparing a material based on β -TCP, granular type, with superior characteristics in terms of biocompatibility, resorbability and regenerative activities with higher functional characteristics in bone tissue repair. The process according to the invention has the following advantages: - It is reproducible in point of view of chemical composition and physico-mechanical properties of the final products; - It is efficient in the sense that uses cheap raw materials, low energy consumption; - Conventional devices from inorganic chemistry are used for process and does not require large investments at introduction in manufacturing ; - Allows the obtaining of advanced medical devices, based on β -TCP, with superior functional characteristics: biocompatibility, total bioresorbability and regenerative. - Does not Require Any Special Conditions for storage/conservation.
Class	14



National Institute for Aerospace Research

STAR 2012-Space Technology and Advanced research -ATLAS code 109 – Integrated evaluation system for Advanced |Multilayered materials in Aerospace and related Fields

Class



Horia Hulubei-National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH)

RO.148.	
Title	Lubricant and wear resistant compound based on tungsten disulfide for metallic substrate coating
Authors	Gheorghe MATEESCU, Alice-Ortansa MATEESCU
Institution	Horia Hulubei-National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH)
Patent no.	RO 127961 B1
Description	The patent presents a structure and a composition of a compound based on wolfram disulfide (WS2) with lubricant and wear resistant properties, for coating of a metallic substrate, by standard/ reactive magnetron sputtering or by ionized magnetron sputtering. The deposition material contains a top lubricant material (WS2) and a metallic material (Ti, Al, Cr, Ag, etc.) and has a multilayer structure with variable composition and thickness of component layers.
Class	5

RO.149.

Title	Lubricant and wear resistant compound based on tungsten disulfide and carbon
Authors	Gheorghe MATEESCU, Alice-Ortansa MATEESCU
Institution	Horia Hulubei-National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH)
Patent no.	RO 127962 B1
Description	The patent presents a structure and a composition of a compound from tungsten disulfide (WS2) and carbon with lubricant and wear resistant properties, for coating of a metallic substrate, by standard/ reactive magnetron sputtering or by ionized magnetron sputtering.
	The deposition material contains two top lubricant materials (WS2 and C) and a metallic material for adherence improvement (Ti, Cr, Ag) and has a multilayer structure with variable composition and thickness of the component layers.
Class	5

Agricultural Research – Development Station Secuieni-Neamt

RO.150.	
Title	The method of cultivation of the species <i>Echinacea purpurea</i> (L.) Moench in terms of Moldavia Center
Authors	Adina Catalina Drutu, Elena Trotus
Institution	A.D.R.S. Secuieni
Patent no.	Patent application No. A/00845/2014
Description	The present invention relates to method of cultivation of the species <i>Echinacea purpurea</i> (L.) Moench in terms of Moldovia Center. The species is native to North America and naturalized in terms of Agricultural Research and Development Station Secuieni, Neamţ County, Romania. It is an herb that is used medically to treat colds, flu and gives the body immunity. For the development of environmentally friendly cultivation method were conducted research which established the plant needs to climate and soil organic ingrasasminte doses, optimum sowing times and distance between rows. The data obtained led to the development of the species for cultivation method conditions Moldova Center. The method was developed as a necessity for growers of medicinal and aromatic plants in order to extend agriculture of new species <i>Echinacea purpurea</i> (L.) Moench. Requested by the pharmaceutical industry because it contains active principles species.

Class

-			
	1	3	3

RO.151.	
Title	Hemp (Cannabis sativa L.)- DACIA SECUIENI variety
Authors	Constantin Gauca, Luca Mihai Alexandru
Institution	Agricultural Research and Development Station
Patent no.	Patent application No. 00285/2012
Description	Dacia Secuieni - homologated in August 2012, a specific variety for stems and fibers. It is characterized in fiber crops by slender stems which can reach at $1.8 - 2.8$ m and for the seed crops the plants height can reach and even exceed 4.5 m. The strains yield is between $8.5 - 11.8$ t/ha with a content of good quality fiber about $30 - 31\%$ resulting in a production over 3200 kg/ha. The stems color is yellow – green, leaves with $7 - 9$ wide leaflets. The inflorescence is NATIONAL

compact and provides a production of 1000 - 1200 kg/ha which maintains a high multiplication coefficient, a very useful character in growing hemp for fiber. It is a long season variety of 120 - 130 days. It is also a resistant variety at broomrape, spring low temperatures and some diseases. The THC content is of 0.0134%, much lower than the admitted maximum of 0.2% in EU.

Genitors: Male partner – AR 1 line, monoecious selection, tardy, from their own genetic resources.

Female partner, K8 selection from Kompolt dioecious variety.

The obtaining method: The variety was obtained by direct crossing, backcrossing, followed by selection on families of monoecious plants with high seed productivity, high fibers and low THC content.

Morphological characteristics:

Plant height – in stem crops: 1.8 – 2.8 m – in seed crops: 3.0 – 4.5 m

Class

3

National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development URBAN-INCERC, Bucharest, Romania

NATIONAL

RO.153.	
Title EN	Sound-absorbing and insulating layered panel
Authors	Marta Cristina ZAHARIA PhD.Dipl.Eng.
Institution	INCD URBAN - INCERC
Patent no	RO122864
Description EN	The domain of <i>Urban Acoustics</i> is the one that presents the acoustical measures that are necessary when an engineer or an architect make a project for an urban area and design and placed a building in it. To help people to feel and live in acoustically comfortable conditions inside that urban area and in that building, there are necessary taken special measures on the way from the noise source to receptor (people). One of this measure is to placed acoustically barriers like acoustical panels. In the poster I present an invention, Patent nr. 122864 /30.03.2010, relates to <i>a sound-absorbing and insulating layered panel</i> which is intended for mounting along traffic arteries road and / or rail to form <i>noise barriers</i> for the protection from the vehicle noise in the vicinity of the inhabited areas. The problem solved by the invention is to create a layered sound insulating and sound absorbing panel, allowing simultaneously, <i>due to the shape and type of materials</i> , increasing the percentage of <i>insulation and sound absorption</i> by overlapping multiple noise insulating and soundproofing materials.
Class no.	
KO.154.	
Title EN	Cementitious composites with self-healing capacity as beam-column interface material for antiseismic hybrid joint
Authors	Cornelia BAERĂ, Mircea PĂSTRAV, Henriette SZILAGYI
Institution	INCD URBAN - INCERC
Description EN	The research main objective was the development of sustainable mix designs of cement-based composites, Self-Healing Fiber Engineering Cementitious Materials, having the fresh and hardened state properties similar or close to those of Engineered Cementitious Composites (ECCs) with their unique properties including self- healing (SH) capacity. The experimental study was performed using local raw materials, mostly available on Romania.

Class no.

RO.155.	
Title EN	Drying shrinkage behaviour of high strength fiber reinforced concrete
Authors	Cazan Oana Eugenia
Institution	INCD URBAN - INCERC
Description EN	This research assesses the drying shrinkage behaviour of high strength fiber reinforced concrete. The fiber addition is known to restrict the growth of shrinkage cracks. Steel, polypropylene and a cocktail of these two types of fibers fibers were used to gain a quick growth of strength and a low shrikage cracking. Fly ash was also used as a partial replacement of Portland cement in all mixes. The shrinkage was measured using a Huggenberger deformeter on three 100x100x300 prisms for each mix, starting the first day after demoulding. The prisms were stored for 28 days in water (T=20±2 °C), after which they were moved to a climatic chamber, in constant conditions of temeprature and relative humidity (T=20±2 °C, RH=60±5%). The phenomenon of shrinkage was followed until the age of 390 days for C1, C2, C4 and C5, C6 mixes and until the age of 390 days for C3 mix. Shrikage attenuation occurs after approximately 90 days for all the mixes. The lowest shrinkage strains were measured on the prisms with 0.22% polypropylene fibers addition. It can be concluded that from the point of view of restricting or reducing the shrinkage strains of high strength concrete, the addition.

Jass no.



RO.156. Experimental device for determining the thermal Title EN conductivity of vacuum insulation panels Adrian Alexandru CIOBANU Authors Institution **INCD URBAN - INCERC**

The research work has been carried out during a doctoral project - Adrian Alexandru CIOBANU PhD Thesis: High thermal insulation solutions.

Vacuum insulation panels make part from the category of innovative material, being a high performance thermal insulation characterized by very low thermal conductivity, from 5 up to 8 times lower than conventional thermal insulation. Vacuum insulation panels are not homogeneous materials, they have in their composition two distinct components (the core and the envelope).

To assess the thermal performance of these materials considering only the central area of the panel, without taking Description into account the thermal bridges represented by the joints between them, it is incorrect. Thus, an analysis of the panels, considering the effect of thermal bridges which occur due to the edge effect, it is necessary.

> The evaluation of thermal performance of vacuum insulation panels was carried out using an experimentally device made by the author. The experimental setup has at the base the principle of a hot guarded plate.

The advantages of the proposed device are:

the use of the device for any board type of building material (insulations, glass, plasterboards composites, etc.);

the possibility of using the device for studying thin linear thermal bridges (between two insulation boards);

1 the low cost for the device manufacture

Class no.

EN

RO.157.	
	MULTI-HAZARD SCENARIOS AND IMPACT
T:41. EN	MAPPING FOR RISK MITIGATION TO
The En	EARTHQUAKES AND OTHER EXTREME ACTIONS
	IN A PROTECTED AREA OF BUCHAREST
Authors	Emil-Sever GEORGESCU ¹ , Cristina Olga GOCIMAN ² ,
	Iolanda Gabriela CRAIFALEANU ^{3, 1} ,
	Mihaela Stela GEORGESCU ² , Cristian Iosif MOSCU ² ,
	Claudiu Sorin DRAGOMIR ^{4, 1} , Daniela DOBRE ^{3, 1}
	¹ National Institute for Research and Development URBAN-
	INCERC, Bucharest, Romania
	² "Ion Mincu" University of Architecture and Urban,
	Planning, Bucharest, Romania
Institution	³ Technical University of Civil Engineering Bucharest,
	Romania,
	⁴ University of Agronomic Sciences and Veterinary
	Medicine, Faculty of Land Reclamation and Environment
	Engineering, Bucharest, Romania
	The Project URBASRISK - "Urban Blocks in Central Protected
	Area in Multiple Hazard Approach - Assessment, Mapping and
	Strategies for Risk Mitigation. Case Study: Bucharest Destructurea
	the Romanian Ministry of Education and Scientific Research -
	UEFISCDI in the PNII, "Partnerships" Programme, Contract No.
	53/2012. The protected area is located in Bucharest, in front of the
	Romanian Parliament, along Unirii Blvd., being delimited by
	Regina Maria Blvd. in the south and by Dambovita River in the
	north.
	hazard interdisciplinary approach, which allowed the assessment of
Description	the functional value as well as of the seismic vulnerability for the
EN	existing building classes, with cultural value scored on the six
	scaling stages of the Romanian Law of Historical Monuments.
	The multi-hazard scenarios used in the assessment were:
	- for seismic hazard, Vrancea earthquakes with intensity VIII
	and VIII ¹ /2;
	 local soft hazards, inquefaction and/or settlements, climatic and hydrologic hazards as snow snow-storm vortex
	raising water, rain and flooding:
	- man-made hazards, as explosions with chemical release, gas
	explosions, terrorist attacks on public institutions and urban
	fire.
	The advantages of the multi-hazard scenarios reside in their ability
	of providing comprehensive view and a synthetic mapping of
	NATIONAL

impacts and risks. The assessment allowed identifying a number of areas for shelter / security community centers. The risk reduction strategies are structured on emergency and perspective terms, based on structural and non-structural methods and envisaging long-term interventions, as maintenance, improvement and transformation. Innovative Research

Class no.

RO.158.

Specific elements of spatial planning from the analysisTitle ENand diagnosis of the current situation in the Romanian-
Bulgarian cross-border area

Authors Constantin CHIFELEA, Alina CHICOS

Institution NIRD Urban-Incerc

The aim of the research was to develop a common strategy for sustainable territorial development in the Romanian-Bulgarian cross-border area by establishing a functional area in the two countries.

The analysis was based on the association of natural and anthropogenic factors influencing territorial processes, of which the most important are: 1) Many natural areas; 2) Sites of built cultural heritage, which are a ,,critical mass" that allows a sustainable and economically efficient use; 3) Agricultural land is the major advantage of the area; 4) Urban centres, mainly small and medium towns; the number of urban areas is higher in Bulgaria; large urban centres are located in Romania.

Description EN The diagnosis revealed the main areas of intervention: road and rail infrastructure; development of mixed transport; cross-border cooperation in the economic and touristic field.

It clearly outlines two directions of spatial development: persistence of spatial polarization processes and monocentric oriented development at all levels; the need for a shift towards a polycentric model, to make full use of the existing resources.

Urban centres and their areas of influence continue to be vulnerable to global challenges, but still preserve chances to resist these threats due to the numerous resources offered by the border area, having small and medium towns as a basis for development. The average development scenario was selected as a model for future development, as well as the most realistic one in the current economic and demographic development with limited resources and a small number of well-defined priorities.

Class no.

RO.159.Title ENSocio-environmental issues of marginal territories within
the Romanian-Bulgarian cross-border area

Authors Georgiana TOTH, Alina HUZUI-STOICULESCU

Institution NIRD Urban-Incerc

Class no.

The territorial system overlapping cross-border areas shapes a particularly dynamic and complex functional area. This paper synthesises several research outcomes regarding the social and environmental dysfunctions and opportunities defining the marginal territories that were emphasised during the 'Analysis and diagnosis of the current situation in the cross border area', a phase of the project 'Common Strategy of sustainable territorial development of the Romanian-Bulgarian cross-border area' (SPATIAL). The main indicators concerning the population structure and movement highlight a series of problematic aspects within the crossborder area: population decline, significant rural population concentration on the Romanian side, demographic ageing, Description age dependency ratio increase, and a negative natural growth EN and migration rate. The analysis also indicates areas of sociodemographic potential which are marked by population growth, a significant young population presence that is convergent with an important share of active population. In this perspective, the spatial analysis also focused on identifying natural drivers affecting development and restrictive factors, on the environmental quality evaluation, as well as on establishing areas exposed to natural and technological risks. Therefore, delineating and analysing components underlying social and environmental processes were intended to determine those issues and opportunities considered to influence the evolution of this potentially functional area

RO.160.	
Title EN	Study regarding shear behavior of reinforcement for concrete elements
Authors	Constantinescu Horia
Institution	National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development URBAN-INCERC, Cluj-Napoca Branch
Description	This research assesses the bearing capacity of reinforcement

Innovative Research

NATIONAL

EN bars subjected to shearing forces. Shear efforts appear frequently in reinforcing bars used in concrete elements and it is generally believed that bearing capacity in shear is less than the bearing capacity in tension. This belief is based on research carried out over twenty years ago. Since then steel used for reinforcement has changed along with the advance of its manufacturing technology. Thus new studies need to be conducted in order to evaluate if the current level of knowledge is correct.

Class no.



Experimental testing device

RO.161.

Title ENInorganic pollutants in indoor air of Bucharest office
spaces. Case study

AuthorsVasilica Vasile, Alina Dima, Mihaela Ion, Cora StamateInstitutionNIRD URBAN-INCERC, INCERC Bucharest BranchIn the modern era, across the world, there is growing public

In the model era, across the world, there is growing public awareness regarding the risk associated with poor indoor air quality (IAQ) in the workplace and home. Because people spend more than 20 hours every day indoors, the issue of indoor contamination has gained increased attention, due to the health-related problems, reported by previous numerous studies, such as allergic diseases and asthma, skin disease like atopic dermatitis, as well as respiratory (bronchitis symptoms, wheeze) and cardiovascular problems, even potential carcinogenicity, after long-term exposure. The aim of the present study was to identify the compounds contributing to the air pollution of four office spaces, of which in one of them smoking, located in urban area of Bucharest – Romania. For that goal, inorganic gaseous

pollutants such as nitrogen oxides (NO, NO₂), sulfur dioxide (SO_2) , ozone (O_3) , carbon dioxides (CO, CO_2) , were monitored. by using the equipment fitted with electrochemical sensors that detects and records, in real time, the concentrations of the compounds. Factors like the dimensions of the office spaces, the emissions from the existing equipment and furniture, the number of occupants, and the time of the ventilation varied among the four spaces. average values of SO₂ (2728.5 μ g/m³), CO₂ The

(1428 μ g/m³), CO (0.9 μ g/m³), O₃ (5.84 μ g/m³) were the highest values recorded in office number 2, while in the smoker's office were recorded the highest values for the NO concentration (24.4 μ g/m³).

The results of this research are a significant contribution to the development and deepening of knowledge in the field of indoor air quality.



Class no.

Particles matter in indoor air of the residential spaces
Alina Dima Mihaala Ian Vasiliaa Vasila Mariana Cianay
Puenea
NIRD URBAN-INCERC, INCERC Bucharest Branch
The indoor air quality monitoring in residential spaces relating the presence of solid particles, an important component of the comfort concept, with direct effects on occupants 'health, is part of the research area of European and international interest. The solid particles in suspension are a complex group of organic and inorganic substances, indoors emitted, generated by specific activities carried out in the residential spaces, by smoking and outdoor contribution. The size and concentration of the particles matter are extremely important NATIONAL

in setting their action on the occupants' health. Therefore were monitored the concentrations of fine particles fractions $PM_{0,3-0.5}$, $PM_{0,5-1,0}$, $PM_{1,0-2,5}$ and of coarse particles $PM_{2,5-5,0}$, $PM_{5,0-10,0}$, $PM_{\geq 10}$, and correlated the value obtained with the parameters of the interior climate (temperature, relative humidity, concentration of carbon monoxide and carbon dioxide).

In the monitoring program there were selected three residential areas located relatively far from the traffic and near arteries with high traffic. Were separated, identified and determined by the size and concentrations of solid particles in a volume of air taken at preset time intervals, using an optical particle counter. The influence of the interior comfort parameters (CO şi CO₂) was quantified using portable equipment fitted with specified sensors for recording of their concentrations by electrochemical and NDIR methods.

The information obtained in this research related on the solid particles concentrations in indoor air of the residential spaces contributes to the completing of the data base in terms of the preparation of the necessary frame to adopt the national limit levels.

Class no.

RO.163. New sustainable solutions for fire performance improvement Title EN of combustible facades used at rehabilitated buildings Octavian Lalu Authors Institution **INCD URBAN-INCERC** In Romania most of the buildings with heights up to 11 floors are rehabilitated with polystyrene thermal insulation which is a quick and inexpensive solution. In a compartment fire situation the external cladding with combustible materials contribute at the vertical fire spread to the upper floors of the building. This research study has focused on sustainable solutions applicable in current practice to limit the vertical Description EN fire spread on rehabilitated buildings. From the test carried out we concluded that the combustible material must be discontinued at certain heights above the window with incombustible materials. We proposed a new composite panel solution which interrupts the combustible thermal insulation and in this manner limits the vertical fire spread. The composite panel system has an independent structure such

that works independently in case of fire from the existing thermal insulation.

Applications: The composite panel system is applicable on walls of the buildings rehabilitated with combustible materials.

Advantages: The composite panel system is easy to put into practice, eliminates the execution errors and limits the vertical fire spread.

Class no.



RO.164.

Title ENUsing poured earth to achieve load-bearing elements in
buildings

Authors Aurelian Gruin, Enache Felicia, George Stanciu, Vlad Stanciu

Institution INCD URBAN-INCERC

The research project aims to find a clay-based material which together with various additives, electrolytes and granular material to be used as base material to achieve load-bearing elements of a building. The main goal in this stage of the research is to pour earth just like concrete, thus to have the same workability = water, too much of it would weaken the structure with effect in shrinkage and cracks when drying. Description So the main task is to liquefy earth without adding too much water. The poster presents the first experimental results EN obtained regarding : linear shrinkage - as to estimate de shrinkage ratio for a mix, workability – as to pour the earth like concrete and compressive strength - as the most important mechanical property for building material. The final goal is to build a structure - ECOBORDEI - using local materials, traditional building methods, pricing target 25.000 \notin for 100 m² house.

Class no.



RO.165.	
Title EN	ECO-EFFICIENT ENERGY BUILDING ENVELOPE
Authors	Constantin Miron
	National Institute for Research and Development in
Institution	Construction, Urban Planning and Sustainable Spatial
	Development "URBAN-INCERC" Iasi Branch
Patent No.	a 2010 01301 / adr. OSIM 1002686/ 28.01.2015
	The invention consists in an energy-efficient and ecological
	building envelope, achieved with water modules in an
	integrated system, with a multiple role as solar energy
	convertor thermal accumulator and self-protection against
	fire used for buildings whose energy consumption is ensured
	mostly from renewable sources through the energy produced
	by the envelope itself As a result of applying this invention
Description	the building envelope acquires a multifunctional role as
EN	the building envelope acquires a multifunctional fold as
E 1N	mechanical insulation assing the autorion anary converter
	mechanical insulation against the exterior, energy convertor -
	generator for the heating and cooling of interfor spaces,
	support for the thermal agent that accumulates and carries
	energy for cooling/heating, and especially important, a role in
	the self-protection against fire, by annihilating any source of
	fire detected nearby through the controlled release of the
	incorporated water.
Class no	2. Energy and sustainable development
UIA33 IIU.	7. Buildings and Materials



RO.166. Title EN

Authors Institution Patent no.

Description

EN

Class no.

Construction system for civil and industrial buildings Constantin Miron

INCD URBAN-INCERC, Iasi

a 2010 01301 / adr. OSIM 1002686/ 28.01.2015

The invention consists in a constructive system for civilian and industrial buildings with high energy autonomy, whose energy consumption is ensured mostly from renewable sources, through the energy produced by the envelope itself by converting solar energy and by the foundation soil, as a result of capturing geo-thermal energy. This system is made of a metallic load-bearing structure, with tubular elements and closings – walls that incorporate thermally massive water elements, ensuring the accumulation of energy, the heating and cooling of the building and that, by means of thermally fusible devices, can release a large quantity of water, for the rapid and efficient protection in case of fire.

By using this constructive system according to the invention, we can ensure the accumulation and release of the thermal energy necessary for the operation of a building in terms of heating-cooling by using the water inside the structure and walls of the building, at the same time with the ability to annihilate any source of fire by the local release or production of water.

Energy and sustainable development
 Buildings and Materials



NATIONAL 349

RO.167.	
Title EN	Grid system for managing and controlling the air flow
Authona	¹ Manian CHEDECHES ² Naly Criation CHEDECHES
Authors	Monica CHERECHEŞ, Neiu-Cristian CHERECHEŞ,
	1) National Institute for Research and Development in
	Construction, Urban Planning and Sustainable Spatial
Institution	Development "UKBAN-INCERC" lasi Branch
	2) Technical University Gneorgne Asachi of Tasi, Faculty
	of Util Engineering and Building Services, Department
D-44	Of Building Services
Patent	Patent application No. a 2011 012/8/2011
	The invention refers to a grid system, each grid consisting of
	two independently adjustable shutters, horizontally disposed
	inside the channel of a ventilated facade. The grids are placed
	at each level and between levels of the building.
	The aim is that air can be controlled and adjusted at each
	level in order to improve its thermal efficiency and also for
	energy recovery used for heating and cooling the interior
	space.
	The system consists of grids (1) placed horizontally inside
	the ventilated facade channel (C), which together with the
	outer glazing (2) and interior glazing (3) separate the outside (DVT)
Description	environment (EX1) from an interior environment (IN1),
ĒŇ	which has a desired comfort temperature.
	Each grid is made up of louvers (4 and 5) which can be
	adjusted, independently or together, manually or
	automatically with an electric motor. $(4 - 1.5)$
	The two louvers (4 and 5) are different sizes and their
	arrangement in ventilated facade channel shall be designed to
	ensure the air directing.
	I he invention has the following advantages:
	- adjusting the air flow for each level of ventilated facade;
	- directing the air flow within the channel of ventilated
	- usaoiiiiy,
	- nign efficiency.
Class no.	/. Buildings and Materials



RO.168.

EN

Structural Safety Assessment of Reinforced Concrete Title EN **Buildings**

Claudiu-Sorin Dragomir, Daniela DOBRE. Cornelia Authors ALECU, Emil-Sever Georgescu

INCD URBAN-INCERC, Institution

The paper present a method of structural safety assessment based methods temporary on non-destructive and seismic instrumentation of Reinforced Concrete buildings which were rehabilitated. The non-destructive testing of the RC structures gives valuable information for the engineers when investigating problems and can reveal unanticipated or hidden damages. The repair of the structure is guided by the results of the testing. The paper presents the authors' research on RC building structure and proposes an original concept of evaluation for this type of building. The results on dynamic characteristics of these buildings obtained by seismic instrumentation with seismic data acquisition system are presented. In present, one of typical Description strengthening solutions was carried out. The full-scale experimental analyses were carried in the previous years when the Technical Reports were completed. The natural period of the building is a significant dynamic parameter which gives information relating to the building stiffness. In order to check the solution adopted for rehabilitation, a modal analysis was carried out to compare natural periods of the building in those two stages. The paper briefly presents the concept of building assessment and thereafter the outcome of investigation. Nondestructive methods are based on auscultation, ultrasound and Schmidt percussion with hammer. and the seismic instrumentation methods are based on multichannel seismic station with adequate software. In conclusion, it may be said that

seismic instrumentation is an essential tool for both the assessment of building behaviour and the monitoring of building rehabilitation, especially of historical ones.

In addition to the above should be noted that in one of the previous presented buildings a seismic station was installed with the possibility of transmitting real-time data recorded. Thus, based on structural models previously created seismic response can be determined at a future strong earthquake.

Class no.

RO.169. A new concept in the operation and development of the Title EN **National Strong Motion Network for Construction** Claudiu-Sorin Dragomir, Vasile MEITA. Emil-Sever GEORGESCU. Iolanda-Gabriela CRAIFALEANU. Ioan-Authors Sorin BORCIA, Nicolae-Cristian CROICU, Cornelia ALECU, Daniela DOBRE INCD URBAN-INCERC Institution NRDI URBAN-INCERC manages, maintains and exploits for more than 40 years the National Strong Motion Network for Construction. At this moment the network consists of approximately 65 equipments for recording and monitoring strong motions, most of them being the most recent equipments developed by the manufacturers On march 4'th 1977, the only seismic data of the distructive earthquake, with meaning for structural engineers, was recorded at the INCERC Bucharest Headquarters, with one of the equipments of the National Strong Motion Network for Construction. From this recording, it has been determined that the seismic data known prior to this moment wasn't according to the reality, and that intermediary Description Vrancea earthquakes have a specific set of accelerations and spectral EN content completely different from other types of earthquakes, which lead to heavy overload on tall and slender buildings. The National Strong Motion Network for Construction is a strategic network regarding the safety of the population. The equipments of the NRDI URBAN-INCERC network, placed in seismic areas considered critical for the human habitat from the entire territory, answer vital necessities. Unlike the seismic network, intended for background seismic monitoring (mainly current earthquakes of low magnitude) and with equipments placed on rocks, and in areas that are usually away from vibration sources, the National Strong Motion Network for Construction equipments are installed in cities and in buildings, so NATIONAL

that the movement of the buildings as a result to earthquakes can be recorded, analyzed and correlated with the eventual damage state or good behavior, and also with the subsoil characteristics.

As a result of the specific conditions of seismic hazard and vulnerability, our country is currently passing a period of preparations for the impact of a possible major seismic event. To prevent and reduce the consequences of such an event, Romania faces a critical moment regarding strategic options for seismic risk. Next steps:

- for the near future The National Strong Motion Network for Construction has developed a plan for real time transmission of the recorded seismic data, based on a protocol with the Romanian Special Telecommunication Service, protocol that will be signed in the coming weeks. Taking into consideration that in case of emergencies caused by earthquakes, the equipments need to function properly, a big part of them were relocated in buildings of different District Inspectorates for Emergency Situations, where the equipments needed for the transmission of data already exist.

- for covering Romania's territory with seismic equipments, new locations will be established in dens populated areas corelated with the provisions of the new zoning map code P100-1/2013.

Class no.

RO.170.

Assessment of physical and mechanical performances of Title EN stabilized road structures using composite ecological products

Authors Cornelia-Florentina Dobrescu, Elena-Andreea Calarasu

Institution INCD URBAN-INCERC,

The research approaches an actual issue by aiming a sustainable development of compaction work on natural and stabilized soils using composite ecological products. Technical integration of analytical and computational assessment of laboratory experimental results obtained for various typologies of natural and stabilized soils will allow

Description EN the achievement of road structures characterized by physical and mechanical performances. The impact of such type of study reveal in increasing of technical and economic competitiveness by adopting efficient solutions in road structures design executed from stabilized soil layers using eco-friendly products. The use of composite ecological products in stabilized soil for road structures will contribute to develop a sustainable and green infrastructure.

Class no.

RO.171.	
Title EN	The methodology of analyzing and evaluating the quality of housing
Authors	Daniel-Gabriel Vâlceanu
Institution	INCD URBAN-INCERC, Urbanproiect
Description EN	The quality of housing is the basic component for quality of life and it is an integrated concept, the result of a complex analysis of the characteristics and dimensions of its base components – home and neighbourhood – in order to meet their needs and user requirements. Using quantitative and qualitative methods and field observation must become the main tools for complex research field of housing at different scales of analysis. The methodology is used for the elaboration of different integrated studies of analysis and assessment of housing, the need for it is absolutely necessary to achieve the objectives of European strategies for sustainable territorial development, smart and inclusive growth and improve the quality of life of vulnerable categories
Class no.	vunctable categories.
RO.172.	
Title EN	Eco- efficient system energy insulation, made with clean and renewable materials.
Authors	Livia Miron
Institution	INCD URBAN-INCERC, Iasi
Description EN	Innovative insulation system, is the result of researches on vulnerability to climatic environmental actions of the insulation systems, insulating materials based on synthetic, unnatural, as opposed to natural materials, sustainable and renewable, generating ideal living conditions. The eco - energy efficient insulation allows rehabilitation of existing buildings or new buildings at low cost, with natural materials, cheap and renewable, locally available and renewable and renewable and to the health of recents.
Class no.	 2. Energy and sustainable development - Innovative Research 7. Buildings and Materials



RO.173.	
Title EN	A new possibility to predict the bevaviour of high - performance anticorrosive protections applied on steel after their exposure in natural aggressive environments, respectively in laboratory accelerated conditions
Authors Institution	Irina Popa, Alexandrina Mureşanu INCD URBAN-INCERC, Bucharest As a result of the global warming, notable changes in the climatic regime of Romania were observed in the last 40-50 years by increasing of the maximum temperatures and decreasing of the minimum temperatures characteristic for each season. This paper makes reference to an experimental research regarding the actual severity of the Romanian climate and its effects toward some performant anticorrosive coatings applied on steel. Such performant anticorrosive protection systems were exposed in situ – marine and alpine environment - and in parallel, aiming to simulate the severe climatic actions throught laboratory accelerated environments - neutral salt fog, condensation and temperature variations. The graphical representation and the interpretation of the adhesion to the steel surface by means of the variation of the class into which the paint was framed after performing the cross-cut test during the exposure provided information concerning a new possibility to predict the evolution of the degradation of the paint, by means of this characteristic exprimentaly determined.
Class no.	Innovative Research

RO.174.	
Title EN	SR3, SR, SR
Authors	Valentin TACHE, Monica TACHE, Cristina IVANA
Institution	INCD URBAN-INCERC, Bucharest
Description EN	Establishment and Evaluation Methodology for Metropolitan Areas in Romania The methodology is based on the study of polycentric ESPON 1.1.1 and on a statistical-mathematical model for assessing the Functional Urban Areas (FUA-s), using a spatial database comprising territorial indicators of seven specific areas. The methodology includes three major phases:

first stage it delineates Functional Urban Areas (FUA) using Espon 1.1.1. methodology; FUA delineation corresponds, according proposed methodology, with the assessment methodology for Potential Urban Strategic Horizons (PUSH). This involves the identification of Territorial Administrative Units corresponding to 30 minute isochronous from centroid of cities, using Geographic Information Systems. The second phase of the methodology involves the development of spatial database of Functional Urban Areas and counties in Romania, database containing territorial indicators in the following areas: tourism, industry, transport, education, population, administrative activities and decision-making centers. The third stage is the stage of aggregation data based on mathematical-statistical model, namely Electre Method aimed at evaluating all Functional Urban Area for the seven areas studied. Finally, based on results of the proposed methodology will be reviewed scientific and defined as critical mass all Functional Urban Areas and therefore Metropolitan Areas, so that integrated development strategies make sense and be effective.

Class no.

RO.175.

Title EN

Authors

Institution INCD URBAN-INCERC, Bucharest

Alexandru-Ionut PETRISOR

Although spatial planning involves a collaborative approach of specialists with different backgrounds, implying a flexible approach, and in order to better serve its purpose the contents of substantiation studies associated with spatial planning should reflect scientific progress, a large part of specialists prefers to use the current guidelines, which are rigid and outdated from a scientific standpoint. In more details, this means that they do not Description allow for a systemic view on the environment, which one the one EN side involves accounting for economic, social, and cultural criteria in addition to the environmental ones, and on the other side involves a multi-scale approach, because the behavior of a system is equally influenced by the behavior of the integrating and integrated ones. The proposed methodology addresses all these shortcomings, and through its scientific substantiation is equally applicable to the planning process and to research.

Multi-scale, trans-disciplinary approach to spatial

environmental research and planning

Moreover, its application involves the employment of the Geographical Information Systems to analyze multiple layers of information, including the human interaction at multiple spatial levels, using data that are often freely offered by many international, European or Romanian specialized agencies. The methodology has been successfully used to many plans and studies, presented in the poster. The advantages include time savings (due to the use of Geographical Information Systems), flexibility, reproducibility, integration of data originated from research, and, more important, scientific soundness and compliance with the current developments of science.

Class no.

Innovative Research



KO.176.	
Title EN	LONG TERM BENDING BEHAVIOR OF ULTRA- HIGH PERFORMANCE CONCRETE (UHPC) BEAMS
Authors	Gheorghe-Alexandru BĂRBOS
Institution	INCD URBAN-INCERC, Cluj-Napoca Branch
Description EN Class no	It is known the fact that increasing the concrete strength, the rheological phenomena are reduced. The tests made on Ultra- High Performance Concrete (UHPC) samples, with a compression strength higher than 150 MPa, have shown that the creep is reduced up to 3.5 times than the creep in case of normal concrete. If we refer to UHPC not many studies have been made before regarding beams subjected to long-term bending. Therefore, it is important to know how we can evaluate these strains, during the service life of an UHPC beam. This research is based on how UHPC beams develop creep strains under long-term bending.

NATIONAL 357

RO.177.	
Title EN	Studies on ways to protect the environment. The use of
Authors	Gabriela Călătan Andreea Hegyi
T	Technical University of Cluj Napoca
Institution	INCD URBAN-INCERC
Description EN	The aim is to identify opportunities to reduce environmental pollution using vernacular construction materials. The objectives were to identify the optimal mixtures for: elements of full brick and mortar for masonry ; thermal insulation ; increase resistance to environmental agents and finish construction of clay . The used materials were sandy clay, sand and diferent fillers: lime, bone glue , sodium hydroxide , sodium chloride , hemp fibers , straw , wax, natural oil , oil . Optimum composition of the mixtures was determined from the results of laboratory tests: - Masonry materials : mechanical strength (compressive / tensile bending) , bonding, axial shrinkage , density, thermal conductivity . - insulation materials : thermal conductivity . - protection and finishing materials : adhesion , water vapor permeability , water absorption . Experimental results indicated that the use of filler materials like lime, bone glue, improved workability and allowed the use of optimal amounts of sand in mixture, so as to obtain superior physical and mechanical characteristics . Vegetable materials have positively influenced the mechanical resistances or resistance to heat transfer . Methods of treating the surface with lime, wax, natural oils, oil, led growth the resistance to water keeping the impermeability to water vapor Thus, we have identified solutions for achieving a vernacular housing type (resistant walls , partitions , floors , plaster, protection to water , thermal insulation and finishing) in terms of safety, durability and aesthetics.
C1855 IIU.	A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER OF THE OWNER OF THE OWNER OWNE OWNER OWNER OWNER OWNE OWNE OWNER OWNER OWNER OWNE OWNER OWNE OWNER OWNE OWNER OWNER OWNE OWNER OWNE OWNER OWNE OWNER OWNE OWNER OWNER OWNE OWNER OWNE OWNER OWNE OWNER OWNER OWNER OWNER OWNER OWNER OWNER OWNER OWNE OWNER OWNE OWNER OWNER OWNER OWNE OWNER OWNER OWNE OWNER OWNER OWNER OWNER OWNER OWNE OWNER OWNER OW



NATIONAL 358

RO.178.

Title ENCriteria for the sustainable development of Danube Delta
Biosphere ReserveAuthorsVasile MEIŢĂ

Institution INCD URBAN-INCERC

Largest biosphere reserve and second largest wetland, hosting approximately 15,000 people, the Danube Delta hosts a high diversity, biological (unique and rare species, habitats, and ecosystems) and cultural (multiple ethnic and religious groups, with an impressing cultural heritage), resulting into its listing with the "Man and Biosphere", "Natural World Heritage" and Ramsar Convention; in addition, natural protected areas of national and international importance have been declared on its territory over time. The protection status imposed by the overlapping categories determines often Description EN contradicting restrictions to a population suffering already from demographic ageing and massive outgoing migration. due to the constraints imposed to economy by the protection status, but also due to the invasion of the "new" as a consequence of uncontrolled tourism. This research is trying to overlay the main criteria which must be included in proactive, long term planning, ensuring a sustainable codevelopment of the natural and cultural heritage. Advantages of this methodology include its trans-disciplinary character and research substantiation

Class no. Innovative Research



RO.179.	
Title EN	Comparative analysis of the construction sector romania – european union
Authors	Silviu LAMBRACHE
Institution	INCD URBAN-INCERC
Description EN	For a objective description of the construction sector situation in our country by comparison with European level shoul be analyzed the evolution of certain specific indicators of construction activity compared to the national level and for the Member States of the European Union. Most representative indicator for the construction sector is characterized by the development of the production value of construction works for a certain period of time, expressing in practice the investments made in constructions. An important indicator describing the situation of the construction sector investment is the number of building permits issued in a certain period of time (usually the study is conducted for grants of over a year). The evolution of the construction sector directly affects the accessibility of housing and at national and regional level the evolution of housing policies.The most representative approach of estimate the evolution of housing policies is the housing sector indicators such as number of existing dwellings, number of dwellings complete, total area, total built area and the number of building permits issued.

Class no.

Evolution of construction works


S.C. ANTIBIOTICE S.A.

RO.180.	
Title	Topical composition for the treatment of wounds, burns
	and skin ulcers and process of obtaining it
Authors	Axinte Mihaela, Neacșu Amelia, Băițan Mariana, Moisuc Lăcrămioara, Diaconu Eugen, Horeanu Genoveva
Institution	Antibiotice SA
Patent no.	Patent application No. a 2011 01421
Description	Composition of the invention relates a topical preparation used in the treatment of wounds, burns and skin ulcers and a process for preparing the composition. Invention to be used in human medicine and pharmacy. The novel pharmaceutical composition corresponding to this invention, widens the categories and indications of the therapeutical products used for the treatment of wounds, burns and other ulcero varicose dermatological conditions. By associating silver sulfadiazine with bentonite, chitosan, glycerol and lactic acid a new medical formulation with superior therapeutically value was attained.
Class	4
RO.181.	
Title	StablePharmaceuticalCompositionComprisingAmorphousRosuvastatinCalciumPoturRoxana-GeorgianaMoisucLăcrămioaraStefania
Authors	Sarafinceanu Nicoleta, Boiță Tudor, Macovei Lenuța, Teliscă Amalia-Diana
Institution	Antibiotice SA
Patent no.	RO 129060 B1
	This invention concerns a novel stable pharmaceutical composition of amorphous rosuvastatin calcium, comprising calcium carbonate and lactose monohydrate in the core, coated with a film based on polyvinyl alcohol, free of iron

Description oxides. The specific ratio of stabilizing salt (calcium carbonate), soluble filler (lactose monohydrate), and the type of coating provides the stability and the bioavailability of the amorphous poorly soluble drug, resulting in a composition that is bioequivalent to the originator product.

Class

I

I

4

S.C. AREXMAN CONSTRUCT S.R.L.

RO.182.	
Title	SENTINEL G07 Advanced Systems For Earthquake
Authors Institution Patent no.	 Protection Mircea MANOLESCU AREXMAN CONSTRUCT SRL Patent application No. XXXX/2010 SENTINEL G07 is based on a SMART electrical panel which receives information from an early earthquake alert device and triggers safety procedures in case of a major earthquake: *cuts off the gas supply of a building from the outside, *permanent monitoring of a room and alerts even gas leakages in the absence of earthquakes, *cuts off the power supply of a building or of equipment/machinery *closes water circuits (water supply, heating) * instant launch of the alarm signal (both visual and sound) and voice safety instructions 20- 40 seconds before the destructive wave arrives *works even during power cuts *alerts both main earthquakes and aftershocks *no monthly fee required *no dependency on some external signal *can be used wherever in the country o *operates any other required system for building or industrial plant protection
Class	12

Heating Cen Ð

ADVANCED EARTHQUAKE PROTECTION SYSTEM SENTINEL G07

Ð Heating Cen

nable Gas E1a

S.C. BIOTEHNOS S.A.

RO.183.

	Valorization of some entomological compounds
Title	research results through the development of two
	pharmaceuticals
Authors	Laura Olariu*, Veaceslav Ciuhrii**, Brindusa Dumitriu
Institution	S.C. Biotehnos S.A. 3-5 Gorunului, Otopeni, Ilfov
	*associate member of Academy of Romanian Scientists,
	Splaiul Independentei 54, 050094,Bucharest, Romania
	** Newton Laboratories LTD

The analogy of animal structures with the human ones explains their unique therapeutic efficacy through the entocomplexes complemmentary mode of action on altered human mollecular substrates. This type of biological complexes selectively induces a very good responsivenes on with certain dysfunctions. organs Our performed investigations have as result two entomological complexes with an appropiate, well defined design and significant biological activity. These effects refers to keratinic - like disorders (ENTODERM complex) and prostate proliferative aberrations (Ento-P COMPLEX). The innovative structured chemical groups (Patent Application no. A / 00208/2015) has a structural and functional complexity, with a deep impact on Description anti-inflammatory and anti-proliferative ..in vitro" mechanisms. These products are in the technological transfer stage, in order to develop two pharmaceuticals designed for the above mentioned degenerative diseases, haveing as major therapeutical advantage the efficacy/toxicity ratio. Regarding the "in vitro" effect of Ento-P complex, the antiproliferative, pro-apoptotic, anti-inflammatory and antiangiogenic actions were demonstrated on prostate cell lines, normal and metastatic. ENTODERM proteolytic complex has anti-inflammatory effect at keratinocyte and fibroblast level and stimulates cellular turn-over, with impact on dermal/epidermal regeneration and healing the skin lesions.

The research was conducted as part of the UEFISCDI ROMANIAN INNOVATION PROGRAMME - project ENTOMED / Ctr DPST 26/2013.

Class 4. Medicine - Health Care - Cosmetics

RO.184.	
Title	Method and adsorbent composition for reducing
Authona	Veronico Drumoo, Louro Oloriu
Authors	G G DIOTENINOS G A
Institution	S.C. BIOTEHNOS S.A.
Description	The invention relates to a process with industrial application in order to reduce by 80-99% the concentration of pesticide residues in alcoholic and glycolic plant extracts. The effect was confirmed for the organophosphate and organochlorine pesticides, that get by hazard in vegetable raw materials and thus in the extracts derived therefrom. The new adsorbent material that is used to remove the mentioned contaminats from the plant extracts is the combination of a polysaccharide extract obtained from seeds of <i>Trigonella foenum graecum</i> species and glutaraldehyde, an usualy cross-linking agent
	The procedure is simple, easy to apply and allows the use of plants to which the pesticide residues content exceeds the permited limits, enabling safety use of the plant extracts (eg. alcoholic tinctures type).
	The research was conducted as part of POSCCE PROGRAMME-Operation 2.3.3 Promoting innovation in enterprises - project QPOVRMGP, CTR. 546/2013

Class

3

S.C. Erika Power Systems S.R.L.

RO.185.	
Title	Vision 1712-Communication and underwater inspection system
Institution	Cristi ISAC, Dogan ASAN, Nicolae TUDOR, Tiberiu NEAGU, Lucian CHIRILA, Stelica MOCANU, Robert COROIANU.
Authors	S.C. Erika Power Systems SRL
	S.C. Atlantis Mar Group SRL
Patent no.	Pending
Description	Systems team, is a video and communication system designed to be used by diving teams. The equipment can be easily operated and its supports both video and voice communication by one diver and also fitted with internal and external recording devices. Additionally the system supports wireless communications that could prove very useful for tender or any other third party operator. The display is a 17' daylight viewable with high brightness and wide viewing angles which offers excellent clear image of underwater operations. VISION 1712 offers up to 72 hours of continuous inbuilt audio and video recording. The system is equipped with on internal DVD-RW and also USB 2.0 port for external devices. The system is powered with 220V a.c., 50 Hz and has internal rechargeable batteries that can keep the equipment powered up to 4 hours. The surface control station incorporates audio and video controls and also fitted with trackball that makes the intuitive on screen menu very easy to operate. 10.Information Technology and Communication
	ER.5. VISION 1712



RO.186.

Underwater camera designed for Kirby Morgan helmetTitlecompatible with Vision 1712-Communication and
underwater inspection systemOvidiuTANASE, CristiISAC, DoganASAN, Radu

Authors

Class

Institution Regia Autonoma de Transport in Comun Constanta and Sc.Erika Power Systems Srl

MATASARU.

Description

The underwater camera is designed for surveillance and supervision during specific underwater tasks as follows: maritime, pillars of oil platforms, bridge pylons, nuclear powerplant, underwater pipes and other installations.

The underwater camera is fitted with panel adjustable LED array designed to enhance visibility when needed. The state of the art video camera is incorporated in a watertight housing which is fitted in a special glass with very high resistance and clearance. The camera has auto image adjustment, autofocus, light compensation functions which can be adjusted from the control station.

The cable design allows the equipment to be operated for video and audio transmission simultaneously and separately.

VISION 1712, engineered, and developed by Erika Power Systems team, is a video and communication system designed to be used by diving teams. The equipment can be easily operated and its supports both video and voice communication by one diver and also fitted with internal and external recording devices.

Additionally the system supports wireless communications that could prove very useful for tender or any other third party operator.

The display is a 17' daylight viewable with high brightness and wide viewing angles which offers excellent clear image of underwater operations.

VISION 1712 offers up to 72 hours of continuous inbuilt audio and video recording. The system is equipped with on internal DVD-RW and also USB 2.0 port for external devices.

The system is powered with 220V a.c., 50 Hz and has internal rechargeable batteries that can keep the

equipment powered up to 4 hours.

The surface control station incorporates audio and video controls and also fitted with trackball that makes the intuitive on screen menu very easy to operate.



SC HOFIGAL EXPORT -IMPORT SA

SAN - Natural phytotheraphic product for improoving and eye health and its obtaining process. a St, Tamas V, Ivopol G, Neagu M OFIGAL EXPORT -IMPORT SA 201001098 product, known as "Vedisan" is made as dietary ement in the form of capsules / tablets with high
a St, Tamas V, Ivopol G, Neagu M OFIGAL EXPORT -IMPORT SA 201001098 product, known as "Vedisan" is made as dietary ement in the form of capsules / tablets with high
OFIGAL EXPORT -IMPORT SA 201001098 product, known as "Vedisan" is made as dietary ement in the form of capsules / tablets with high
201001098 product, known as "Vedisan" is made as dietary ement in the form of capsules / tablets with high
product, known as "Vedisan" is made as dietary ement in the form of capsules / tablets with high
idant activity and appropriate content of natural cts, necessary for the health and extension of natural (carotenoids, anthocyanins, flavones, vitamins, als, enzymes, amino acids, polyunsaturated fatty acids, For making this product, there were used extracts of: rries / blueberries, barley grass, tomato parings / bld, red corn, selenium yeast. The treatment is lasting, e results, good and efficient.

RO.188.

Title	BILO-Reglan Natural phytotheraphic product to improve liver function and biliary functions and its obtaining process
Authors	D. Ionescu, Mihaela E Denisa Emilia Florica Balint, Manea
	St.
Institution	SC HOFIGAL EXPORT -IMPORT SA
Patent no.	Ro a201300553
Description	The product, called Bilo-Reglan, is intended to stimulate hepatobiliary function, both for the synthesis of billiary acids (gall) and its evacuation, ensuring the normalization of digestion process. It presents as a single dose, easy to keep, stabilize and administrate. Clinical experimented, based on ultrasound imaging, gives a very good results and is free of harmful side effects, being biocompatible.
Class	4

RO.189.

Title	ARSUTRAT /PLAGOTRAT - Anti-burns gel and
	its obtaining process
Authors	Manea St., V. Tamas, C. Iordachel
Institution	SC HOFIGAL EXPORT -IMPORT SA
Patent no.	A.00210, B.I. nr 125505/2011
Description	Product "Arsutrat "-gel is indicated for the relief and treatment of various forms of dermal burns and wounds with disinfectant, decongestants, painkillers properties and also being a good dermorestitutiv and regenerativ of damage tissue.
Class	4

RO.190.

	LARVALBINA - Natural Phytotherapeutic product with
Title	biotrophic, energizing and vitalizing properties and
	process for obtaining it
Authors	Manea Stefan
Institution	SC HOFIGAL EXPORT -IMPORT SA
Patent no.	RO 2012 00103
Description	Each capsule contains oil of sea buckthorn (<i>Hippophae</i> oleum), linseed oil (oleum Lines), biomass Spirulina (<i>Spirulina platensis</i>), total extract of drone larvae and excipients. Larvalbina is a balanced combination of multivitamins and minerals, is a natural product, easily digestible, ensuring completion and normalization of unbalanced diets and corrects deficiencies occurring, especially those related to the immune rebalance hormonal system, and, neuro-vegetative system, increasing body resistance.
Class	4

Class

AEG PROGRESIV SRL

RO.191.	
Title	Procedure for achievement of the coatings with self- cleaning and self-sanitizing properties as also with air purifying properties from photo-catalytic materials, sensitive in solar radiation
Authors	Alice-Ortansa MATEESCU, Gheorghe MATEESCU
Institution	AEG Progresiv SRL
Patent no.	- (Patent Application no. A/00305 from 18.04.2013)
Description	The patent application presents the procedure with 5 deposition process steps and 7 deposition methods of the dry nanopowders or colloidal dispersion of the nanopowders for achievement of the photo-catalytic coatings that work under solar radiation (in UV and visible light) and that present self-cleaning, self-sanitizing and air-purifying properties.
Class	

RO.192.

Title	Materials and ecological and economical procedures for textile material treatment, for ensuring the following properties: hydrofilicity, hydrofobicity, anti-microbienne and self-cleaning
Authors	Alice-Ortansa MATEESCU, Gheorghe MATEESCU
Institution	AEG Progresiv SRL
Patent no.	- (Patent Application A/00663 from 09.09.2013) The patent application presents the: coating materials with direct and indirect self-sanitizing properties and treatment procedure with plasma in open atmosphere of the textile materials (<i>synthetic and natural</i>) in order to ensure them the following properties: hydrophilic, hydrophobic, anti
Description	microbienne and self-cleaning. According to the patent application the coating materials will be made by 5 ecological and economical deposition methods with development in open atmosphere that allow coatings of large surfaces as also easy integration of them in the existent technological processes.

Class

RO.193.	
Title	Materials and coating thin films structures with photo- catalytic and antimicrobial properties and treatment procedures of the internal and external surfaces of the cars for ensuring properties of: hydrofilisation, adhesion, anti-stick, anti-fog, self-sanitizing, and indirect reduction of the automotive noxes.
Authors	Alice-Ortansa MATEESCU, Gheorghe MATEESCU
Institution	AEG Progresiv SRL
Patent no.	- (Patent Application A/01044 from 30.12.2013)
Description	The patent application presents the: materials (3 basic materials in 5 combinations), structures (nanometric or micrometric thickness), deposition methods and surface treatment procedures with plasma in open atmosphere for deposition of the photo-catalytic coatings with self-cleaning, self-sanitizing and air-purifying properties of the internal and external surfaces of the vehicles in order to obtain anti-fog, reduction of dirt deposition, indirect reduction of the noxes
Class	produced by the cars (NO _x , SO _x , CO).
RO.194.	
Title	Dry, lubricant and complex materials with structure of monolayer and gradual or constant composition and methods or procedures for achievement of the gradual and lubricant coatings with these materials
Authors	Alice-Ortansa MATEESCU, Gheorghe MATEESCU
Institution	AEG Progresiv SRL
Patent no.	- (Patent Application A/01074 from 28.12.2013)
Description	The patent application presents the dry lubricant and complex materials with 12 structures and compositions (<i>made from: WS2; MoS2; hBN; Metal; Metallic compounds, with variable and constant compositions)</i> , as also 5 deposition procedures of them, in vacuum and in open

Description atmosphere. Achievement of the dry lubricant and complex materials will be made in a sole technological process by simultaneously or successively deposition of the materials that are included in the 12 structures.

Class

RO.195.	
Title	Materials and methods for achievement of gradual and complex tribological films for metallic object coating that work under friction
Authors	Alice-Ortansa MATEESCU, Gheorghe MATEESCU
Institution	AEG Progresiv SRL
Patent no.	- (Patent Application A/01075 from 28.12.2012)
Description	The patent application presents the coating materials with 5 complementary-cumulative properties, necessary for achievement of the tribological coatings with improved properties. Also, in the patent application 6 structures with variable composition (from 2; 3; 4 or 5 materials) of the tribological coatings are presented. According to the patent application the coating materials with different structures and variable composition will be deposited using the classical PVD methods as also the Ionized PVD methods in 5 procedures.
Class	

CORNELIU GROUP Association for Research&innovation

RO.196.	
Title	Super-absorbing air filter
Authors	Corneliu Birtok Baneasa
Institution	CORNELIU GROUP
Patent no.	Patent - 126019 / 28.12.2012
Description	The invention is a mutifunctional air filter, a product designed for filtering the air required for the functioning of the internal combustion engines. According to the invention, the super- shearbing air filter with performed shell and internel gong for
Description	internal combustion engines is designed to increase the volume of the filtered air available for feeding the internal combustion engine.
Class	- 8



RO.197.	
Title	Dynamic Device For Air Transfer
Authors	Corneliu Birtok Baneasa
Institution	CORNELIU GROUP
Patent no.	Patent - RO 2009 00028/30.06.2010
Description	The dynamic device for air transfer refers to a device designed to transfer air from outside the engine compartment on the classic and sport air filter, to make a laminar, concentrated flow of air and lowering its temperature for increase the volumetric efficiency of internal combustion engine.
Class	8
	[ANTINGTON AND]



Fructex Bacau SRL

RO.198.	
Title	MOLDOVA Variety – Rosa canina
Authors	Rati Ioan Viorel
Institution	Sc Fructex Bacau Srl
Description	The plant habitus is wide, thick and tall. The young sprouts present a reddish / brownish color. The branches are thorns free or present very few thrones. The leaves are small and shiny on the superior side. It is recommended for BIO exploitations, due to high productivity. The fruit has a jug like form. It usually ripens, three to four weeks before the other varieties from the wild flora.
Class	3. Agriculture and Food Industry



RO.199.	
Title	Variety AMALIA – Malus domestica
Authors	Rati Ioan Viorel
Institution	Sc Fructex Bacau Srl
	The tree is of a middle size, with a high density of displayed
	branches. It fructifies on both short and long branches. The one year
	old sprouts have medium width rare pubes on the superior half of
	the sprout. It is resistant towards Venturia Inaequalis and tolerates
Description	Podosphaera leucotricha, The fruits are medium to large in size,
_	oval shaped with medium calyx. The background color is green /
	yellowish and the covering color is dark red. The pulp is white in
	color and firm. The fruit consumption maturity starts around
	August 20th.
Class	3. Agriculture and Food Industry



RO.200.	
Title	Variety - SAUCESTI – Cornus mass
Authors	Rati Ioan Viorel
Institution	Sc Fructex Bacau Srl
Description	The plant is of middle size, with displayed branches and moderate branch density. The leaf limb has a pointed apex form with rare pubes on the superior side. The fruit resembles a cylinder, it is large in size, red in color and has a middle size peduncle. The seed has an ellipse like shape. The productivity is very high, with late ripening towarhs the middle of September.
Class	3. Agriculture and Food Industry



RO.201.	
Title	Variety - SERBANESTI – Cornus mass
Authors	Rati Ioan Viorel
Institution	Sc Fructex Bacau Srl
Description	The plant is of middle size, with semi erect branches and presents lenticels on one year old branches. The leaf limb has a pointed apex form with rare pubes on the superior side. The fruit resembles a cylinder, is red/purple in color and the seed has an ellipse like shape. The productivity of this variety is very high, with early ripening, usually towards the end of July or early August.
Class	3. Agriculture and Food Industry



RO.202.

Title	STAR variety - Hipophae rhamnoides (white
The	seabuckthorn – male, pollinator)
Authors	Rati Ioan Viorel
Institution	Sc Fructex Bacau Srl
	The plant is a male, with column like growth, erected and thick middle sized branches. The middle and upper branches
Description	are thorns free or have a very limited amounts of thorns. It produces a high quantity of pollen, making this variety a very effective pollinator for the following seabuckthorn varieties: Diana, Auras, Serpenta, Victoria, Ovidiu, Tiberiu and Silvia.
Class	3. Agriculture and Food Industry



Individual Inventors

RO.203.	
Title	LASER POWER STATION (LPS)
Authors	MANU MARIANA DANIELA, PLEȘU GHEORGHE,
	NICOLAE NĂCIOIU
	Cabinet Oberon Iași, Research and Development (in bionics and
	biofotonics)
Patent no.	"Gh. Asachi" Technical University, Iași
	Research Agency for Military Technique and Technology
	Bucuresti

Description

Class

Short description of invention. A Laser Power Station (LPS) A Laser Power Station (LPS) is producing electricity after laser-holographic processing, using a bifocal laser resonator with a holographic intricate systems and parabolic mirrors as solar cells at collector pole, laser transformation of the light in polarized light, coherent, amplifying and directed radiation to its focus of and use laser secondary effects as thermal or holographic effects. The model is a certificate of nature for the human eye as "biological laserholographic biophotonic system". Models can be fixed or mobile LPS and may follow the sun moving, any time summer or winter. Efficiency is maxim: a lot of resources and space, work long periods of time. One LPS model use the laser thermal effect for mechanical energy of a Stirling motor, that activate an electric generator, with a high randament more over 30%. Another LPS model use the holographic effect for obtaining side effects (electric, magnetic, photonic laser, biochemical) in laser active substance - phosphate (as potassium di-acid phosphate or KDP)-water-molecular oxygen, sensitive to the visible spectrum, and "generating parametric optical frequency", and electrical super-conductibility both at high/normal temperatures T° and low T° , produces water photolysis -free electrons that emergence of the electric current (DC), in alternating current user, but the redresser diode may correct it; a part of current can be accumulating in the batteries. LPS may amplify optical energy and information.

Applications in the energy industry, as autonomous generator for hospitals, ships, industries, pharmacology,

chemical and biochemical laboratory, regenerative medicine, bioengineering, surgery, agriculture. LPS can have any size, amplified scale, can be transported as mobile or fixed station and can be placed on any place on Earth, areas with water. LPS is patented.



RO.204.	
Title	Flat valve position tracking system
Authors	MOREGA Dragos Dan, NEMTOIU Simona-Greta
Patent no.	A/00156/02.03.2015
Description	The invention refers to a flat valve position tracking system which fits the bottom dumps of dams or hydroelectric intakes. The facility, according to the invention, presents the following advantages: -displaying on the operator panel the valve qouta; -the hunt quota display is jammed in the guides; -constructive simplicity; -high reliability;
Class	2

RO.205.

Conservation and Recovery of Old Textile Objects and ofTitleObjects from Metal Strings from the National Cultural
Heritage

Authors Mihai CHIRILĂ, Ioan CIOARĂ

Institution "Gheorghe Asachi" Technical University of Iasi

A prime issue in the study area engineering of textile chemical finishing processes seems to be the natural methods from the past. A careful analysis in electron microscope (SEM) shows a nearly identical chemical elements used in the finishing process and the mercerization of old textiles compared to the new ones, such as the presence of atoms of sulfur, chlorine, potassium, sodium, etc.

Other priority issues in the study of engineering textile surfaces is the native quality of the physical properties encountered: property to unfold of natural silk or special sensation of coolness feel on the skin in contact with flax textiles, which for modern textile Engineering Sciences, at the present time, is the true performance, in order to make an investment summary with these qualities for synthetic textile materials.

A very special thing and perennial and cultural value represents the metallic thread, especially of gold and gilded silver present in old textile and old embroidery.

Description In old damask textiles and Brocade full decorated we find the glow of wire, as well as his extraordinary usefulness: it contributes, on the one hand to increase the resistance of clothing ornament, according to historical researcher Alexianu recounts in his two volumes, Mode and Vestments in the Past, and on the other hand we find at Simion Reli in his The Origin and Evolution of Costume for Priests, immortal beauty of the worship objects and liturgical textiles present in clothing adornment of churches.

In comparison with modern looms, old tissues made in manual looms, at a careful analysis of the optical photometric microscope, and the conversion-reflexive microscope shows a tendency toward a true perfection premiums in relation to those of today. This is seen especially in the craft workshops of Transylvania, Dobrogea, Basarabia, Ungrovlahia and Bukovina where manual technique rival superiority with mechanistic technique.

By combining scientific research concerning the area of textile engineering, organic and metal objects from old cultural treasures with contemporary engineering research areas for the new textiles as well as those of today's SIM make sense for true immortal progress of science and culture.

Class

Innovative Research

RO.206.	
Title	Device to obtain controlled deposits of electrospun nanofibers
Authors	Liliana Rozemarie Manea, Norbert Cristian Kurczveil, Vasile Caunii, Liliana Hristian, Ion Sandu, Valeriu Dorogan
Institution	Romanian Inventors Forum
Patent	Patent application No. 6458/2015
Class	 The invention is related to a device to obtain controlled deposits of electrospun nanofibres shaped like a fibre web from polymeric solutions, that consists of a modular robot arm attached to computerized electrospinning equipment, which implies synchronous or differentiated/individual motion of the syringe and the point collector, synchronized with the deposit layer motion, which offers the fibres a high ordering degree. The purpose of the invention consists in producing webs with continuous ordered and uniform fibrous deposits by monitoring the direction of polymeric jet released by the syringe toward the point collector, and their deposition on a substrate which moves on the conveyor belt surface. The advantages resulted by applying the inventions are as follows: increase the uniformity and control of fibrous electrospun deposits; provide automated control actuated by the command and control mechanism through the built-in software; possibility to obtain preestablished uniaxial or bidimensional arrays with controlled density, in conditions of precise values of fibers characteristics and processing parameters; obtain continuous controlled deposits with special dimensional and mechanical characteristics; reduced time for analysis/processing the control parameters; adequate selectivity/sensibility, increased processing/ sensing/ intervention speed, high storage/memorization capacity; relatively small prices as compared to the performances/advantages of resulted applications; no processing toxic wastes.



RO.207.	
Title	Delivery mechanism with punched electrodes to increase the efficiency of electrospinning equipment
Authors	Liliana Rozemarie Manea, Cramariuc Bogdan, Ion Sandu, Cramariuc Radu, Valeriu Dorogan
Institution	Romanian Inventors Forum
Patent Description	Patent application No. 6459/2015 The invention is related to a delivery mechanism with punched electrodes which replaces the delivery mechanisms specific to electrospinning equipment with needles, to produce fibers from polymeric solutions, meant to increase the efficiency of electrospinning process. The purpose of the invention consists in producing electrospun fibrous webs with a high covering degree in high efficiency equipment condition, by using an inter- changeable punched electrode. The spherical form of the electrode allows the application of voltages with values greater than 50 kV without producing corona discharges at the electrodes. Applying higher voltages allow increased needle collector distance, which leads to obtaining lower values of fiber diameters and/or using less volatile solvents, the latter representing a very interesting solution for processing by electrospinning in aqueous medium, alternative that presents environmental benefits). The advantages of multijet electrospinning equipment with punched spherical electrodes are: <u>a</u> the increase of productivity in the electrode where polymer jets are formed, which leads to: b.1. thermohydrodynamic increased stability, no interference occurs between polymeric jets (in this case, the electric field has the structure / shape of the one of liquid polymer surface from the electrospinning without needles, but providing the control over the flow rate (uniform flow); c. the increase of applying a rotating movement on the spherical electrodes, the uniform distribution of electrospun nanofibers and the decrease of unevenness of fibers from different holes.

RO.208.			
Title	A Statistical Study About Photocatalytic Properties of Titania Crystals Deposited by Sputtering		
Authors	Violeta Vasilache, Monica Anca Cretu, Ion Sandu, Marian Ioan Risca, Traian Vasilache		
Institution	Stefan cel Mare University Suceava Alexandru Ioan Cuza University of Iasi		
Description	Crystallized titania layers were prepared by vacuum sputtering in a DC magnetron. Photocatalytic properties of the crystals were analyzed using degradation of formaldehyde in a self-conception reactor. All data were analyzed using classical curve dependence and statistical. This study used Anova to find correlations between photocatalytic properties of the crystals and deposition parameters. The considered parameters were pressure, temperature of substrate, argon concentration and time of sputtering, all of this measured during the active process.		
Class	Innovative research		

RO.209.

Wear proof and slippage proof coating on polyurethane Title nanocomposite structure and the process for its obtaining Authors Marin Laurentiu, Marin Catalina Daniela

National Institute for Research and Development in Institution **Chemistry and Petrochemistry ICECHIM Bucharest**

Description

Patent application No.A/00853/2013 The Patent Application contains the scientific informations with the references about obtaining of a polyurethane composite used as a coating for paving (floors) on a large place of surfaces used in constructions (wood, granite, marble, ceramics and/or metal). The novelty of the procedure Class is the modification of the coating with extradure grains (SiC, $Al_2 O_3$) at a very well temporal defined moment of pot life. So the extradure grains will be only attached on the surface of the coating and they will formed on it a number of cup – hooks who accomplish for the coating the wear proof and slippage proof character



RO.210.

Title	Improving the quality of drinking water using quartz crystal properties
Authors	Mircea LAZAREANU, Vasile LAZURCA et al.
Institution	Colegiul Tehnic Siret
	The invention relates to activated or not quartz crystal device to treat
	drinking water from the natural or drinking stations. It is known that
	both the surface water and underground, often used as drinking
	water, have a cargo chemical, physical and microbiological that
	requires further treatment in order to potable using modern stations
Description	in several steps. Water from these stations, most often, does not
	correspond to organoleptic and chemical requirements. therefore
	now these waters are studied in numerous research centers. One
	special research direction is represented by the studies concerning
	the structural oligomeric reformulation of water. On the basis of such
	research, the team managed to re-develop a device for drinkable
	water treatment, in which the quartz crystals, activated or not, are put
	in correlation with the earth's magnetic field.
Class	Innovative research



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

I. SISTEM SOLAR FOTOVOLTAIC P	ORTABIL		
Axinte Andrei	cl. a IX a		
Gheorghiță Sebastian	cl. a VI a		
Motoc Smaranda	cl. aVII a		
Prof. Pantelimonescu Remus			
Prof. Colbu Gheorghe			

2. ROBOT MOBIL AUTONOM –SUMO-Josanu Rareș cl. a VII a Prof. Pantelimonescu Remus

3. ROBOT MOBIL AUTONOM LINIE – OBSTACOL Bejan Irina Mădălina cl. a X a Prof. Pantelimonescu Remus

4. EXPERIMENTE CU ULTRASUNETE Gherghel Ştefen cl. a VI a Bujor Răzvan cl. a VIII a Prof. Pantelimonescu Remus

5. AUTISTIC SPECTRUM – SOFTWARE INNOVATIOI Bejan Irina Mădălina cl. a X a Prof. Pantelimonescu Remus

6. DETECTOR PERSOANE CU ME	OR PERSOANE CU MESAJ VOCAL		
Cohal Alexandru	student		
Popescu Andrei	cl. a XI a		
Prof. Pantelim	onescu Remus		
Prof. Colbu Ghe	eorghe		
7. COMPLEX – ECOLOGIC - DE ARTIŞTI	CREAȚIE PENTRU		
Popescu Andrei	cl. a XI a		
Prof. Colbu G	heorghe		
8. LOCUINȚĂ "ECO"			
Motoc Smaranda	cl. aVII a		
Popescu Irina	cl. a IV a		
Prof. Colbu Gl	heorghe		
9. "SISTEMUL BIELĂ MANIVELĂ ELECTRIC".	ÎNTR-UN TRAFORAJ		
Dascalu Laurentiu	cl. aIX a		
Dascalu Eduard	cl. aVII a		
Prof. Chiriță	Daniel		
10. NAVĂ ECOLOGICĂ			
Popescu Andrei	cl. a XII a		
Prof. Stratula	t Mihai, Prof. Sandu Carmen		
11. COMPOZIȚII			
Munteanu Alice	cl. a VIII a		
Stoica Denisa	cl. a IX a		
Prof. Colbu E	Dumitru-Eugen		
Liceul Tehnologic "	Oltea Doamna" Dolhasca		
12. COMPOZIȚII			
	1 3/1		

Marian Maria	cl. a XI a
Vieru Alexandru	cl. a XI a
Prof. Toma Mădălina	Palatul Copiilor Iaşi

Madalina VOLENTIR

ION CREANGĂ HIGHSCHOOL Chisinau, R. Moldova









Special Guest

Strul MOISA, PhD. Eng.

Ben-Gurion University of the Negev, Beer-Sheva, Israel,

smoisa@bgu.ac.il

Strul Moisa was born in the city of Dorohoi, Romania. Since 1977 he lives in Beer-Sheva, Israel.

Over 33 years Dr. Strul Moisa held the position of Chief Engineer, Department of Materials Science and Engineering, Ben-Gurion University of the



Negev, Beer-Sheva, Israel. He is a well-known expert in bioceramics and composite materials, mechanical properties of metals and metal alloys, surface engineering of materials, thermal and thermo-chemical treatments of materials, materials corrosion and their protection, materials processing and properties investigation, archaeo - metallurgy of the Bible.

His professional and scientific activity comprises: papers published in scientific journals, in the proceedings of international or national conferences, participating in different international or national research projects, member of the scientific committee of different meetings.

Constantly, Dr. Moisa promotes linking bridges between the Ben-Gurion University of the Negev, Beer-Sheva with universities and academics from Romania.

Dr. Strul Moisa held 3 Honorary Professor titles.

THE METALLURGY IN THE BIBLICAL PERIOD, AN IMPORTANT CHAPTER OF THE SCIENCE AND CIVILIZATION HISTORY

Between the Holy Scriptures and Metallurgy – i.e. between spirit and matter - there is an intrinsic strong tie: metals and metallurgy are found overwhelmingly represented in the biblical text, a feature of key significance. This domain provides the 'perfume' of the richness of the world of metals that permeates the beauty and the spiritual message contained in the Holy Scriptures. Metallurgical accomplishments reflect a creative and productive society, a society using advanced technology for the times. Additional aspects, such as metals being used in a metaphoric-spiritual element, constitute a major contribution to the intensity of the biblical message.

Today, the subject of metallurgy in the Bible it is less known.

The presentation aims to be a short contribution, to illustrate that the metallurgy in the biblical period are an important chapter of the human and science history.