

Proceedings of
The 6th Edition of

**EUROPEAN EXHIBITION OF
CREATIVITY AND INNOVATION**

Editors: Andrei Victor SANDU and Ion SANDU



2014

ISBN: 978-606-714-037-8

Editura
Universității
Alexandru Ioan Cuza din Iași

Editors:

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Ion SANDU

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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 Iasi 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 Iași

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 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.

THE ORGANIZERS

ROMANIAN INVENTORS FORUM

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

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FORUMUL INVENTATORILOR ROMÂNÎ

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 și valorificarea activităților de creație științifică, 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.

THE ORGANIZERS

EUROPE DIRECT IAȘI

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



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EUROPE DIRECT IAȘI

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.

THE ORGANIZERS

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

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

The Faculty of Materials Science and Engineering at the "Gheorghe Asachi" Technical University of 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 multi-disciplinary national and international co-operation is highly valued.

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UNIVERSITATEA TEHNICĂ “GHEORGHE ASACHI” IAȘI Facultatea de Știința și Ingineria Materialelor

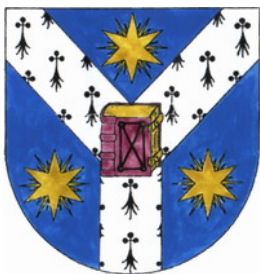
Universitatea Tehnica din Iasi este o alegere excelenta pentru absolventii de liceu care s-au hotarat sa imbratiseze o cariera in domeniul provocator al ingineriei. Cele unsprezece facultati ale universitatii sunt dotate cu laboratoare si echipamente de ultima ora, unde isi desfasoara activitatea specialisti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

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

THE ORGANIZERS

ALEXANDRU IOAN CUZA
UNIVERSITY OF IASI

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



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

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| Anca Monica CRETU | Manuela Cristina PERJU |
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PROGRAM EUROINVENT 2014

DAY 1 – THURSDAY MAY 22th

8 ⁰⁰	Participants registration / Booth setup
12 ⁰⁰	Opening Ceremony Welcoming Speeches Opening of National Salon of Technically and Scientifically Books
13 ³⁰	Jury Evaluation
14 ⁰⁰	Media Interviews
17 ⁰⁰	European Visual Art Exhibition
22 ⁰⁰	End of Exhibition Day

DAY 2 – FRIDAY MAY 23th

10 ⁰⁰	Exhibition start
10 ³⁰	Jury Evaluation
10 ³⁰	WORKSHOP Creativity in European Context
12 ⁰⁰	Delegation presentation
16 ⁰⁰	Scientific Book Salon Award Ceremony
18 ⁰⁰	Jury Final Decision
22 ⁰⁰	End of Exhibition Day

DAY 3 - SATURDAY MAY 24th

10 ⁰⁰	Exhibition start
12 ⁰⁰	City tour (foreign delegations)
16 ⁰⁰	EUROINVENT Award Ceremony
20 ⁰⁰	Cocktail dinner
22 ⁰⁰	Exhibition teardown



EUROINVENT 2014
Cercetare, dezvoltare și inovare la nivel european

Energia și schimbările climatice – Perspective pentru 2030

22 mai 2014

Valori europene în era globalizării

23 mai 2014

Europa Digitală

24 mai 2014

INTERNATIONAL JURY

Honorary President:	Kane KRAMER British Inventors Society (United Kingdom)
President:	Mohd Mustafa Al BAKRI ABDULLAH Universiti Malaysia Perlis (Malaysia)
Vice-Presidents:	Ljiljana PEDISIC Croatian Inventors Association (Croatia)
	Valeriu DOROGAN Technical University of Moldova (Moldova)
Members:	Adrian GRAUR Stefan Cel Mare University of Suceava (Romania)
	Tudor LUPASCU Institute of Chemistry of Academy of Science of Moldova (Moldova)
	Nada ANDRASSY Croatian Inventors Association (Croatia)
	Ana ARNAUT AGEPI Moldova (R.Moldova)
	Cornel CIUPAN Technical University of Cluj-Napoca (Romania)
	Adnan Fahad Rashed Al Ramzani AL-NAIMI Agrigreen (Qatar)
	Constantin UNGUREANU Stefan Cel Mare University of Suceava (Romania)
	Aurelia LUPAN AGEPI Moldova (R.Moldova)
	Ionel MANGALAGIU Alexandru Ioan Cuza University of Iasi (Romania)
	Ion SANDU Romanian Inventors Forum (Romania)
	Andi Dwi PUTRA Association of Young Innovator and Scientist (Indonesia)
	Gabi DROCHIOIU Alexandru Ioan Cuza University of Iasi (Romania)
	Hazim Jabbar Al-DARAJI University of Baghdad (Iraq)
	Yuriy SKOMOROVSKIY Centre Alyumel Sevastopol (Ukraine)
	Octavian CIOBANU "Gr. T. Popa" University of Medicine and Pharmacy of Iasi (Romania)
	Alexandru STANILA "Gheorghe Asachi" Technical University of Iasi (Romania)
	Mihail Aurel TITU "Lucian Blaga" University of Sibiu (Romania)

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 Exquisite Award
The AgroFuture Prize
The CyberLife Award
The Popularity Award
Special Prize

Gold Medal
Silver Medal
Bronze Medal

Prize of Croatia – Croatian Inventors Association
Prize of 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 Iasi
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



INVENTIONS 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

Jury of Book Salon

- President: **Constantin LUCA**
"Gh. Asachi" Technical University of Iasi
- VicePresident: **Atena Elena SIMIONESCU**
"G.Enescu" Art University Iasi, UAP Iasi
- Members: **Catalin BORDEIANU**
"Gh.Asachi" County Library Iasi
- Mihai BRANZILA**
"Alexandru Ioan Cuza" University of Iasi
- Dana LUNGU**
Al.I.Cuza Publishing House
- Diana Mihaela MARDARE**
"Alexandru Ioan Cuza" University of Iasi
- Daniela Fulga VLAD**
Radio Romania Iași
- George BONDOR**
"Alexandru Ioan Cuza" University of Iasi
- Valeriu DULGHERU**
Technical University of Moldova (Moldova)
- Anca Maria Rusu**
"G.Enescu" Art University Iasi
- Romeo Cozma**
"G.Enescu" Art University Iasi
- Valentin SAVA**
"G.Enescu" Art University Iasi

Jury of European Visual Art Exhibition

- President: **Constantin TOFAN**
"G.Enescu" Art University Iasi, UAP Iasi
- Members: **Valentin SAVA**
"G.Enescu" Art University Iasi, UAP Iasi
- Atena Elena SIMIONESCU**
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- Mihai TARASI**
"G.Enescu" Art University Iasi, UAP Iasi
- Dragos PATRASCU**
"G.Enescu" Art University Iasi, UAP Iasi
- Bogdan TEODORESCU**
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P R E A M B L E

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 competitive-interactive 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 Iași inventics school contribution in its aim to form young inventors. Meetings and

workshops in the inventics 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 reevaluate 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 sixth edition of EUROINVENT sent invitations to inventors associations from many countries, as United Kingdom, Spain, Croatia, Poland, Republic of Iran, Iraq, Malaysia, Indonesia, Korea, United Arab Emirates, Turkey, Poland, Portugal, Qatar, France, Ukraine, Taiwan, 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 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 Iasi, “Gheorghe Asachi” Technical University of Iași and “Alexandru Ioan Cuza” University of Iasi and all the partners for all their support and efforts to organize the events”.

Prof. Ion SANDU – President of Romanian Inventors Forum

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BRITISH INVENTORS SOCIETY™





World Invention Intellectual Property Associations

www.wiipa.org.tw

INTRODUCTION:

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

PURPOSE:

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

OBJECTIVES:

The objectives of WIIPA are:

1. 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.
3. To secure cooperation and mutual assistance amongst international associations of inventors and designers.
4. To establish and carry on institutions of education, instruction or research and to provide for the experience of invention knowledge generally.
5. 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.
6. To improve the status of WIIPA inventors at international levels, and to promote cooperation between inventor associations worldwide.
7. 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**



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.

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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.***

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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 reconstruction, areas undergoing social and economic decline, disadvantaged rural 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 INCDC 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 – INCDC INCERC, INCDC 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, INCDC 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.

INCDC 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/>

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;
- ✓ 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 medicine and 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.

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 specialitate 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 curriculumelor naționale în teritoriul medicinei 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 medicinei 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 medicinei dentare în acord cu necesitățile prevalenței unui anumit tip de patologie pe anumite zone ale țării sau creșterea numărului de competențe;
- ✓ Colaborarea între decanii din România și celelalte organisme abilitate din teritoriul educațional și profesional pentru sincronizarea aspectelor educaționale cu necesitățile practice;
- ✓ Implicarea 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 relațiilor de colaborare cu Asociația Dentară Europeană pentru Educație (ADEE) reunește un număr important de ani, menționând faptul că Facultatea de Medicină Dentară, afiliată ADEE, partener activ al ADRE a fost evaluată de către ADEE în 2001 primind o bună apreciere a standardelor în sfera didactică, de cercetare și asistență medicală.

ADRE este organizator a numeroase manifestări științifice internaționale cu profund impact în domeniul medicinei dentare și partener al proiectului european „**Adaptarea ofertei învățământului medical dentar superior la nevoile pieței muncii și ale societății bazate pe cunoaștere**”, nr. contract: POSDRU/86/1.2/S/63699.

Publicație oficială:
**ROMANIAN JOURNAL OF DENTAL
EDUCATION**

Sub redacția Prof. Dr. Norina Forna

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Romanian Inventors Forum



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Romanian Inventors Forum (FIR) is a professional association which aims to support, stimulate the development and valorization of scientific and technical creative activities, and cultural - artistic, but also copyright problems of its members, diversification of research and technological development, design, scientific investigation, micro-production etc. Research and development institution **certified** by the National Authority for Scientific Research (ANCS), according to HG. 551/2007, Decision ANCS no. 9708/29.07.2009.

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

www.afir.org.ro

Agenția de Stat pentru Proprietatea Intelectuală a Republicii Moldova

The State Agency on Intellectual Property of the Republic of Moldova

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URL: www.agepi.gov.md
Director general: dr. Lilia BOLOCAN

Agenția de Stat pentru Proprietatea Intelectuală (AGEPI) este oficiul național și unica autoritate care realizează protecția juridică a proprietății intelectuale sub formă de *proprietate industrială, drept de autor și drepturi conexe* pe teritoriul Republicii Moldova. AGEPI înregistrează și eliberează titluri de protecție juridică a obiectelor de proprietate industrială (OPI): invenții, mărci, indicații geografice, denumiri de origine și specialități tradiționale garantate, desene și modele industriale, soiuri de plante, topografii ale circuitelor integrate, înregistrează obiecte ale dreptului de autor și drepturilor conexe, rezultatele cercetărilor științifice, etc.

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State Agency on Intellectual Property (AGEPI) is the National Office and the only authority which carries out legal protection of intellectual property in the form of industrial property, copyright and related rights on the territory of the Republic of Moldova. AGEPI registers and issues titles of protection for industrial property objects: inventions, trademarks, geographical indications, appellations of origin, traditional specialties guaranteed, industrial designs, utility models, plant varieties, topographies of integrated circuits, registers copyright and related rights objects, and results of scientific results.

AGEPI registers assignment, license and franchising agreements concerning the rights of industrial property objects. Also, AGEPI certifies and authorize the activity of patent attorneys, implements training and upgrading programs for the specialists in the field of intellectual property, publishes the Official Bulletin of Industrial Property, renders consulting services on issues of intellectual property protection to national and international applicants.



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.

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Slovenia, Taiwan, Turkey, Turkmenistan, Ukraine

Albania

AL.1.

Title	Studying and Research Regarding the Valorization of Traditional Women Dresses in North Albania
Authors	Blerta Tuci
Institution	Tirana, Albania ISES, Corvinus University of Budapest
Description	<p>Traditional dresses are undoubtedly one of the most powerful manifestations of traditional culture. They are the hereditary transmission of many elements that come from the ancient times and middle age, but also an expression of cultural relations with other peoples over the centuries. In the research study the main focus will be the valorization of traditional dresses for women in North Albania, as the best example of the representation of ethnic identity.</p> <p>Recent studies have shown that the constituent parts of traditional clothing not all have the same age. There are parts that recall medieval dresses, Byzantine and Oriental influences, others that come as an echo of ancient time, but there are also elements that can be associated with the Illyrian culture. Analogies can mention so the observed line between popular and "dalmatika" Illyrian, or between the hood, Struck (scarves), moccasins, etc, and the respective elements, used by the Illyrians. Thanks to these elements traditional clothing has managed to win a number of original features that take the values of an ethnic indicator. Traditionally, clothing for women consisted of bright and colourful embroidery. Mostly shirts and dresses were worn, but in some regions loose fitting pants were socially acceptable. The paper will identify the information categories of traditional dresses for women in the North Albania, the history, the typical elements that differ from region to region. At the same time, will show the links between traditional and modern reproducing of the costumes in order to maintain alive the tradition, risks and challenges of globalization process in cultural diversity</p>
Class	Innovative Research

Armenia

AM.1.

Title	Model Of Physics And Physicians Possible Collaboration For Correlations Discovery Between Cosmic Weather And Patients Health Condition
Authors	G. Karagiezian
Institution	Yerevan Physical Institution Armenian Technological Academy (ÀÒÀ)
Description	Prom position of chronobiology and chronomedicine with using datas of Yerevan Physical Institute produced model of correlations of solar activity and different diseases.
Class	4. Medicine

Bosnia and Herzegovina

BA.1.

Title	The model of a universal sports facility
Authors	Merzuk Mesanovic, Ermin Podrug, Anel Holjan Muhtarema Muharemovic, Admir Aksamovic
Institution	Secondary School for Electrical Engineering
Description	Pending The automated sports facility model is realized as a football pitch and swimming pool, but the pitch can be modified as an American football field or baseball pitch, and the swimming pool can be modified as an ice skating rink. The aim of the model creation is saving space on the one hand, i.e. the preservation of green surfaces through the multi-functionality attributes of the facility itself; and enabling an efficient, safe and economical running of the facility on the other.
Class	7. Buildings and Materials

Bulgaria

BG.1.

Title	Design, Synthesis And Analytical Characteristics Of Fluorescent Molecular Sensors
Authors	Lyudmila Angelova, Andriana Surleva, Nikolay Georgiev
Institution	University of Chemical Technology and Metallurgy, Sofia, Bulgaria
Description	The stringent demands of the environmental authorities to maximum contamination levels impose the development of sensitive, selective and cost effective sensors. The fluorescent compounds, being very sensitive and fast responding, are appropriate target for development of chemical sensors for heavy metals or toxic anions in aqueous media. However, the most of reported sensors are water sensitive which limits their application to non-aqueous media. The aim of the present project is design and synthesis of water soluble fluorescent compounds based on 1,8 nathalimide derivates. By incorporating appropriate substituents in the structure of the parent compound the fine tunneling of the sensor activity could be achieved. Two main problems in sensor design should be assessed: water solubility without any compromise with sensor activity and selective fluorescent sensor response to the ions of heavy metals or to cyanide anions. The spectral characteristics of the synthesized parent compound and its response to presence of metal ions are studied.
Class	Innovative Research

BG.2.

Title	Silica Hybrid Materials with Different Acrylic Derivatives for Biology Application
Authors	Georgi E. Chernev, Elena V. Todorova
Institution	University of Chemical Technology and Metallurgy, Sofia, Bulgaria
Description	Development of hybrid materials applicable in biology area (immobilization of living cells for purification of wastewater) is a goal of our research groups. The materials should exhibit biocompatibility, high reactivity and stability, and silica hybrids are good candidate for that purpose. The aims of the presented research were synthesis and

structural characterization of hybrid materials modified with incorporation of natural and synthetic organic components into a silica network. Chitosan (CS) and acrylic derivatives (methacrylic acid (MA), methyl methacrylate (MMA) and hydroxyethyl methacrylate (HEMA)) were used as activated monomers of the SiO₂ matrix. The influence of organic components content on the structures and properties was followed by XRD, FTIR, SEM and DTA/TG analysis. Synthesized silica hybrids are homogeneous materials with amorphous structure based on silica network into which the organic components are evenly distributed. The SiO₂/CS/MA materials formed porous structures with high reactive surface area. The DTA/TG results for the hybrids with participation of CS and HEMA components showed, that the free reactive centers are kept. Substitution of MA or HEMA with MMA leads to formation of chemical bounds with CS and silica network, as a result of which the free reactive groups are reduced. From the obtained results can be concluded, that nature of acrylic derivatives determined the structure, properties and application of the hybrid materials. Synthesized silica hybrid materials with participation of acrylic derivatives can be applied in biology area as carriers for immobilization of living cells, as well as adsorbents for different pollutants.

Class Innovative Research

BG.3.

Title **Chemical Analysis of Sediment Formation in a Diesel Hydrotreater Unit**

Authors A.Surleva¹, D. Stratiev², E. Todorova¹, K. Hristov¹, K. Stanoluv¹

Institution ¹University of Chemical Technology and Metallurgy Bulgaria

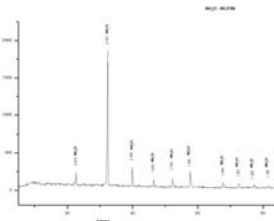
²LUKOIL Neftohim Burgas, Bulgaria

Description Formation of undesired sediments in near zero sulfur diesel hydrotreaters has been recently considered in the literature as a serious problem that demands fast and cost effective solutions. A sudden increase of the pressure in a heat exchanger of near sulfur diesel hydrotreater unit of a Bulgarian refinery imposed its emergency switch off. A solid sediment that hinder the gas flowing was found. However, there is no methodology for sediments identification which

limits the possibilities for implying appropriate technological solutions for its prevention. The initial analytical data provided by the refinery's laboratory was insufficient to reveal the chemical nature of the sample. Thus, the refinery decided to cooperate with our university in efforts to obtain chemical composition of the undesired sediment and the conditions for its formation. A systematic approach applied includes: solubility tests, specific chemical reactions for qualitative analysis, volumetric titration for quantification of main component and critically chosen instrumental methods: argentometric titration, ICP-AES, gas chromatography and XRD. The following composition of the deposit was supposed: 46.6% ammonium chloride, 9.6% nitrates, 13.6% organic chlorides and about 30% water, organic impurities and corrosion products. Numerical investigation of the temperature field in the area of the deposits was performed in order to prove the possibilities for NH_4Cl crystallization. The reliable data about the chemical composition allowed the study of the origin of the sediment and the development of appropriate technological solutions for its prevention to be started.

Class

Innovative Research

**BG.4.****Title****Direct reduction of scale at electrothermal rotary bed****Authors**

Elisaveta Koleva, Boyan Yordanov

Institution**University of Chemical Technology and Metallurgy, Sofia, Bulgaria****Description**

During some metallurgical processes, for example a hot rolling, the plants produces much amount of metal rests as a scale. The purpose of invention is an utilization of dispersed scale (Fe_xO_y) via a process of reduction with dispersed carbon as a graphite at electrothermal rotary bed. Both materials, graphite and scale, are mixed over stoichiometric quantities to be the process successful. It is a method of

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reduction by an innovative rotary furnace. Its special device consists in the passing of electricity through the bed of reducing and reduced rotating particles. Flowing electric current in the contact areas between the particles creates electrical arcs due to the process temperature reaches higher values. As a result it occurs a sublimation and a diffusion intensification. The bed resistance is depend on many factors, such as size, shape, surface nature, hardness, size distribution of the bed particles, voidage within the bed, operating velocity. Temperature range of the process is 1000 to 1500°C. The furnace design offers many possibilities for variance as: change of the temperature, velocity of furnace rotating, degree of furnace filling, fraction of particles, ect.

Class

Innovative Research



BG.5.

Title

Promotion of the Palace of Balchik to the European tourists

Authors

Ralitsa SAVOVA

Institution

Varna, Bulgaria

ISES Foundation, Corvinus University of Budapest

Description

The aim of this study is to identify statement of significance of the Balchik Palace in Bulgaria which contributes to the understanding of the site and enables the local community and the European tourists to understand what makes this monument so unique and special. The second issue is to focus on the actual state of conservation and the progress made so far for the protection of the site. Not at the last place, this paper highlights cultural activities and gives examples of existing and future collaboration and networking between Bulgarian and Romanian governments, NGOs, cultural organizations and local development policies for promoting the Palace to the European tourists as a cultural tourism destination.

Class

Innovative Research

Canada

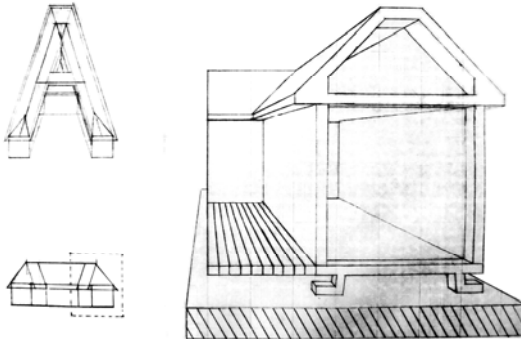
CA.1.

Title Art House – A frame
Authors J.Keith Donnelly, Sylvia Grace Borda
Institution Independent
Patent no. Pending 2014

Description

The house has been designed in an extruded letter form. From an aerial perspective the house has a configuration of the capital 'A' letter in non-serif form. The house form is configured as a seamless link between internal and external living areas. It is configured to allow for optimum solar access, and for a visible and clearly defined built form that provides suitable and usable open and closed living spaces. For instance, it is configured so there is sufficient space to allow for a useable garden or outdoor court area within the letter 'A' frame, that is on either side of the internal bar of the letter and between the 'arms' of the letter. The letter 'A' frame design is configured to allow scaling of the house to multiple storey levels and to retain balanced proportions so that the 'A' form, that is the arms and bar of the letter, remain in constant proportion from an aerial perspective.

Class 7 & 14



CA.2

Title	Physical Adhesive Patch for Wound Protection
Authors	Hojae Cheung, Sanghyuk Son
Institution	University of Waterloo
Patent no.	Not patented
Description	The invention abstracts a patch to cover and protect wounds caused from external environment. It employs physical adhesion to stay on skin. It maintains flexibility for optimal comfort while maintaining appropriate durability and tension of skin allowing clean heal without leaving scars and reducing pain caused during application at the same time.
Class	4

Croatia

Represented by
Croatian Inventors Association / Savez Inovatora Zagreba

HR.1.

Title

Marking antiterrorist uniforme for recognizing in the infrared spectrum

Authors

Jana Ziljak Vujic, Klaudio Pap, Ivana Stanimirovic Ziljak, Vilko Ziljak

Institution

Polytechnic of Zagreb

Patent no.

P20100201A, P20100451A

Description

A new approach is applied in the production of uniforms or camouflage samples and patterns for military equipment by maintaining the duality of hiding. This is first promotion of Infraredesign® Camouflage Uniform (IRCU) method for designing textile and leather with infrared hidden technology. Various uniform products have preset double design: one visible to the human eye, and the other visible in the near infrared spectrum hidden to the human eyes.

Duality in application made on different kinds of camouflage uniform is achieved on our INFRAREDESIGN® theory by resolving and controlling specific colorimetric characteristics, technology that involves dyes properties in infrared spectrum, gloss, thickness, leather surface smoothness and roughness. Thus the goal was reached for incorporating of invisible information into a visible image uniform products, easily detected with simple near infrared camera detection.

Brand new possibilities are created comprising secrecy, invisibility, provocativeness and curiosity. Each camouflage uniforms product has two stories: the visible and the invisible one that may or may not be linked. The visible-invisible pair can preset full individuality, i.e. product uniqueness, and this is an improvement in the military and fashion industry. The dual quality is easily detected with cameras for viewing in the near infrared spectrum. This method allows the highest possible level of protection against textile and leather product brand copying and the production of camouflage uniforms.

Class

9. Chemical and Textile Industry

HR.2.

Title	BELT RASP
Authors	Ivan Krunic, Roman Krunic, Tomislav Krunic
Institution	ROTO KRUNA d.o.o.
Patent no.	Registered in Croatia
Description	Innovative Croatian product, tool made of high quality steel, for use with Belt sanders for removing particles of soft materials such as wood, plastic, rubber etc. Belt rasp with belt sanders is used for sanding soft materials such as wood, plastic, rubber etc., with a higher material removal rate than an ordinary sanding belt regardless of whether the material is wet or stained. It is possible to sand closer to the edges and corners (floor bidding) than with a planner. Belt rasp is made of thermo-chemically processed high quality steel. Cutting blades on the surface of the tool remove the particles which are let out through holes placed below each cutting blade. That prevents filling of the working area and enables continuous work. When the Belt sander is switched on, Belt rasp is guided over two rotational rollers at high speed. Cutting blades on the surface of the Belt rasp remove the particles which are let out through the holes below them.
Class	6. Mechanical Engineering - Metallurgy

HR.3.

Title	ClickPliers
Authors	Matej Bosnjak,
Mentor	Damir Matijak
Institution	Faculty of Mechanical Engineering and Naval Architecture Inventors Organization
Patent no.	Pending
Description	Innovative design of the pliers built in a way so the handle can very easily , if necessary, be separated from the main body of the pliers, and by attaching them back on to the pliers, whole assembly still retains the necessary static strength. Sets of pliers for electronics, household or hobbyists who are now on the market, consists of the pliers for different purposes and their number depends on the size of the set. Almost all pliers have the same handles, while the head of the pliers is different depending on the application. ClickPliers have innovative mechanism for easy connection and separation of handle on the pliers head, which allows us

to have only one set of handles for different types of pliers . Using ClickPliers mechanism, we reduced the amount of metal, polymer and rubber materials in the manufacturing of the pliers set, resulting in a substantial reduction of production costs , which increases with the number of pliers used in the set. Metal part of the handle is coated by using recycled plastic which helps the ecology, and the fact that not each type of pliers has it's own handles, significantly facilitates the user wearing the pliers set, because of the reduced weight and it's dimensions which can be reduced by more than 50 %.

Class 5. Industrial and laboratory equipments

HR.4.

Title

Emergence and Treatment of Carcinogenic and Autoimmune Diseases in Humans

Authors

Dragica Nekic, Rade Nekic

Institution

PTO NEKIC

Patent no.

Pending

Description

The innovation consists of three separate units, where each one functions independently and can exist independently. All three units used together form a comprehensive school of life, and the awareness of oneself and everything surrounding that person.

1. HOUSE OF NATURAL EXCELLENCE

This returns us to ourselves and within ourselves, returns our peace and tranquillity, revealing to us who we really are and why we are here. Here we become acquainted with ourselves and the laws of nature, and we come across the errors that brought us to everything that has happened to us.

2. CREATIVE VISUALISATION IN THE KINGDOM OF ALL POSSIBILITIES

Here we learn to creatively awaken ourselves, and to use this in our creations of our healing, and in all other views and spheres of life.

3. EMERGENCE AND TREATMENT OF CARCINOGENIC AND AUTOIMMUNE DISEASES IN HUMANS

These diseases emerge due to the activation of self-destruction processes. We give the answers how, what and why. By knowing the process of self-destruction, this process can be halted and the healing process can begin.

Our experiences to date indicate that about 60% of people are healed immediately, just by turning around the concepts and ideas in the mental plane. The remaining 40% require a longer and more diverse approach, while among these people, results are seen in about 25% of the mildest cases.

Class 14. Other

HR.5.

Title LED SIGN TABLE
Authors Davor Gusic
Institution Polytechnic of Zagreb
Patent no. Pending

Description

Table is made off two main parts. Panel which contains illuminated sign covered by glass and main controller inside of the enclosure located under the table and secured by the key lock. Sign is laser engraved on plexiglass and side illuminated with four LEDs. Panel has one touch button and when it's pressed for few seconds, a sign starts to blink and that way gives waiter a notice. Table also has a built in proximity sensor so it saves power when no one is close to it. There are three working modes (normal, echo, standby) and they can be selected by the remote controller.

Advantages: Attractive advertising position; Nice looking sign; Low power consumption: normal mode (0.06 W), standby mode (0.006 W); Long battery life: normal mode (1000 hours), echo mode (1800 hours), standby mode (10000 hours); Remote control; Easy to recharge (USB charger); Easy to clean.

Class 11. Printing and advertising

HR.6.

Title ADJUSTABLE MANHOLES
Authors Dragica Nekic, Rade Nekic
Institution PTO NEKIC
Patent no. P20080096

Description

The adjustable manhole can be mounted prior to or after paving. The name itself indicates that it is adjustable by height, and therefore cannot lead to the sinking of automobile wheels on the manhole cover. It is very simple and easy to produce and install. In the installation in the field, it is not possible to err in either the direction or depth

EUROINVENT 2014

of the manhole installation. Advantages: Light, simple, very easy to understand configuration and installation.

Intended use: Maximum safety in passage over any manhole, anywhere, in comparison to the current condition. The level of the manhole cover is always the same as the level of the pavement.

Class 8. Aviation, car industry and transportation

HR.7.

Title

Measurement system for the determination of static and dynamic thermal properties of composites and clothing

Authors

Dubravko Rogale, Gojko Nikolic

Institution

Faculty of Textile Technology, University of Zagreb

Patent no.

P20130350A

Description

The measurement system accurately determines the thermal insulating properties of composites, conventional, protective and smart clothing using a flat panel and metal model of the human body (called thermal manikin). The model consists of 24 segments of the human body with installed electric heaters, temperature sensors, 14 microcontroller assemblies and pneumatic systems for arm and leg movement. This measuring system can measure the values of intensity of thermal protection of composites, conventional, protective and smart clothing in the process of technical design and construction of new garments with targeted thermal properties. It can also be used in the selection of the warmest clothing item among several similar items (for example, in the design of military uniforms, uniforms for special services, sportswear and conventional clothing that will be used in a specific climate.

Class

9. Chemical and Textile Industry

HR.8.

Title

NIKEL Cream with parsley

Authors

Mirjana Brlecic

Institution

PRIRODA LIJECI d.o.o.

Patent no.

RCD001622580, IR1083058

Description

Relation between pharmacy and cosmetology: PARSLEY, a source of natural vitamins C and B complex, carotenoids and flavonoids - applied on the inside - with its antioxidant effect protects the organism from premature ageing. Applied on the

outside, on the skin, with its antioxidant effect it prevents the creation of free radicals that are responsible for damaging the skin cells and their premature ageing.

NIKEL[®] inspired by tradition – realised through science. Tradition encourages research. One example is the **Cream with parsley 100 % ECO**. The writings from the Ursuline monastery in Varaždin about how parsley water rejuvenated the skin, encouraged the research. In the extract of biologically grown parsley, ingredients were proved that harmonized the skin tone, mitigated redness and rejuvenated the skin: vitamins C and B complex, carotenoids, minerals and oligoelements. The extract was implemented in a 100% natural base. Dermatologically tested on 20 testees (6 men aged 19-62, and 14 women aged 19-68) over 28 days, applied 2 times a day (in the morning and in the evening) it was possible to measure pronounced skin hydration, with reduced visibility of capillaries and skin redness. Under the title *Effects of Parsley on Improvement of Skin Status*, the results of the research and effects were presented at the 4th Croatian Pharmacy Congress with international participants. Benefits: First use of parsley as active ingredient in cosmetics (biologically grown, contains natural vitamins A, C and B complex, and bioflavonoids), extremely beneficial in mitigating and rejuvenating the skin.

Class 4. Medicine - Health Care - Cosmetics

HR.9.

Title	Vertical Bicycle Parking System & Bicycle Parking Pillars
Authors	Radovan Marin
Institution	AUTO-MART D.O.O.
Patent no.	RCD000694310
Description	Vertical Bicycle Parking System <ul style="list-style-type: none"> - Saves up to 70% of space comparing to conventional bicycle parking systems - System is modular and extendable endlessly <p>Bicycle Parking Pillars Easy positioning bicycle on parking pillar by inserting pedal shaft into the vertical groove of the pillar, what keeps the bicycle in stable vertical position without possibility to be flipped over and damaged.</p>
Class	14. Other

HR.10.**Title** **Device remote control system****Authors** Kresimir Topolovec, Ivan Juric**Institution** Ruder Boskovic Technical School**Patent no.** Pending**Description**

The aim is to monitor and control devices in an institution. Devices are controlled via any web browser on a PC or a smartphone. The system is based on the platform created by combining Arduino Uno boards and Arduino Ethernet Shield connected by UTP cable to LAN. Communication between the user and the Arduino platform is accomplished via the HTTP protocol, which means simplicity and the ability to work in real time. The devices to control may include any electrical device. Controlling devices in any institution with this system implemented is very simple (it can be used by any one).

Class 10. Information Technology and Communication

HR.11.**Title** **ROTO RASP****Authors** Ivan Kronic, Roman Kronic, Tomislav Kronic**Institution** **ROTO KRUNA d.o.o.****Patent no.** HR 000927900-001**Description**

This innovative Croatian product for cutting soft materials such as wood, plastic, rubber etc. by removing particles is used with hand rotation angle grinders. The aim of Rotation Discs is to widen the range of tools for cutting soft materials by removing particles. Compared to the known blades for angle grinders, the rotation disc makes the cutting of soft materials more efficient with respect to the amount of removed particles in a time unit. The rotation disc can be easily installed by tightening it on its shaft with the original tightening plate and nut. The kinematics necessary for cutting is achieved by changing the rotation on the grinder between 1.500 and 11.000 rpm.

Class 5. Industrial and laboratory equipments

HR.12.	
Title	DR-1 RUBBER LEVEL CROSSING
Authors	Slobodan Rajic
Institution	TELECOR ZAGREB
Patent no.	P20120099A
Description	<p>The Dr-1 Rubber Level Crossing is a system installed on railway crossings where the track intersects with the asphalt road at the same level. Its task is dual: to ensure a smooth and noiseless passage of vehicles over the track and to facilitate the track overhaul. The system is disassembleable and can be reassembled on its previous place. It consists of one multi-purpose rubber element (being installed between the rails and on their outside), one metal element (provided in two variants), and screws. Dealing with the problems of railroad level crossings.</p>
Class	8. Aviation, car industry and transportation
<hr/>	
HR.13.	
Title	Smart clothing with adaptive thermal insulation properties
Authors	Snjezana First Rogale, Dubravko Rogale, Gojko Nikolic, Zvonko Dragicevic
Institution	Faculty of Textile Technology, University of Zagreb
Patent no.	P20120243, EP2254430, US2011004984
Description	<p>Smart clothing with adaptive thermal protection registers the condition of the environment and the body temperature of the wearer and can automatically adjust to the temperature changes in the external environment and inside the clothingso as to automatically set the optimum thermal insulation properties according to the exact measurements and the smart action algorithm. The potentials are enormous, and the fact that this is the first such prototype and that it has been patented (with full protection of intellectual property) should be taken advantage of. There is no similar product and there is no competition.</p>
Class	12. Safety, protection and rescue of people

HR.14.

Title Convertible Wind Surfing Board

Authors Radovan Marin

Institution AUTO-MART D.O.O.

Patent no. RCD000861349

Three in One – Sport & recreational activities

1. Wind surfing
 2. Bicycle riding
 3. Water cycling
- Conversion kit enables easy conversion of wind surfing board to a water bike

Description

- Any kind of modern bicycle can be used for water cycling without disturbance of its original purpose
- Transmission/propeller ratio is changeable in the same way as it is done when riding bicycle on shore, what gives a great pleasure of challenge regarding achievable speed
- Easy transportation on the roof of personal vehicle

Class 13. Sports, Games and Leisure

France

FR.1.	
Title	Enhancing Keystroke Dynamics Biometric Systems With Soft Biometrics
Authors	Syed Zulkarnain Syed Idrus, Christophe Rosenberger, Patrick Bours, Estelle Cherrier
Institution	Université de Caen Basse-Normandie / ENSICAEN
Description	Soft biometric traits: physical, behavioural or biological human characteristics – derived from the way human beings normally distinguish their peers e.g. height, gender, hair colour etc... Keystroke dynamics: user can be authenticated while typing a password or a passphrase on a keyboard. This is a novel proposal of a new soft biometrics database and approach for keystroke dynamics. We illustrate how soft biometrics combined with authentication can help improve system's performance to recognise users from their way of typing.
Class	10. Information Technology and Communication

Georgia

GE.1	
Title	System of Protection and Safety
Authors	Omar Bilonashvili
Institution	Tbilisi, Georgia
Patent no.	Patent of Georgia 2009 4733B (2009).
Description EN	"System of protection and safety" is constructed as combination of CCTV, mini fire-arms, radio and audio recording system and it provides security and safety for different type of transport, governmental and private buildings etc. It is easy to manufacture and operate hole system and it is new generation security system.
Class no.	12. Safety, protection and rescue of people

Greece

GR.1
Title

Cultural and Economical Exploitation of Ancient Greek and Roman Monuments.

Authors

Georgios LAMPRAKOULIS

Institution

Greece

ISES Foundation, Corvinus University of Budapest,

Description EN

The core research question that underpins this study is: What actions they must take place to benefit from the various Ancient Greek and Roman monuments in disadvantaged areas in Greece and in the rest of the European region. Ancient towns in the geographical area of Greece, although are important and huge monuments of the cultural heritage of Greece have not been exploited economically or culturally from the local communities or the state. More specifically, there are many important monuments with unknown or little study until now in Europe that the states or the communities do not benefit from them culturally, were its ruins being on the fields, forgotten and abandoned. From this study I am going to give methods for their exploitation with a simple process of 12 different cultural events. As for the way of exploitation, some countries getting benefit from private individuals so that the new owners take over the maintenance cost which the state cannot meet. In Greece the state acts different and I am proposing a new formula so the Greek state can benefit from it and the monuments can revive again, but not only in Greece the state acts different so this study can be a prototype for the exploitation of all the Greek and Roman monuments with unknown or little study all over Europe.

Class no.

14. Other

Indonesia

Represented by

Association of Young Innovator and Scientist Indonesia (AYISI)

ID.1.

Title Oxihid generator; generator modifier electrolysis of water as an environmentally friendly hydrogen (fuel , gas) & oxygen

Authors Muhammad Ganiswara Afif Kharisma, Muhammad Irsyad

Institution **TITIAN TERAS H. ABDURAHMAN SAYOETI Senior High School**

Patent no. Pending

Description EN OXIHIDgenerator is a tool created for converting water as a natural resource endowment into hydrogen and oxygen, this tool can be used all around the world to process water to better utilized. hydrogen is very beneficial as it can generate a large amount of electric Power generated by a hydrogen gas, such as hydrogen-fueled battery. In addition to containing these gases can displace electricity natural gas such as gasoline and other chemical processes, and turn waste into methane and eliten. Breathing For a living being), sufferers of lung, diver, astronaut; then oxygen is very beneficial for all beings, like to breathe in addition To combustion/oxidizing a mixture of liquid oxygen and liquid hydrogen used for rocket fuel For the raw materials of various chemical compounds. In addition to that oxygen is also beneficial in the field of health, for example for housing as well as tools for the sterilization of patient care in hospitals, hospitals with these tools can generate oxygen independently, this tool is created by using the concept of the process of electrolysis which change the water with the help of electricity, this tool can be run using the electricity comes from solar panels or any power source, this tool will be a solution to the energy problem as well as a breakthrough in eco-friendly technologies in the world. a simple and minimalist concept makes the society certainly is easy to use it..

Class no. 1. Environment - Pollution Control



INTERNATIONAL EXHIBITS

ID.2.

Title

PEDIA: Body Weight Calculator Shoes and Android Health Coach

Authors

Muhammad Adlan Arvyanda Ramly

Institution

Al Izhar Senior High School

Patent no.

Pending

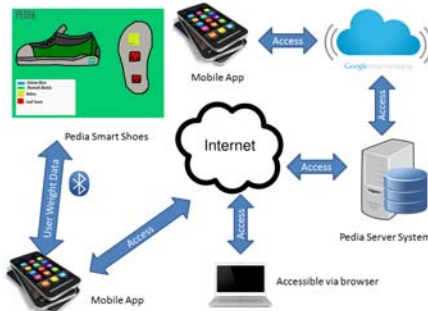
Description EN

Maintaining our health is the most important thing to get a better life. Some indicators which determine a healthy body is a good immune system and ideal body weight. Body weight is a variable that can determine condition of a person, whether the person is health or not. Obesity is dealt with a body weight disease. It is one of the most serious death causes in many countries. Both children and adults can be diagnosed with obesity. It is not just merely about over weight problem, therefore we need to be aware of our health.

From the reason above, the reseacher creates a project named PEDIA. It is made from a set of hardware in a form of shoes which can measure body weight by using Arduino microcontroller equipped with bluetooth module. The bluetooth is used for connecting the mobile based application by using Android platform to be used as health coach and show the body weight of the user. By using body weight, users will know the information of the ideal body weight by using the analysis of BMI, body fat percentage, and also lean body mass. This application can be used by everyone, such as atheletes and can also be used in health institutes. Here, we provide the service of personal data access which gives the possibility for the users to save their data in the server. In addition, users can easily monitor their body weight.

Class no.

4. Medicine - Health Care - Cosmetics



Iran

IR.1.

Title

SHABAH UAV

Authors

Mohammad Topichi, Omid Fakhrizadeh, Maryam Karimi, Arsalan Kahyesh

Institution

TROBOTIC INVENTION GROUP-IRAN

Patent no.

Pending

Description EN

SHABAH is a small UAV that uses for up to 10 KM full autonomous missions. It has 900 watts brushless motor and 80 Ampere Esc which uses four lithium polymer batteries. It's maximum energy is 450 Wh. It has made by balsa wood and ply and covered by ORA cover. five (385 MG metal gear) servos has been used in SHABAH and RC equipment is Futaba 7c. The camera is GoPro HERO1 and 1.2 GHz VTX 1000 mw low mate with 15 Km range. The data link uses in SHABAH FY505 with 500mw power. The autopilot has 3 gyroscope, 3 accelerometer and barometric pressure with IMU. Navigation air route by GPS that shares between autopilot and OSD.

Class no.

8. Aviation, car industry and transportation



Iraq

IQ.1.

Title

The use of magnetized water for improve reproductive and productive performance of birds

Authors

Hazim J. Al-Daraji, Atoof A. Aziz

Institution

University of Baghdad

Patent no.

3360 / 4 / 12 / 2011

Description EN

In this invention we locally manufactured the devices for magnetizing water with three intensities which were 500, 1000 and 2000 gauss. After that these devices were connected to the water lines that supply drinking water for the birds. Results of this application revealed that supply the chicken with magnetized water at three intensities (500, 100 and 2000 gauss) resulted in significant improvement in productive performance (egg production rate, feed conversion ratio, feed intake, egg mass, egg weight, egg quality traits and fertility and hatchability rates), reproductive performance (semen volume, sperms concentration, spermatocrit, mass and individual motility, percentage of live spermatozoa, percentage of normal spermatozoa, percentage of normal acrosomes, seminal plasma metabolites and concentrations of testosterone, estrogen and progesterone hormones in blood plasma) and physiological status (RBC count, WBC count, thrombocyte count, hemoglobin, PCV, differential leucocytes count and blood plasma metabolites) of these birds.

Class no.

3. Agriculture and Food Industry

IQ.2.**Title**

Development of *in-vitro* susceptibility testing for pathogenic bacteria.

Authors

Fouad Houssein Kamel, Chimani H. S., Ashti M. A., Saleem S. Q.

Institution

Hawler Polytechnic University/ Erbil- Iraq.

Patent no.

3665 / 2013

Description EN

A new method developed for *in-vitro* susceptibility test in medical laboratories consist of micro tubes or gloves containing dehydrated tryptic soya broth ,5% glucose ,0.1% bromothymol blue and one type of antibiotics (ampicillin, tetracycline and chloramphenicol) with critical concentration for susceptibility. Standard quality control strains of bacterial (*E. coli*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*) and incubated two hours at 37°C.

The resistant bacteria producing a color change of the media from blue to yellow, while the sensitive bacteria show no change in color. This developed method characterized by fast (only two hours) and less cost in comparison to conventional technique. The new micro tube strip is highly stable (more than one year) with more sensitive in detection of variable pathogenic bacteria including standard bacteria strains compared with conventional technique.

Class no.

5. Industrial and laboratory equipments

Kazakhstan

KZ.1.

Title	Diagnostical and Rehabilitation Complex
Authors	V. Savkin, V. Latishev
Institution	Medical Valeological Centre “ÀLU Petrovavlovsk, Kàzakhstan
Patent no.	Patent of Russian Federation ¹ 2180516 (2008)
Description EN	Diagnosnostic by electropuncture method «Eurasia» inspection of work of psychic-physiological systems of the person. Proposed process of rehabilitation programs.
Class no.	4. Medicine - Health Care - Cosmetics

Kyrgyzstan

KG.1.

Title	Porcelain mixture for production of low-voltage and high- voltage electrical and everyday tableware
Authors	S.Jekisheva, G. Maslennikova
Institution	Kyrgyz-Russian Slavonic University Bishkek, Kyrgyzstan
Patent no.	Patents of Kyrgyzstan (2008-2011) Worked the porcelain mixture for production of everyday china, using domestic non- traditional raw materials. Development of low-voltage porcelain items on the base of muscovite raw materials, which permit to reduce cost of items thanks to cheap raw materials and burning.
Description EN	Development of the mixture on the base of milled non- traditional raw material – porcelain stone with additional kaolin and vollastonit.
Class no.	7. Buildings and Materials

Korea

Represented by **Korea University Invention Association**

KR.1.

Title

Multipurpose Clamp

Authors

Lee Ji Hun

Institution

Ulsan Science High School

Patent no.

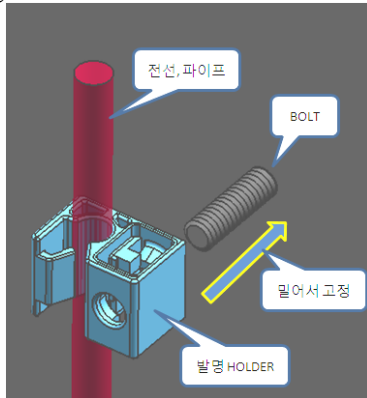
Pending

Description EN

When installing a clamp around conduits like wires or pipes, tools such as spanners, wrenches, drivers or power tools are typically used to drill bolts. However, this invention requires no such tools and a simple push allows the bolt to be securely tightened.

Class no.

7. Buildings and Materials



KR.2.

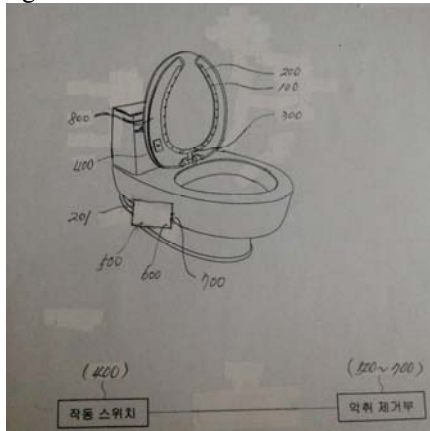
Title Closestool having deodorization on function
Authors Gim Jae Hong
Institution Mirae High School of Science & Technology
Patent no. Pending

Description EN

When you sit on the toilet, a sewage ejector automatically starts inhaling air and emitting odor outside through the ejector pump connected to a hose. The bad smell then is emitted after being purified passing through the air cleaning filler

Class no.

7. Buildings and Materials



Malaysia

Represented by University Malaysia Perlis

MY.1.

Title	Fly Ash Artificial Geopolymer Aggregate Using Low Temperature
Authors	Alida Abdullah, Mohd Mustafa Al Bakri Abdullah, Kamarudin Hussin, Che Mohd Ruzaidi Ghazali, Muhammad Faheem Mohd Tahir, Rafiza Abdul Razak, Ku Amirul Ku Yen
Institution	Universiti Malaysia Perlis
Patent no.	Pending
Description EN	Previous study has shown that many of the aggregate were produced using high temperature in order to make it highly in strength. The using of high temperature will cause the increasing in cost as well. Hence, the new process called geopolymerization process will be used to produce a lightweight aggregate of fly ash based geopolymer using low temperature through geopolymerization method. Furthermore, since fly ash is a by-product, no mining is required and it's already fine enough for sintering. The potential of geopolymer lightweight aggregate using geopolymerization process with low temperature between 100 °C - 1000 °C depend on the raw materials used. Result show that the fly ash artificial geopolymer aggregate using low temperature has comparable properties compared to conventional aggregate (rocks).
Class no.	7. Buildings and Materials

MY.2.

Title	Nanocomposite Solder Material Fabricated using Innovative Hybrid Microwave Assisted Rapid Sintering
Authors	Alida Abdullah, Mohd Mustafa Al Bakri Abdullah, Mohd Arif Anuar Mohd Salleh, Norainiza Saud, Kamarudin Hussin, Flora Somidin
Institution	Universiti Malaysia Perlis
Patent no.	Pending
Description EN	An innovative sintering process will be introduced by using hybrid microwave heating introduced with a susceptor material for the development of novel lead free nanocomposite solder. Through microwave heating of materials in comparing to the conventional heating, the heat is generated internally within the

EUROINVENT 2014

material instead of originating from an external heating and subsequent radiative transfer. Through exploring in the development of novel lead free nanocomposite solder, by using this hybrid microwave sintering, it is expected to gain a lot of significant solderability and mechanical properties advantage of the novel lead free hybrid nanocomposite solder. This is mainly because of microwave's heating intrinsic advantages such as rapid heating rates, reduced processing times, substantial energy savings, novel and improved properties, finer microstructures, and being environmentally cleaner.

Class no.

6. Mechanical Engineering - Metallurgy

MY.3.

Title

PulFF- A New Sustainable Lightweight Structural

Authors

Mohd Firdaus Omar, Hazizan Md Akil, Nik Noriman Zulkepli, Sam Sung Ting, Kamarudin Hussin, Muhammad Salihin Zakaria, Mohd Lokman Hakim, Ahmad Azrem Azmi

Institution

Universiti Malaysia Perlis

Patent no.

Patent filling stage

Description EN

PulFF is a novel advanced kenaf fibre reinforced pultruded composite which could be used as an alternative material to glass fiber, aluminium and steel in various light weight structural applications. PulFF offers high specific mechanical properties, low cost, lightweight, high corrosion resistance and environmentally friendly. Typically, PulFF was produced by sophisticated fabrication technique namely pultrusion process. This invention was mainly made by combination of Unsaturated Polyester Resin reinforced with continuous kenaf fiber with addition of filler: Calcium Carbonate (CaCO_3), surface additive (KOTE) and Catalyst: Benzoyl Peroxide (BPO), respectively.

Class no.

7. Building and Materials



INTERNATIONAL EXHIBITS

MY.4.**Title****Novel Red Phosphor for LEDs and Displays****Authors**

Mohd Fathullah Ghazli, Jack Silver, Kamarudin Hussin, Shayfull Zamree Abd Rahim, Norshah Afizi Shuaib

Institution

¹Universiti Malaysia Perlis, ²Brunel University

Patent no.

PI 2011700184

Description EN

The use of rare earth elements has been a big crisis worldwide due to its limited source and irrational prices. Europium 3+ is one of rare earth elements that is heavily used in making phosphor for manufacturing white light emitting diodes (WLEDs). Replacing Europium 3+ with Aluminum 3+ ion inside *Li Eu (WO₄)₂* phosphor massively reduces its manufacturing cost. What more surprising is the performance (red emission light intensity) from the phosphor is greater. This newly invented phosphor is a successful end product applied on displays and LEDs with much cheaper cost. By having this new phosphor, the product now can be fabricated more than 50% cheaper than current product but with better luminescence as compared to the ‘conventional’ expensive red phosphor. Therefore this product is the right candidate to replace the conventional red phosphor and it solves rare earth market crisis around the world. This product has been filed for patent with an application number of **PI 2011700184**.

Application: White Light Emitting Diodes (WLEDs), Electronic displays.

Class no.

9. Chemical and Textile Industry



MY.5.

Title

BioxdPlast – A novel natural pro-oxidant for biodegradable plastic

Authors

Mohd Firdaus Omar, Nik Noriman Zulkepli, Sam Sung Ting, Muhammad Salihin Zakaria, Lokman Hakim Ibrahim, Ahmad Azrem Azmi, Nik Zakaria Nik Yahya, Muhammad Ridhwan Jamalul Nasir

Institution

Universiti Malaysia Perlis

Patent no.

PI2013000062

Description EN

BioxdPlast known as the natural pro-oxidant product is absolutely green product; main ingredients are recycled plastics waste combined with turmeric and Imperata Brasiliensis grasses, which can be obtained at low cost, renewable resource and environmental friendly. Due to the continuously rise on demand of natural pro-oxidant for plastic industry, BioxdPlast is very interesting to be highlighted as a potential product to replace conventional pro-oxidants which can cause health problems after long exposure. In this innovation, the hybrid of turmeric and Imperata Brasiliensis components give much benefit because it is biologically degradable and to produce a greener and safer biodegradable material at lower cost.

Class no.

1.Environment – Pollution Control



MY.6.

Title

Fibre Optic Based Structural Sensor

Authors

Mukhzeer Mohamad Shahimin, Syamimi Azizan

Institution

Universiti Malaysia Perlis (UniMAP)

Patent no.

Patent application No. 13734929

Description EN

Optical fibers can function as extremely efficient sensors when embedded in composite materials; predicting failures and making it possible to perform real-time analysis of changes in the structure of a material. Our DFOS system focuses on these atypical applications for optical fibres, creating the next generation structural sensor via embedding fibre sensors in crucial structures.

Class no.

5. Industrial and laboratory equipments

MY.7.**Title**

Integrated Optical Biosensor for Early Dengue Detection

Authors

Dr Mukhzeer Mohamad Shahimin, Khor Kang Nan

Institution

Universiti Malaysia Perlis (UniMAP)

Patent no.

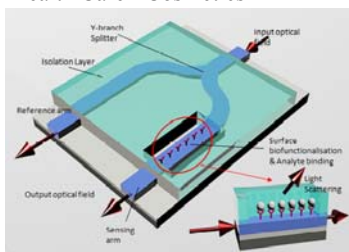
Patent application No. PT/3738/UniMAP/11

Description EN

More than 30,000 cases reported on yearly basis for dengue fever. Risk reduction from this inevitable problem is no longer preferable, it is crucial. Our innovative device based on optical technology provides a comprehensive solution in diagnostic, analysis and ultimately detection of dengue virus.

Class no.

4. Medicine - Health Care - Cosmetics

**MY.8.****Title**

Towards Green Construction Materials: Geopolymer Composite Brick Fabrication Machine Vol. 2.0

Authors

Mohd Mustafa Al Bakri Abdullah, Kamarudin Hussin, Mohammed Binhussain, Mohammad Tamizi Selimin, Che Mohd Ruzaidi Ghazali, Muhammad Faheem Mohd Tahir & Wan Mastura Wan Ibrahim

Institution

Universiti Malaysia Perlis (UniMAP) & King Abdul Aziz City Science and Technology (KACST)

Patent no.

PI 2013701396

Description EN

In Malaysia, bricks are commonly used as wall, cladding and facing perimeter and garden wall, paving and flooring. There are different types of bricks that going to give different properties for different usage. The used of geopolymer in brick manufacturing can lead to high performance, strength and durability. The usage of geopolymer to replace the cement in brick making is because the production of cement was emitted the

carbon dioxide CO_2 gas to the atmosphere. This invention overcomes the problem of how to save the environment by substituting the cement with geopolymer material in brick making process and at the same time utilize the waste materials which are geopolymer materials such as fly ash, volcanic ash and palm oil fly ash (POFA). It produces a specific, environmentally friendly and easy to use brick. The invention also improves the brick making process especially geopolymer brick which make it easier and more effective. By having this machine which is most suitable to be used to produced geopolymer based brick, it will improve the production of geopolymer brick and at the same time promote the usage of geopolymer brick to the construction industries by providing adequate supply of geopolymer brick to the construction site.

Class no.

6. Mechanical Engineering - Metallurgy



MY.9.

Title

SSDEM©: Statistical Software for Filling Missing Observations and Fitting Distribution in Air Pollutant Monitoring Data

Authors

Norazian Mohamed Noor, Mohd Mustafa Al Bakri Abdullah, Ahmad Shukri Yahaya, Wong Yee Shian

Institution

Universiti Malaysia Perlis (UniMAP) & Universiti Sains Malaysia (USM)

Patent no.

Pending

Description EN

Missing observation in air pollutant data usually caused by machine failures, changes in the siting monitors,

routine maintenance, human error, imperfect procedures of manual data entry, incorrect measurement and equipment error. Incomplete data set usually cause bias analysis and computation due to differences between observed and unobserved data. Hence, without effective and useful data, it is impossible to identify and apportion the sources of emissions, establish the permanent monitoring system and hence impossible to develop effective measures to prevent and reduce harmful pollutants. SSDEM[®] is a statistical software that is equipped with easy application. This software is able to calculate and replace the missing values in time-series data and plots the function for three types of common distributions for better prediction. The application is very simple and easy even for the first timer user.

Class no.

1. Environment - Pollution Control

MY.10.

Title

New innovation in epoxy coating “cockle shells powder as filler”

Authors

Muhammad Faizal Bin Hamizat

Institution

SBP Integrasi Rawang

Patent no.

Pending

Description EN

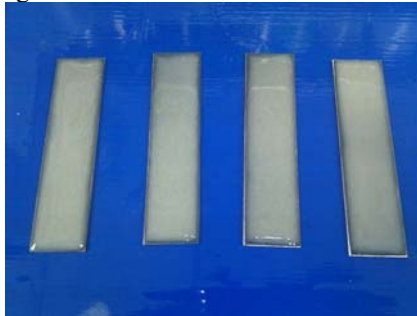
Corrosion is a common and major problem especially in the pipelines of gas and oil industries. The conditions of corrosion are the presence of water and oxygen which perfectly suits the condition in the pipelines, bringing them to an increased rate of corrosion under those primary elements.

Powder coating is the mainstream of preventing corrosion among materials made out of steel and normally applied as a free-flowing, dry powder. Epoxy resins are important in the oil and gas industry, and are already employed widely for home appliances and auto parts by world famous brand manufacturers.

This study is to further research the abilities of cockle shell powder (*anadara granosa*), at the same time pushing the abilities of epoxy coating to its utmost limit. Based on the X-Ray Diffraction (XRD test), cockle shell powder contain almost 99% calcium carbonate is processed to a particle size of $75\mu\text{m}^3$ is used as filler in epoxy coating which is one of the important mix in

epoxy coating. Calcium carbonate which is an insoluble salt would prevent interaction between water, oxygen and the surface of the pipeline, thus preventing corrosion of the metal surface. By adding ingredients that enhance its natural properties (Calcium Carbonate), it will perform better with the added ingredients. In addition, oil and gas pipelines last longer when both inhibitors and protective coatings are used together than when only batch inhibition was used, thus prolong life-line of the pipe.

Class no. 7. Buildings and Materials



MY.11.

Title

From waste to wealth: “Inorganic neutralizer and heavy metal adsorbent“

Authors

Amir Hasyimi Bin Mohd Fuad

Institution

SBP Integrasi Rawang

Patent no.

Pending

Description EN

When a waste stream is found to be hazardous because of corrosivity, neutralization is the primary treatment used. Wastewater is a major problem faced by industries because it must be treated before discharged into the environment as effluent.

This research’s aim is to investigate the potential of Malaysian cockle shell (*anadara granosa*) to be used as a neutralizer and heavy metal adsorbent for wastewater treatment. In this research, cockle shells’ powder which is made up of calcium carbonate are processed to a particle size of 250 µm used to neutralize electroplating wastewater which are in acidic medium and heavy metal removal. Based on the X-Ray Diffraction (XRD analysis), cockle shell powder contain almost 98%

percentage of calcium (Ca). In a chemical reaction, when calcium carbonate (lime) reacts with acid, it will undergo neutralization. Therefore, in this study wastewater from electroplating industrial samples were taken and its pH were measured using pH meter and Jar Test was conducted for homogeneous stirring at different speed (30 RPM,60 RPM and 90 RPM). 500 cm³ of electroplating wastewater sample (pH 3.0) reacted with 0.3 g calcium carbonate at the different speed. For pH adjustment, using calcium carbonate at RPM 90 can increase pH 3.0 to 5.8. For heavy metal removal, Scanning Electron Microscope (SEM) results show 0.3 g calcium carbonate at RPM 90 can adsorb 54.97% copper in residue while Inductively Couple Plasma (ICP-OES) results show 0.3 g calcium carbonate at RPM 90 can remove 63.95 % copper in the treated wastewater.

Class no.

1. Environment – Pollution Control



MY.12.

Title

‘Easy Pouring Set’

Authors

Jennifer Asing, Mariatul Hanis M.Abdullah, Chelsie Feeley Bachee, Galedine Lind, Carlsson Paddy, Jovi Jivinsol Moosom

Institution

Sekolah Menengah St. Michael, Penampang Sabah.

Patent no.

Patent application No: **2014000844/2014**

Description EN

Easy Pouring Set

‘Easy Pouring Set’ is an alternative equipment that would solve serving problems especially when there is a large number of guests.

Product’s function

‘Easy Pouring Set’ effectively serves a larger number at one

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time quickly through a number of funnels from the jug itself. A number of glasses will be filled in one serving through the different funnels. The content of the jug is equivalent to the content of all the glasses served. The number of glasses depends on the number of funnels prepared and this comes in a single set. There are a few different versions depending on the different interesting characteristics.

Product's Speciality

- Saves time, space and energy
- Light, portable and efficient storage
- User friendly with easy-to-use/simple mechanism
- Unique and interesting designs catering for different uses such as commercial, decoration and handicrafts
- Non-seasonal usage

Target clients

- Restaurant management
- Hotel
- Canteen management
- Home use
- Handicraft production

Class no.

14. Other



MY.13.

Title	‘Smart Food Protector’
Authors	Jennifer Asing, Mariatul Hanis M.Abdullah, Chelsie Feeley Bachee, Galedine Lind, Carlsson Paddy, Jovi Jivinsol Moosom
Institution	Sekolah Menengah St. Michael, Penampang Sabah.
Patent no.	Patent application No <u>SMART FOOD PROTECTOR</u> The Smart Food Protector is a type of product which is used to protect ready-to-serve food from being pestered by flies, ants and other insects which are attracted with consumer food products. This product can keep a great deal of food safely and also keep it cleaner. <u>HOW TO USE</u> The Smart Food Protector has simple functions. The consumer only has to arrange the plates of cooked food or any other food product on to its base which is similar to a high tray. On the sides of the tray can be seen small grooves where water is poured in as a trap for ants so that ants cannot reach the food. The cover of this product is a dome-like shape to enable the food to be covered and protected from flies and other insects from getting to the food. The food can be left on the product even when the food is being consumed. It comes in a simple set but with enough functions to keep cooked food or other food products safe and protected from insects. <u>SPECIALTY OF THE PRODUCT</u> <ul style="list-style-type: none"> • To keep the cleanliness of the food • It saves space and also easy to use • Light, so that it is easy to carry anywhere • Easy to keep and easy to clean • Unique and interesting form • What is most important is that it is consumer-friendly • We are also proud to showcase this product in different sizes, variations and functions according to the consumer • Simple product mechanism • Different variations of the product <u>CONSUMER TARGET</u> <ul style="list-style-type: none"> • Restaurant manager 4. Household use 5. Handy-craft proprietor
Description EN	
Class no.	14. Other



MY.14.

Title

Improving Quality And Productivity In Rapid Heat Cycle Molding with A New Design Of Conformal Cooling Channels

Authors

Shayfull Zamree Abd Rahim, Safian Sharif, Kamarudin Hussin, Azlan Mohd Zain, Rozaimi Mohd Saad, Mohd Fathullah Ghazli

Institution

Universiti Malaysia Perlis (UniMAP)

Patent no.

Pending

Description EN

The quality of consumer plastic products highly depends on the cosmetic appearances. Applying coatings to cover the injection moulding defects on the plastic parts such as paintings and electroplating are renowned solutions by manufacturers. However this method requires additional secondary processes which definitely increase the manufacturing costs. In addition, painting process also contaminates the environment and sometimes harmful to the operators. To overcome these issues, a new technology has been developed recently which is known as Rapid Heat Cycle Moulding (RHCM). It has been proven that RHCM can eliminate the weld line and improve the surface quality of the ejected parts. However, the cycle time of injection moulding process is much longer as compared to the conventional injection moulding process due to the time taken to heat up and cool down the mould insert. Thus A new designs of Conformal Cooling Channels provide an alternative solution to industries in order to improve quality and productivity of the molded parts in RHCM process.

Class no.

1. Environment - Pollution Control



Core and cavity inserts of a new design
of conformal cooling channels applied in RHCM

MY.15.

Title

Green Matbakh

Authors

Diyana Nabilah bt Mohamed Soder
Aida Nabila bt Rahim

Institution

Sekolah Raja Perempuan Taayah

Patent no.

Pending

Description EN

The function of Green Matbakh 2.0 has been extended to filter factory smoke that contains pollutants such as sulphur dioxide, carbon dioxide and carbon besides filtering smoke from cooking process effectively at a reasonable price. This new innovation can reduce carbon dioxide, sulphur dioxide, carbon, oil, particles and odour so that the smoke that have been released from factory and cooking process are cleaner and safer. This innovation has 2 stages of effective filtration. At the first stage, this innovation will act as an oil filter that can condense oil and water particles. In addition, dust and carbon particles will be prevented from being free into the air. At the same time, this oil filter acts as positive and negative plates that can trap smaller dust and carbon particles through the electrostatic process. The electrostatic charge that is formed will also neutralise acidic gases molecules (positive charged) such as carbon dioxide and sulphur dioxide. At second stage, the neutralised smoke that contains less carbon, particle, oil, water, carbon dioxide and sulphur dioxide will pass through small pieces of charcoal to eliminate the neutral

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carbon dioxide and sulphur dioxide along with the odour from the smoke. Lastly, smoke that contains less harmful substances will be release and it will be safe to be inhaled. Moreover, it can reduce the formation of acid rain that is produced by the reaction with the acidic sulphur dioxide and water. In conclusion, Green Matbakh is smaller, compressed, convenient and user friendly.

Class no. 1. Environment - Pollution Control



MY.16.

Title

Z_Filter

Authors

Aida Nabila bt Rahim,
Diyana Nabilah bt Mohamed Soder

Institution

Sekolah Raja Perempuan Taayah

Patent no.

Pending

Description EN

Z_FILTER is to simplify the process of filtering oil from water to overcome the problem of water pollutions. By using Density Theory and Pressure Theory, it can separate oil automatically. At the early stage of Z_FILTER development, only used items are being used such as food and drinks containers. Then the containers are combined using tank connector after being drilled according to the specific measurement. Next Z_FILTER is upgraded for efficiency for about seven generations. Based on previous experiments, 90% of oil is successfully filtered by using Z_FILTER. Nowadays, conventional oil filters in the market are using manual method compared to Z_FILTER which filters oil

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automatically and is environmental friendly. Z_FILTER can be used at water flow area such as drains, rivers and seas. It can also be used at sewage system area which is not centralized like the business premises, school labs, canteens, drainage, boat engine, lab apparatus and oil platforms. The automatic channelling system is user friendly. It can be operated by anyone. Besides, the filter oil can be used for domestic purposes especially in the industries for biodiesel. As a conclusion, Z_FILTER can overcome the problem of water pollution, easy to use and highlighting the concept of recycling. Z_FILTER is also capable of giving a big impact towards solving global problems.

Class no.

1. Environment - Pollution Control



Moldova

AGEPI Moldova

MD.1.

Title	Variete of <i>Ocimum basilicum</i> "Crețișor"
Authors	Chisnicean Lilia, Colțun Maricica, Ciocârlan Nina
Institution	Botanical Garden (Institute) of the Academy of Sciences of Moldova
Patent no.	Patent application No. v 2013 0013/2013.02.18
Description EN	It is a variety of food basil with taste and pleasant aroma, medicinal properties and special seasoning, ornamental foliage. The growing season to harvest raw materials - 43 – 60 day, to harvest seeds - 110 – 122 day, The productivity of raw material - 3.5 – 3.8 t/ha
Class no.	3. Agriculture and Food Industry



Variete of *Ocimum basilicum* "Crețișor"

MD.2.

Title	Variety of <i>Silphium perfoliatum</i> L. „VITAL”
Authors	Alexandru TELEUȚĂ, Victor ȚÎȚEI
Institution	Botanical Garden (Institute) of the Academy of Sciences of Moldova
Patent no.	Patent application No. v 2013 0010 /18.02.2013
Description EN	Production of fodder for animals: 1kg of natural fodder contains: 0.16 nutritive units, 1.92 MJ metabolizable energy, 32.0 g of raw protein, 21.47 g of digestible protein, 5.1 g of raw fat, 71.5 g of raw cellulose, 4.58 g of calcium, 0.46 g of phosphorus, 78.7 g of nitrogen-free extractive substances and 35.90 mg of carotene. 134 g of digestible proteins correspond to one nutritive unit. Production of renewable energy: <i>Solid fuel: briquettes and pellets with a calorific value of 18.3 MJ / kg.</i> The potential of 25 t/ha of dry matter can

INTERNATIONAL EXHIBITS

contribute to obtain 300-425 GJ/ha.

Biogas 450 l/kg of dry matter with a methane content of 70%.

Production of honey. The late melliferous plant provides 120-190 kg/ha honey

Production of phytosanitary products. Production of pharmaceutical products. Works on green areas planning, phyto-improvement, phytoremediation and enhancement of degraded and contaminated lands

Class no.

3. Agriculture and Food Industry



Variety of *Silphium perfoliatum* L. „**VITAL**”

MD.3.

Title

The variety of *Phacelia tanacetifolia* Benth “MELIFERA”

Authors

Alexandru TELEUȚĂ, Victor ȚÎȚEI

Institution

Botanical Garden (Institute) of the Academy of Sciences of Moldova

Patent no.

Patent application No. v 2013 0008 /18.02.2013

Vegetation period: 80-87 days

Weight of 1000 seeds: 1.9-2.0 g

Production of fodder for animals: The average productivity of fresh mass constitutes 284 q/ha and, in 2013, at sowing in early spring (March 17) it reached 50 t/ha (9.6 t/ha of dry matter) and in successive crop (August 1) - 20.5 t/ha.

Description EN

The chemical composition of substances of the natural fodder: 12.25% - raw protein, 2.79% - fat, 47.20% - nitrogen-free extractive substances, 23.50% - raw cellulose and 14.26% - ash. 125 g digestible proteins correspond to one nutritive unit. The productivity of digestible protein – 776 kg/ha. Melliferous fast-ripening plant, harvest - 200-400 kg/ha honey, as successive crop

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for late harvest. Food for entomophagous.
Green fertilizer: At the introduction of fresh mass in soil,
in 2013, it was equivalent to 180kg/ha of nitrogen.

Class no.

3. Agriculture and Food Industry



Technical University of Moldova

MD.4.

Title	Cycle of inventions "ADMITTANCE AND IMPEDANCE METERS WITH SIMULATED RESONANCE "
Authors	Nastas Vitalie, Nicolaev Pavel
Institution	Technical University of Moldova
Patent no.	MD 490Z, MD 544Z, MD 590Z, MD 591Z, MD 629Z, MD 639Z
Description EN	Cycle of inventions includes a method (MD 490Z) and a meter (MD 544Z) for high-precision measurement of admittance components, a method (MD 591Z) and a meter (MD 639Z) for high-precision measurement of impedance components in Cartesian and polar coordinates, and two ohmmeters with simulated resonance (MD 590Z, MD 629Z) with various features for high – precision measurement of resistance.
Class no.	5. Industrial and laboratory equipments

MD.5.

Title	Photodiode with sensibility control using the gyration phenomenon
Authors	SÎRBU Nicolae, DOROGAN Valerian, DOROGAN Andrei, STAMOV Igor, NEMERENCO Lucreția, BEJAN Nicolae
Institution	Micro-Optoelectronics Laboratory / Technical University of Moldova
Patent no.	Pending
Description EN	Diodes with narrow sensibility band had been elaborated basing on birefringent and gyrotropic CdP ₂ crystals. The photodiode represent a semiconductor film in which two optic waves are propagating. The phenomenon and particularities of gyration influence the spectral characteristics of p-n photodiodes and Schottky diodes. This allows controlling the characteristics, presenting negative and positive dispersion values from λ_0 wavelength, where the values of n_o , n_c refraction indexes intersect.
Class no.	5. Industrial and laboratory equipments

MD.6.

Title	Method of digital λ-modulated spectroscopy
Authors	SÎRBU Nicolae , STAMOV Igor, DOROGAN Andrei, DOROGAN Valerian, ZALAMAI Victor
Institution	Micro-Optoelectronics Laboratory / Technical University of Moldova
Patent no.	In the process of patenting
Description EN	The elaborated method gives the possibility to determine the energy of electronic transitions in semiconductors at a high resolution for estimating an interference spectra structure for analyzing ordinary and extraordinary light dispersion in crystals. The used optic system allows data registering with a spectral width of the slit 0.02 Å (± 0.01 meV) using a double Raman spectrometer CДJI- 1 and MДP-2, which has the linear dispersion of 7Å/mm and relative aperture 1:2.
Class no.	5. Industrial and laboratory equipments

MD.7.

Title	PERSONALIZED CLOTHES FOR PATIENTS WITH FLEXIBLE MORPHOLOGICAL STRUCTURE
Authors	Angela SCRIPCENCO, Olga SUGAC, Jana CIRJA, Angela BUȘTIUC and Michaela CAZAC
Institution	Technical University of Moldova
Patent no.	Pending
Description EN	<p>Personalization is one of the directions of marketing strategies. General understanding of product personalization strategy boils down to adapting products to the needs of the consumer. It is important that the clothes for patients must fully correspond to the requirements and conditions of exploitation that will attribute them to the category of personalized products. Usability assessment basing on an analysis of manipulation produced with the product, such as, dressing/undressing, access to specific areas of the body for medical attention/procedures. Effective design of personalized products is possible only on using the principle of constructive and technological unification. Some construction elements can contain multiple-choice solutions that allows applying the ones, which correspond to preset patient's needs. So on a unified product construction can be applied constructively functional elements in various combinations, which completely changes the look and purpose of the product.</p> <p>The aim of this work is to develop methodological foundations of design of personalized products for patients and their efficient production in industrial environments. Research</p>

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methods based on a morphological analysis of the product, its decomposition and combinatorial synthesis. The results allowed to develop the hospital set of clothing that have several options for transformation each of which responds to that or other requirements of everyday wear. So, the simple transformation of products can expand its function without using of an additional product. Thus, articles of varying the morphological structure will satisfy more the patient's needs and predict their appearance during wear. Moreover, it will be very cost effective too.

Class no. 4. Medicine - Health Care – Cosmetics

MD.8.

Title **Optoelectronic economical lighting and securing system**

Authors Dorogan Valerian, Vieru Tatiana, Secieru Vitalie, Vieru Stanislav, Munteanu Eugen, Dorogan Andrei, Zaporojan Sergiu

Institution **Micro-Optoelectronics Laboratory / Technical University of Moldova**

Patent no. In the process of patenting

Description EN The elaborated system uses renewable energy sources (hydro, wind, solar) for autonomous supply of household techniques, outdoor lighting and house securing. The intelligent securing, alarm and control system represents an autonomous block powered from battery. The electronic block collects alarm signals form different sensors: humidity, gas, fire, breakage and generates an alarm sound signal or notifies by fixed or mobile network (GSM) the security or police authorities.

Class no. 12. Safety, protection and rescue of people

MD.9.

Title **System for measuring the nucleus diameter and coating thickness of the microwire**

Authors Dorogan Valerian, Zaporojan Sergiu, Munteanu Eugen, Larin Vladimir, Pavel Victor, Vieru Tatiana, Secieru Vitalie, Vieru Stanislav, Calmîcov Igor

Institution **Micro-Optoelectronics Laboratory / Technical University of Moldova**

Patent no. Patent Application no. S2013 0215 of 12/18/2013

Description EN The system is intended for measuring the diameter of the microwire nucleus and the coating thickness. On the side irradiation of a microwire with visible light, the nucleus

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will fully absorb the light and the coating partially or even will be opaque for the visible light. For ultraviolet the glass coating has a less transparency than for visible light. Using the measured coefficients of transparency, and calculating the ratio of their transparency and overlapping with the known characteristics, we can calculate the geometric parameters.

Class no. 5. Industrial and laboratory equipments

MD.10.

Title

Mobile mammography pilot system for early detection of breast cancer

Authors

Dorogan Valerian, Matei Vasile, Zaporojan Sergiu

Institution

Micro-Optoelectronics Laboratory / Technical University of Moldova and INTER-FARMA S.A.

Patent no.

In the process of patenting

Description EN

The mobile mammography “Excellence Mammo” is intended to minimize the risk of mortality and morbidity of the population caused by breast cancer. The relevant characteristics of the mobile mammography system are:

- Possibility of performing breast screening in every village and district center of the Republic of Moldova.

- Access and supervision of social vulnerable people, including the elderly, who are more prone to cancer.

- Possibility of movement at home with the emergency screening.

- Penitentiaries, etc.

On the other hand, the system provides new screening technologies with pre-registration of the patient and the possibility of data transmission.

Class no. 4. Medicine - Health Care – Cosmetics

MD.11.

Title

Guidance system of the solar parabolic device

Authors

Bostan Ion, Vișa Ion, Dulgheru Valeriu, Dicusară Ion

Institution

Technical University of Moldova

Patent no.

MD3975

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. 5. Industrial and laboratory equipments

MD.12.

Title	Industrial prototype of microhydropower plant with modified vertical axis hydrodynamic rotor.
Authors	Bostan Ion, Dulgheru Valeriu, Bostan Viorel, Sochireanu Anatol, Vaculenco Maxim, Ciobanu Oleg, Ciobanu Radu, Gladîş Vitalie
Institution	Technical University of Moldova
Patent no.	MD 589Y, 601Y, 659Y, 4235, Microhydropower plants provides kinetic energy conversion of river water into mechanical or electrical energy without building barrages. Increased efficiency is provided by blades aerodynamic profile and their optimum position for efficient conversion of water kinetic energy. The experimental prototypes of the rotors are fabricated.
Description EN	
Class no.	2. Energy and sustainable development

MD.13.

Title	Industrial prototype of horizontal axle power wind turbine with vindroze wheeled and heat generator
Authors	Bostan Ion, Dulgheru Valeriu, Bostan Viorel, Sobor Ion, Sochireanu Anatol, Vaculenco Maxim, Bodnariuc Ion, Dicusară Ion, Ciobanu Oleg, Ciobanu Radu, Trifan Nicolae, Odainâi Valeriu, Crudu Radu, Guţu Marin, Gladîş Vitalie, Porcescu Gavril
Institution	Technical University of Moldova
Patent no.	MD660Y, 661Y, 681Y, 4212, 4213 Aeolian turbine include three blades rotor with aerodynamic asymmetric profile. The wind orientation of the turbine is doing through a two-wheeled vindroze linked by a reducer with turbine nacelle. The power of 10 kW is produced at wind speed of 11 m/s.
Description EN	
Class no.	2. Energy and sustainable development

MD.14.

Title	Planetary precessional multiplier.
Authors	Bostan Ion, Dulgheru Valeriu, Ciobanu Radu.
Institution	Technical University of Moldova
Patent no.	In the process of patenting Planetary precesional multiplier has overall dimensions and low weight, load capacity and high efficiency. The precession drive is produced multiparous (up to 100% pair of gear teeth are simultaneously).
Description EN	
Class no.	2. Energy and sustainable development

Technical University of Moldova
Industrial Design

MD.15.

Title **Design Concept „Campus-car”**
Authors Ostahii Olga, Podborschi Valeriu
Institution **Technical University of Moldova**
Description EN Electric vehicle, to be used by the personnel of enterprises, educational institutions, which are situated in vast, open spaces. The vehicle is autonomous, not requiring any human input during driving, and it follows a closed circuit route.
Class no. Innovative Research

MD.16.

Title **Design Concept „Electric vehicle”**
Authors Voloşin Andrei, Podborschi Valeriu.
Institution **Technical University of Moldova**
Description EN Electric vehicle, to be used by young people, visitors of museums, tourist complexes, sports fields etc.
Class no. Innovative Research

MD.17.

Title **Design Concept „Opel-Vauxhall”**
Authors Verenjac Andrei, Stamati Mihail
Institution **Technical University of Moldova**
Description EN Conceptual project for automobile design contest announced by „Opel” auto manufacturer.
Class no. Innovative Research

MD.18.

Title **Design Concept „Electric urban transport”**
Authors Molovata Sergiu, Podborschi Valeriu
Institution **Technical University of Moldova**
Description EN Electric means of transport for people, travelling along a predefined route. Vehicle travels above other urban traffic.
Class no. Innovative Research

MD.19.

Title **Design Concept „Table and chair for kids”**
Authors Iachim Victoria, Podborschi Valeriu
Institution **Technical University of Moldova**
Description EN Furniture pieces, made of plastic, which can be disassembled and transformed into toys.
Class no. Innovative Research

Moldova State University

MD.20.

Title	WATER-SOLUBLE ACTIVE POLYMERS
Authors	Nicanor Barbă, Anastasia Ștefîrță, Ștefan Robu, Vitalie Filip, Lilia Brînză, Svetlana Buceacea, Mihai Melenciuc <i>The State University of Moldova</i>
Institution	<i>The Institute of Plant Physiology of the National Academy of Science of Republic of Moldova</i>
Patent no.	MD-3438, MD-3466
Description EN	<p>Innovation refers to the biologically active compounds, in particular to the synthesis of water-soluble copolymers with the plants growth properties.</p> <p>The biologically active polymers represent copolymers of N-vinylpyrrolidone with potassium or ammonium methacrylate, according to the formula of Figure 1.</p> <p>The binary copolymers of N-vinylpyrrolidone: acid metacrilate are obtained by free-radical polymerization in the presence of azobisisobutyronitrile initiator. After sedimentation they are treated with ammonium hydroxide solution or potassium hydroxide that contain the molar ratio 84 mol% of N-vinyl pyrrolidone and 16 mol% of potassium or ammonium methacrylate.</p> <p>These copolymers being applied on cucumber plant leaf area or "Cucumis sativus in latin" fruit increase the production per hectare by 7-10 %.</p>
Class no.	3. Agriculture and Food Industry

MD.21.

Title	WATER-SOLUBLE ACTIVE POLYMERS
Authors	Nicanor Barbă, Anastasia Ștefîrță, Ștefan Robu, Vitalie Filip, Lilia Brînză, Svetlana Buceacea, Mihai Melenciuc <i>The State University of Moldova</i>
Institution	<i>The Institute of Plant Physiology of the National Academy of Science of Republic of Moldova</i>
Patent no.	Pending
Description EN	<p>Innovation refers to the biologically active compounds, in particular to the synthesis of water-soluble copolymers with the plants growth properties.</p> <p>The biologically active polymers represent copolymers of N-vinylpyrrolidone with potassium or ammonium methacrylate, according to the formula of Figure 1.</p>

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The binary copolymers of N-vinylpyrrolidone: acid metacrilate are obtained by free-radical polymerization in the presence of azobisisobutyronitrile initiator. After sedimentation they are treated with ammonium hydroxide solution or potassium hydroxide that contain the molar ratio 84 mol% of N-vinyl pyrrolidone and 16 mol% of potassium or ammonium methacrylate.

These copolymers being applied on cucumber plant leaf area or "Cucumis sativus in latin" fruit increase the production per hectare by 7-10 %.

Class no.

3. Agriculture and Food Industry

MD.22.

Title

The elaboration of technology for obtaining a selective sorbent and of water purification using this sorbent.

Authors

Gutsanu Vasile

Institution

Moldova State University

Patent no.

MD 4241, MD 3295

The first stage of the invention consists in the modification of the ionic cross-linked commercial polymer containing strongly basic groups with compounds of Bi (III). The polymers of this type are the high tonnage product of chemical industry and are widely used in water treatment technology.

Description EN

The selectivity of sorption is due to the ultrafine particles of the Bi(III)-containing compounds which are synthesized in the polymer phase. The second part of the invention consists in the application of the obtained sorbent in the process of removing hydrogen sulfide from the water. The investigation has shown that the obtained sorbent (polymer AV-17 (Cl) modified with Bi(III)-containing compounds) is able to sulfide ions removal from water that contain excess of hydrogencarbonate, chloride and sulfide ions. The sorbent granules permit their use in flow with a good hydrodynamic, being transparent for inorganic ions. Sorbent can be used cyclically for a long time. During the water purification, does not form ultrafine particles of sulfur which are difficult to remove from the system.

Class no.

1. Environment-Pollution Control

MD.23.

Title

Process for the manufacture of a wall construction and wall construction

Authors

Cazac Oleg, MD Cazac Veronica, MD

Institution

Technical University of Moldova, Faculty of Cadastre, Geodesy and Constructions ; State

University of Moldova, Faculty of Physics and Engineering

Patent no.

MD615Z2013.10.31/Patent application No.s 2012 0005/2011

Description EN

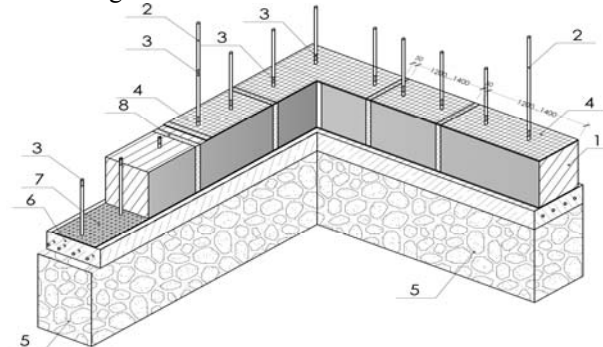
The invention relates to the construction, in particular to the wall constructions of buildings, and can be used in the erection of walls of private houses, resistant to seismic shocks.

The process for the manufacture of a wall construction includes the execution of a foundation, in which are vertically placed polypropylene bars with thread at the ends, installation of removable formworks with the formation of a space divided into sectors for the formation of blocks with the help of polystyrene plates fixed in the formworks, filling and sealing of layers of clay mixture, application on the upper surface of the blocks of a grid of polypropylene fibers along the full length of the wall. After the consolidation of blocks, the polypropylene bars are connected through a thread to the bars of the next placed blocks, are removed the formworks and is repeated the process to the erection of the wall. The wall construction includes a foundation

5, are vertically placed polypropylene bars (2) with thread (3) at the ends. On the reinforced concrete belt (6) is applied a horizontal 10 waterproofing layer (7), on which are placed blocks of a clay mixture (1), on the upper surface of which is placed a grid of polypropylene fibers (4) along the full length of the wall. On the lateral surfaces of the blocks are placed polystyrene plates (8). The polypropylene bars (2) are connected by means of a thread (3) to the bars (2) of the next placed blocks.

Class no.

7. Buildings and Materials



MD.24.

Title **Building block and process for its manufacture**
Authors Cazac Veronica, MD; Gaina Georgel, MD
Institution **State University of Moldova, Faculty of Physics and Engineering; Technical University of Moldova, Faculty of Cadastre, Geodesy and Constructions**
Patent no. MD 297 Z 2011.12.31 / Patent application No.s 2010 0084/2010

The invention relates to the industry of construction materials, in particular to a building block and a process for its manufacture.

The block, according to the invention, contains clay, cement, polyvinyl acetate emulsion, ground polypropylene waste and expanded polystyrene granules, in the following component ratio, mass %.:
 clay 82...90

Description EN

cement 6... 8 polyvinyl acetate emulsion 1...2 ground polypropylene waste 1...3 expanded polystyrene granules 2... 5.

The process, according to the invention, includes mixing of the clay with the addition of water up to the humidity of 25...27%, sequential addition of cement, polyvinyl acetate emulsion, ground polypropylene waste and expanded polystyrene granules, mixing of the components, placement of the obtained mixture into a damped mould in 2...3 layers with the compaction of each, extraction of the block from the mould and its drying.

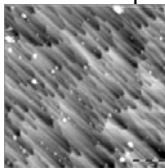
Class no. 7. Buildings and Materials



Photo1. A mixture of clay, cement, polyvinyl acetate, polystyrene beads and polypropylene chips

MD.25.

Title	SEMICONDUCTOR DEVICE WITH RELIEF P-N JUNCTION AND METHOD FOR IT MANUFACTURING (<i>embodiments</i>).
Authors	BARANOV Simion; CINIC Boris; GORCEAC Leonid.
Institution	State University of Moldova
Patent no.	MD-4182; MD-4261;
Description EN	The invention relates to the field of renewable power engineering and electrical engineering, in particular to devices for direct conversion of solar radiation into electrical energy, and can be used in the manufacture of photovoltaic cells and power semiconductor devices. The semiconductor device with relief p-n junction, according to the first embodiment, comprises a crystalline substrate of p or n type semiconductor with the forbidden energy band greater than 1.1 eV, for example, from A ₃ B ⁵ type compound, doped with an impurity, donor or acceptor, to the concentration of charge carriers over 10 ¹⁸ cm ⁻³ , with the thickness of 300...400 μm, on the surface of substrate being formed many micro-defects. The p-n junction is formed by two crystalline semiconductor layers, at the same time the first layer is grown epitaxially on the substrate, with relief microstructure of semiconductor identical with the type substrate, doped with an impurity donor or acceptor, to the concentration of charge carriers of (2...6)·10 ¹⁷ cm ⁻³ , with the thickness of 3...5 μm, and the second layer is grown epitaxially on the surface of the first layer, with relief microstructure of semiconductor opposite to the type substrate, doped with an impurity, acceptor or donor, to the concentration of charge carriers of 10 ¹⁹ ...10 ²⁰ cm ⁻³ , with the thickness of 2...3 μm.
Class no.	2. Energy and sustainable development

**MD.26.**

Title	STANDALONE CdTe PHOTOVOLTAIC TRAFFIC LIGHT SYSTEM
Authors	<i>P. Dumitriu, D. Duca, T. Potlog</i>
Institution	Moldova State University
Patent no.	Pending
Description EN	Solar powered traffic light system can offer significant savings

EUROINVENT 2014

on both energy consumption and costs for cities. Small photovoltaic module are excellent supply sources in the street lighting, traffic signalization et al. Polycrystalline CdTe PV cells fabricated at Moldova State University were proven to be the most favorable type for traffic light system, 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. A dc converter was used in order to either amplify or decrease the input voltage so that a constant voltage output is obtained. Batteries are used as the electric energy storage for the PV system to use electrical energy in the absence of sunlight. The complete system was tested for different time of the day and different days of each month. The highest voltage was supplied at an angle of 30 to 45 degrees during the morning time up to 12:30. In the afternoon, after 12:30, the angles 60 to 75 degrees showed the highest voltage. Proposed standalone photovoltaic traffic light system is able to function for long periods at all times with no grid connection, is environmentally friendly and energy bills can be reduced by two times.

Class no.

2. Energy and sustainable development

MD.27.

Title

New procedures of spirulina cultivation and obtaining of biomass with predicted content of iron or germanium.

Authors

Bulimaga V., Zosim L, Djur S., Rudic V, Gulea A., Turta C., Şova S., Lazarescu A.

Institution

State University of Moldova, Institute of Mycrobiology and Biotechnology ASM, Institute of Chemistry ASM

Patent no.

MD228; MD3625

Description EN

The aim: The elaboration of procedures of spirulina cultivation and obtaining of biomass with the high predicted content of iron or germanium. The solution: New procedures of spirulina biomass obtaining with high content of iron or germanium have been proposed. Advantages: Iron rich spirulina biomass, will contribute to the solution of the problems caused by iron deficiency anemia. Germanium rich spirulina biomass will serve as a natural source of organic germanium for destroying effect of oxidative stress in the human body, as well as for obtaining of anticancer remedies.

Class no.

3. Agriculture and Food Industry

MD.28.

Title	Process for obtaining feed supplement, containing vitamin B12, and methane
Authors	COVALIOV Victor, COVALIOVA Olga, DUCA Gheorghe, BOBEICĂ Valentin
Institution	State University of Moldova,
Patent no.	4176 MD-BOPI 7/2012
Description EN	The project involves an original technology based on the principle of phytochemical stimulation of methanogenesis and a special equipment for the 20%-intensification of the process of post-distillery alcohol vinasse purification and enhancement of biomethane yield up to 80-90%, concomitantly with the production of vitaminized sludge containing vitamin B12. The presented project involves complex solutions for biochemical production of vitamin B12 and methane with high yield, based on the use of new microadditives of phytochemical stimulants, cobalt complex compounds and electrolytical hydrogen supplement, in the conditions of a special bioreactor.
Class no.	3. Agriculture and Food Industry

MD.29.

Title	Installation for anaerobic production of biohydrogen
Authors	COVALIOV Victor, COVALIOVA Olga, UNGUREANU Dumitru, NENNO Vladimir, IONET Ion
Institution	State University of Moldova,
Patent no.	Patent application no.4204 MD-BOPI 2/2013
Description EN	A new process and a combined biochemical reactor are presented for biohydrogen generation with a content of 65-70% in the composition of biogas from anaerobic fermentation of oenological and technological grains based on the application of micro-additives of phytochemical stimulants and continuous purification using the two-component liquid absorbent.
Class no.	2. Energy and sustainable development

MD.30.

Title	Combined anaerobic reactor for the production of biomethane
Authors	COVALIOV Victor, COVALIOVA Olga, NENNO Vladimir, IONET Ion, SLIUSARENCO Valentin, BOBEICĂ Valentin
Institution	State University of Moldova,
Patent no.	Patent application no.4244 MD-BOPI 7/2013

EUROINVENT 2014

Description EN

The project involves an original technology based on a new principle of phytochemical stimulation of methanogenesis and a special equipment for the 20%-intensification of the process of post-distillery alcohol vinasse purification and enhancement of biomethane yield up to 80-90%, concomitantly with the production of vitaminized sludge containing vitamin B12

Class no.

2. Energy and sustainable development

"N.Testemiteanu"
State Medical and Pharmaceutical University

MD.31.

Title	Treatment of patients with sensorineural deafness using extract of <i>Spirulina platensis</i> (Nordst.) Geitl., CNMN-CB-02 cyanobacterium biomass
Authors	RUDIC Valeriu, PARII Sergiu, CABAC Vasile, CHIRIAC Tatiana
Institution	State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova
Patent no.	No. MD 545, MD 4277, The invention relates to medicine, in particular in otorhinolaryngology speciality and it can be used for the treatment of patients with sensorineural hearing loss.
Description EN	According to the claimed invention, extract from <i>Spirulina platensis</i> (Nordst.) Geitl., CNMN-CB-02 cyanobacterium strain biomass (BioR® 5mg, capsules) is used for the treatment of patients with sensorineural deafness, 5 mg, 2 times a day, before meals, for 20 days. The result is to obtain a higher score therapy of patients with sensorineural hearing loss.
Class no.	4. Medicine - Health Care - Cosmetics

MD.32.

Title	Method for the determination of Speech Intelligibility Score
Authors	PARII Sergiu, JUCOVSCI Constantin
Institution	State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova
Patent no.	No. MD 792 Z, A61B 5/12 (2006.01) The invention relates to medicine, in particular in otorhinolaryngology and can be used to assess the intelligibility of the voice. Summary of the invention is that thonal audiometry examination is performed by setting the following parameters: appearance audiometric curve, the average hearing threshold, degree of deafness, the average threshold of discomfort, articular index, then the results are used to calculate the speech intelligibility score according to a developed mathematical formula.
Description EN	
Class no.	4. Medicine - Health Care - Cosmetics

MD.33.

Title

DEVICE FOR TISSUE PROCESSING

Authors

Macagonova Olga, PhD student, Nacu Viorel, PhD, MD, professor, Cociug Adrian, PhD student.

Institution

Laboratory of Tissue Engineering and Cells Cultures, State Medical and Pharmaceutical University “Nicolae Testemitanu”

Patent no.

Patent application No. MD s2014-0004/2014-01-13

Description EN

The invention relates to molecular biology and can be used in medical scientific research. It is a device designed for the soft tissue processing with the aim of the structural selected components extracting.

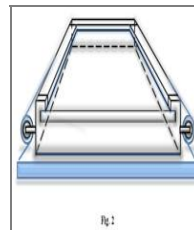
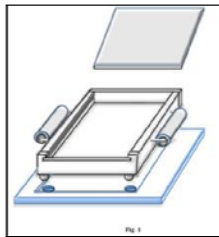
The device presents a hollow parallelepiped (a reservoir) with internal cavity, the length 250-400 mm, the height 30-45 mm and the width 200-300 mm. The side walls and bottom with thickness of 5 mm are made of stainless steel, isolated on the inside with penopolyurethane and covered with glass fiber. The top wall of the device is made up of a sliding smooth aluminum plate with a thickness of 3 mm. The sliding mechanism of the top plate allows you to upload it up with liquid nitrogen or dry ice. Overall, the described device is placed in a removable rectangular support plate, made of plastic material, with the length-250 mm, -250 mm, the width, 3 mm thickness, with the purpose additional isolation and fixation.

The problem solved by the invention consists in maintaining of the low temperature on the working surface of the device that allows us selectively to separate the required tissue layers.

Areas of use: Molecular biology, regenerative medicine, stemcell research.

Class no.

4. Medicine - Health Care - Cosmetics



MD.34.

Title

The minimal invasive method of early installation of endosseous dental implants in two surgical stages

Authors

Chele Nicolae, Topalo Valentin

Institution

State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova

Patent no.

MD580

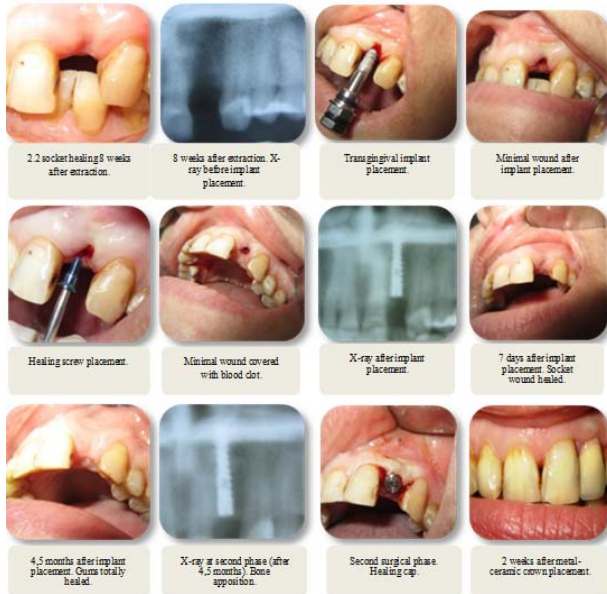
This method is based on two phase implant placement after 4-8 weeks after extraction with transgingival implantation, without incision, mucoperiosteal flap reflection, and curettage of the healing tissue from post extraction socket.

Description EN

Advantages of this method are: soft tissue is healed, infection risk is reduced, no sutures needed, post operative discomfort is reduced, no need of bone augmentation that reduces the cost of intervention. The risk of viral infection is excluded (HIV, hepatitis, etc.). Treatment period is reduced by 4-8 months that reduces functional discomfort of the patient.

Class no.

4. Medicine - Health Care - Cosmetics



MD.35.

Title

Method for early placement of implants in a single surgical technique

Authors

Chele Nicolae, Topalo Valentin,

Institution

State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova

Patent no.

MD595

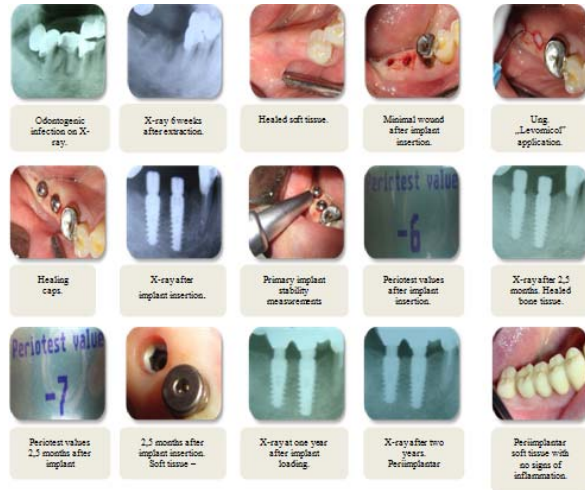
Method is based on implant insertion after 4-8 weeks after extraction when soft tissue is healed. New socket is drilled transgingival, implant is placed and the inner space of the implant is filled with „Levomicol” ointment and healing screw is placed. It is recommended 5-7 days of anti-inflammatory therapy.

Description EN

Advantages of this method are: healed soft tissues, reduced infection risk, is reduced the time of treatment, by excluding second surgical phase, no incision and flap reflection are made, so the patients discomfort is reduced, healing immature bone from post extraction socket is preserved, no need for bone augmentation and the treatment cost is reduced. The process of forming the epithelial-connective tissue around the implant is accelerated, favoring the formation of keratinized soft tissue that is necessary for an optimal esthetic around the prosthetic crown.

Class no.

4. Medicine - Health Care - Cosmetics



MD.36.

Title	Device and method for treating s cataract
Authors	Ion JERU
Institution	State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova
Patent no.	MD: 722, 656, 612, 581, 500, 438, 437, 292, 142,9, 5, 2515, 2735, 3475, 3676, 3796
Description EN	<p>The invention relates to medicine, in particular to ophthalmology and can be used for treating senile cataract.</p> <p>The device for treating senile cataract comprises a syringe with blunt-pointed needle made of two segments bent at an angle of 90°, the proximal segment has a length of 9 mm and the distal one – of 2 mm.</p> <p>The method for treating senile cataract consists in that it is carried out the local and regional anesthesia, is applied the blepharostat, is fixed the superior rectus muscle, is performed the incision of conjunctiva at the limbus level, which corresponds to 10.00...13.00 o'clock, is performed the incision of cornea at the level of 10.00...13.00 o'clock, is performed the anterior capsulorhexis, is removed the nucleus and lens masses by means of said device, is performed the circular dilatation of pupil up to the periphery, are aspirated the residual lens masses, is implanted the artificial lens behind the posterior chamber and is sutured the cornea and conjunctiva.</p>
Class no.	4. Medicine - Health Care - Cosmetics

MD.37.

Title	MORPHOLOGIC ARGUMENTATION OF EARLY INSTALLATION OF ENDOOSSEOUS DENTAL IMPLANTS.
Authors	Nicolae Chele, Valentin Topalo, Emilian Onea
Institution	State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova
Patent no.	Pending
Description EN	<p>In different terms after dental extraction (2, 4, 8 weeks) was histological studied socket's content at 30 patients. The biopsy tissue was obtained with trephine drill before installing endosseous dental implants. 2 weeks after the extraction the alveolar socket was filled</p>

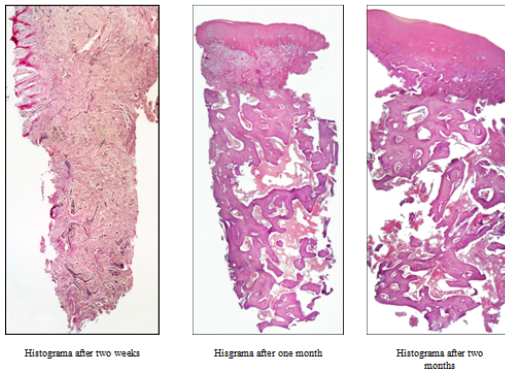
with granulation tissue, young connective tissue with osteogenic islands and covered by immature stratified epithelium. At the end of the first month the epithelium and connective tissue mature but newly-formed osseous tissue is partially mineralized. 2 months after the extraction the alveolar socket is presented by matured connective tissue and trabeculae of mineralized osseous tissue.

Therefore performed histological study results allow us to recommend to preserve the contents of the alveoli in the healing phase in time of dental implants early insertion. This recommendation is in tune with recent studies. Optimal time to early insertion (type 2) of the implants is 4-8 weeks after tooth extraction.

Class no.

4. Medicine - Health Care - Cosmetics

Histograma of socket's content at different terms after tooth extraction:



MD.38.

Title

Treatment method for recurrent herpes

Authors

Uncuța Diana, Rudic Valeriu, Lupan Ion

Institution

State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova

Patent no.

MD: 2671, 3724, 4110

Description EN

The invention refers to medicine, particularly to dentistry and to a method for treating recurrent herpes labialis and herpes peri-oral-nasalis.

Class no.

4. Medicine - Health Care - Cosmetics

MD.39.

Title	Method for plastic surgery with vascular graft of the Achilles tendon defect
Authors	VEREGA Grigore, MD, VEREGA Grigore, MD; IORDACHESCU Rodica, MD; BÎRCA Radu, MD; FEGHIU Leonid, MD; CLIPA Marcel, MD
Institution	Public Medical Care Institution National Scientific and Practical Center for Emergency Medicine / Moldova State University of Medicine and Pharmacy "Nicolae Testemițanu"
Patent no.	A61B 17/56 (2006.01)
Description EN	The invention relates to medicine, in particular to traumatology and plastic surgery and can be used for plastic surgery on Achilles tendon with vascular graft. According to the invention, the claimed method consists in that it is performed the dopplerography and is determined the projection of vessels, are performed two curved incisions with the concave sides pointed to the lateral and medial edge of the Achilles tendon, having the same start and end point, afterwards it is mobilized the covering fascia, the Achilles tendon, the proximal and distal vascular pedicles of the triceps muscle of calf, is prepared a graft including the skin, the covering fascia of the Achilles tendon with the vascular pedicle from the sural artery and the tendon transplant, prepared from the triceps muscle of calf, then the prepared graft is unfolded distally at 180° and placed in the region of Achilles tendon defect, and the ends of the tendon transplant are introduced into the sagittal gaps of the Achilles tendon fragments and are sutured, after which the wound is sutured in layers.
Class no.	4. Medicine - Health Care - Cosmetics

MD.40.

Title	Method of treating burns of I...IIIB degree.
Authors	Babiuc Vasile, Babiuc Victor, Babiuc Alexandru, Babiuc Nadejda
Institution	State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova
Patent no.	MD 757 Y 2014.04.30
Description EN	The invention relates to medicine, in particular to combustiology and can be used for treating burns of

I...IIB degree.

According to the invention, the claimed method consists in that it is carried out the detoxifying and anti-shock therapy, simultaneously is performed the wound lavage with solutions of antiseptics and anesthetics, is removed the sloughed epidermis, then on the wound is applied a sterile gauze layer on which is applied 5% solution of disodium-2-(4-sulfamidephenilazo-7 acetylamide-1-oxynaphtholine-3,6-disulfonate), every 8...10 hours, for 24 hours.

Class no. 4. Medicine - Health Care - Cosmetics

MD.41.

Title

Method of treating donor zones after dermatoplasty at patients with burns of IIB...IV degree.

Authors

Babiu Vasile, Babiu Alexandru, Babiu Victor, Babiu Nadejda

Institution

State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova

Patent no.

MD 758 Y 2014.04.30

The invention relates to medicine, in particular to combustiology and can be used for treating donor sites after dermatoplasty in patients with burns of IIB...IV degree.

Description EN

According to the invention, the claimed method consists in that after preparation of the dermal graft, on the entire surface of the site is applied a gauze layer, then thereover are applied another 2...3 gauze layers impregnated with saline heated to 50...55°C, to provide the hemostasis to the completion of operation, afterwards the last 2...3 gauze layers are removed, and on the remaining layer is applied 5% solution of disodium-2- 4-sulfamidephenilazo-7 acetylamide-1-oxynaphtholine-3,6-disulfonate), for 24 hours.

Class no.

4. Medicine - Health Care - Cosmetics

MD.42.

Title

METHOD OF DIFFERENTIAL DIAGNOSIS OF CHRONIC COMPENSATED AND DECOMPENSATED TONSILITIS IN CHILDREN BY AGE CATEGORY

Authors

Danilov Lucian, Ghinda Serghei, Ababii Ion, Maniuc Mihail, Tudor Elena, Rotaru Elena

Institution State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova
Patent no. Pediatric ENT Clinic.

Pending
 The problem consists in the elaboration of the method of differential diagnosis of chronic compensated and decompensated tonsillitis, which include cellular and humoral sensitivity assessment. 99 healthy children of different age have been examined as well as 196 children with chronic tonsillitis.

To determine the differential diagnosis level (DL) of forms of chronic tonsillitis the following formula is used:

$$DL = \frac{IIFA}{NIAAC} + \frac{IIPS}{NICSAC},$$

where:

IIFA- individual index of antibody formation to streptococcal antigens of the patient, IIPS- individual index of sensitivity to the patient's streptococcal antigens, NIAAC -index of the physiological norm of antibodies by age category, NICSAC - index of physiological norm of cell sensitivity by age category.

Description EN

If children aged 1-5 years, have a DL higher than 48.5, they are diagnosed with decompensated chronic tonsillitis. When the index is lower they are diagnosed with compensated chronic tonsillitis. If children aged 6-10 years have a DL higher than 46.2, they are diagnosed with decompensated tonsillitis, and if the index is lower children are diagnosed with compensated tonsillitis. If children aged 11 to 14 years old have a DL higher than 35.9 they are diagnosed with decompensated tonsillitis, and the lower index - compensated tonsillitis. Children aged 15-18 years with a DL higher than 17.2 are diagnosed with decompensated chronic tonsillitis, and the lower index is indicative of compensated tonsillitis. The advantage of this method is a more precise determination of the form of chronic tonsillitis and a more correct choice of treatment strategy.

Class no. 4. Medicine - Health Care - Cosmetics

MD.43.

Title

Method of preventing the development of pathological reflexes in the surgical manipulation

Authors

Victor Ghicavii, Ianos Coretchi

Institution

**State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova
 Department of Pharmacology**

EUROINVENT 2014

Patent no. Patent application No. **665 Z / 2013**
The invention consist in that during performing of surgery or other traumatic handlings, in addition to the respective anesthesia is administered a single-dose of azamethonium bromide (3 mg/kg) and then intravenously is administered profetur in a dose 5 mg/kg.

Description EN

Class no. 4. Medicine - Health Care - Cosmetics

MD.44.

Title **Method of prophylaxis of pelvic organ complications of radiotherapy**

Authors **Victor Ghicavii, Vadim Gavrilita**

Institution **State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova**
Department of Pharmacology

Patent no. Patent application No. **MD 482Z /2012.09.30**
The novelty consists in those that are administered once a day after meals for 15 days after beginning the cure of radiotherapy, one capsule (33000) of retinol, one capsule (0.2) of tocopherol and one tablet (0.2) of methiluracil. Simultaneously is administered "Dovisan" (*Oleum Semeni Cucurbitae*) on rectal microclisme of 20 ml one hour before radiation therapy. Also the product is administered orally, one teaspoon (5 ml) 2 times per day, from 2-3 days before initiation of radiation therapy course and throughout it. Use of "Dovisan" in the proposed association during radiotherapy cure, clearly reduces the degree of manifestation of early complications (cystitis, rectal, etc.) of radiation of the pelvic organs with the improvement of patients.

Description EN

Class no. 4. Medicine - Health Care - Cosmetics

MD.45.

Title **Hepatoprotective and immunomodulator entomological drug**

Authors Victor Ghicavii, GHICAVĂI Victor, CIUHRII Mircea, BACINSCHI Nicolae, CIUHRII Veaceslav, GHICAVĂI Vitalie

Institution **State University of Medicine and Pharmacy „Nicolae Testemițanu” of the Republic of Moldova**
Department of Pharmacology

Patent no. Patent application No. **MD 2787 F1 2005.06.30**

Description EN The novelty consists in those that the entomological hepatoprotective and immunomodulating drug is a complex of lipoproteins, amino acids and antioxidants, obtained from the eggs and pupae, in the ratio of 1: 3, of the insect order *Lepidoptera*, such as *Lymantria*, taken at different stages of development. Drug along with hepatoprotective, membranostabilisator, lipotropic, antiproliferative and stimulating metabolism action, possess the new properties, such as antioxidant, antiviral, immunomodulatory and substitution of some biologically active components.

Class no. 4. Medicine - Health Care - Cosmetics

MD.46.

Title Method of root canals disinfection
Authors Spinei Aurelia, Spinei Iurie
Institution "Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova
Patent no. MD 746 Y / Patent application No 746 Y /2013

The invention is related to medicine, namely to dentistry and can be applied to disinfect root canals in pulpitis and apical periodontitis treatment.

The problem solved by the present invention is to develop an efficient method of root canals disinfection to increase bactericidal effect, to prevent complications and to reduce patient's discomfort during treatment.

The method, according to the invention, consists in that after the isolation of saliva action the root canals content is removed, than instrumental and drug treatment of root canals is performed, they are dried and filled with blue toluidine gel of low viscosity with a concentration of 0.1 mg per 1-2 minutes, the optical guide of conical shape with peak diameter of 0.5 mm is introduced and is irradiated with light LED (wavelength of 625-635 nm, the power of 2.0-3.0 W), with irradiating exposure lasting 30-60 seconds, ensuring the contact of optical guide with photosensitizer. After that the root canals are irrigated with distilled water, dried and obturated.

Description EN

Increasing efficacy of treatment of pulpitis and apical periodontitis increases bactericidal effect, prevents complications, reduces pain and patient discomfort during treatment and the lasting time of treating session.

Technical result - high efficiency of the proposed method and achievement of rapid disinfection of root canals helps prevent exacerbations and complications of pulpitis and

apical periodontitis.

Due to the fact that this method is simple and fast in execution, causing no discomfort to patients it can be applied to disabled persons.

Class no. 4. Medicine - Health Care - Cosmetics

MD.47.

Title Method of dental caries prevention

Authors Spinei Aurelia

Institution “Nicolae Testemitanu” State University of Medicine and Pharmacy of the Republic of Moldova

Patent no. MD 745 Y / Patent application No 745 Y /2013

The invention relates to medicine, in particular to dentistry and can be used for dental caries prevention in children with intellectual disabilities.

The problem solved by the present invention is to develop a new effective method for dental caries prevention in people with high caries risk caused by increased activity of the acidogenic bacterial strains of oral biofilm.

The method, according to the invention, consists in that after application of 5,0% anthocyanin extract for 10-20 min the teeth surfaces are repeatedly irradiated with LED 625...635 μm for 10...30 sec, and a drug is applied on the irradiated surface for deep fluoridation of the enamel and dentin, which includes a solution containing fluorine (F⁻) and copper (Cu²⁺) ions, as well as a suspension, containing finely dispersed calcium hydroxide in distilled water, at the same time after the first irradiation 1...3 drops of the solution are applied on the irradiated surface, and after the second course of irradiation 1...3 drops of the same suspension are applied, after which the third course of irradiation is carried out in the same way, the preventive course is carried out 3...4 times a year.

Description EN

Technical result – increase of the effectiveness of dental caries prevention, increase of bactericidal effect on acidogenic strains without damaging the epithelial cells of the oral cavity tissues, formation of a physiological microbial community and considerable reduction of caries risk, increase of crystal formation capacity and enamel mineralization, reduction of the number of preventive check-ups, saving practitioner’s time and financial resources.

Class no. 4. Medicine - Health Care - Cosmetics

MD.48.

Title **Method of dental caries treatment**
Authors Spinei Aurelia
Institution “Nicolae Testemitanu” State University of Medicine and Pharmacy of the Republic of Moldova
Patent no. MD 735 Y / Patent application No 735 Y/2013

The invention relates to medicine, namely to dentistry and can be used for dental caries treatment.

The method, according to the invention, consists in that after caries cavity preparation, isolation and drying, a photosensitizing substance is applied for a period of time necessary to link effectively with microbial cells (5 ... 6 min) and irradiated with LED of a wavelength of 625...635 µm for 10...20 s, ensuring contact with the photosensitizer and optical guide, carious cavity is irrigated with distilled water, dried and filled.

Description EN

The proposed method of caries treatment prevents pain and patient's discomfort during treatment. It prevents secondary caries, is quick and easy to perform, being a minimally invasive method of treatment which allows maximum preservation of tooth tissue and application in patients with intellectual and neuro-motor disabilities. As a result, high efficiency of the proposed method and the effect of rapid disinfection and cariostatic action in a short period of time, but with a long-lasting effect, stops the spread of caries, prevents complications and patient's suffering, allowing this method to be used both in children and adults. It reduces the treatment sessions duration and saves practitioner's time.

Technical result - increase of caries treatment efficacy, increase of bactericidal effect, lack of pain and reduction of patient's discomfort during the treatment, prevention of secondary caries and its complications.

Due to the fact that this method is simple and fast in execution, causing no discomfort to patients it can be applied to disabled persons.

Class no. 4. Medicine - Health Care - Cosmetics

MD.49.

Title **Method for treating chronic marginal periodontitis**
Authors Spinei Aurelia, Spinei Iurie
Institution “Nicolae Testemitanu” State University of Medicine and Pharmacy of the Republic of Moldova
Patent no. MD 734 Y/ Patent application No 734 Y /2013

Description EN The invention relates to medicine, namely to dentistry and can be used for treating chronic marginal periodontitis.

The method, according to the invention, consists in that it is carried out the sanitation and curettage of periodontal pockets, then therein is applied toluidine blue gel with a concentration of 0.1 mg/ml, for 1...2 min, it is further ir-radiated with LED light with the wavelength of 625...635 nm, the power of 2.0...3.0 W, for 40...60 s, the course of treatment is 1...4 procedures.

Increasing efficacy of treatment of chronic marginal periodontitis increases bactericidal effect, prevents complications, reduces pain and patient discomfort during treatment and the lasting time of treating session.

Due to the fact that this method is simple and fast in execution, causing no discomfort to patients it can be applied to disabled persons.

Class no. 4. Medicine - Health Care - Cosmetics

MD.50.

Title

Method of dental caries treating in children with intellectual disabilities

Authors

Spinei Aurelia

Institution

“Nicolae Testemitanu” State University of Medicine and Pharmacy of the Republic of Moldova

Patent no.

MD 597/ Patent application No.597Z /2013

Description EN

The invention is related to medicine, namely to dentistry and can be used for the treatment of dental caries in children with intellectual disabilities.

The method, according to the invention, consists in that: on the carious dental surfaces a mixture containing 3% of sodium hypochlorite, 0.1% of BioR gel and 0.5% of alkaline fuxine in the ratio 1:1:0.2 is applied during 15...20 s, after removing the altered dental tissues, the carious cavity is treated antiseptically, it is dried and irradiated with laser with wavelength of 0.85...0.98 μm, a frequency of 2000...3000 Hz, impulse power of 5 W, for 20...30 s, then 1...2 drops of suspension containing finely dispersed calcium hydroxide in distilled water are applied on the irradiated surface, and then the second course of irradiation is carried out in the same way, 1...2 drops of the drug comprising a solution containing fluoride (F⁻) and copper (Cu²⁺) ions are applied for deep fluoridation of enamel and dentin, and the third course of irradiation is carried out in the same manner.

The proposed method prevents pain and patient's discomfort during treatment. It prevents secondary dental caries; it is simple and quick in use. High efficiency of the proposed method ensures fast disinfection and cariostatic effect in a short time, but with a long-lasting effect, stops caries spread,

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preventing complications and children's suffering, reduces the duration of treatment session and saves practitioner's time. Due to the fact that this method is simple and fast in execution, causing no discomfort to patients it can be applied to disabled persons.

Class no. 4. Medicine - Health Care - Cosmetics

MD.51.

Title

Method of dental caries prevention in children with intellectual disabilities

Authors

Spinei Aurelia

Institution

"Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova

Patent no.

MD 582/ Patent application No.582 Z /2013

The invention is related to medicine, in particular to dentistry and can be used for dental caries prevention in children with intellectual disabilities.

The method, according to the invention, consists in that the teeth surfaces are repeatedly irradiated with laser of a wavelength of 0.85...0.98 μm , a frequency of 2000...3000 Hz, an impulse power of 5 W, for 30...60 sec, and a drug for deep fluoridation of enamel and dentin, which includes a solution containing fluorine (F) and copper (Cu^{2+}) ions is applied on the irradiated surface, as well as a suspension, containing finely dispersed calcium hydroxide in distilled water, at the same time after the first irradiation 1...3 drops of the mentioned solution are applied on the irradiated surface, and after the second course of irradiation 1...3 drops of the same suspension are applied, after which the third course of irradiation is carried out in the same way, the preventive course is carried out 2...5 times a year.

Description EN

The proposed method provides an increased efficiency dental caries prevention due to an increased bactericidal effect on cariogenic strains, considerable reduction of caries risk, increase of the crystal formation capacity and enamel mineralization. High efficiency of the proposed method ensures protection against dental caries in a short time, but with a lasting effect, allows to reduce preventive sessions, saving practitioner's time and financial resources. Due to the fact that this method is simple and fast in execution, causing no discomfort to patients it can be applied to disabled persons.

Class no. 4. Medicine - Health Care - Cosmetics

The State Agrarian University of Moldova

MD.52.

Title	Process for Preserving of Green Corn
Authors	Caisin Larisa, Vrancean Vasile, Eremia Nicolae, Grosu Natalia
Institution	State Agrarian University of Moldova
Patent no.	Patent application No. 981 MD, 2013/01/02
Description EN	<p>The invention refers to agriculture field, namely to animal feed production. The process conservation of green corn consist with added the biological preservative at level 6,5 g/t in chopped corn meal, which then it is tamped. The preservative is produced in dry form of powder milling waste (bran) by the new technology from lyophilized live microorganisms: <i>Lactobacillus acidophilus</i> - 2×10^9 CFU/g, <i>Lactobacillus plantarum</i> - 1×10^9 CFU/g, <i>Lactobacillus fermentum</i> - 5×10^9 CFU/g, <i>Bifidobacterium bifidum</i> - 3×10^9 CFU/g.</p> <p>The invention allows to extend the shelf life and the safety of the plant mass, to lower the total acidity, and to improve the nutrient content.</p>
Class no.	3.Agriculture and Food Industry

MD.53.

Title	Process of feeding of young pigs
Authors	Caisin Larisa, Carpincic Valeriu, Busev Vitalie, Bivol Ludmila
Institution	State Agrarian University of Moldova
Patent no.	Patent application No. 1156 MD, 2014/04/29
Description EN	<p>The invention relates to agriculture, in particular in the livestock industry and is in the process of growth of the pigs. The method of feeding pigs consists in the use the adsorbent with the mixed fodder for animals from weaning period till the end of its growth. The adsorbent contains: wheat bran - 10%, at least 25% bentonite, at least 25% vermiculite, palygorskite clay 30%, yeast autolysate 5 %, acidifying agent 5%.</p> <p>The preparation-adsorbent provides an effective increase in the live weight (6.83%), adsorbent has improved the average daily gain of animals (on average by 7.83%) and reduced feed consumption of 1.03 kg.</p>
Class no.	3.Agriculture and Food Industry

MD.54.

Title **METHOD OF BEE QUEENS RISING**
Authors Eremia N., Zagareanu A.
Institution **State Agrarian University of Moldova**
Patent no. MD567 Z 2012.12.31

The invention relates to beekeeping, in particular to the process of bee queens rising.
 The method includes the bee families feeding using 50% of sugar syrup, in which is introduced a feed supplement, that includes lacto- and bifid bacteria in a quantity of $1 \cdot 10^6$ CFU/g, and in mass %: strains of lactulose up to 5, yeast extract up to 20, pectin up to 10, in a quantity of 100...200 mg/L of syrup. Bee families are daily feed using one liter of mixture for one raising family, starting from the moment of raising frame introducing with the grafted larvae until the brood will be capped (until 5 days).

Description EN

Class no. 3. Agriculture and Food Industry

MD.55.

Title **METHOD OF BEEKIPING**
Authors Eremia N., Zagareanu A., Caisîn L., Modvala S., Rotaru I., Naraevscaia I.
Institution **State Agrarian University of Moldova**
Patent no. S 2014/0013

The invention relates to beekeeping, in particularly to a method of beekeeping.
 Beekeeping method includes bee' feeding with sugar syrup 50% using feed additive (Beloxan) that includes lacto- and bifidobacteria strains and in mass %: Lactobacillus acidophilus with a titer of 1×10^8 CFU/g – 10, Lactobacillus plantarum with a titer of 1×10^8 CFU/g – 10, Lactobacillus bulgaricus with a titer of 1×10^8 CFU/g – 10, Enterococcus (Streptococcus) faecium with a titer of 1×10^7 CFU/g – 4.5, Bifidobacterium bifidum with a titer of 1×10^8 CFU/g – 10, and pectin – 10, yeast extract – 25, lactulose – 0.5, lecithin – 20, in a quantity of 50.....200 mg/L of syrup. Bee feeding is performed during the spring evenings of the first days of April using 0.5.....1.0 L of mixture for a family once in 6.....12 days until the start of the main harvest, at queens' raising at the time of introduction of frame

Description EN

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with transferred larvae to the nurse family is administered 1.0 L of mixture, and then daily is administered 0.5 L until larvae capping (4 days), at the introduction of the next frame with larvae syrup is administered by the same scheme.

Class no. 3. Agriculture and Food Industry

MD.56.

Title

METHOD OF BEES FEEDING

Authors

Eremia N., Modvala S., Zagareanu A., Caisin L., Naraevsaia I.

Institution

State Agrarian University of Moldova

Patent no.

MD S 2014/0020

The invention relates to beekeeping, particularly to bees feeding.

Description EN

Method is based on bees feeding that includes feeding with sugar syrup of 50%, that includes a feed additive (Vitacorm AD-1) with no less than, in%: humate of sodium/potassium – 0.1, extract/yeast autolysate – 10.0, lactic acid – 5.0, beta glucan – 5.0, in an amount of 1.5....4.5 ml/l of syrup. Feeding is carried out in calculation of 1.0 l of the mix to a bee family in the evening, over each 10.....12 days, beginning with the first days of April till the beginning of the main harvest.

Class no.

3. Agriculture and Food Industry

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

MD.57.

Title	NEW SELENIUM CONTAINING NUTRACEUTICALS FROM ALGAL BIOMASS
Authors	RUDIC V., ŞOVA S., BOGDAN V., DJUR S., CHIRIAC T., RUDI L., CEPOI L., MISCU V., BULMAGA V., IAŢCO Iu.
Institution	<i>Institute of Microbiology and Biotechnology of Academy of Sciences of Moldova, State University of Moldova, FICOTEHFRM LTD</i>
Patent no.	No. MD 130 Z2010.01.31; MD 4122 C1 2012.02.29; MD 4123C1 2012.02.29
Description EN	Is proposed the complex technology for obtaining the new premixes and nutraceutical products with Se for human and animal consumption which includes 3 stages: The obtaining of algal biomass with high concentration of active principles and selenium as effective part; The obtaining from algal biomass with selenium complexes of bioactive compounds with Se (free aminoacids and oligopeptids; phospholipids, sulphated polysaccharides and proteins) by extraction, separation and purification; The obtaining of compositions (technological receipts) of new feed premixes and nutraceutical supplements with Se for human and animal consumption. Applications: Biotechnology and Pharmaceutical producing companies; Human health; Animal health.
Class no.	3. Agriculture and Food Industry 4. Medicine - Health Care - Cosmetics

MD.58.

Title	NEW PROCEEDING FOR OBTAINING ANTIOXIDANT COMPLEX FROM ALGAL BIOMASS
Authors	RUDIC V., COROPCEANU E., CEPOI L., RUDI L., RIJA A., BOLOGA O., BULHAC I., MISCU V., CHIRIAC T., CODREANU S., VALUTA A., SADOVNIC D.
Institution	<i>Institute of Microbiology and Biotechnology of Academy of Sciences of Moldova, Institute of Chemistry of Academy of Sciences of Moldova</i>

INTERNATIONAL EXHIBITS

EUROINVENT 2014

Patent no.	No. MD 4254 C07F 15/06 (2006.01) It is proposed a new proceeding for obtaining antioxidant complex from microalgal biomass of <i>Porphyridium cruentum</i> . The given proceeding includes microalga cultivation in mineral medium supplemented with 0,02-0,022 g/L coordination compound <i>Hexafluorotitanatbis[(dimethylglyoximato)-di(thiocarbamide)cobalt(III)]dihydrate</i> .
Description EN	Antioxidant preparation is obtained from the biomass collected from the 10th day of cultivation by the extraction in 96% ethyl alcohol. Total antioxidant activity of the complex is 0,68 mM/ml ascorbic acid (phosphomolybdic reagent reduction test); antiradical activity is 53-57% inhibition of ABTS or 0,13 mM/mL trolox TEAC index. The ethanol preparation contains 0,35 mg/ml β -carotene.
Class no.	3. Agriculture and Food Industry 4. Medicine - Health Care - Cosmetics

MD.59.

Title	Nutritive medium for fungal strain <i>Fusarium gibbosum</i> CNMN FD 12
Authors	Deseatnic-Ciloci A., Clapco S., Bivol C., Coropceanu E., Bologa O, Stratan M., Tiurin J., Labliuc S., Rija A., Dvornina E., Bulhac I.
Institution	Institute of Microbiology and Biotechnology of Academy of Sciences of Moldova Institute of Chemistry of Academy of Sciences of Moldova
Patent no.	Patent application: a 2013, 0053; 2013. 07.30 The essence of the invention consists in elaboration of a new nutrient medium for submerged cultivation of <i>Fusarium gibbosum</i> CNMN FD 12 fungal strain – producer of proteases, xylanases and β -glucosidases, which in addition to proximate components of the medium contains as stimulator the coordination compound $Zn_2(NiOxH_2)_2(CH_3COO)_4[\gamma_1\gamma\text{-dipy}(H_2O)_2]$.
Description EN	Advantage: The increase of neutral proteases biosynthesis with 48,1 – 107,4% and acid proteases with 52,0 – 201,2%. Applications: Industrial microbiology
Class no.	3. Agriculture and Food Industry

MD.60.

Title	The methods for enhancement of fungal strains enzyme activity with application of millimeter-range electromagnetic radiation
Authors	Deseatnic-Ciloci A., Clapco S., Pasha L., Tiurina J., Labliuc S., Stratan M., <u>Ghitu D.</u>
Institution	Institute of Microbiology and Biotechnology of Academy of Sciences of Moldova
Patent no.	MD 3256
Description EN	<p>The essence of inventions consists in proposing of new procedure of submerged cultivation that includes the exposure of inoculums or/and fungal culture in logarithmic phase of growth to low intensity millimetre waves ($\lambda = 5.6\text{mm}$) emitted in periodic regime.</p> <p>Technical results of inventions consist in increase of pectolytic enzymes biosynthesis by 28,0 - 39,0 % compared to the prototype and reduction of producer cultivation cycle by 24 hours.</p>
Class no.	3. Agriculture and Food Industry

MD.61.

Title	Technology of mannoprotein products obtaining from <i>Saccharomyces</i> yeasts
Authors	Molodoi Elena, Usatfi Agafia, Efremova Nadejda, Fulga Ludmila
Institution	Academy of Sciences of Republic of Moldova Institute of Microbiology and Biotechnology
Patent no.	Patent No. 4216, BOPI 4/2013 Patent No. 4227, BOPI 5/2013
Description EN	<p>The technology is based on the use of <i>Saccharomyces cerevisiae</i> CNMN-Y-18 yeast strain with enhanced potential for synthesis of mannoprotein, optimal parametres of application of millimeter waves of low intensity for inoculum producing, optimized culture medium for mannoprotein biosynthesis, are proposed in wine production, food industry and cosmetics.</p>
Class no.	3. Agriculture and Food Industry

MD.62.

Title	<i>Saccharomyces cerevisiae</i> yeasts – source of antioxidant enzymes
Authors	Efremova Nadejda, Molodoi Elena, Usatii Agafia, Fulga Ludmila
Institution	Academy of Sciences of Republic of Moldova Institute of Microbiology and Biotechnology
Patent no.	Patent no. MD 4205, Patent no. MD 4243
Description EN	The cycle of inventions relates to the production of antioxidant enzymes (superoxid dismutase and catalase) intended for neutralization of harmful consequences of oxidative stress, from <i>Saccharomyces</i> yeast strains with the perspective of utilization in pharmaceutical, cosmetic and food industries.
Class no.	3. Agriculture and Food Industry

MD.63.

Title	A method for treatment of potato against the <i>Ditylenchus destructor</i> nematode
Authors	Melnic M., Rusu St., Erhan D., Onofras L., Todiras V., Slanina V.
Institution	Institute of Zoology of the Academy of Sciences of Moldova Institute of Microbiology and Biotechnology of the Academy of Sciences of Moldova
Patent no.	MD719
Description EN	The process consists in treating, in bathing, of the potato prior to planting with an aqueous solution of the culture liquid containing the bacteria <i>Pseudomonas fluorescens S CNM 11 - PFB-01</i> . The process takes place in one time with a subsequent exposure time of 20 hours, using a variety of 1:100-1:500 dilutions. After that the processed potatoes are exposed to air drying.
Class no.	3. Agriculture and Food Industry



**Academy of Sciences of Republic of Moldova
Institute of Chemistry**

MD.64.

Title	Nitrate-trans-bis(dimethylglyoximato)bis(nicotinamide)cobalt(III)dihydrate – compound with antioxidant properties upon plants
Authors	Ștefîrță Anastasia, Bulhac Ion, Melenciuc Mihai, Buceacea Svetlana, Bologa Olga, Ciobănică Olga
Institution	Institute of Chemistry of Academy of Sciences of Moldova, Institute of Genetics, Physiology and Plant Protection of Academy of Sciences of Moldova
Patent no.	MD 7704/20.12.2013
Description EN	The invention relates to chemistry and biotechnology, in particular to coordinative compounds that can be used as antioxidants in agriculture. According to the invention, the coordinative compound-nitrate-trans-bis(dimethylglyoximato)bis(nicotinamide)cobalt(III)dihydrate, exhibiting antioxidant properties in plants is claimed.
Class no.	3. Agriculture and Food Industry

MD.65.

Title	Tetraizothiocyanatocobaltate of bis(nicotinoylhydrazone)-2,6-diformil-4-methylphenol(methanol)(aqua)cobalt(II) and process for cultivation of microalga <i>Porphyridium cruentum</i> with the use thereof
Authors	Rudic Valeriu, Danilescu Olga, Bulhac Ion, Cepoi Liliana, Rudi Ludmila, Mitina Tatiana, Rija Andrei, Miscu Vera, Chiriac Tatiana, Sadovnic Daniela
Institution	Institute of Chemistry, Institute of Microbiology and Biotechnology of Academy of Sciences of Moldova
Patent no.	4255 B1 MD/2014
Description EN	The invention relates to chemistry and biotechnology, in particular to the synthesis of a new coordinative compound of cobalt(II) and to a process for cultivation of microalga <i>Porphyridium cruentum</i> with the use thereof. According to the invention, a coordinative compound tetraizothiocyanatocobaltate of bis(nicotinoylhydrazone)-2,6-diformil-4-methylphenol(methanol)(aqua)cobalt(II) is claimed. Also, a process for cultivation of microalga <i>Porphyridium cruentum</i> is claimed. The result consists in increasing the antioxidant activity of the ethylic extract obtained from microalga biomass.
Class no.	3. Agriculture and Food Industry

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

MD.66.

Title	Method of preplant processing of winter wheat grains
Authors	Botnari Vasile, Vasilachi Iuliana, Borovskaia Alla, Nedova Irina, Kintia Pavel
Institution	Institute of Genetics, Physiology and Protection of Plants, Academy of Science of Republic of Moldova
Patent no.	Patent application No. MD 2013 0189, 2013.11.08
Description EN	The invention consists in treatment of winter wheat grains with 0.005% aqueous solution of Scrofularioside which leads to increasing the length by 20.0% and 71.1% of rootlet and germ, respectively. Preplant treated grains give good rooting plants, the frost and drought resistance of which raises.
Class no.	3. Agriculture and Food Industry

MD.67.

Title	A process for obtaining the composition of polyphenolic antioxidants from walnut kernels (<i>Juglans regia</i> L)
Authors	Raisa IVANOVA
Institution	Institute of Genetics, Physiology and Protection of Plants, Academy of Science of Republic of Moldova
Patent no.	Patent application No. MD a2013 0065, 2013.09.16
Description EN	The invention relates to a process for preparing the composition of polyphenolic antioxidants from pellicles of walnut kernels (<i>Juglans regia</i> L.) and can be used in agriculture, food and pharmaceutical industries, in medicine and cosmetology. This process includes the separation of pellicles from the kernels, drying, grinding, extracting by simple maceration using 20 ... 70% ethyl alcohol at the temperature of 15...30°C with constant shaking and separation of polyphenolic antioxidants. The technical result is obtaining a new composition of polyphenolic antioxidants with enhanced ability to free radicals scavenging activity
Class no.	3. Agriculture and Food Industry

MD.68.**Title**

A process for obtaining the composition of polyphenolic antioxidants

Authors

Raisa IVANOVA, Pavel TATAROV

Institution

Institute of Genetics, Physiology and Protection of Plants, Academy of Science of Republic of Moldova

Patent no.

Patent application No. S2014 0014, 2014.01.29

The invention relates to a process for preparing the composition of polyphenolic antioxidants from walnuts (*Juglans regia* L.) and can be used in agriculture, food and pharmaceutical industries, in medicine and cosmetology.

Description EN

This process includes the separation of pellicles from the kernels, degreasing, drying, grinding, extracting by simple maceration using 20 ... 60% ethyl alcohol at the temperature of 15...30°C with constant shaking and separation of polyphenolic antioxidants.

The technical result is obtaining a new composition of polyphenolic antioxidants with enhanced ability to free radicals scavenging activity.

Class no.

3. Agriculture and Food Industry

MD.69.**Title**

FABA BEAN (*Vicia faba* L.) var. Jeca

Authors

Valentin Celac

Institution

Academy of Science of Moldova, Institute of Genetics, Physiology and Plant Protection

Patent no.

Pending

Description EN

The invention is related to the new faba bean cultivar created and introduces in agriculture of R. Moldova, with improved resistance to drought and diseases, produces a bean yield 2,85 t/ha. Protein content in seeds – 28,5 – 30,2%, fat – 1,2%. The vegetative period - 90 days.

Class no.

3. Agriculture and Food Industry

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

MD.70.

Title	Mediums for cryopreservation of human sperm
Authors	Borotchuc G., Roşca N., Balan I., Cazacov Iu., Bucarchuc M., Mereutsa I., Buzan V.
Institution	The Institute of Physiology and Sanocreatology of the Academy of Sciences of Moldova
Patent no.	Patent MD 58, 201, 718
Description EN	Due to selected components and proposed proportions, the cryopreservation mediums assure the stability of spermatozoa's membranary structures during the cryopreservation process. The mediums created on the basis of the biological active substances allow firmly increasing of sperm's physiological indexes after thawing in comparison with native sperm, which provides a high quality of donor's reproductive material. These findings could be applied in sanocreatology, cryobiology and criomedicine.
Class no.	4. Medicine - Health Care - Cosmetics

MD.71.

Title	Biologically active food additives (innovative products)
Authors	T. Strutinsky, M. Petreanu, M. Timoshco.
Institution	The Institute of Physiology and Sanocreatology of the Academy of Sciences of Moldova
Patent no.	Patent MD 3879, 253, 290
Description EN	Biologically active food additives with a broad spectrum the action, having positive effect on processes of secretion, motor and evacuation functions of the gastrointestinal tract, stimulate multiplication of obligate intestinal microflora and inhibits pathogenetic microflora, profilacte of gerontologic and stimulate immune processes.
Class no.	3. Agriculture and Food Industry

Republic of Moldova

Ministry of Health

National Scientific-Practical Center of Emergency Medicine
(NCPCEM)

MD.72.

Title **METOD OF ZYGOMATIC COMPLEX FRACTURE OSTEOSYNTESIS.**

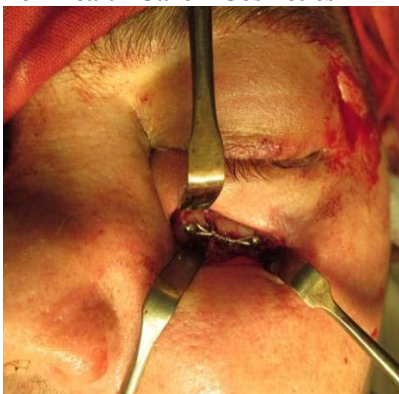
Authors **CIOBANU Gheorghe, PROCOPENCO Olga, TOPALO Valentin, ȘIRBU Dumitru**

Institution **National Scientific-Practical Center of Emergency Medicine (NCPCEM)**
State Medical and Pharmaceutical University „N.Testemițanu”

Patent no. **Brevet AGEPI–MD Nr.558 din 2013**

Description EN The method relates to medicine, particularly in oromaxillo-facial surgery, traumatology and is intended for reduction and fixation of fracture fragments by fixation displaced zygomatic complex. The problem is solved by the proposed method zygomatic complex fractures fixation with minimally invasive procedure with low complications and maintaining bone fragment in the correct anatomical position.

Class no. **4. Medicine - Health Care – Cosmetics**



MD.73.

Title **THE METHOD OF MODELING OF ACUTE LUNG INJURY CAUSED BY POLYTRAUMA.**

Authors ARNAUT O., CIOBANU Gh., SAULEA A., ȘANDRU S., MUNTEANU A., GRABOVSCI I., CLIM A., VOVC V., COBĂLEȚCHI S., BALTAGA R., LOZOVANU Svetlana

Institution **National Scientific-Practical Center of Emergency Medicine (NCPCEM)**

Patent no. AGEPI-MD OȘ N.3734 / 09.07. 2013

The method of modeling of acute lung injury caused by polytrauma relates to medicine, particularly to experimental medicine, resuscitation and intensive therapy, and is intended for modeling ALI / ARDS caused by politrauma in rabbits in order to study the physiopathology of politrauma and histopathologically changes in real time.

Description EN The priority of this method is that it allows us to study the functional and histological changes in rabbits, that is the relevant processes in the human body, as a simple, affordable and very cost effective. For the first time, an experimental model of ALI/ARDS in polytrauma. Were highlighted systemic inflammatory response syndrome (SIRS), caused by multiple injuries, which corresponds to the definition of polytrauma, as well as the occurrence of acute pulmonary dysfunction, reflected in the decrease in the partial pressure of oxygen in the lungs in real time.

Class no. **4. Medicine - Health Care – Cosmetics**

MD.74.

Title **DICOM Viewer INTEGRATĂ ÎN SISTEMA „HIPOCRATE” PENTRU AFIȘAREA ȘI ANALIZAREA IMAGINE CT/Rg.**

Authors CIOBANU Gh., GABERI R., GOLUBEV N.

Institution **National Scientific-Practical Center of Emergency Medicine (NCPCEM)**

Patent no. AGEPI-MD OȘ Nr.3734 / 09.07. 2013

Description EN DICOM CT/Rg Viewer softul permiteți afișarea rezultatelor imagistice. DICOM CT/Rg Viewer a fost integrat în sistemul informațional medicală" SII

HIPOCRATE" și utilizat pentru prelucrarea și analizarea imaginii tomografiei computerizate, roentgenografiei, ultrasonografiei și angiografie, etc. și au fost utilizat nemijlocit de către medici. Experiența de lucru cu acest softul oferă specialiștilor avantaje vădite investigarea datelor și luarea deciziilor de tratare, în apelarea la suportul specialiștilor autohtoni și din alte țări bazat pe standardul DICOM cu utilizarea rețelilor deschise.

Class no.

4. Medicine - Health Care – Cosmetics

**MD.75.****Title**

SURGICAL CORRECTION OF LATE COMPLICATIONS OF PERMANENT VASCULAR ACCESS USING VASCULAR PROSTHESES

Authors

VASILIEV Andrei, MIȘIN Igor, TĂNASE Adrian, MASTAK Dumitru

Institution

National Scientific-Practical Center of Emergency Medicine (NCPCEM)

Patent no.

AGEPI-MD OȘ Nr. 3797 /22.10. 2013

Description EN

Some patients needing the program dialysis, have vascular depletion and a sharp decline in the possible locations for AV. One of the methods of complications of surgical correction of the AVP is the use of synthetic vascular grafts of polytetrafluoroethylene (PTFE). In this context outline two basic directions: the formation of new vascular access graft using PTFE as a result of depletion of reserves and keeping AVP-existing vascular reconstruction FAV PTFE graft. Selecting irrational segment FAV placement and type is resulting in the reduction potential of FAV native locations and in many patients the use of PTFE grafts are single and / or final way to continue the treatment.

Class no. 4. Medicine - Health Care – Cosmetics



Fig. 1. Multiple venous aneurysm
+ Stenosis venous proximal.

Fig. 2. Segmental prosthesis within the
vein intact native FAV



Fig. 3. The final aspect of reconstruction

MD.76.

Title

**MONITORING ALGORITHM OF LATE
COMPLICATIONS OF VASCULAR ACCESS FOR
PROGRAMMED HEMODIALYSIS.**

Authors

**VASILIEV Andrei, MIȘIN Igor, TĂNASE Adrian,
MASTAK Dumitru**

Institution

**National Scientific-Practical Center of Emergency
Medicine (NCPCEM)**

Patent

AGEPI–MD OȘ Nr. 3799 / 22.10. 2013

Description EN

The main cause of developing venous aneurysm are genuine multiple punctures with the same location and the presence of proximal venous stenosis, as confirmed by the prevalence of multiple aneurysms appropriate puncture sites. In this context it should be mentioned that these aneurysms are prone of complications and reconstructive interventions. Pathological changes of the fistular directly near the anastomosis of the vein and the use of the SPA as the primary cause of vascular access stenosis development of native FAV. Dopplerography characteristics of blood flow through complicated FAV stenosis (reduced blood flow, increased peripheral resistance index) is the main diagnostic criteria of this type of complication.

Class no.

4. Medicine - Health Care – Cosmetics



Fig. 1. Multiple aneurysms a FAV native: the region of the anastomosis and the puncture site.



Fig. 2. 3D-CT angiography of multiple aneurysms: anastomosis region and puncture site.

MD.77.

Title RATIONAL APPROACHES IN CORRECTION OF LATE COMPLICATIONS OF VASCULAR ACCESS USING NATIVE VESSELS.

Authors VASILIEV Andrei, MIȘIN Igor, TĂNASE Adrian, MASTAK Dumitru

Institution National Scientific-Practical Center of Emergency Medicine (NCPCEM)

Patent AGEPI–MD OȘ Nr. 3796 /22.10. 2013

Description Patient's vascular reserves are the main factor influencing the selection of the optimal method of surgical correction of complications AVP. Making use of IR dish native fistular vein in reduced time to diagnosis complications of hemodialysis allows the next meeting via FAV rebuilt. V.basilica diameter in the distal portion of the arm is the determining factor for selecting the AVP education. Presence v.basilica diameter > 4.0 mm is provided mandatory training FAV BB with subsequent rearrangement v.basilica. If insufficient diameter is indicated formation v.basilica FVA PTFE.

EN

Class no. 4. Medicine - Health Care – Cosmetics



Fig.1. Vascular-nervous elements of the package



Fig. 2. Projection v.basilica anterolateral surface of the arm

Institute of Crop Science "Porumbeni"
Republic of Moldova

MD.78.

Title	<i>Hibrid of corn, Porumbeni 270CRf</i>
Authors	N.Vanicovici., S. Musteața, P. Borozan, L. Nujnaia, V. Știrbu, E.Partas, N.Frunze, V.Gorceacov, C. Guțanu, I. Frunze, V. Micu, I. Bejenari, S.Mistreț., A.Rotari, G.Pritula, .
Institution	Institute of Crop Science "Porumbeni"
Patent	Patent no. MD108, 2012.08.31. Patent application no.080413/8-2013
Description EN	Medium three-way cross hybrid of maize, FAO 270. The kernel is dent, yellow, with an average content of 11.5% protein, 4.7% oil and 70.5% starch, weight of 1000 kernel is 300-315 g. Potential productivity 10-12 t/ha. High resistance to spring cool conditions. Resistant to lodging and drought. Tolerant to diseases and pests. Fast grain dry down. Registered in Bielorrussia for grain and silage use.
Class no.	3. Agriculture and Food Industry

MD.79.

Title	<i>Hibrid of corn, Porumbeni 375MRf</i>
Authors	V. Gorceacov., G. Pritula., N. Vanicovici., V. Micu., I. Bejenari., N. Frunze., C. Guțanu., E. Partas., V. Ciobanu., I. Garbur., I. Frunze., V. Știrbu.
Institution	Institute of Crop Science "Porumbeni"
Patent	Patent no.MD117, 2012.10.31. Patent application no. 240413/1-2013; 080413/8-2013
Description EN	Medium modified single cross hybrid of maize, FAO 380. The kernel is dent, yellow, with an average content of 11.8% protein, 3.9% oil and 70.1% starch, weight of 1000 kernel is 280-300 g. Potential productivity 10-12 t/ha, silage yield is 40-45 t/ha. Resistant to lodging and drought. Tolerant to diseases and pests. Registered in Moldova for grain and silage use.
Class no.	Agriculture and food industry 3. Agriculture and Food Industry

MD.80.

Title	<i>Hibrid of corn, Porumbeni 458MRf</i> G. Pritula, S. Mustețã, V. Gorceacov, N. Frunze, N. Vanicovici, V. Micu, V. Știrbu, I. Garbur, C. Guțanu, G. Caraivanov, V. Pojoga, E. Partas, V. Ciobanu, I. Frunze, A. Rotari, A.Iurcu
Authors	
Institution	Institute of Crop Science "Porumbeni"
Patent	Patent no.MD112, 2012.09.30. Patent application no.080413/8-2013; 240413/1-2013; Medium-late single cross hybrid of maize, FAO 450. The grain is dent, yellow, with an average content of 9.5% protein, 4.2% oil and 71.0% starch, weight of 1000 kernel is 260-300 g. Potential productivity 13-14 t/ha, silage yield is 40-45 t/ha. Resistant to drought, highly resistance to falling and breaking of the strains. Tolerant to diseases and pests. Responsive to high yield environment and irrigation. Registered in Moldova, Russia and Ukraine for grain and silage use.
Description EN	
Class no.	3. Agriculture and Food Industry

MD.81.

Title	<i>Hibrid of corn, Porumbeni 461MRf</i> G. Pritula, V. Gorceacov, N. Frunze, N. Vanicovici, V. Micu, V. Știrbu, I. Bejenari, E. Partas, V. Ciobanu, I. Garbur, I. Frunze, C. Guțanu, A. Rotari
Authors	
Institution	Institute of Crop Science "Porumbeni"
Patent	Patent no.MD109, 2012.08.31. Patent application no. 240413/1-2013 Medium-late single cross hibrid of maize, FAO 460. The grain is dent, yellow, weight of 1000 kernel is 300-310 g. The average content of 9,3% protein, 4,1% oil and 72,0% starch. Potential productivity 14.0-15.0 t/ha, silage yield is 40.0-50.0 t/ha. High resistance to drought, diseases and pests. Has a excellent resistance to lodging. Responsive to high yield environment and irrigation. Registered in Moldova for grain and silage use.
Description EN	
Class no.	3. Agriculture and Food Industry

MD.82.

Title	<i>Hibrid of corn, Porumbeni 459MRf</i>
Authors	G. Pritula, S. Musteță, V. Gorceacov, N. Frunze, N. Vanicovici, V. Micu, V. Știrbu, I. Garbur, C. Guțanu, G. Caraivanov, V. Pojoga, E. Partas, V. Ciobanu, I. Frunze, A. Rotari, A. Iurcu, I. Bejenari
Institution	Institute of Crop Science "Porumbeni"
Patent	Patent no.MD107, 2012.08.31. Patent application no. 240413/1-2013
Description EN	Medium-late single cross hybrid of maize, FAO 460. The grain is dent, yellow, with an average content of 9.5% protein, 4.2% oil and 71.0% starch, weight of 1000 kernel is 260-270 g. Potential productivity 14-15 t/ha, silage yield is 40-50 t/ha. Resistant to drought. Tolerant to diseases and pests. Responsive to high yield environment and irrigation. Registered in Moldova for grain and silage use.
Class no.	3. Agriculture and Food Industry

**Agency for Innovation and Technology Transfer
Republic of Moldova**

MD.83.

Title	Burner head for burning wood chip
Authors	Anastasov Serghei
Institution	Goliat-Vita SRL Company
Patent	Patent application No. S20140034 from 17.03.2014 The invention relates to the heat-power engineering, in particular for burners for combustion of solid fuel and can be used to burn different wood waste, for example in the production of furniture, as well as furnaces of hot-water boilers.
Description EN	
Class no.	2. Energy and sustainable development

MD.84.

Title	New tomato cultivare Tomiș
Authors	Mihnea Nadejda, Grati Maria , Jacotă Anatol , Ganea Anatol, Lupașcu Galina
Institution	Institute of Genetics, Physiology and Plant Protection
Patent	MD 148 2014.04.30 New tomato varieties <i>Tomiș</i> have been developed at the Institute of Genetics, Physiology and Plant Protection. The fruits of the variety <i>Tomiș</i> are large with weighing 100-115 gr., round shaped ($I = 0.95$). The number of seed lobes is 3-4, the seed number per fruit is more than 100. The fruits contain 4,0...5,8% of dry matter, 4,5...4,7% of sugars, 22...51 mg/% of vitamin C, 0,53...0,60% of acidity. The variety is early ripening with a vegetation period is 95-105days. In the cultivation through both seeds, the variety ensures a total yield makes 48.0..60.0 t/ha, the marketable yield is 45.0-54.0 t/ha. The variety <i>Tomiș</i> harmoniously combines high productivity, good tasting qualities with the resistance to cold and drought. The productivity is high at cultivation through both seeds and seedling transplants.
Description EN	
Class no.	3. Agriculture and Food Industry



MD.85.

Title

High productivity *Salvia sclarea* L. (Clary Sage) early variety *Ambra Plus*

Authors

Gonceariuc Maria, Balmuş Zinaida, Cotelea Ludmila

Institution

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

Patent

MD 142 2013.10.31

Description EN

We offer the new high-effective early variety of **Clary sage** (*Salvia sclarea* L.) *Ambra Plus*, which is winter hardiness, resistant to drought and diseases, and with an enhanced producing capacity. The variety represent very complex hybrid and suitable for both processing technology of raw material as well as production of essential oil through distillation and production technology of concrete through organic solvent extraction. The *Ambra Plus* variety flowering in the first, second and third year of vegetation. The **essential oil** producing capacity of variety *Ambra Plus* is 73 kg/ha (I year-18.0 kg/ha, II year-31.5 kg/ha, III year-23 kg/ha) with a high concentration of linalyl acetate (65%) and sclareol (6.0%), as well as **concrete** producing capacity – 200-250 kg/ha with a high content of sclareol (60-70%). This variety together with other medium and late ripening varieties form a conveyer during harvesting, which allows a gradual harvesting of each variety and ensures a substantial reduction of raw material and essential oil losses. Thus, this contributes to the increase of the areas occupied with sage and processing of a higher quantity of raw material while expanding industrial processing capacities.

Applications: Agriculture (production of raw material (inflorescences), processing, essential oil and concrete production); perfumery (component in producing of the high quality perfume), medicine (balneology: baths, massage; treatment diseases of the respiratory apparatus, rheumatic diseases).

Class no.

3. Agriculture and Food Industry



MD.86.

Title	<i>Coriandrum sativum</i> L. (Coriander) new high-effective variety Aromat
Authors	Gonceariuc Marie, Balmus Zinaida, Botnarenco Pantelimon, Cotelea Ludmila, Mascovteva Svetlana, Butnaras Violeta
Institution	Institute of Genetics, Physiology and Plant Protection Academy of Sciences of Moldova
Patent	MD 133 2013.10.31
Description EN	The variety of <i>Coriandrum sativum</i> - Aromat is an annual plant, with erect cylindrical stems, glabrous, strongly branched 60.0 cm height. Leaves are bright green, broadly lobed near the base, and longer and thinner on the flowering stems. Flowers are pale pink on the beginning and after that are white, produced in small, shortly-stalked umbels. The Aromat is early variety, harvested in mid-July. The fruits content 1.087-1.426 % (dry matter) of essential oil. A one gram containing 159 seeds (fruit). The production of fruit is 1.2 t/ha, and of essential oil – 16.1 kg/ha. Applications: Agriculture, Essential oil production; Food industry; Medicine
Class no.	3. Agriculture and Food Industry



Coriandrum sativum variety Aromat, plant, fruit (seeds)

MD.87.

Title	<i>Salvia officinalis</i> L. (Garden Sage, Common Sage) variety Miracol
Authors	Gonceariuc Marie, Balmus Zinaida
Institution	Institute of Genetics, Physiology and Plant Protection Academy of Sciences of Moldova
Patent	MD 123 2013.10.31
Description EN	Perennial, evergreen shrub 73.0 cm height, diameter, 85 cm in diameter with, 62 shoots in each plant. Its leaves are oblong to

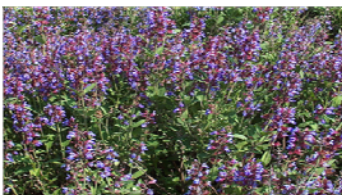
EUROINVENT 2014

5.6 cm width, finely toothed and hairy, gray-green in color. Flowers are in whorls, violet-blue. Inflorescences are 16.5 cm length. The yield of fresh herbs in July is 3.0 t/ha or 0.85 t/ha leaves. Content of essential oil in shoots with leaves – 1.572% (dry matter), in leaves – 1.543% (dry matter). The essential oils production of variety Miracol is 18.0-20.0 kg/ha. Essential oil from shoots with leaves contain 22 compounds and oil separated from leaves - 20 compounds. Main compounds of essential oil separated from shoots with leaves are: α -tujon (33.79%), camphor (24.59 %), and eucalyptol (8.416%).

In essential oil separated from leaves major compound are: α -tujon (21.24%), camphor (19.144%), β -tujon (16.20%) and eucalyptol (10.372%)

Class no.

3. Agriculture and Food Industry



MD.88.

Title

LAVENDER (*LAVANDULA ANGUSTIFOLIA* MILL.) VARIETES-CLONES

Authors

Gonceariuc Marie, Balmus Zinaida

Institution

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

Patent

Variety-clone Moldoveanca-4, no. MD 73 2010.07.31

Variety-clone Alba 7, no. MD 75 2010.07.31

Variety-clone Vis Magic 10, no. MD 74 2010.07.31

We offer three varieties-clones of *Lavandula angustifolia* Mill. (**Lavender**) with different term of ripening: early - Moldoveanca-4, late – Alba-7; middle ripe - Vis Magic-10

Innovative Aspects and Main Advantages

New varieties are distinguished by: **frost resistance, winter hardiness, drought and disease resistance.**

Description EN

The varieties are characterized by:

high yield of inflorescences: Moldoveanca 4, 12.8t/ha, Vis magic 10, 7.4t/ha; Alba 7, 12.8t/ha.

high content of essential oil, 3.491-5.376 % (dry matter)

high productivity of essential oils:

Moldoveanca 4, 178kg/ha; Vis Magic 10, 132kg/ha; Alba 7, 250kg/ha; high **quality** of essential oil.

Varieties are different in terms of harvest time and facilitate to

EUROINVENT 2014

extend the lavender harvest period with 15 days. This varieties form a conveyer during harvesting, which allows a gradual harvesting of each variety and ensures a substantial reduction of raw material and essential oil losses.

Applications: Agriculture (production of raw material, processing, essential oil production); perfumery (component in producing of the perfume), medicine (balneology: baths, massage; treatment diseases of the respiratory apparatus, rheumatic diseases).

Class no.

3. Agriculture and Food Industry



Alecru Russo State University of Bălți

MD.89.

Title

Ionospheric effects of wind shear

Authors

Valeriu ABRAMCIUC

Institution

Alecru Russo State University of Bălți

The paper presents results of theoretical and applicative researches of the specific wind structures that have been observed experimentally in the E region of terrestrial ionosphere. It has been demonstrated that the action of these winds at altitudes in the range ~ 90 -120 km, form intense layers of free electric charges. This layers is formed in the dynamo region of the ionosphere when metallic ions of meteoric origin are converged vertically in a wind shear. This layer-forming process is controlled fully by ion dynamics, which can be adequately expressed through a simplified version of the ion momentum equation.

In the simplified version, neglecting pressure gradient (diffusion) forces at E region heights, gravity, as well as electric field forces at middle and low latitudes, the equation of ion motion includes at steady state only the ion-neutral collisional and geomagnetic Lorentz forces:

$$m_i v_i (\vec{v}_i - \vec{U}_n) - e \vec{V}_i \times \vec{B} = 0, \quad (1)$$

where m_i and v_i are the ion mass and ion-neutral collision

frequency, \vec{v}_i and \vec{U}_n are the ion drift and neutral wind velocities respectively, e is the electronic charge, and \vec{B} the geomagnetic field vector. By adopting a geomagnetic south, geomagnetic east and vertically up Cartesian (x, y, z) coordinate system for the northern hemisphere, and using the notations for the vectors $\vec{V}_i(u, v, w)$, $\vec{U}_n(U, V, W)$ and $\vec{B}(-B \cos I, 0, -B \sin I)$, Equation (1) can be solved for the (positive upwards) vertical ion drift:

$$w = \frac{v_i \cdot \cos I}{\omega_i} \cdot V + \frac{\cos I \cdot \sin I}{1 + \left(\frac{v_i}{\omega_i}\right)^2} \cdot U \quad (2)$$

Here, I denotes the magnetic dip angle while $\frac{v_i}{\omega_i}$ is the ratio

of ion-neutral collision frequency to ion gyrofrequency, which introduces an altitude dependence through the decrease with altitude of the ion-neutral collision frequency.

Appearance applied - these layers substantially alter the conditions of propagation of radio waves in a wide frequency range, including mobile networks and satellite telecommunications.

Class no.

Innovative Research

INTERNATIONAL EXHIBITS

MD.90.

Title

The plasma lenses in the ionosphere and their contributions to the perturbation of radiocommunication

Authors

Valeriu ABRAMCIUC

Institution

Alecu Russo State University of Bălți

Article refers to research of conditions for radio and television communications in the near Earth cosmic space. It presents the results of the simulation of plasma inhomogeneities in the form of lenses, that may have formed, under certain conditions, in a natural way, in the E region of the ionosphere. Many such inhomogeneities form the screen which greatly violates radio and television communications, including mobile phones, on lines earth - satellite or ground - ground through the ionosphere.

Modeling results are presented in the figure, which shows the h - x cross-section of one inhomogeneity and shows several contour lines (lines of equal concentrations of ions/electrons).

Description EN

Using real values of parameters for the external contour, having a minimum concentration of ions/electrons, the following equation is obtained:

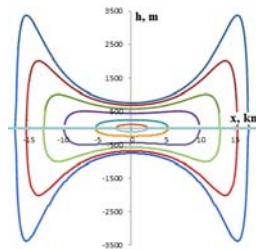
$$h^2 = [2,866 - 0,01 \cdot x^2] \cdot \exp(50 \cdot x^2).$$

Dimensions of inhomogeneities in the shape of the lens are approximately as follows: in the horizontal direction of 40 - 50 km, in the vertical direction of about 3 - 5 km. The concentration of charged particles within the inhomogeneity can be both higher and lower than the concentration outside the lens.

The appearance on the path of radio waves of such irregularities may give rise to focusing or defocusing effects of the signal, to the observation of high level flicker of signal and/or phase, as well as other undesired effects.

Class no.

Innovative Research



Poland

Represented by Eurobusiness-Haller

PL.1.

Title	Innovative flame retarded polymeric polyester nanocomposites for environmental applications by CC-GRP system
Authors	Ewa Kicko-Walczak, Grażyna Rymarz and Barbara Cichy, Marta Stechman
Institution	Institute for Engineering of Polymer Materials and Dyes in Toruń- Poland
Patent no.	Pol.Pat. Appl.P.399236(2012) and International Pat. PCT/PL2012/000055
Description EN	<p>The subject of the inventions is possible to obtain innovation, constructional flame retardant polyester nanocomposites, which are to be matrix possible production of ecological polymers materials by CC-GRP system. Innovation of elaborated resins rely on using for the first time in Poland and the World synergy-based, multi-component halogen-free mixture flammability reducing modifiers-phosphate/nitrogen additives-cooperating with special choice nanofillers, mainly montmorillonite, expandable graphite and synthetic silica. Small share such constructed flame inhibitors has to reduce the level of flammability of products without negative influence on each mechanical properties. The technology on base this inventions are way of transformation of materials what make possible for using of new ecological production according to adequate UE regulations. The products are application in building, transportation, shipbuilding, home applications and electronic industry. The technology are original, protected by Pol. Pat.Apll. P.399236(2012) ; Intern. Pat. PCT/PL 2012/000055 and prepared for offer of commercialisation in above applications.</p>
Class no.	12. Safety, protection and rescue of people



PL.2.

Title	Skeletal striated muscle examination instrument & new method of myofascial pain diagnosis based on the use of the instrument
Authors	Elżbieta Skorupska, Michał Rychlik, Poznan University of Medical Sciences, Department of Physiotherapy, Rheumatology and Rehabilitation.
Institution	Poznan University of Technology, Faculty of Machines and Transport, Department of Virtual Engineering.
Patent no.	Patent application: P 403467 [WIPO ST 10/C PL403467], 2013-04-08 The subject of our invention is a new, globally unique technique of evoking short-term vasodilation in the pain area - Thermovisual Technique of Dry Needling (TTDN). The technique can be used in diagnosing treatment-resistant myalgias of anti-inflammatory character and radiculopathies, which are related to sympathetic nervous system activity (e.g. sciatica, migraine). Confirmation and recording of vasodilation In the pain area of the patient objectifies examination results and sheds new light on understanding the pathomechanism of pain, i.e. in sciatica patients. It also changes the way myofascial pain is viewed. Anticipated effects resulting from the use of the invention: • Social effects: - An additional diagnostic method confirming palpatory criteria of myofascial pain diagnosis, - Confirmation of coexistence of myofascial pain among i.e. sciatica and headache patients, - Increased usage efficiency and comfort due to the ergonomic needle handle, - Lower risk of needle fracture (inside the body) and its consequences. • Economic effects: - Longer working hours thanks to the improved ergonomics of needle handle, - Treatment cost reduction through accurate diagnosis, - Shortening the time of patient incapacity for work, • Financial effects: - Eliminating the costs of additional tests needed to confirm the diagnosis,
Description EN	

- Lower costs of pain medication.

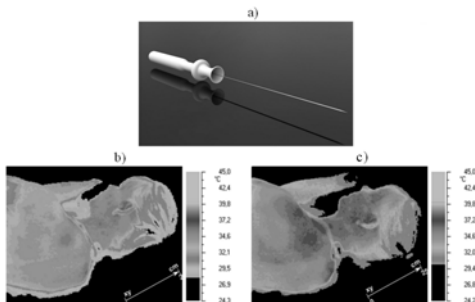
The implementation process of the invention is twofold:

- 1) Implementation of a new diagnostic procedure in neurology and orthopaedics,
- 2) Production and use of a new instrument for skeletal striated muscle examination.

Additionally, the instrument can be used in all medical procedures related to acupuncture needle use.

Class no.

4. Medicine - Health Care - Cosmetics



The instrument – a specially-profiled acupuncture needle handle (a) and visualization of the pain area of a patient with a confirmed myofascial pain diagnosis – migraine: (b) pre-TTDN, (c) post-TTDN (pain area are marked with orange and red-dark colour in BW image)

PL.3.

Title

3D space measuring device of human upper limb reaches and forces, especially of disabled and elderly persons

Authors

Piotr Pohl, Bogdan Branowski, Sebastian Głowala, Jarosław Gabryelski, Maciej Sydor, Marek Zabłocki

Institution

Poznań University of Life Science

Patent no.

P. 407661 (Polish Patent Office)

Description EN

The object of the invention is a device which allows measurements of the operational space and forces of people. It makes possible determination of the spatial map of forces of reaches of human arms. It is an all-purpose device which allows measurement of reaches as well as forces of both upper limbs in all spatial directions: up – down, left – right as well as towards and away from the person. The device possesses virtual measuring planes which do not get in the way of the measured person. Such solution makes it possible to measure both able-bodied and disabled persons, in a

sitting and standing position without the need of readjusting the device.

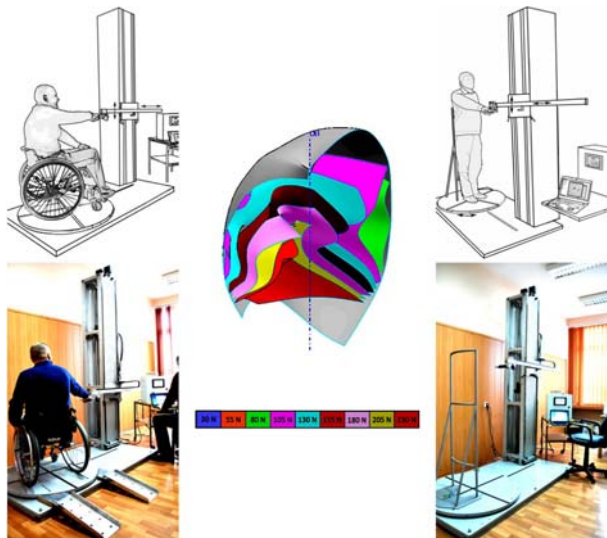
The method of gathering and storing measuring data is fully automatic. The results of measurements presented in an attractive visual form of fixed-force spatial surfaces are perfectly suitable for their implementation into CAD software. In addition, measurement results can be used to determine optimal position of various objects (e.g. tools, elements of equipment etc.) in relation to the user. This can be useful, in particular, in: 1/ designing work stations, 2/ designing furniture, 3/ planning distribution of goods in supermarkets, 4/ designing of the driver's seat in vehicles.

The device manufactured in accordance with the patent was used to perform investigations on the following two groups: one group representing a sub-population of males aged 65+ and another group made up of a subpopulation of disabled persons on wheelchairs.

The enclosed Figures show diagrams of the application of the device in accordance with the patent documentation, photographs of persons examined on measuring stations as well as graphic representation of the research results

Class no.

Innovative Research



PL.4.**Title***Modular Cupboard with Mobile Internal Units***Authors**

Agata Bonenberg

Institution*Poznan University of Technology***Patent no.**

P.407038

The invention is aimed at enabling persons using a wheelchair or persons with a limited scope of manipulation movements convenient access and use of storage space located at higher levels of rooms which are usually inaccessible to them.

The modular cupboard contains two levels of storage modules where the availability of upper modules is ensured owing to the possibility of sliding them to the lower level. The movement is supported with the electric drive and mechatronic control. Modules may be equipped with shelves, drawers, cabinets or pulled out cargo type elements. Modules are placed in skew drive system socket in two levels and the total number of skew drive sockets is even $n > 2$. In the upper level $n/2$ modules are placed and in the lower level the number of modules amounts to $(n/2) - 1$. Whereas the upper level modules slide vertically, lower level modules slide horizontally.

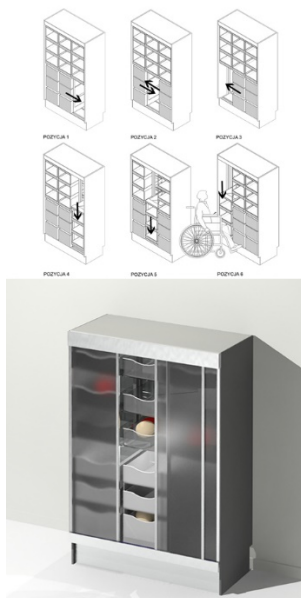
Description EN

Along with the increase in the n number, the degree of the use of the cupboard usable area is increasing. Lower level storage modules may only move horizontally, to strictly defined positions, leaving one socket space free. The upper level storage module can easily move into this space.

The invention solves the problems of storage space availability and it relates to persons with near-ground reach and manipulation zone resulting from anthropometric characteristics (e.g. low height of a person), the musculoskeletal system mobility (e.g. at older age) or motor disability (e.g. persons using a wheelchair). At the same time the piece of furniture enables traditional manner of use by persons with full motor skills. The comfort of use both by disabled persons and able-bodied persons makes the piece of furniture meet the European standards of universal designing.

Class no.

7. Buildings and Materials



PL.5.

Title

Torch for the blind

Authors

Paweł Górzyński, Tomasz Krzysztofik, Tomasz Kropiwnicki, Sławomir Kozok, mgr inż. Krzysztof Smyczek, mgr inż. Zbigniew Pałasz

Institution

Zespół Szkół Nr6 im. Króla Jana III Sobieskiego w Jastrzębiu Zdroju, Centrum Kształcenia Praktycznego w Jastrzębiu Zdroju

Patent no.

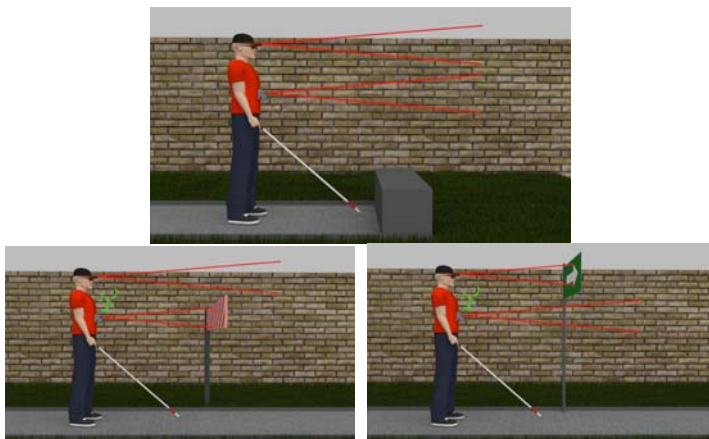
P.405534

Description EN

"Torch for the blind" is a project that facilitates moving AROUND of people with disabilities in confined spaces as well as in the open air. The person using the torch is informed about a possible obstacle which may appear in front of , on the right or on the left side of the blind person by the appropriate sound signals. The frequency of the signal determines the distance from the obstacle. The system does not replace the traditional cane for the blind, which is a recognizable attribute of the blind. It only supports the mobility of the disabled person. The area controlled by the "torch" protects particularly the upper part of the body, mainly the head of the blind (the

user is informed about an obstacle by the signal of a different mode).

Class no. 12. Safety, protection and rescue of people



PL.6.

Title

Integrated System of Creating Emergency Management Plans Based on Modern Information Technologies

Authors

Dariusz WROBLEWSKI, Maria KEDZIERSKA, Bartlomiej POLEC, Dariusz MAJCHRZAK, Grzegorz SOBOLEWSKI, Pawel KEPKA, Rafal WROBEL, Krzysztof SZELAGOWSKI, Teresa TISZBIEREK, Jadwiga NOWOTNIK, Bartosz KRZYWICKI

Institution

Scientific and Research Centre for Fire Protection
National Research Institute
National Defense University
Main School of Fire Services
Union of Volunteer Fire Departments of the Republic of Poland
ASSECO Poland S.A.

Patent no.

Pending

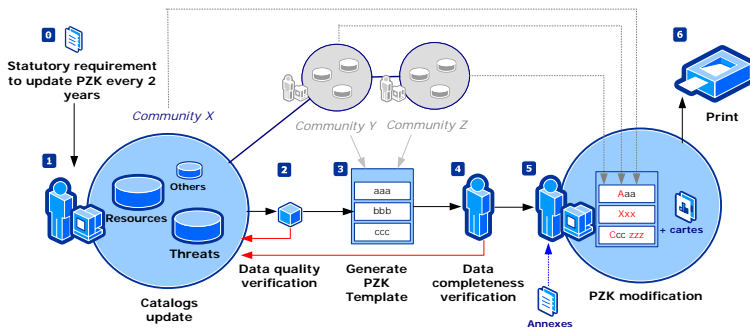
Description EN

The project is addressed to the local and state authorities which play a major role in the emergency management system. The result of the project will be stand-alone software supporting the creation of emergency management plans (EMP) for municipalities, counties

and voivodeships. Programme will enable the authorities to collect and manage the information necessary for the efficient management of resources, even during a crisis situation. Software (teleinformation system) will directly contribute to the improvement of safety in terms of emergency management, civil defense, fire protection, natural and technical hazards as well as terrorism. Moreover, the thematic scope of this project incorporates some priority research directions in the area of security and defense of a strategic importance for both Poland and European Union. The main objectives consist in the unification of the process plans creation along with the data needed to create Emergency Management Plans, harmonization of the scope and form of presentation of information in EMP and facilitation of the access to the data for administrative units. At this stage, the authors of the project defined: business objectives of the EMP system, the concept of software architecture, main functionalities and function modules of the system. The main functionalities of the software consist in directories data related to EMP enabling to generate EMP (including a repository of documents), geolocation of information entered into the data catalogs and a platform for the creation of hazard and risk maps and data sets which constitute a knowledge base on emergency management.

Class no.

10. Information Technology and Communication



A concept of functional architecture

PL.7.

Title

The 3D MAPPING SYSTEM SITE OF A FIRE

Authors

Marzena Półka, Dariusz Bułka

Institution

The Main School of Fire Service (POLAND)

Patent no.

CYBID

Pending

Innovative system for measuring, collecting data and visualization 3D of site of a fire and crime scenes.

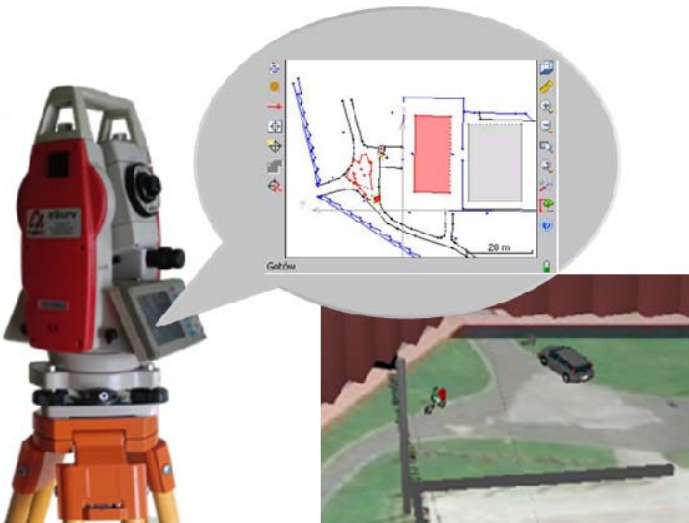
- 3D laser measurement - accuracy and precision
- Automatic: collecting data, calculations and diagram creating - fast speed and minimization of errors
- Safety of examination the scene - remote measurement
- Compatibility at every stage of the investigation-transfer data from measurement to reconstruction
- More accurate causes indication of crime or accident - effectively prevention activities in the field of safety

Description EN

Class

10. Information Technology and Communication

12. Safety, protection and rescue of people



PL.8.

Title	A disc for application of carbon coats with admixture of biologically active metals and disc production method
Authors	<i>Piotr Putyra, Bogusław Rajchel, Lucyna Jaworska, Jadwiga Kwiatkowska, Marcin Podsiadło, Ludosław Stobierski</i>
Institution	Instytut Zaawansowanych Technologii Wytwarzania
Patent no.	P.404207
Description EN	<p>Subject of the invention are discs with carbon precursor and bioactive metals demonstrating antibacterial properties and disc production method.</p> <p>Discs allow combining powder elements and compounds in any proportion, as depending on composition of carbon, diamond-like and diamond coats applied using IBAD, IBSD, magnetron and PLD processes.</p> <p>Discs are executed in the blend of graphite powders, size 0-100 μm, with powders of silver, platinum, iridium, gold, copper and/or palladium, size 0-100 μm and in any weight proportion, bound with phenolic and formaldehyde resin.</p> <p>Graphite and metal powders are blended in any weight proportion with phenolic and formaldehyde resin. The material is then pressed in dies under the pressure in the range 20 to 50 MPa and then hardened or heat-treated at 50 to 250°C.</p>
Class	6. Mechanical Engineering - Metallurgy



PL.9.

Title **Polymer material of reduced flammability and method of production of polymer material of reduced flammability**

Authors Krystyna Wrześniewska-Tosik, Tomasz Mik, Sławomir Dutkiewicz, Danuta Ciechański, Michalina Pałczyńska, Jolanta Tomaszewska, Stanisław Zajchowski, Kinga Szola

Institution *Institute of Biopolymers and Chemical Fibres, M. Skłodowskiej-Curie 19/27, 90-570 Łódź, Poland*
University of Technology and Life Sciences, Ks. Kordeckiego 20, 85-225 Bydgoszcz, Poland

Patent no. P.403003

Description EN New type of polymer material of reduced flammability (12-15,5 mm/min), lowered absorbability (1,5–7,5%) while preserving good strength properties was obtained as a result of PE and PP modification by means of appropriately prepared waste of poultry feathers. Polymer material of reduced flammability is a mixture of permanently combined PE or PP (40–90%), fragmented poultry feathers (10 – 60%) of 0,3 – 5mm length as well as suitable compatibilizers (PE grafted with maleic anhydride or PP grafted with maleic anhydride) which facilitate combination of feathers with PP and PE polymer matrix. Obtained composites can be processed by injection, extrusion or pressing into elements applicable, e.g. in building industry and in furniture.

Class 9. Chemical and Textile Industry



Portugal

PT.1.

Title

Innovative multimedia online tool for the study of gilded carved wood in Portugal

Authors

Irina Crina Anca Sandu

Institution

Universidade de Evora

Description EN

The innovative tool proposed as outcome from a research project funded by the Portuguese Foundation for Science and Technology (FCT) aims to disseminate the scientific results of this project to both the larger public and specialized one. The interdisciplinary multi-scale research of the gilding materials and techniques in ecclesiastic Portuguese woodcarved decoration (“talha dourada”), covering a range of time from c.1500 to c.1800, is available online through a dedicated website (www.gilt-teller.pt) and database including the most representative altarpieces and polychrome sculptures studied within the project. The tool, designed with the help of the company from Coimbra, illustrates the different components of the project and its milestones in the form of text, images and video contents on case studies. For the first time in the history of the ecclesiastic Heritage, this multimedia tool brings together knowledge from three different scientific areas: Art History (with a component of Technical Art History), Conservation and Heritage Science.

The Gilt-Teller tool has several functions: database structure, comprising various typologies of documents (texts, static images, graphs, movies etc.); easy and friendly-accessible, available online; experimental and virtual instrument, allowing real-time multi-level interaction with the fruiters/public; capability to be transferred and integrated in an alternative, unconventional system of training (e-learning); capability to be applied and up-dated to/with similar case studies or research topics (technological transfer), allowing also comparative studies; capability to apply it for monitoring the preservation state of the studied artifacts (gilded surfaces and composites) and to evaluate in time the effects of restoration treatments.

Class no.

X. Innovative Research



Qatar

QA.1.

Title
Water Production from Humidity
Authors

Adnan Fahad Al Ramzani Al Naimi

Institution
Agri-Green
Patent no.

GC- 2010-16757 / 27/09/2010 - Cooperation Council For The Arab States of the Gulf (GCC)

Description EN

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 marginal 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



Slovenia

SI.1.
Title
Water tank
Authors

Jernej Trebse, Elisey Ozerov, Viljem Vesenjaj, Matej Vesenjaj

Institution
School centre Maribor, Secondary School for Engineering
Description EN

The design of the water tank solves the problem, which enables quieter operating of the water tank. The main feature of the water tank is that it operates more quietly due to the installation position of the intake valve. Filling valve is mounted to the lowest point in a housing of the water tank. Outlet tube is closed by a porous tube. The primary task of such installation of the intake valve and the perforated pipes is that immediately after the start of the filling of the water tank it is immersed in water. Specialty of the water tank is that when filling with water, there is a quieter operation due to the installation of the intake valve in the water and the installation of perforated pipe reduces the flow rate of water through the final cross-section of the pipe.

Class no.

14. Other

Taiwan

Represented by **WIIPA**

TW.1.

Title

Various combinations rescue buoyancy modules.

Authors

Fa-Shian Chang, Shih Hsu, Chih-Feng Liu, Jeng-Nan Li, Wei-Sheng Wang

Institution

CHENG SHIU UNIVERSITY

Patent no.

Patent Application No: 103201252

Description EN

The invention is combination of buoyancy aids expansion module with multiple air cushion, can be combined various sizes of buoyancy apparatus carrying personnel and vehicles in order to reduce the loss of life and property damage.

Class no.

12. Safety, protection and rescue of people



Can be combined for a variety of models



Parking area



Large vehicles



Varied combinations of elements

TW.2.

Title **The Electric Contain Device**
Authors Jwo-Ming, Jou, Ying-Zhi, Lin Zhi-Ying, Chen Yu-Shun, Dai
Institution **Cheng Shiu University**
Patent no. M467403
Description EN The present invention is an electric (charge or light touch) contain device, which is very suitable for public places or restaurants. It can use a light touch way to start the device, so that users can quickly and conveniently access chopsticks, fork spaghetti or elongated rods, and it does not pollute the contain device.
Class no. Other

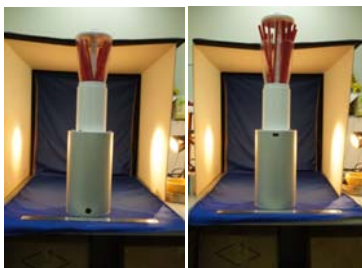


Fig. 1

Fig. 2

Fig. 1 The closed state of the electric contain device.

Fig. 2 The open state of the electric contain device.

TW.3.

Title **The crutch structures**
Authors C. H. Chen, R. J. Wu, M. H. Yang, W. C. Lin, C. M. Tsai
Institution **Cheng Shiu University**
Patent no. Patent Application No: 102217153
Description EN The invention of crutch consists of a LED flashlight, Global Positioning System (GPS), an alarm system, a pedometer, and a USB automotive power, which can be served as the charging system, and can also enhance the safety and convenience.
Class no. 12. Safety, protection and rescue of people



TW.4.

Title

Safety Lid

Authors

Yang, Yi-Lun, Sung, Chi-Yun, Chen, Hsieh-Ping, Xu, Zheng-You, Yang, Meng-Lin, Tu, Yen-Chun

Institution

Cheng Shiu University

Patent no.

102223867

Description EN

We designed a warning lid. It is placed on a cup, then the password is set by the user. If the lid is moved, it will flash red and emit a loud siren. This way, the user can make sure that the lid is not opened even when he/she is not around, and prevent people from slipping drugs.

Class no.

12. Safety, protection and rescue of people



TW.5.

Title

Robot arm (Unmanned Ground Vehicle)

Authors

Fa-Shian Chang, Shih Hsu, Chung-Yi Wu, Chih-Feng Liu, Wei-Sheng Wang

Institution

CHENG SHIU UNIVERSITY, Taiwan , R.O.C.

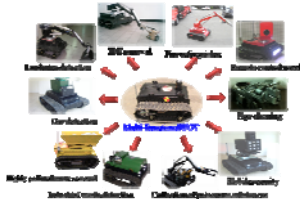
Patent no.

M466772

Description EN

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

Class no. substance sampling, etc.).
12. Safety, protection and rescue of people



TW.6.

Title Door storage frame
Authors HU, WAN-PEI, LI, CHING-SHU, CHEN, SZU-JU, LIN, YI-JING
Institution Cheng Shiu University, Taiwan, R.O.C.
Patent no. M470577

Description EN This innovation is designed to use the interior space of the door storage frame to put cosmetics, accessories, and so on. It will enhance the value and the profit by using different functions and designs of door storages to customers' needs.

Class no. 14. Other



TW.7.**Title**

Antibacterial essential oils of magnolia flower composition

Authors

HUI CHEN, WANG

Institution

FENG HO MEI BIOTECHNOLOGY CO., LTD.

Patent no.

Application No: 099118017

Description EN

It has now been found that essential oils from *Michelia Alba* possess antimicrobial activities. The invention provides a composition that is active against broad range of common medically important microorganisms.

Class no.

3. Agriculture and Food Industry
4. Medicine - Health Care - Cosmetics

**Title**

Equivalent Circuit Model for A Compact MIMO Antenna Design

Authors

Shun-Min Wang, Lih-Tyng Hwang, Fa-Shian Chang, Chih-Feng Liu

Institution

Department of Electronic Engineering, Cheng Shiu University

Description EN

The excited surface-current distributions and the equivalent circuit modeling of the design are studied. The current distributions on the system ground behave differently with different port excitation, which may have contributed the needed isolation between the antennas. The results showed the obtained antenna port correlation coefficient is less than about 0.1. Moreover, the antenna is easy to fabricate and suitable for application at the 5-GHz bands for wireless modules.

Class no.

Innovative Research

TW.9.

Title	Design of Omni-Directional Antenna System for WLAN 2.4-GHz Band Access Point Applications
Authors	Chung-Wei Ou, Chin-Jung Chao, Fa-Shian Chang, Shun-Min Wang
Institution	Department of Electronic Engineering, Cheng Shiu University
Description EN	A four-patches metal-plate antenna system with an omni-directional radiation pattern for WLAN access point in the 2.4-GHz band is presented. By integrated four pieces metal-plate have reached an omni-directional radiation pattern and improve the radiation gain. The antenna system is very suitable for WLAN access-point applications where uniform radiation in one direction or one half-space is required.
Class no.	Innovative Research

TW.10.

Title	Effects of Antenna Mode Currents (AMC) for Antenna Design
Authors	Shun-Min Wang, Lih-Tyng Hwang, Yu-Lun Huang, Fa-Shian Chang, Kai-Ming Tsai
Institution	Department of Electronic Engineering, Cheng Shiu University
Description EN	We investigated the effects of ground on a small balanced antenna fed differentially (a balanced feed) and single-endedly (an unbalanced feed). The common mode currents on the connector were validated by a close match in simulation and near-field (NF) scan measurement results.
Class no.	Innovative Research

TW.11.

Title	A Plane MIMO Antenna for WLAN 2.4/5 GHz Dual-Bands Access Point Applications
Authors	Chung-Wei Ou, Chin-Jung Chao, Fa-Shian Chang, Shun-Min Wang, Kai-Ming Tsai
Institution	Department of Electronic Engineering, Cheng Shiu University
Description EN	A plane four-antennas system suitable for multiple-input multiple-output (MIMO) applications operating at the 2.4/5 GHz WLAN bands is presented. This configuration provides diverged patterns with a good isolation characteristic through the 90° polarization. The design concept can be applied to smaller wireless access point or router for WLAN applications.
Class no.	Innovative Research

Turkey

Represented by TROBOTIC & Aydin Istanbul University

14.1.

Title

New Cartel Screw

Authors

Zafer Utlu , Saeid Dadashzadeh, Arash Abbasi, Siamak Rajabi, Hamzeh Mirzaei, Arash Khalili

Institution

Aydin Istanbul University

Description EN

One of the problems is that cars usually appear several years after the production of oil spill Vehicle cartel. This problem is caused by a dirty place where the car stops in parking lots and private residences in addition to health problems make it ugly appears to be locations. The other side oil flow to the engine oil level will decrease over time. Leads to loss of engine efficiency. The problems in the tropics to cool the engine oil plays a more critical role in the case is not sufficient to heat the engine and cylinder head or the engine will burn in extreme cases. For example, using the screw holes needed for oil change and pollution is uncommon. On the other hand the amount of excess oil in the crankcase (when oil is spilled over the engine). Easily controlled by the screw is removed . This simply at home even without any pollution and without holes as possible. Noted the advantages of the screw steam than other samples can be longer life - High performance - lack of vulnerability impacts (eg, taking the vehicle to the ground floor) - Low Cost (in mass production) - simple design

Class no.

X. Innovative research

Turkmenistan

14.1.

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. Skomorovsky, S. Serova, A. Karpin, A. Sergienko, N. Chornobay
Institution	Centre of Living Systems Reseach of Ukrainian Academy of Sciences: Centre „AYUMEL” and Dep. of Valeology of V. Karazin Kharkov National University
Patent no.	Pending UA 2012
Description EN	Produced special multistratum watch face with 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

UA.3.

Title Energy Concentration Devices
Authors V. Goch, V. Selishchev
Institution Centre of Living Systems Reseach of Ukrainian 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 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.
Description EN
Class no. 14. Other

NATIONAL EXHIBITORS

Universities

Research Institutes

Companies

Individuals

University POLITEHNICA of Bucharest

RO.1.

Title EN	PROCESS FOR PURIFYING USED AIR AND EFFLUENTS WITH ORGANIC CHEMICAL CHARGE
Authors	Predeanu Georgeta, Calinescu Ioan
Institution	University POLITEHNICA of Bucharest
Patent no.	RO125293 (B1) / 2013-08-30
Description EN	<p>The invention relates to an active coal used for purifying gases and industrial effluents and purifying processes by using the same. According to the invention, the active coal is obtained from wastes of melamine and/or non-melamine wood chipboards or of peach stones and has a 80...90% content of fixed carbon, a iodine number of 700...1000 mg/g, a BET specific surface of 700...1000 m/g, a pore volume of minimum 0.200 m/g and a distribution of the pore radius less than 15A of minimum 75%.</p> <p>Applications: Purification of wastewater and waste gas with high efficiency in water-air pollution.</p>
Class no.	1. Environment - Pollution Control

RO.2.

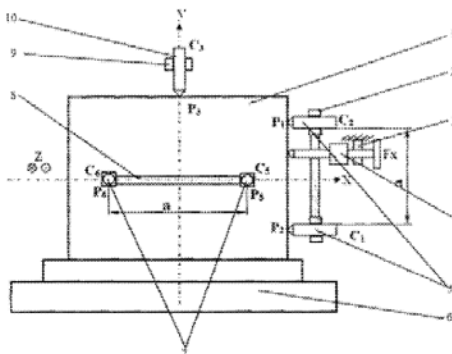
Title EN	SYSTEM FOR DETERMINING THE CENTRE OF STIFFNESS IN MILLING MACHINES
Authors	Bisu Claudiu Florinel, Zapciu Miron, Hadar Anton
Institution	University POLITEHNICA of Bucharest
Patent no.	Patent application filed No. RO128493 (A2) / 2013-06-28
Description EN	<p>The invention relates to a system for determining the center of stiffness in milling machines. The claimed system is used both in the situation when there is used a tool gripping device and when using a work piece fixing device, and the center of stiffness is determined based on the transducer position in relation to the measurable mark (see Image below), so that in case of a device (6) for gripping the work piece (1), the system is built so that along a direction (x) some uniaxial displacement transducers (5) are fixed in a support (2), along a direction (y) some uniaxial displacement transducers (10) are fixed in a support (9) and along a direction (z) some uniaxial displacement transducers (7) are fixed in a support (8), along each direction there being placed two transducers of the same type, fixed in the same type of support, so as to maintain a distance (a); there between, a force transducer (4) being positioned by means of a fixing support (3) along each direction (x,y,z). The claimed method for determining the stiffness center consists in finding the intersection point of the displacement vectors generated as a consequence of the application of a force loading on said</p>

NATIONAL

direction, the two vectors and the intersection point defining a plane, and thereby determining a plane along each loading direction (x,y,z), finally defining three planes of displacement corresponding to the three directions..

Applications: Milling machine tool technology system, comprising the latch of work piece or tool.

Class no. 5. Industrial and laboratory equipments



RO.3.

Title EN

PHARMACEUTICAL BIOADHESIVE DISK-TYPE PREPARATIONS BASED ON CHLORHEXIDINE METAL COMPLEXES AND PROCESS FOR PREPARING THE SAME

Authors

Negreanu-Pirjol Ticuta, Meghea Aurelia et al.

Institution

University POLITEHNICA of Bucharest

Patent no.

Patent application filed No. RO127727 (A2) / 2012-08-30

Description EN

The invention relates to a pharmaceutical preparation of the bio adhesive disk type, having antimicrobial, antifungal, anti-inflammatory and wound healing effects and to a process for preparing the same. According to the invention, the preparation comprises 0.01...0.1% metal complexes of cyclohexidine with Cu(II), Zn(II), Ag(I), a solution (1:3) of propyl p-hydroxybenzoate : methyl p-hydroxybenzoate, gelatin, sorbitol, glycerol and water, presented as smooth translucent yellowish disks having a surface pH in the range of 4.5...6.25. The process claimed by the invention consists in hot dissolving the weighed starting materials in water, pouring the mixture into molds, jellifying the same at the ambient temperature, followed by the control and conditioning of the final product.

Applications: Product for human health and / or veterinary, with disinfectant and antifungal action, for the treatment of mucosal.

Class no.

4. Medicine - Health Care - Cosmetics

RO.4.**Title EN****HEATING FURNACE****Authors**

Geanta Victoras, Stefanoiu Radu, Cioaca Ion, Cioaca Maria Daniela, Ene Marin, Burcoveanu Alexandru, Posoiu Paul Catalin

Institution

University POLITEHNICA of Bucharest

Patent no.

Patent application No. A-00834 – 25.11.2009

Description**EN**

The heating furnace with mobile rotary hearth is used for heating small metallic semi-finished parts, of high series, which will be subject to die forging operations. The furnace consists of an external metallic structure, an inner ceramic structure and insulation, vertically positioned and supported on a foundation with supports attached to the exterior metallic structure. Inside the structure is a metal-ceramic rotary hearth on which are placed the pieces to be heated by radiation from a radiant arch in the center of which lies a short flat flame burner. The flue gases generated by the combustion chamber of the burner are centrifuged under the arch, in contact both with the arch and the ceramic blocks of the vertical outer wall of the workspace, and then aspirated through the channels and exhausted to the stack. The mobile hearth consists of a vertical cylindrical body, on which are attached: a support plate, an annular frame, a circular annular trough filled with a sealing material, a ring gear for driving the movable hearth, a bandage ring used to support and running.

APPLICABILITY DOMAIN: metallurgical and refractory materials industries.

Class no.

6. Mechanical Engineering - Metallurgy



RO.5.

Title EN

NOISE DAMPE

Authors

Geanta Victoras, Stefanoiu Radu, Cioaca Ion, Cioaca Maria Daniela, Ene Marin, Burcoveanu Alexandru, Posoiu Paul Catalin

Institution

University POLITEHNICA of Bucharest

Patent no.

Patent OSIM RO 125112-28.06.2013

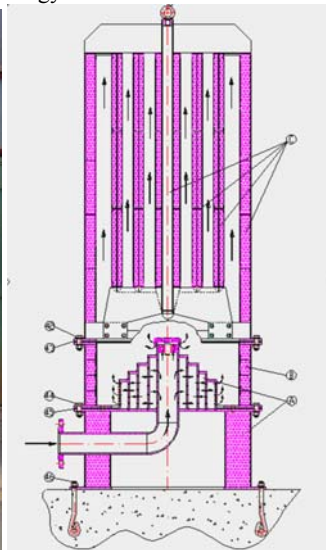
**Description
EN**

The modular noise damper is used for suppressing the noise produced by high pressure steam and gas expansion, upon discharge thereof into the environment. It is able to attenuate the sound waves in the entire range of audible frequencies, in continue and/or sequential operating conditions. In order to exploit it in favorable and safe conditions, with the possibility of intervention in its internal structure for inspections and repairs, to ensure higher reliability and a more profitable construction in terms of mechanical resistance, the noise damper consists of three distinct coaxial storeyed modules which are assembled in a dismountable manner by using flanges, screws and sealing joints.

APPLICABILITY DOMAIN: energy and metallurgical industries.

Class no.

2. Energy and sustainable development
6. Mechanical Engineering - Metallurgy



RO.6.**Title EN**

AUTOMATED INSTALLATION FOR LASER BEAM WELDING OF RADIOACTIVE CAPSULES FOR NUCLEAR MEDICINE AND METHOD OF USE

Authors

Voiculescu Ionelia, Geanta Victoras, Stefanoiu Radu, Iacobescu Gabriel, Grigoriu Constantin, Nicolae Ionuț, Drăgulinescu Dumitru, Viespe Cristian, Sima Cornelia, Fugaru Viorel, Manea Simona-Eugenia, Daisa Dana Daniela

Institution

University POLITEHNICA of Bucharest

Patent no.

Patent application No. A-00305/03.05.2012

Description

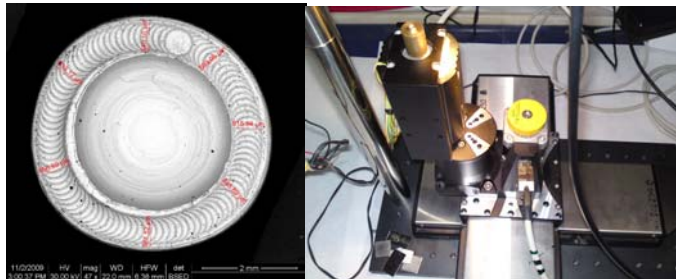
EN

The automated installation for laser beam welding is used for sealing the capsules for sealed radioactive sources used in medical field for the treatment of malignant tumors with radioactive sources of Co-60, Ir-192, I-125 or Y-90. Also is used in industrial applications of gammagraphy, NDT and monitoring of industrial processes that use gamma emitting radioactive sources of Ir-192, Co-60, Se-75 and Cs-137. **The process** consists in the welding of the capsule components, namely the body and its cover, by exposing the area to be joined under the laser beam. Welding is done without filler metal, by concomitant melting of the components edges which are part of the austenitic stainless steel capsule.

APPLICABILITY DOMAIN: medicine – treatment of malignant tumors and industrial applications of gammagraphy, NDT and monitoring of industrial processes.

Class no.

4. Medicine - Health Care - Cosmetics



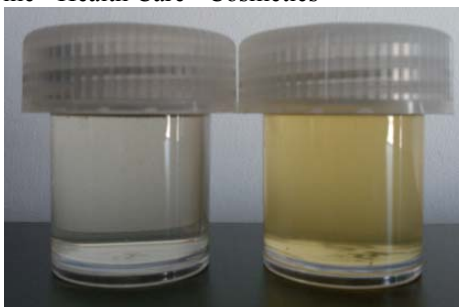
**University of Agronomic Science
and Veterinary Medicine Bucharest****RO.7.**

Title EN	GIS1 – Single chamber system for <i>in vitro</i> simulation of the human gastrointestinal tract
Authors	Emanuel Vamanu
Institution	University of Agronomic Science and Veterinary Medicine - Faculty of Biotechnology & Applied Biochemistry and Biotechnology Center BIOTEHNOL Bucharest
Patent no.	Patent application A/01030 from 18.10.2011 The present invention describes an <i>in vitro</i> testing system for the effect of the transit through the human gastro-intestinal tract, in two phases, in case of lactic bacteria strains and of lactulose. The systems ensures, in the first phase, the determination of the viability of the lactic bacteria through separate simulation of the conditions of every segment of the digestive system consisting in stomach and small intestine, and in the second phase, from the colon. The 1 st <i>in vitro</i> simulation phase allows the obtaining of the stomach environment, the stimulation of the transit between the stomach and the small intestine, the testing of the effect of the pancreatin and the bile salts within the intestine, the simulation of the absorption, the determination of the microbial viability, and the determination of the ratio of the used strains. Phase 2 allows for the simulation of the colon micro-flora by continuous fermentation for 46 hours, the simulation of the ascending, transversal and descending colon conditions, and the micro-biologic analysis for determining the ratio between different micro-organism groups.
Description EN	
Class no.	5. Industrial and laboratory equipments



RO.8.

Title EN	Obtaining glycerolalcoholic and hydroglycerolalcoholic products with antioxidant effect from <i>Pleurotus ostreatus</i> mycelium
Authors	Emanuel Vamanu
Institution	University of Agronomic Science and Veterinary Medicine - Faculty of Biotechnology
Patent no.	Patent application A/00609/21.08.2012
Description EN	The present invention consists in a method of obtaining a hydroglycerolalcoholic and a glycerolalcoholic extract, similar to gemmotherapy products, with antioxidant effect from fresh mycelium of the <i>Pleurotus ostreatus</i> mushroom obtained by submerged cultivation in the bioreactor. The invention protocol requires the extraction of a mixture of 10 g mycelium/100 mL solvent for 10 days, stirring at 150 rpm, at a temperature in the range of 4 ... 9 ^o /C, with a mixture of purified distilled water:glycerol:ethanol (1:1:1) - hydroglycerolalcoholic extract and ethanol:glycerol (2:1) - glycerolalcoholic extract. Finally, the mycelium was separated by filtration under vacuum, and the alcohol by evaporation, the obtained extracts being kept refrigerated.
Class no.	4. Medicine - Health Care - Cosmetics



Technical University of Cluj-Napoca, România

RO.9.

Title EN

Sonic system for obtaining high pressure for waterjet cutting machines

Authors

Cornel Ciupan, Emilia Ciupan, Rareș Petruș

Institution

Technical University of Cluj-Napoca

Patent no.

Patent application No. **RO A10033/2013**

Description EN

The problem solved by this invention is to provide a simple and efficient amplifier system based on the theory of sonics. The equipment consists of a sonic generator and a water-oil amplifier. The novelty consists in the realization of a compact amplifier which can be inserted in the cutting head. The amplifier and the sealing chambers are also new.

Class no.

6. Mechanical Engineering - Metallurgy

RO.10.

Title EN

Continuously variable transmission CVT-01

Authors

Cornel Ciupan, Emilia Ciupan

Institution

Technical University of Cluj-Napoca

Patent no.

Patent application

Description EN

The technical problem of the invention consists of infinitely variable speed with reversing offering opportunities to optimize dynamic performance. The novelty consists in combining a continuously variable differential mechanism. Novelty can be found in constructive solutions adopted.

Class no.

8. Aviation, car industry and transportation



RO.11.

Title EN **Procedure and device to obtaining the bent tubular parts with variable section from polymeric reinforced fiber composite materiales**

Authors Paul Bere, Petru Berce, Horatiu Iancău

Institution **Technical University of Cluj-Napoca**

Patent no. Patent application A/00104 / 2011

Description EN The invention relates the procedure and device to obtaining the bent tubular parts with variable section from reinforced fibre composite materials. The composite materials are manufactured used glass, carbon, aramid (Kevlar, Tarwon) or other fibre-reinforcement material in a polymeric matrix (polyester, epoxy, phenol, vinilester resin or other polymers. In composite materials can be incorporate other auxiliary materials like colorants, flame retardant and other substances auxiliaries considered

Class no. 7. Buildings and Materials

RO.12.

Title EN Method and composite material for ornamental synthetic plates manufacturing

Authors **Sabău Emilia, Bălc Nicolae Octavian, Bere Petru Paul**

Institution **Technical University of Cluj-Napoca**

Patent no. Patent application A/10030/2013

Description EN The invention relates to a method and a composite material that uses in the structure waste fiber-reinforced composite materials, with applicability in the construction domain, for building cladding. The obtained material is a solid material, resistant to external agents, the method being easy to perform. The composite material gives superior mechanical characteristics of traditional materials.

Class no. 7. Buildings and Materials

RO.13.

Title EN **SELF-LOCKING INTRAMEDULLARY NAIL**

Authors COSTE Camilio Victor, GROZAV Sorin Dumitru

Institution **Military Hospital Cluj**

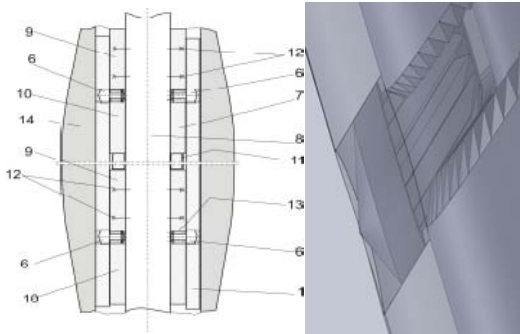
Patent no. **127480 B1**

Description EN The invention relates to an self-locking intramedullary nail fixation used if closed hearth. The self-locking intramedullary nail according to the invention costs of a rod (1), in which is inserted a central core (7) comprises a inner shaft (8) and several hollow modules (9 and 10). They are provided with the teeth (13), each module (9) fixed to the inner shaft (8) and a module (10) arranged on the same inner shaft (8). Between the teeth (13) are set screws

(6) that is fixed to the bone by a movement of rotation of the inner shaft (8), which is part of the central core (7).

Class no.

4. Medicine - Health Care – Cosmetics



RO.14

Title EN

Eco Road Concrete/ Betonul Rutier ECO

Authors

Ofelia CORBU, Attila PUSKAS

Institution

**Tehchnical University of Cluj-Napoca,
Faculty of Civil Engineering**

Patent no.

Pending

Description

EN

ECOLOGICAL COCRETE or ECO-CONCRETE:

is an GREEN construction material for construction of buildings and civil infrastructure.

The ecological road concrete is the new sustainable concrete which has in its structure, mineral waste as aggregate, cement and waste glass from constructions and demolitions.

Green is a must in almost every aspect of today's modern life. This is a way of changing old habits in an environmentally friendly way.

Besides its green/eco-friendly components, which also substitute part of the cement, this concrete proves to have really good mechanical characteristics, on short and long term, typical for road concrete. It also shows stamina to frazzle, classified in the attrition classes.

Advantages:

Saving nonrenewable natural aggregates by using the crushed waste from constructions and demolitions, resulting in the release of inert waste deposits.

Reducing the negative impact or "footprint" of CO₂ by replacing a quantity of cement used in the concrete.

Class no.

7. Buildings and Materials



Eco-friendly composite material made of recycled mineral as aggregate and waste glass

RO.15

Title EN

Authors

Institution

Patent no.

Road Concrete with mineral and textile waste

Attila PUSKAS, Ofelia CORBU, Henriette SZILAGYI

Technical University of Cluj-Napoca

Pending

TEXTILE WASTE REINFORCED ROAD CONCRETE WITH RECYCLED AGGREGATES:

Construction material for road / civil infrastructure, incorporating important quantity of waste.

The textile waste reinforced road concrete represents a sustainable concrete solution, having in its composition recycled aggregates from crash of concrete waste and textile waste from the production of industrial threads.

Description

EN

Physical, mechanical and chemical characteristics obtained on the fresh and hardened concrete according to standard tests has comparable values to those foreseen in standards and norms as quality standards for road concrete, presenting also improved characteristics to abrasion.

Advantages of textile waste reinforced road concrete with recycled aggregates:

- Reduce of used nonrenewable components therefore salvage of important natural aggregate quantity;
- Reuse of textile waste in concrete composition obtaining improved mechanical properties for road concrete;

EUROINVENT 2014

- New concrete composition incorporating recycled content with controllable risk;
- Practical solution for increasing the rate of recycling of mineral waste while obtaining new concrete compositions;
- Energy efficient concrete composition with reduced embedded energy for concrete production and reduced carbon footprint with respect to the usual concrete.

The proposed concrete composition fulfills the sustainability criteria due to reuse of waste, reduce of water contamination and reduce of incorporated nonrenewable resources, use of recycled aggregates and thrifty use of materials available locally.

Class no. 7. Buildings and Materials



RO.16

Title EN

Road Concrete with mineral and textile waste

Authors

PhD.eng. Attila PUSKAS, PhD.eng. Ofelia CORBU,
PhD.eng. Henriette SZILAGYI

Institution

Technical University of Cluj-Napoca

Patent no.

Pending

TEXTILE WASTE REINFORCED ROAD CONCRETE WITH RECYCLED AGGREGATES:

Construction material for road / civil infrastructure, incorporating important quantity of waste.

The textile waste reinforced road concrete represents a sustainable concrete solution, having in its composition recycled aggregates from crash of concrete waste and textile waste from the production of industrial threads.

Description

EN

Physical, mechanical and chemical characteristics obtained on the fresh and hardened concrete according to standard tests has comparable values to those foreseen in standards and norms as quality standards for road concrete, presenting also improved characteristics to abrasion.

Advantages of textile waste reinforced road concrete with recycled aggregates:

- Reduce of used nonrenewable components therefore salvage of important natural aggregate quantity;
- Reuse of textile waste in concrete composition obtaining improved mechanical properties for road concrete;
- New concrete composition incorporating recycled content with

controllable risk;

- Practical solution for increasing the rate of recycling of mineral waste while obtaining new concrete compositions;
- Energy efficient concrete composition with reduced embedded energy for concrete production and reduced carbon footprint with respect to the usual concrete.

The proposed concrete composition fulfills the sustainability criteria due to reuse of waste, reduce of water contamination and reduce of incorporated nonrenewable resources, use of recycled aggregates and thrifty use of materials available locally.

Class no. 7. Buildings and Materials



RO.17

Title EN

STUDY ON USING RECYCLED POLYURETHANE FOAM AS AGGREGATES IN CEMENT OR GYPSUM PLASTER BASED COMPOSITES

Authors

PhD. Eng.Ofelia Cornelia CORBU, Eng.Valentin TOFANĂ

Institution

Technical University of Cluj-Napoca, Asociatia ECOTIC

Patent no.

Pending

This study represents one of the first stages of a complex research activities dedicated to solve one of the main problems of the waste electronics recycling (WEEE) industry: recovery options for de-polluted fractions consists of polyurethane (PUR) foam. Regularly, across EU, after CFC de-pollution, PUR foam is incinerated or landfilled, loosing in this way an important resource.

This study has shown that PUR foam, fine grinded, can be added, as an aggregate or filler to a composite based on cement or gypsum plaster matrix. This study reveals a few major conclusions:

Description

EN

- PUR foam can be used in preparation of lightweight mortars or precast construction modules
- PUR foam can replace the river sand aggregate up to 100%
- PUR foam improves the workability of mortars, reducing the quantity of water needed
- PUR foam may reduce some characteristics of lightweight mortars – mechanical strenght

Areas of application:

- Construction mortars
- Precast modules for walls insulation

- Precast modules for interior design application
- Class no.** 7. Buildings and Materials



RO.18

Title EN Composite material with waste CRT glass content from WEEE (Waste electrical and electronic equipment) treatment processes

Authors Antoanela POPOVICI, Ofelia-Cornelia CORBU, Gabriela POPIȚA, Tiberiu RUSU, Cristina ROȘU, Valentin TOFANĂ

Institution Technical University of Cluj-Napoca, Faculty of Materials and Environmental Engineering

Patent no. Pending

Description PhD thesis aim is to design a composite material with aggregates consists of waste CRT (cathode ray tubes) glass, on a cement matrix, as building material, classified as a mortar, based on its aggregate size (particle size <4 mm). The waste CRT glass is mechanically processed after its extraction from WEEE (Waste electrical and electronic equipment) treatment and depollution processes. The used method for achieving the composite is an ecological recovery method, using hazardous waste from WEEE, with low energy consumption, reducing hereby the CO₂ emissions that would be generated during conventional recovery processes thereof. Due to the ecological recovery method the composite material has a low cost. The results of the mechanical test showed that the composite outperforms the mortars, with very good homogeneity and strength. The composition may be used for the production of decorative elements, jointed, at competitive costs with recovered materials.

EN

Class no. 7. Buildings and Materials



Eco-friendly composite material made of CRT glass

RO.19.**Title EN** **IN SITU COLD RECYCLING TECHNOLOGY, WITH RECOVERED DISPERSED FIBER GLASS REINFORCEMENT****Authors** Nicolae POP, Mihai ILIESCU, Ofelia C. CORBU, Dumitru ARDELEAN**Institution** **Tehcnical University of Cluj-Napoca, SC DRUMCONSTRUCT SRL****Patent no.** Pending

In situ cold recycling technology, with recovered dispersed fiberglass reinforcement is not used across the most developed countries or either Romania.

The aim of this paper is to develop, based on specific scientific methods, the general conditions of using the dispersed fiberglass reinforcement into the pavement cold recycling technology, operated in situ. The main technology focused uses also, as additives, foamed bitumen, cement and water.

All the experiments were focused on obtaining a high level of accuracy of fiberglass dosage and also on the other main issues as the fiber orientation, matrix adherence related to water content, degree of homogeneity of the recycled mixture.

Description EN The unique dosage technology, used at FIBREX SRL Crasna, Salaj County consists of layering the fiberglass on a 0.2 mm thin PE sheet, followed by binder spraying. This technology can be considered as a significant progress compared with the conventional techniques which uses a manual layering of the mixture in front of the cold recycler machine.

Almost all the shows that the film layers inside the recycled mixture can be assimilated to a polyphasic system (aggregate-binder-fibres-water). These properties of the film layers are significantly influencing the physical, mechanical and workability properties of the mixture, close to a AB2 bituminous coating mixture.

In order to control the dispersed fiberglass reinforced recycled mixture properties, it is need to find the proper length of the fibers and also to find the proper binders. These two technical aspects improves the film layer interface of the recycled mixture which can be used as a basement for rehabilitated roads

Class no. 7. Buildings and Materials

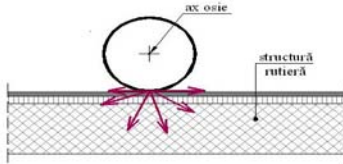


Road structure before recycling with fiber dispersion.

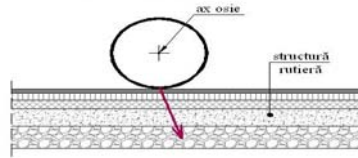


Samples taken from the road structure recycled with fiber dispersion

REINFORCED ROAD. WITH FIBER
STRUCURĂ RUTIERĂ RANFORSATĂ CU FIBRE



NOT REINFORCED ROAD
STRUCURĂ RUTIERĂ NERANFORSATĂ



— braking force distribution

RO.20.

Title EN

Thermal conductivity study of composite materials containing wastes

Authors

Moga Ligia, Tiuc Ancuta Elena

Institution

Technical University of Cluj-Napoca

Patent no.

Pending

Description

EN

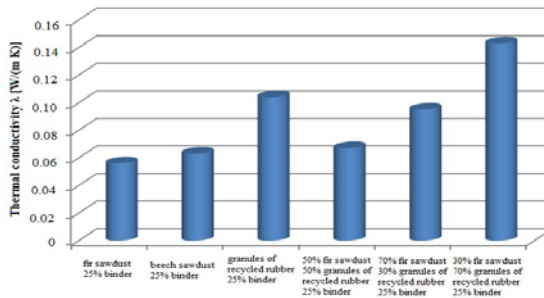
Traditional products whose manufacture requires expensive raw materials are being replaced with composite materials with alternative properties which display better qualities and perform in a better way. Turning waste into composite materials presents a major technical, economic and ecological importance. Several researches exist on a worldwide level on the implementation of thermal insulating materials from different wastes, which have better thermal properties (rubber, wheat and barley straw, coconut fibres, wood wastes and others). The aim of the research was to develop new types of composite materials with sound absorbing and thermal insulating properties, in order to improve acoustic and thermal comfort of an enclosure. Thus, to achieve these materials several wastes were used (fir sawdust, beech sawdust and particles of recycled rubber) and polyurethane binder which was used as matrix. The thermal conductivity λ [W/(mK)] of the material was determined in order to characterize the thermal behaviour of each composite material. The λ coefficient is the main indicator of the

thermal insulating property of a material. The coefficient indicates the capacity of a material to transmit a heat flow through its surface when a temperature of 1K exists between the opposite surfaces of the material. Its value is influenced by several factors, i.e. apparent density, stiffness, nature and distribution of pores, temperature, humidity. If λ has a low value it means that the material has a high thermal insulating capacity, which means a high thermal resistance R [(m²·K)/W], where R =thickness of a material/ λ . Results show that the achieved materials have very good thermal properties and that these property varies on the nature of waste used as raw matter in producing these materials.

Class no. Innovative Research



The test stand used to determine the thermal performance of materials.



RO.21.

Title EN

The equivalent thermal conductivity determination of a Phase Change Material (PCM)

Authors

Moga Ligia, Ousseynou Diao, Moga Ioan

Institution

Technical University of Cluj-Napoca

Patent no.

Pending

Description

The social habitat in tropical environments knows a major problem of thermal comfort, because the traditional buildings that are built do not ensure proper thermal comfort.

EN

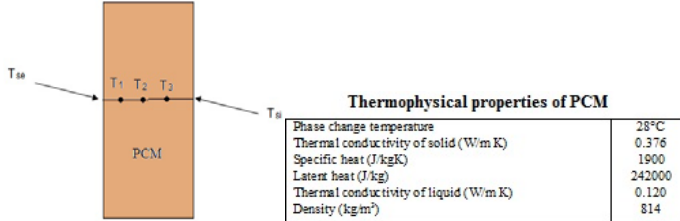
Currently, researches are made for the optimization of energy systems,

and one of the means of saving energy is energy storage. The thermal storage techniques known are: sensible heat storage and latent heat storage. The latent heat storage is defined by a heat absorption or release process when a storage material undergoes a phase change from liquid to gas or solid to liquid or vice-versa. This method provides higher storage density, with a smaller temperature difference between storing and releasing heat. In the field of latent heat storage systems, the PCMs were given a special attention in the past years. The imperative reason of using these systems is due to their great energy capacity available at certain PCMs during fusion (melting) or solidification compared to the sensible heat storage systems. A research was made by considering a phase change material placed in the structure of a wall and Senegalesian climate conditions $T_e > T_i$. Thermal simulations were made using the finite differences method and the Matlab software, for a better understanding of the PCMs behaviour. The software simulation was made in order to investigate the effects of temperature fluctuation on the thermal conductivity in the nodes of the PCM wall. When choosing a PCM a special attention should be given to their phase change temperature that should be close to the average room temperature and also appropriate values should be required for latent heat and thermal conductivity of the PCM.

Class no.

Innovative research

**Image/
Photo**



**“Iuliu Hatieganu” University of Medicine and Pharmacy
Cluj-Napoca**

RO.22.	
Title EN	“Procedure to determinate the pharmaceutical properties of the powders blend for tableting”
Authors	Ioan Tomuta, Alina Porfire, Andreea Loredana Vonica-Gligor, Sorin E. Leucuta
Institution	“Iuliu Hatieganu” University of Medicine and Pharmacy
Patent no.	Patent application No. A/00577/2013
Description EN	The invention is relate to a procedure for development and validation near infrared spectroscopic - chemometrics methods to determinate the physical properties of the powders blend for tableting and how to apply them on a rotary tablet presses in order to on-line monitoring the pharmaceutical properties of the powders blend for tableting during tableting process.
Class no.	4. Medicine - Health Care - Cosmetics
RO.23.	
Title EN	Experimental dental implant that reproduces the natural teeth's mobility
Authors	Manea Avram, Pop Dumitru
Institution	“Iuliu Hatieganu” University of Medicine and Pharmacy Technical University Cluj-Napoca
Patent no.	Patent application No. A/00275/2013
Description EN	One of today’s dental implants main drawbacks is the fact that once osteointegrated in the maxillary bone, they become immobile. This leads to the impossibility of using a mixed support prosthetic structure, both on teeth and dental implants, and also the appearance of non-physiological forces transmited to the surrounding bone. This patented implant protects the bone by absorbing the masticatory forces, allows the use of a mixt support prostetic structure and improves the seal between the implant and abudment.
Class no.	4. Medicine - Health Care - Cosmetics

RO.24.	
Title EN	Multitargetted therapy apoptosis induction in triple negative breast cancer cells
Authors	Braicu Cornelia, Pileczki Valentina, Neagoe Ioana-Cornelia-Stanca, Irimie Alexandru
Institution	“Iuliu Hatieganu” University of Medicine and Pharmacy
Patent no.	Patent application No. A/00082/2014
Description EN	The invention refers to a multitargetted therapy in triple negative breast cancer, based on combination of the natural compound epigallocatechin-gallat (EGCG) and TNF- α gene inhibition by RNA interference mechanism using cell line Hs578T. The combined therapy will ensure the specific inhibition and major efficiency of cell survival mechanisms and activating the apoptotic pathways.
Class no.	4. Medicine - Health Care - Cosmetics
RO.25.	
Title EN	“Multifunctional biocompatible cream containing [2-amino-2-deoxy-(1-4)-β-D-gluco-pyranosis]”
Authors	Crisan Maria, Crisan Diana; Dreve Simina-Virginia, Mos Elena, Olenic Liliana
Institution	“Iuliu Hatieganu” University of Medicine and Pharmacy
Patent no.	Patent application No. A/00448/2012
Description EN	The invention refers to a biocompatible, multifunctional ointment cream, oil in water type, with emollient, cytoprotective, cytostimulating, antibacterial properties, fast absorbing, leaving no fat residue behind. It is extremely well tolerated, offers a profound hydration of the integument at reticular dermis level, contains cheap ingredients and is easy to produce
Class no.	4. Medicine - Health Care - Cosmetics
RO.26.	
Title EN	Emollient cream for dry skin
Authors	Crisan Maria, Crisan Diana; Mos Elena, Olenic Liliana
Institution	“Iuliu Hatieganu” University of Medicine and Pharmacy
Patent no.	Patent application No. A/00669/2012
Description EN	The invention refers to a cream displaying complex properties, highly emollient and hydrating, that absorbs fast into the skin after application, leaves no fat residue, does not contain any allergenic substances, offers protection and is well tolerated even by babies and pregnant women; can be used as a washing agent, and represents an efficient base for the incorporation of pharmaceutical substances, contains few and cheap ingredients and is easy obtainable.
Class no.	4. Medicine - Health Care - Cosmetics

RO.27.**Title EN** **Device and method for testing the resistance to impaction****Authors** Ilea Aranka**Institution** **University of Medicine and Pharmacy „Iuliu Hațieganu”
Cluj-Napoca****Patent no.** Patent application No. A/10002/2014

The invention relates to a device and a method for applying dynamic forces on bone or bone prostheses in order to determine the resistance to impaction and the propagation of the fracture of the following applications:

1. Mechanical testing of temporal bone strength during a lateral blow with a blunt body
2. Testing the mechanical resistance of the skull during a lateral, frontal or occipital blow with a blunt body
3. Development hypotheses of skull fracture and how fracture lines is spreading combined with finite models. Assessment if finite model in fracture is reliable and if is validated by practical aspects
4. Testing of some protection systems of the skull
5. Testing hypotheses of skull fracture, determine the speed and force of impact, and its forensic applications
6. Testing the impact resistance of chest when the forces are applied frontal and posterior. Evaluation of the fractures types of ribs, sternum and spine, the movements of intervertebral disks and the vital risk
7. Testing of some impaction damping effects by supporting chest of surfaces partially elastic and anatomic conformed
8. Testing the resistance of pelvic bones in a blow on the anterior or posterior surface
9. Development and testing of protective systems.

Description**EN****Class no.**

4. Medicine - Health Care - Cosmetics



University of Craiova

RO.28.

Title EN	ELBOW PROSTHESIS TYPE BALL JOINT
Authors	Tarniță Dănuț Nicolae, Tarniță Daniela, Boborelu Cristian, Popa Dragoș Laurențiu, University of Craiova
Institution	University of Medicine and Pharmacy, Craiova Emergency Hospital, Craiova
Patent no.	Patent application No. A00505 din 11 iulie 2013 The invention relates to a new model of elbow prosthesis which has the operating principle hinge model, with a spherical shape. The elbow prosthesis according to the invention has the following advantages: • It has a simple construction, easy to perform; • It consists of two components that are implanted separately easily; • The destruction of bone for implantation is small; • Intracapsular implantation is performed, which provides greater stability elbow prosthesis after implantation; • The prosthesis allows motion in the frontal plane, which leads to lower stress in ulna and humerus bones; • The two components are coupled without the use of other devices, which, in other types of prostheses, produce fouling elements of movement, resulting in limitation of movement of the joint.
Description EN	Applications Rehabilitation, Medicine, Orthopedics
Class no.	4. Medicine - Health Care - Cosmetics

**Image/
Photo**



RO.29.

Title EN	<i>ORTHOTIC DEVICE USED FOR OSTEOARTHRITIC HUMAN KNEE</i>
Authors	Catana Ionel-Marius, Tarniță Daniela, Tarniță Dănuț Nicolae
Institution	University of Craiova, Romania University of Medicine and Pharmacy, Craiova

NATIONAL

Patent no. Patent application No. [A00821/ 2013](#)

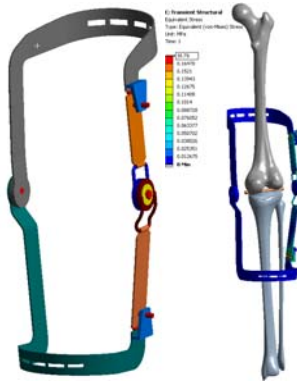
The invention relates to an orthotic device used in the human knee joint orthotics affected by osteoarthritis in the medial compartment. It has the possibility of adjusting the angles of the components. Orthotic device used in the human lower limb orthotics wherein presents new elements that lead and contribute to minimizing the internal space of the lower limb and orthotic device by change of position components.

Description EN Through fixing and tightening there are stabilized lateral movements in flexion-extension movements. The orthotic device makes it possible to conduct the people affected in the human knee showing the various stages of the osteoarthritis

Applications
Rehabilitation, Medicine, Orthopedics

Class no. 4. Medicine - Health Care - Cosmetics

**Image/
Photo**



RO.30.

Title EN *MODULAR ADAPTIVE NETWORK BASED ON INTELLIGENT MATERIALS*

Authors Bîzdoacă Nicu George, Tarnita Daniela, Dănoiu Suzana, Stanciu Adrian

Institution University of Craiova

Patent no. University of Medicine and Pharmacy, Craiova
Romanian Patent No. 127483/30.12.2013

Description EN The invention relates to a modular adaptive network based on implantable modules (Modular Adaptive Implant – MAI) made of Nitinol, used in long bone fractures for the reduction of the fracture, and correctly immobilization of the bone fragments. The modular adaptive network based on

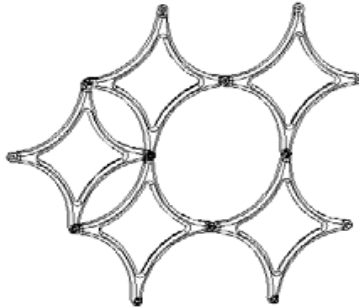
intelligent materials allows full configuration of the assembly to the bone structure, and /or fracture geometry. Using Nitinol offers to the network the possibility of a perfect detection, and study in vivo by radiological methods. Modular adaptive network module form, made of quarter-circle arcs connected through connectors whose termination is connected, coupled with the connecting elements, provides a typological standardization which results in a reduced time of the modular adaptive network configuration. The small size of modules compared to the network allow to perform their extraction through minimally invasive techniques. The modular adaptive network of the present invention allows a recovery local treatment, by using of modular containers (that can store medication) in the central parts of the network modules. Through the perforation of the film in direct contact with the fractured bone, the physician facilitates area irrigation with drug substance, and needle punch could lead to ensure a flow of irrigation as required fracture.

Applications

Medicine, Orthopedics, Implants

Class no. 4. Medicine - Health Care - Cosmetics

**Image/
Photo**



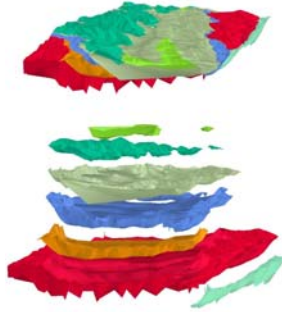
„Alexandru Ioan Cuza” University of Iasi

RO.31.

Title EN	Study regarding the conservation state of two icons on wooden support from the XIX-th century
Authors	Marius Munteanu, Ion Sandu
Institution	„Alexandru Ioan Cuza” University of Iasi
Description EN	The paper presents the data obtained by investigating the conservation state of two icons part of the cultural heritage of ”Sfinții Mihail și Gavriil” church from Galați. The study identifies and presents the degradation and deterioration processes that affect the icons as a whole, the causes that favoured their birth and development and also the stages of the processes upsurge. In order to determine the conservation state Fourier Transform Infrared Spectroscopy (Micro-FTIR) and Scanning Electron Microscope coupled with Energy Dispersive X-ray spectroscopy (SEM-EDX) were employed. The archeometric characteristics of the pigments and binders were identified and the evolutive degradation and deterioration effects were established. The date obtained will be used in further restoration on the two icons.
Class	Innovative Research

RO.32.

Title EN	Structural 3d Model Of Tulgheș-Hășmaș-Ciuc Syncline, Between Bicz River And Javardi River
Authors	TONY-CRISTIAN DUMITRIU, MIHAI BRÂNZILĂ
Institution	„Alexandru Ioan Cuza” University of Iasi
Description EN	This work represents an improvement of the methodology applied in the geological study of the Hășmaș Mountains by approaching the fault system and the formation in a 3D volumetric space. The resulting 3D model will allow geologists to make measurements in any region of the studied area and because the model will remain active, further improvement can be done when new data arrive.
Class	Innovative Research

**RO.33.**

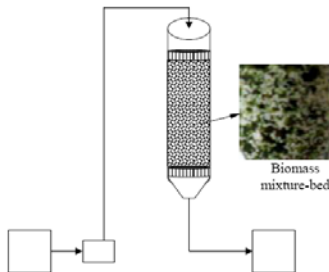
- Title EN** **Processes for separating and monitoring corn solids, oil, and zein from sieved cornmeals**
- Authors** Drochioiu, Gabi;^{1,2} Murariu, Manuela;¹ Petre, Brindusa Alina;^{1,2} Ciobanu, Catalina,^{1,2} and Bancila, Sabina²
- Institution** ¹ Petru Poni Institute of Macromolecular Chemistry of Iasi, Romania
² Al. I. Cuza University of Iasi, Romania
- Description EN** Several patents have been awarded for separating corn floury fractions by sieving a coarse corn flour with various meshed sieves. Maize flours with different granulation and chemical composition were obtained to be used in food and pharmaceutical industries.¹ They are adequate as feed for mono-gastric animals or for producing starch and ethanol. A micro-method for rapid determination of fat content in corn grains was also applied.² Crude protein or total nitrogen in cornmeal can be colorimetrically assayed.³ A turbidimetric method was normally used to determine zein in corn samples, while the Biuret method is under study for the same purposes.⁴ These methods have been compared with that previously used.⁵ Therefore, we report here our expertise in the field of corn milling processes and machines and no other information which is not yet disclosed is presented.
- Class** **Acknowledgment:** This project has been developed with the financial support of the Romanian-American Foundation.
Innovative Research

RO.34.	
Title EN	Ultrasound and microwave assisted synthesis of dihydroxyacetophenone derivatives with or without 1,2-diazine skeleton
Authors	Gheorghita Zbancioc,¹ Ana Maria Zbancioc,² Ionel I. Mangalagiu¹
Institution	1. "Al. I. Cuza" University of Iasi, Organic and Biochemistry Department, 2. University of Medicine and Pharmacy "Grigore T. Popa" Iasi,
Description EN	A thorough study concerning O-alkylation and \square -bromination of dihydroxyacetophenone (DA) and N-alkylation of 1,2-diazine, under ultrasound (US) and microwave (MW) irradiation as well as under conventional thermal heating (TH) is presented. Under US and MW irradiation the yields are higher, the amount of used solvent decreases substantially, the reaction time decreases considerable (from hours or days to minutes) and the consumed energy decreases, consequently the O-alkylation, \square -bromination and N-alkylation methods could be considered environmentally friendly. A selective and efficient way to either bis-O-alkylation or mono-O-alkylation of DA has been found, the relative position of the two hydroxyl groups on the phenyl moiety being compulsory. A selective and efficient way for \square -bromination in heterogeneous catalysis of DA derivatives under US irradiation is presented. The N-alkylation reaction of DA under US and MW irradiation proved to be the most convenient setup procedure for these types of reactions. Overall, the use of US proved to be more efficient than MW or TH. Acknowledgements: Authors are thankful to CNCS Bucharest, Romania, project PN-II-DE-PCE-2011-3-0038, no. 268/05.10.2011, for financial support.
Class	<i>Innovative Research</i>
RO.35.	
Title EN	Low-cost biomass mixture-bed for continuous treatment of aqueous effluents
Authors	Laura Bulgariu¹, Dumitru Bulgariu^{2,3}
Institution	¹ Gheorghe Asachi Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection ² "Al.I.Cuza" University of Iasi, Faculty of Geography ³Romanian Academy, Iasi Branch, Geography
Description EN	The researches are related to the utilization possibility of various low-cost biomasses, for the continuous removal of heavy metals from aqueous effluents. In general, the biomasses uses as biosorbents have small size of their particle and therefore cannot be

utilized for continuous treatment of aqueous effluents, due to the ease with that the column is clogged. In order to solve this inconvenient, we propose an original solution, namely: the mixing of biomass with an anion exchanger resin. The biomass mixture is obtained by mechanically shaken of different types of biomasses, that are low-cost biosorbents with high biosorption capacity for numerous heavy metals (Pb(II), Cd(II), Co(II), etc.), and commercially available PuroLite A-100 resin, (designed for nitrate and sulphate removal). This mixture can be easy packed in a bed-column, and the main advantages are the prevention of clogging of the column and ensuring of reasonable values of aqueous solution flow rate. The procedure described in these researches included: (i) the preparation of biomass mixture-bed; (ii) study of the influence of most important experimental parameters, such as flow rate and initial heavy metals concentration on the biosorption performances in continuous systems; (iii) optimal experimental conditions required for the efficient and economic treatment of aqueous effluents, (iv) implementation limits of the biomass mixture-bed column. The procedure described in these researches includes methodological details for each work step and applicability limits.

The financial support for the studies was provided by the Romanian Academy, Branch Iași, Collective of Geography (Project no. 3 / theme 1 / 2014).

Class *Innovative Research*



RO.36.

Title EN **Valorisation of biodiesel production waste in heavy metals biosorption processes**

Authors Laura Bulgariu¹, Dumitru Bulgariu^{2,3}

Institution ¹ **Gheorghe Asachi Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection**

² **“A.I.Cuza” University of Iasi, Faculty of Geography**

³ **Romanian Academy, Iasi Branch, Geography**

Description EN

Various kinds of biomasses (algae, agricultural by-products, peat, etc.) are particularly attractive for the biosorptive removal of heavy metals from aqueous media, because are available in large quantities,

required only few step of preparation and have on their surface numerous functional groups that could represent binding sites for heavy metal ions. In the last years, many of these biomasses have been also considered as a feasible alternative for the production of biodiesel, and this utilization is more economical efficient. However, the biodiesel production from biomasses lead to getting important quantities of waste biomass that cannot have any utilization due to the presence of organic solvents from extraction steps, and that cause negative environmental impact due to the disposal problems. Thus, it is economical reasonable and in benefits of environment to utilize such waste biomasses (from biodiesel production) as low-cost biosorbents for the heavy metals removal from aqueous media. The research related to this area included: (i) preparation and characterization of waste biomasses; (ii) study of the experimental parameters (initial solution pH, biomass dose, initial heavy metals concentration, contact time and temperature) in order to establish the optimum conditions; (iii) thermodynamic and kinetic modelling of biosorption process; (iv) implementation limits. The procedure described in these researches includes methodological details for each work step and applicability limits.

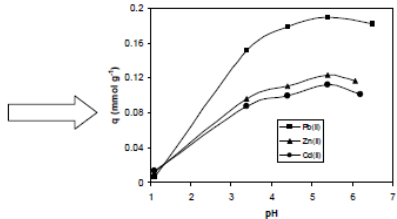
The financial support for the studies was provided by the Romanian Academy, Filial of Iași, Collective of Geography (Project no. 3 / theme 1 / 2014).

Class

Innovative Research



Waste biomass



Efficiency in biosorption processes

RO.37.

Title EN

Natural geopolimers – possible models for the inorganic macromolecular compounds and composite materials synthesis

Authors

Bulgariu Dumitru^(1,3), Bulgariu Laura⁽²⁾

Institution

¹ „Alexandru Ioan Cuza” University of Iași
² Technical University „Gheorghe Asachi” of Iași
³ Romanian Academy, Iași Branch – Geography

Description EN

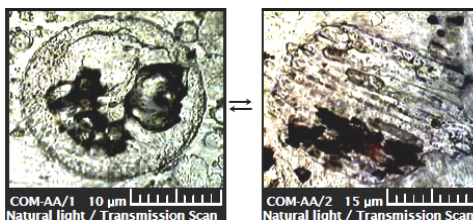
From frangipane horizons of some horticultural anthrosols have been separated and studied four types of silico-alumino-phosphates copolymers $(SiO_2)_x(Al_2O_3)_y(PO_4)_z$, with formula mass between

3400-8350 [g] and chains length of 210–1135 [Å]. After the structure and properties, these hetero-polymeric materials have not synthetic analogs, so these were included as new types in geo-polymers class. The macromolecular chain of these geo-polymers is formed by 1-3 silicate units by $-\text{[Si}_3\text{O}_9]-$ type, with hexagonal structure and chair conformation, linked by silico-oxo-aluminium units by $-\text{[Si-O-Al-O-Si-O]}-$ type or $-\text{[Si-O-Al-O-Si-O-Si-O]}-$ type, in alternation with $-\text{[HPO}_3^-]_n-$ ($n = 2-3$) meta-phosphates or $-\text{[P}_n\text{O}_3\text{O}_{n+1}]^{(n+2)-}$ ($n = 3-4$) iso-phosphates units. The distribution of structural units in macromolecular chain is relatively symmetric and varied between 5:3:1 and 5:1:1. Remarkable in case of these geo-polymers are the high hydrolytic stability and extraordinary stability of structure, which is manifested by reversible modification of macromolecules conformation and configuration, at variation of environmental conditions. In conditions of water excess, geo-polymers have compact structures, lamellar-plane and multilayer, relatively well individualized, where the macromolecules have linear conformations. Concomitant with reduction of water contents the geo-polymers successively adopt helicoidally structures and then globular by folding 2-6 macromolecules. The studied geo-polymers could be a possible model for to obtain some new polymeric materials with applications in inorganic polymer technology.

The financial support for the studies was provided by the Romanian Academy, Filial of Iași, Collective of Geography (Project no. 3 / theme 1 / 2014).

Class

Innovative Research



RO.38.

Title EN

„In situ” generation of biocompatible hetero-copolymers - application in environmental protection

Authors

Bulgariu Dumitru^(1,3), Bulgariu Laura⁽²⁾, Rusu Constantin^(1,3), Juravle Doru⁽¹⁾

Institution

¹„Alexandru Ioan Cuza” University of Iași
²Technical University „Gheorghe Asachi” of Iași
³Romanian Academy, Filial of Iași–Collective of Geography

Description

From solutions resulted after the treatment during of 18 months of

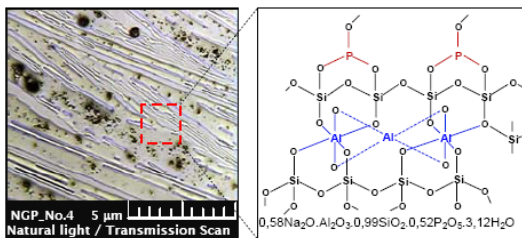
EN

hortic anthrosol with polyethylene glycol (MW = 2000), vinyl-acetate – maleate copolymer and maleate-metacrylate copolymers, have been separated and analyzed around 31 macromolecular compounds with formula mass between 1600–120 g and molecular dimension by de 280–3450 Å, formed “in situ”, by interaction of initial polymeric materials with certain organic components of horticultural anthrosol. The experimental studies have shown that these macromolecular compounds are copolymers whose molecular chain is formed by two structural units: (i) one molecular fragment from the cleavage of polymeric materials used for the treatment of horticultural anthrosol, (ii) one molecular fragment from organic matter decomposition in soil (with polymerization degree < 10). The macromolecular chains of studied copolymers contain 4–16 structural units from each type. The “in situ” generated copolymers have a high biocompatibility degree with biological systems from natural environment, act selectively on chemical-mineralogical processes and have no residual toxic effects on the environment where they are generated. The applications in environmental protection of “in situ” generated copolymers derive primarily from the practicality to selectively control of their biocompatibility control with biological systems from some natural environment, from their effects on the interaction process with some environmental component and on the dynamics of pedo-geochemical processes, respectively.

The financial support for the studies was provided by the Romanian Academy, Filial of Iași, Collective of Geography (Project no. 3 / theme 1 / 2014).

Class

Innovative Research



“Gheorghe Asachi” Technical University of Iasi

RO.39.

Title EN	Fractal design: A new path to improve the dynamic of organizational competitiveness
Authors	Ionut Viorel HERGHILIGIU ¹ , Luminita Mihaela LUPU ¹ , Christian ROBLEDO ² , Abdessamad KOB ² , Alexandru Ionut POHONTU ³
Institution	¹ „Gheorghe Asachi” Technical University of Iasi, Romania ² University of Angers, ISTIA, LARIS, France ³ University of Angers, GRANEM, LUNAM, France
Description EN	<p>Based on fractal philosophy the aim of the research is to assess and design an innovative dynamic diamond of four differentiations of an organization (cooperation, competency, competition, and knowledge) in order to enhance organizational competitiveness. Starting from the literature a theoretical framework is developed for understanding the key concept related to learning and integration of knowledge sharing, competence development and learning process in such a way that collaborative knowledge sharing becomes a part of the work culture and overcome organizational competitiveness.</p> <p>The proposed conceptual framework, built after fractal philosophy principles offers a number of specific tangible benefits, such as: (a) different decisions can be generated by a small series (even standardized decision) of aspects that are considered relevant; (b) eliminates data/ information redundancy and so on; (c) can reduce data and information storage (e.g. reports) revealed from various analysis (reducing the costs for these specific actions); (d) simplifies the analysis/ codification of information’s processes; (e) can reduce the response time materialized by an decision; (f) can reduce the established connections number at this decision-making level process, and (g) may develop particular decision-making methodologies (depending on the particularities of organizations) to streamline this process.</p> <p>Considering the previous ideas, the fractal design approach the organisation as a sum of autonomous entities (regarding the organizational structure) – presented in the figure below – that „work synergistically” in order to continuously improve the overall organizational competitiveness.</p>
Class no.	Innovative Research

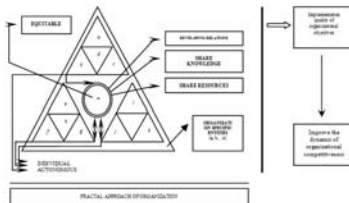


Figure: Fractal approach of the organizational component entities

RO.40.

Title EN **Foot prosthesis on natural fibers composite with limiting bending**

Authors Dimitriu Bogdan

Institution **Gheorghe Asachi Technical University of Iasi, Faculty of Mechanics**

Patent no. Pending

Description EN Prosthetic for leg amputation, lower system (paw foot), made of composite from cotton natural fabrics and resin. The system is part of the elastic type "energy return". The degree of mobility of composite blades is controlled by an integrated or embedded devices in order to allow a degree of damping - adjustable depending on the type of travel or activity

Class no. 4. Medicine - Health Care - Cosmetics

RO.41.

Title EN **Device of administration through the membrane diffusion phytosanitary substances in ligneous plants**

Authors Vlahidis Virgil, Manea Liliana Rozemarie, Lupascu Tudor, Sandu Ion

Institution **Gheorghe Asachi Technical University of Iasi „Ion Ionescu de la Brad” University of Agricultural Sciences and Veterinary Medicine Iași Institute of Chemistry of Academy of Science of Moldova Alexandru Ioan Cuza University of Iasi**

Patent no. Pending

Description EN The device uses a command system that controls the difusion of the phytosanitary solution from a basin through a unidirection membrane with a micro-pump. The device is attached to the plant, close to the soil. The device is automatic being monitored by a command center.

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

RO.42.

Title EN **Device of administration by absorption on pseudo-roots of phytosanitary substances in ligneous plants**

Authors Manea Liliana Rozemarie, Vlahidis Virgil, Lupascu Tudor, Sandu Ion

Institution **Gheorghe Asachi Technical University of Iasi**

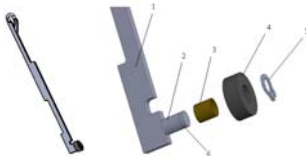
Patent no. Pending

Description EN The device is manually set on each plant durring the fructification cutting during the vegetative rest. The solution is changed each year and the device every 3-4 years.

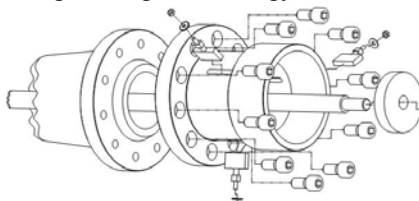
Class no. **3. Agriculture and Food Industry**

RO.43.

- Title EN** **KNITTING NEEDLE FOR WEFT FLAT KNITTING MACHINES**
- Authors** **Mirela BLAGA, Neculai Eugen SEGHEDIN, Dragoș CHITARIU**
- Institution** **“Gheorghe Asachi” Technical University of Iași, Romania**
- Patent** **Patent application No. A 00137/01.03.2012**
- Description EN** The invention relates to a needle, designed for weft electronic flat knitting machines, coarse gauge, with the purpose of a lower initial impact friction, between needle but and cam profile. According to the invention, the needle comprises the main body, which has on the lower part a cilindric part, on which is placed a roll, through an element anti friction. Roll is prevented from moving axially by a safety ring, placed into a channel, executed on a cylindrical part. Roll is in contact with a cam, which performs a translation movement of the needle.
- Class no.** **9. Chemical and Textile Industry**

**RO.44.**

- Title EN** **Device for gripping with cut out chuck collet**
- Authors** **SEGHEDIN N. E., HORODINCA M., VUCICHI A.**
- Institution** **Technical University „Gheorghe Asachi” of Iasi, ROMANIA**
- Patent** **Patent no. RO128492-A2/ 28 Jun 2013**
- Description EN** The invention relates to a device for gripping with cut out chuck collet, used for centering and clamping pieces to be machined on machine-tools. According to the invention, the device comprises a body in which there is introduced a chuck collet where there is clamped a piece whose axial motion during the clamping process is prevented by some adjustable supports which are fastened on the body of the device by means of some screws and washers and which pass through some elasticizing slits of the chuck collet.
- Class no.** **6. Mechanical Engineering - Metallurgy**



RO.45.

Title EN	Effect of temperature and time on drying process of the carrot (<i>Daucus carota</i>) and parsnip (<i>Pastinaca sativa</i>)
Authors	Claudia Cobzaru ^{1*} , Genoveva Bordeianu ² , Corina Cernătescu ¹ , Adriana Marinouiu ³
Institution	¹ “Gheorghe Asachi” Technical University of Iași, Faculty of Chemical Engineering and Environmental Protection D. Mangeron, 71, 70050, Romania. ² Tehcnical College “Danubiana” Roman, Neamt. ³ National R D. Institute for Cryogenics and Isotopic Technologies- ICIT, 4 Uzinei St., Rm Valcea.
Description EN	The by microwave drying is a rapid dehydration technique that can be applied to vegetables. The advantages of by microwave drying include the following: shorter drying time, improved product quality and flexibility in producing a wide variety of dried products. In case of vegetables namely carrots and parsnips the by microwave drying is very profitable because a high percentage of dry substance is obtained in short time.
Class no.	Innovative research

RO.46.

Title EN	The first material capable to be fluidized using the light instead of heat.
Authors	Cristina-Maria Păiuș ^a , Nicolae Hurduc ^a , Dan Scutaru ^a , Constanta Ibanescu ^a , Norica Branza-Nichita ^b , Licinio Rocha ^c
Institution	^a “Gheorghe Asachi” Technical University of Iași, Faculty of Chemical Engineering and Environmental Protection ^b Institute of Biochemistry of the Romanian Academy, Department of Viral Glycoproteins ^c CEA, LIST Saclay, Laboratoire Capteurs et Architectures Électroniques
Description EN	The aim of this work was to obtain, for the first time, a material capable to pass (athermal) from the solid state to the fluid one, using the light. The basic concept was to use a photo-sensitive segment (azobenzene) capable to change his geometry as a result with the interaction with light, connected in the side-chain of a polysiloxane. Due to the high flexibility of the polymeric chain, the geometrical changes of the azobenzene segments during the light irradiation (trans-cis isomerization processes) induce dramatic modifications at the conformational level, having as main effect the material fluidization. This behavior named <i>conformational instability</i> is responsible for the impossibility of

the system to generate a solid phase [1, 2]. The behavior is completely reversible, the material passing into the solid state when the light irradiation is stopped. This new polymer was obtained by the connection of nitro-azobenzene groups in the side chain of a polysiloxane. The fluid state of the material is obtained when the azo-polymeric film is irradiated using the blue light (488 nm) [3]. The material fluidity degree can be controlled by changing the wave length irradiation, only a plasticization effect being obtained at 365 nm. This new material can be used as support in the cell cultures [4] (figure 1), the signals induced at the cell membrane level being calibrated by the light stimuli.

Class no. Innovative Research

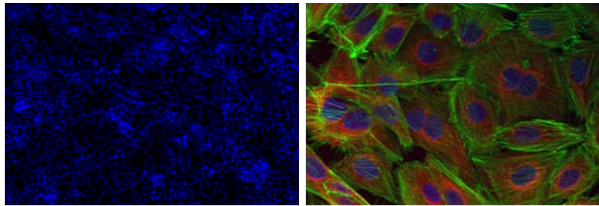


Figure 1. Immunofluorescence microscopy images of HepaRG cells developed on azo-polysiloxanic film (NO₂-Azo-PSi). The scale bar is 100 μm (left) and 50 μm (right).

RO.47.

Title EN

MICRO-POSITIONING, MICRO-ORIENTATION AND MICRO-DISPLACEMENT SYSTEM WITH SIX DEGREES OF FREEDOM

Authors

Mihăiță HORODINCĂ, Neculai-Eugen SEGHEIDIN, Eugen CARATA, Dragoș CHITARIU, Claudiu FILIPOAIA, Mihai BOCA

Institution

Technical University „Gheorghe Asachi” of Iasi

Patent

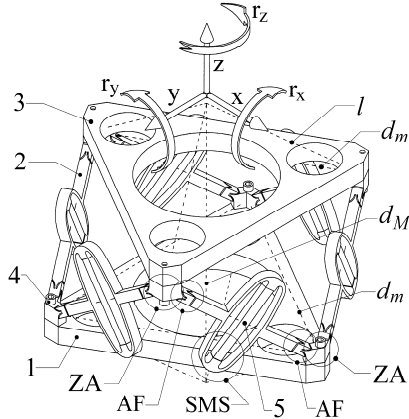
Patent application No. a 2010 01017/27.10.2010

**Description
EN**

This system is useful as mechatronic setup with open-loop piezoelectric actuation. It is a Gough-Stewart platform with cubic architecture. It consists of a fixed plate, a mobile plate and a mechanical structure with piezoelectric actuators, placed between. The mechanical structure is a body with six actuated active struts oriented on the six edges of the cube which doesn't meet the longest diagonal. Each active strut consist of two flexible joints AF, a mechanical support SMS which contains a piezoelectric actuator and two stiff rectangular cross section mechanical connectors. The deformation of the piezoelectric actuator is amplified by the support SMS and directed toward the deformation of the active

struts (it decreases the length if the actuator increases the length). The struts are connected each other by some parts called ZA, used also to attach the mechanical structure to the plates and, with screws. The main contribution of this patent application is the shape of the mechanical structure as a single body made by wire electric discharge machining (WEDM).

Class no. 6. Mechanical Engineering - Metallurgy



**“Gheorghe Asachi” Technical University of Iasi
Faculty of Materials Science and Engineering**

RO.48.

Title EN

Hair Coloring Comb

Author

Cojocaru Filipiuc Vasile

Institution

“Gheorghe Asachi” Technical University of Iasi

Patent no.

RO 123288

The hair coloring comb is formed from plug, hair highlighting limiting device, hair color holder (coloring case), hair color pushing piston and color mixing stick.

The hair coloring comb has as purposes as follows:

-complete hair coloring;

-hair highlighting;

Description

-even distribution in the hair of various products with the following destinations:

EN

*hair structure repair (mask);

*hair repair and hydration (conditioner);

*hair dyeing (shading dye);

*hair bleaching (particle-free hair bleach);

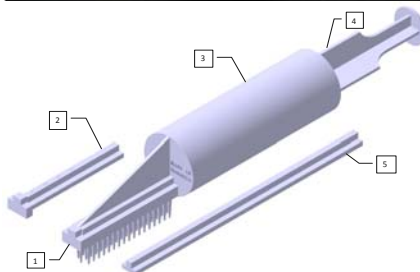
*excess sebum reduction (anti-sebum product), allergy resistance, hair loss control, scalp resistance increase, etc.

Class no.

4. Medicine - Health Care - Cosmetics



**Image/
Photo**



1 – cork;

2 – hair highlighting limiting device;

3 – hair color holder (coloring case);

4 – hair color pushing piston ;

5 – color mixing stick

RO.49.

Title EN	Thin layers systems for Fe-C alloys using impulse electric discharges
Authors	Vizureanu P., Perju M.C., Nejneru C., Achitei D.C., Sandu A.V., Minciuna M.G.
Institution	Gheorghe Asachi Technical University of Iasi Faculty of Materials Science and Engineering This consists in prolonging functioning period of Fe-C alloys pieces that work under intense regime (ex. piston rings for Diesel engines, cutting tools, dies for heat and cold deformation, medical instruments, different mechanical pieces). The project proposes a wear resistance increase of Fe-C alloys pieces through coating with hard thin layers using the impulse electric discharges method. Procedure's advantage is that heat density of the piece is minimum maintaining chemical composition and the properties of basic material.
Description EN	
Class	Innovative Research

RO.50.

Title EN	Study of the heat flux at the liquid-metallic object interface for synthetic quenching mediums
Authors	Nejneru C., Vizureanu P., Achitei D.C., Sandu A.V., Minciuna M.G., Perju M.C.,
Institution	Gheorghe Asachi Technical University of Iasi Faculty of Materials Science and Engineering The proposed research program aims to analyze the influence of cooling factors on the cooling characteristics of the usual media for quenching. It is primarily pursued the additives influence in increasing the cooling characteristics of synthetic quenching environments and also study the effect of thermal fatigue on quenching performance. The cooling capacity of the proposed environment for analysis, those composed by water and corboximethylcellulose (CMC) of Sodium (Na-) to perform the quenching operation is influenced by various factors such as: the ambient temperature, the viscosity, the degree of agitation and thermo-physical properties of the liquid as heat capacity, thermal conductivity, density, the diffusion, etc. All these factors influence the quench quality of the cooling environment in a complex manner with unfavorable influences in some situations that may very well be determined by the proposed experimental methodology.
Description EN	
Class	Innovative Research

RO.51.

Title EN

Modern heating system for thermo sensitive electric heat treatments

Authors

Cucos Iulian

Institution

Tehcnical University “Gh. Asachi” of Iasi

The establishment of prediction methods based on the phenomenological description and computer simulation of the transformation processes during heat treatment and the development of software for technological planning has been of major interest.

Description

EN

The control of furnaces for thermic treatment is a consequence of permanent effort for relief of work through amplify of his capacity in solving problems of productions. The advanced system for conducting the furnaces rof heat treatments has the main importance in different activities developed in hard conditions.

Class

Innovative Research

**“Gheorghe Asachi” Technical University of Iasi
Faculty of Electrical Engineering**

RO.52.**Title EN**

Facilitating cortical reorganization in stroke patients by means of a Brain-Computer Interface & FES hybrid system

Authors

Danut C. Irimia, Marian S. Poboroniuc

Institution

“Gheorghe Asachi” Technical University of Iasi, Faculty of Electrical Engineering

In the last decade, a variety of different Brain-Computer Interface (BCI) applications for communication and control were developed. A promising new idea is to utilize BCI systems as tools for brain rehabilitation.

Both, functional electrical stimulation (FES) system and brain computer interfaces (BCI) based rehabilitation are earning year by year more involvement within rehabilitation field. Our system consists of a motor imagery based BCI system coupled with a neuroprosthesis.

During a training session, the user has to imagine the movement of either right or left hand (in random order) as instructed by a visual paradigm. While performing one of the hands movement imagination, the EEG signal changes its oscillations patterns in the motor cortex areas. A classifier which is calculated by recording that phenomenon helps the system to detect which hand movement the subject imagined. The visual feedback is provided in form of a bar which starts in the center of the monitor and it extends to the right or left side, according to the classification result. At the same time, a programmed neurostimulator (inducing muscle contraction by means of surface electrodes electrical stimulation) induces the opening of either right or left hand, according to the classified imagined movement.

**Description
EN**

The new approach within this work is to demonstrate a new rehabilitation method for stroke patients by using a hybrid BCI&FES system, which stimulates more afferent pathways and forces the patient's brain to re-organize and to regain control over the affected limbs. Clinical tests are being conducted in Rehabilitation Hospitals.

Class no.

Innovative research



RO.53.**Title EN****A new rehabilitation method based on a hybrid FES-mechatronic intelligent robotic glove****Authors**

Sergiu Hartopanu, Florin Serea, Marian Poboroniuc

Institution**“Gheorghe Asachi” Technical University of Iasi, Faculty of Electrical Engineering****Description****EN**

The Rehabilitation Robotics is a branch of Robotics and Mechatronics areas that addresses the study of complex robotic systems aiming to restore the human functions for those people who suffer major trauma as a result of stroke or other neurological diseases.

The aim of this research is to design and develop a Hybrid FES(Functional Electrical Stimulation)-Mechatronic Intelligent Robot-Glove for the rehabilitation of the patients who suffered a cerebrovascular accident (CVA). The intelligent glove contains an exoskeleton that supports the human hand and hand activities by using control architecture for dexterous grasping and manipulation. It is a medical device that acts in parallel with a hand in order to compensate some lost function. The proposed solution is to develop a mechanical architecture consisting of a cascade of articulated elements, whose design cover as much as possible the anatomic and functional finger phalanges, providing support for the actuation system.

The novelty of the proposed hand rehabilitation system consists in its balanced control among FES muscle activation and the lightweight exoskeleton itself creating the premises for a better recovery of the hand functions.

The figure below presents first results of the research. The entire control of the hand movement will take into account the hand exoskeleton control as well as the contribution provided by the muscles themselves by means of the electrical stimulation. Tests that assess the hand dexterity improvements are planned. Clinical trials which follows aim to prove the effectiveness of the new intelligent FES-mechatronic glove.

Class no.

Innovative research



RO.54.**Title EN****ONZOFF control method to support Functional Electrical Stimulation-based standing in paraplegia****Authors**

Marian-Silviu Poboroniuc

Institution**Gheorghe Asachi Technical University of Iasi****Patent**

Patent application No. A00170/25.02.2013

**Description
EN**

Functional electrical stimulation (FES) is a technology that uses small electrical impulses to artificially activate peripheral nerves, causing muscles to contract, and this is done so as to restore body functions. Regular FES-based standing in spinal cord injured subjects is thought to help in preventing osteoporosis; in preventing contracture by preserving the range of movement at lower limb joints; in improving digestion, respiration and urinary drainage; in reducing the chance of decubitus ulcers by relieving pressure; and contributing to the psychological benefit by enhancing personal esteem. The patent application deals with a new ONZOFF control method to support FES-assisted sitting down in paraplegia. It works according to a switching curve in knee angle against knee angular velocity state-space, but with a gradual increase or decrease in stimulation pulsewidth between the on and off sub-spaces, the so-called 'zone'. In order to perform standing exercises, a paraplegic person has to accomplish the three phases: standing up, standing and sitting down. Based on the proposed method, a chained motion standing-up, standing and sitting-down can be easily programmed by means of a neuroprosthesis (neurostimulator) activating the quadriceps, gluteals and/or hamstrings muscles of a paraplegic person. Electrical stimulation is delivered by means of surface electrodes placed over the bulk of each of these muscle groups. Transfer functions as bed-wheel chair, wheel chair-toilet are to be dramatically improved in terms of energy consumption and performance time (controlled sitting-down in a T7 paraplegic patient by means of the ONZOFF method; see figure bellow).

Class no.

4. Medicine - Health Care - Cosmetics
10. Information Technology and Communication



RO.55.**Title EN**

New upper limb rehabilitation method in paralyzed people by means of functional electrical stimulation and exoskeletons

Authors

Florin Serea, Sergiu Hartopanu, Marian Poboroniuc

Institution

“Gheorghe Asachi” Technical University of Iasi, Faculty of Electrical Engineering

New concepts of rehabilitation, like Functional Electrical Stimulation (FES) and robotics or FES along with intensive motor learning, have shown great potential for restoring motor functions to some subjects,.

Functional Electrical Stimulation – FES is a relatively new method used in the rehabilitation process of neurological patients and can be widely applicable. Most times the central nervous system is affected and the command is interrupted. The electrical stimulus replaces the command that previous was generated voluntary. In order to produce a muscle contraction strong enough to achieve a movement we have to apply an electrical stimulus taking into account the condition that the nerve causing the contraction has to be intact. By activating in steps different muscle groups we can produce complex movements mimicking activities previously made voluntary. The movements that we are trying to achieve are the shoulder’s flexion/extension and abduction/adduction and elbow flexion/extension.

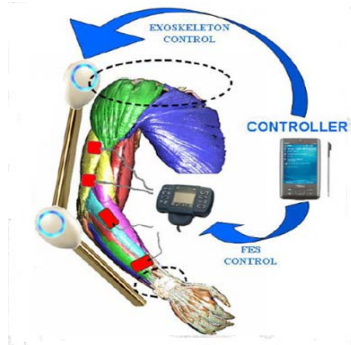
Description
EN

The aim of this research is to design a wearable exoskeleton in compliance with human arm to support the rehabilitation exercises. The approach of this research is to design and construct a biomechanical arm that combines the balanced control among induced electrical stimulation and electrical drive, that facilitates cortical reorganization and restore the movement independence of the patients. The system shows good premises for ambulatory exercises. It can be designed like a wearable jacket that can be worn to do normal daily activities.

The figure below presents the concept of the research. The entire control of the upper limb movement will take into account the upper limb exoskeleton control as well as the contribution provided by the muscles themselves by means of their electrical stimulation.

Class no.

Innovative Research



**“Gheorghe Asachi” Technical University of Iasi
Faculty of Civil Engineering and Building Services**

RO.56.

Title EN **Applied invention: Fan - shaped expandable house**
Authors Alexandru Stanila, Oana Stanila, Alexandru Balevici, Alin-Ionuț Buduleci,
Institution **Faculty of Civil Engineering and Building Services,
Technical University “Gheorghe Asachi” of Iasi**
Patent no. Pending
Description EN An ideal solution for solving serious social problems, providing social homes or houses for emergency situations. Our invention is also a viable solution for temporary housing, normal common homes in rural areas, holiday homes etc, and it can be available on a worldwide scale.
Class 7. Buildings and Materials



RO.57.

Title EN **A modern technology for pools construction**
Authors Alexandru Stanila, Giurma Ion, Catalina Deleanu, Oana Stanila, Adrian-Georgian Neculai, Alexandru Balevici
Institution **Faculty of Civil Engineering and Building Services ,
Technical University “Gheorghe Asachi” of Iasi**
Patent no. Pending
Description EN This modern technology will ensure constructing walls and floors for any type of water tanks, using a structural formwork system with variable geometry. Applying this technology, will enable the engineers to built, in a record time and clean manner, swimming pools, fishing farms, collecting water tanks, and so on.
Class 7. Buildings and Materials

RO.58.

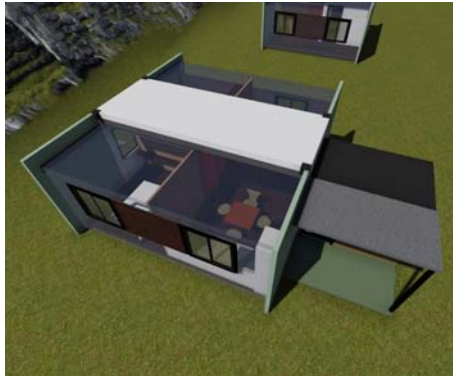
Title EN	Mobile laboratories for medical investigations Associate prof. eng. Alexandru Stanila, PhD
Authors	Eng. Oana Stanila, PhD Student Adelina Tatar, 5 th year, Faculty of Architecture „G.M. Cantacuzino”
Institution	Faculty of Civil Engineering and Building Services , Technical University “Gheorghe Asachi” of Iasi
Patent no.	Pending A general problem is obtaining funds from humanitarian aids for the third world countries. These laboratories are transportable, made in modular shapes, identical in volumes with marine shipping containers (20ft). They solve social problems, for short and long term, in underdeveloped countries all over the world.
Description EN	Some advantages of the invention: quick installation, long service life (minimum 10 years). Medical investigations with ultra-modern equipment (for example CT, MRI), have become a necessity in the whole world. The problem that the invention solves is the safe transportation of sensitive equipment, and providing space for the medical attendants, all in a single transport container..
Class	7. Buildings and Materials

RO.59.

Title EN	Packed houses Alexandru Stanila, Mihai Budescu, Oana Stanila, Adrian - Georgian Neculai, Alexandru Balevici
Authors	
Institution	Faculty of Civil Engineering and Building Services , Technical University “Gheorghe Asachi” of Iasi
Patent no.	Pending Execution in a record time of a permanent construction, with built in steel structure and A class thermal resistance. On the bearing frame of a classic container walls and ceilings elements are attached, made of STESBA panels, with expanded polyurethane core.
Description EN	Out of a classic container develops a surface level of 80 - 100 sqm. By overlaying a similar module over the first one, a GF + 1 house can be obtained, with modern cubist architecture.
Class	7. Buildings and Materials

RO.60.

Title EN **Transportable social shelters**
Authors Alexandru Stanila, Oana Stanila, Alexandru Balevici
Institution Faculty of Civil Engineering and Building Services ,
Technical University “Gheorghe Asachi” of Iasi
Patent no. Pending
 The main problem this invention meets is obtaining funds from humanitarian aids to the third world countries. These shelters are transportable, made in modular shapes, with a quick installation, with a long service life in optimal conditions, according to global standards.
Description
EN This invention solves the problem of temporary housing for one or two families in case of emergency situations encountered everywhere in the world.
Class 7. Buildings and Materials



RO.61.

Title EN **Multi - purpose transporter**
Authors Alexandru Stanila, Alin-Ionuț Buduleci
Institution Faculty of Civil Engineering and Building Services ,
Technical University “Gheorghe Asachi” of Iasi
Patent no. Pending
 The invention involved equipping a common transporter (minibus) with the purpose of using it in three directions simultaneously, with the following functions:
Description
EN

- classic cargo transport
- passenger transportation
- holiday mobile home (wohn mobil)

Class 7. Buildings and Materials

RO.62.**Title EN****Field hospitals****Authors**Alexandru Stanila, Alexandru Balevici, Adelina Tatar,
Oana Stanila, Adrian - Georgian Neculai**Institution****Faculty of Civil Engineering and Building Services ,
Technical University “Gheorghe Asachi” of Iasi****Patent no.**

Pending

These field hospitals solve social problems, for short and long term, in underdeveloped countries. Their advantages: quick installation, long service life (for more than 10 years) in optimal conditions.

**Description
EN**

With the help of multiple specialized spatial modules has been developed the execution of field hospitals, composed of multiples containers. With three bedroom containers, two operative medical unit containers, and a sanitary, an administrative and a dining container, the problem of a hospital with a capacity of 60 patients is solved, in a modern professional fashion, anyplace in the world!

Class

7. Buildings and Materials

**RO.63.****Title EN****Modern Schools in under-developed countries****Authors**Alexandru Stanila, Elena Axinte, Oana Stanila, Alexandru
Balevici, Adelina Tatar**Institution****Faculty of Civil Engineering and Building Services ,
Technical University “Gheorghe Asachi” of Iasi****Patent no.**

Pending

They solve social problems, regarding education, in underdeveloped countries all over the world.

**Description
EN**

They are quickly installed, with a long service life, according to global standards.

A school for educating 120 children can be realized by using a minimal social administrative container and two classroom containers.

Class 7. Buildings and Materials



**University of Medicine and Pharmacy
„Grigore T. Popa” Iași**

RO.64.

Title EN	Disinfection mini box with non-ionizing radiations
Authors	Norina Consuela Forna University of Medicine and Pharmacy „Grigore T. Popa” Iași
Institution	Faculty of Dental Medicine Romanian Society for Oral Rehabilitation Romanian Dental Association For Education
Patent	Osim Registration File No. U/00006/30.01.2012 The disinfection mini box with non-ionizing radiations was created in order to be used in the medical area. It ensures a safe disinfection without consuming other materials, entirely eliminating the danger related to the contamination of the probes used for establishing some diagnoses. The disinfection is done with the help of ozone resulted through the action of the ultraviolet radiations UV-C with a wavelength of 185 nm.
Description EN	
Class	4. Medicine - Health Care – Cosmetics

RO.65.

Title EN	Air disinfection installation in reverse current
Authors	Norina Consuela Forna University of Medicine and Pharmacy „Grigore T. Popa” Iași
Institution	Faculty of Dental Medicine Romanian Society for Oral Rehabilitation Romanian Dental Association For Education
Patent	Osim Registration File No. A 00649/10.09.2012 It refers to an installation for the air disinfection from rooms where human activities are performed, food storages and especially medical units, libraries, archives, etc. using the C type ultraviolet radiation. In order to reduce the time allocated for the disinfection of the room, the air collection is done from different directions through the rotation of the installation horizontally due to an electric diagram proposed in a usage variant.
Description EN	
Class	4. Medicine - Health Care – Cosmetics

RO.66.

Title EN	The effect of different bleaching agents on surface roughness of composite resins
Authors	Simona Stoleriu, Gianina Iovan, Galina Pancu, Andrei Georgescu, Sorin Andrian
Institution	„Grigore T. Popa” University of Medicine and Pharmacy of Iasi, Faculty of Dental Medicine
Description EN	The aim of this study was to evaluate the effect of one in-office and two home bleaching agents on the surface roughness of a hybrid, microhybrid and nanohybrid composite resin. Three composite resins (Valux Plus, 3M ESPE, Filtek Z 250, 3M ESPE and Herculite XRV Ultra, Kerr) and three bleaching agents (Opalescence PF, Ultradent Products, Perfect Bleach, Voco and Perfect BleachOffice +, Voco) were chosen for this study. Twentyeight samples of each composite resins were prepared and were equally split in 4 groups: 7 samples were stored in distilled water (control group), 7 samples were subjected to 17% carbamide peroxide gel (Perfect Bleach) action for 3 hours a day, 7 days, 7 samples were subjected to 15% carbamide peroxide gel (Opalescence PF) action for 3 hours a day, 7 days and 7 samples were subjected to 35% hydrogen peroxide gel (Perfect BleachOffice +) action two times for 15 minutes. After cleaning the samples were submitted to roughness evaluation using atomic force microscopy(AFM). The hybrid resin recorded the highest roughness after bleaching, followed in descending order by microhybrid and nanohybrid composite resins. Bleaching agents that contains 35% hydrogen peroxide and 17% or 15% carbamide peroxide have erosive effect on composite resins surface
Class	Innovative Research

RO.67.

Title EN	Acceleration of tooth movement during orthodontic treatment by local injection of vitamin D3.
Authors	Maria-Dumitrelea Ciur, Sorin Andrian, Irina Zetu.
Institution	University of Medicine and Pharmacy Grigore T. Popa, Iași, Romania.
Description EN	<u>State of art:</u> Orthodontic treatment is based on mechanical forces applied on teeth. This static force is transmitted to surrounding bone tissue and the result is a bone remodeling process [1]. The duration of tooth movement depends on the

rate of bone remodeling . Vitamin D3 (calcitriol) is known to accelerate the bone remodeling process by activation of bone cells [2].

Aim of investigation: Is to accelerate orthodontic tooth movement by local administration of vitamin D3 and to evaluate its clinical efficiency.

Material and methods: After application of orthodontic appliances the maxillary arch of all selected patients is divided into right side and left side. One will serve as an experimental side (right or left) which will benefit of local administration of vitamin D3, while the other side will serve as the control side. The rate of tooth movement on each side will be measured and compared.

Results: Our clinical results show that vitamin D3 accelerates orthodontic tooth movement by interfering with bone remodeling process. One clinical case will be presented in France on 30May at French Society of Orthodontics and Dentofacial Orthopedics congress.

Conclusions: Mechanical forces associated with pharmacological agents (vitamin D3) induce an accelerated rate of orthodontic tooth movement.

Keywords: orthodontic treatment, tooth movement, vitamin D3.
Innovative Research

Class

RO.68.

Title EN

Influence of Chemical Therapeutical Methods on Manducatory Muscles

Authors

Laura Elisabeta Checherita, Elena Luca, Liliana Foia, Ovidiu Stamatin

Institution

University of Medicine and Pharmacy „Grigore T. Popa” Iași

Description EN

Muscular relaxation offers the opportunity of muscular reconditioning by means of physical therapies with the establishment of new neural-muscular engrams and, implicitly, of new patterns of mandible dynamics. Our study aims was the investigation of different methods of treatment through physical factors, the assessment of action and efficiency, along with the integration of these methods within a therapeutic algorithm that would finally, lead to stomatognathic system and cephalic musculature homeostasis.

Class

Innovative Research

RO.69.

Title EN	Detection and investigation of IL-6 in irreversible pulp inflammation
Authors	Giuroiu Cristian Levente, Paşca Aurelian Sorin, Melian Anca, Andrian Sorin
Institution	University of Medicine and Pharmacy „Grigore T. Popa” Iaşi
Description EN	Introduction The pulpitis is one of the most encountered dental disease worldwide. Interleukine 6 (IL-6) is an important cytokine in dental pathology as a major mediator (signal protein) of immunological and inflammatory host response. Materials and method. This study analysed the level of IL-6 to 50 patients diagnosed with irreversible pulpitis, treated by pulpectomy. The assessment of inflammatory process within pulp tissues was performed with immunohistochemical tests using rat monoclonal antibodies anti-IL6. Results and Discussions. High quantities of IL-6 were detected to all inflamed pulp samples. The control group presented low levels of IL-6. Conclusions The detection of IL-6 high levels to patients with symptomatic pulpitis, comparing with patients with asymptomatic pulpitis, suggests the excessive IL-6, due to the exacerbation of inflammatory status and clinical symptomatology. Keywords irreversible pulpitis, IL-6, immunohistochemistry, immunologic and inflammatory response.
Class	Innovative Research

**“Ion Ionescu de la Brad” University of Agricultural
Sciences and Veterinary Medicine Iași**

RO.70.

Title EN	Studies on the territorial distribution in Romania of the vegetable sources as raw material for the biodiesel production
Authors	Alexandru - Dragoș ROBU, Teodor ROBU
Institution	“Ion Ionescu de la Brad” University of Agricultural Sciences and Veterinary Medicine Iași
Description EN	<p>According to Directive 2003/30/EC of the European Parliament and of the Council regarding the promotion and use of biofuels for transport, Romania is using biodiesel blended with conventional diesel in amount of 4% from 1 July 2008 and in amount of 5% from 1 January 2011.</p> <p>The main advantages of biodiesel compared to conventional diesel are linked on one hand, to the environmental protection against pollution and on the other hand the annual regeneration of oil crops that can be raw material for biodiesel. There are large areas in Romania with favorable pedo-climatic conditions for the cultivation of these oil crops, the most important being rapeseed, soybean and sunflower. These species have the advantage that they can be fully mechanized thus reducing costs with labor force. Also the introduction of varieties with high production efficiency rises the productivity of these species.</p> <p>Given these considerations, the areas for growing the biodiesel production crops gain an increasing proportion within Romania's arable territory.</p>
Class	Innovative Research

“Vasile Alecsandri” University of Bacau

RO.71.

Title EN	Chess-playing robot
Authors	Stan Gheorghe, Pal Anton, Nedeff Valentin, Ciobanu Romeo Cristian, Ungureanu Viorel, Topliceanu Liliana, Livinți Petru, Schnakovszky Carol
Institution	“Vasile Alecsandri” University of Bacau
Patent no.	No. 125583 / 2012
Description EN	This invention refers to a chess-playing robot integrated into a specific chess table, designed for use in entertainment areas. This robot is comprised of an arm with two articulations that are foldable with the help of two axes of revolution. A linear pneumatic cylinder and a device used for gripping and releasing the chess pieces form the complete terminal structure of the chess-playing robot. The control system of this robot is comprised of the electronic computer, the data acquisition board, the video camera and the drivers corresponding to the electric motors controlling the axes of revolution. This control system also allows the selection of the difficulty level by the human player.
Class no.	13. Sports, Games and Leisure

RO.72.

Title EN	Planetary speed reducer
Authors	Stan Gheorghe
Institution	“Vasile Alecsandri” University of Bacau
Patent no.	No. 126782 / 2012
Description EN	This invention refers to a planetary speed reducer, whose purpose is to adapt the characteristics of the driving motor to the ones corresponding to the driven machines being used in various fields such as: machine building, metallurgy, lifting machines, etc. The planetary speed reducer presented in this invention, has a conceptual structure which ensures a very high transmission ratio and at the same time a very high efficiency and reliability, having at the same time a low weight and requiring simple maintenance operations. The elements comprising the structure of the planetary speed reducer are: the sun gear, satellite gears, a fixed ring gear and a moving one. The manufacture of these basic elements is subject to the conventional manufacturing technologies.
Class no.	8. Aviation, car industry and transportation

RO.73.

Title EN **Polyarticular Mechanism**
Authors Stan Gheorghe, Pal Anton, Ciobanu Romeo Ciprian
Institution “Vasile Alecsandri” University of Bacau
Patent no. No. 122904 / 2010

Description
EN The invention refers to a polyarticular mechanism used in the structure of an industrial robot. The mechanism, according to invention, is built from an arm having several universal joints, which give the rotational movement under X and Y axes individually. Each rotational axis is a controlled axis, thus allowing accuracy regarding spatial positioning. The polyarticular mechanism is slender and flexible. These characteristics make it well suited for complex spatial positioning of the end effector and for various narrow spaces access.

Class no. 5. Industrial and laboratory equipments

“Lucian Blaga” University of Sibiu

RO.74.

Title EN	Central Heating Radiator Element with Heath Storage
Authors	Oprean Constantin, Țițu Aurel Mihail, Retea Cornel, Mărginean Ion
Institution	„Lucian Blaga” University of Sibiu
Patent no.	Patent No. 125182 / 30.12.2013; The invention refers to an element necessary for the composition of central heating radiators. According to the invention, the radiator element is endowed in its structure with a cavity filled with a substance with slow melting-solidifying temperature found in the typical values range of the central heating thermal agent which melts during its functioning period accumulating heath and it re-solidifies after each sequential stop of the central heating, slowly allowing the accumulated heat to flow.
Description EN	
Class no.	2. Energy and sustainable development

RO.75.

Title EN	APIBALM lip balm based on honey, propolis, beeswax and essential oils
Authors	Banu Ilie, Țițu Aurel Mihail, Păcală Mariana
Institution	„Lucian Blaga” University of Sibiu
Patent no.	Patent application No. A 00429 2013 The “APIBALM product for lips based on honey, propolis, beeswax and essential oils” represents a mixture of natural ingredients used to hydrate and treat lips, which has an important role in the prevention or treatment of angular cheilitis. The composition of the product gives it a higher advantage compared to other synthetic products and its price is one relatively close to those on the market. Its composition is characterized by the inclusion of: acacia honey, concentrated propolis tincture, extra virgin olive oil, cold pressed seed oil, 100% natural chamomile oil, natural beeswax. It may be used throughout the year by women as well as by men. During autumn and winter it is recommended to be used 2-3 times a day in case the lips are to be kept healthy, avoiding chapped lips and providing high resistance to cold weather. During the summertime, it may be used 1-2 times a day, an intense hydration as during autumn and winter not being necessary. The product also has the advantage of an extended shelf-life of 4 years.
Description EN	
Class no.	4. Medicine - Health Care - Cosmetics

NATIONAL

RO.76

Title EN

Remediation procedure for the dislocations occurring in the road pavement

Authors

Țițu Aurel Mihail, Oprean Constantin, Bondrea Ioan, Carabulea Ilie, Mărginean Ion, Moldovan Alexandru Marcel, Bogorin-Predescu Adrian

Institution

„Lucian Blaga” University of Sibiu

Patent no.

Patent application No. A 00824 2013

Description
EN

The procedure consists of technologically modifying the shape and depth of the hole in the asphalt, so that an implant may be created through the local casting of asphalt mixture in the newly created cavity instead of the hole. The created implant fills the hole and extending downwards vertically to the level of the road foundation it is joined by pressing the inclined walls of the cavity, which crosses the layers of the pavement, providing a vert stable assembly. The contact area between the implant and the road structure, with the geometric shape of a truncated cone, is self-fixated and self-sealing by priming and pressing under its own weight and the vehicle traffic, so that the stability of the remedied site increases over time. The procedure may be applied in the operative correction of isolated damages that appear on the road, being able to use the material from the drilling of new holes with minor additions and improvements in the immediate creation of the implant that will occupy the previously damaged site. By using local bituminous material in small quantities, its local heating is economical, its remediation is done quickly and the traffic is resumed shortly after the intervention. The remedied road through the procedure of implant, according to the invention, is more stable and stronger after the remediation than before it was damaged due to the effect of local vertical reinforcement.

Class no.

7. Buildings and Materials

RO.77.

Title EN

Protection system for the light of oncoming vehicles during night car traffic

Authors

Frățilă Ioan Liviu, Țițu Aurel Mihail, Oprean Constantin

Institution

„Lucian Blaga” University of Sibiu

Patent no.

Patent application No. A 00717 2010

Description

The invention is applicable to the field of vehicles during

EN nighttime for which it ensures total protection against the light of oncoming vehicles, by reducing the related stress, increasing the comfort and safety of car drivers during night car traffic.

Class no. 8. Aviation, car industry and transportation

RO.78.

Title EN **Gallstone collector**

Authors Sabău Dan, Sabău Alexandru Dan, Dumitra Anca Maria, Țițu Aurel Mihail

Institution **„Lucian Blaga” University of Sibiu**

Patent no. Patent application No. A 00004 2013

Description EN The invention refers to a method and a device for the abdominal collection of certain corpuscular/fluid structures with a diameter below 10 mm, destined for minimally invasive surgery, especially laparoscopic as well as for open surgery. Collection methods rely on the existence of a closed, hyperbaric chamber (abdominal cavity) and several fragments of gallstones, blood clots, dispersed or agglutinated, possibly fluid tissue, that need to be relatively quickly discharged without unnecessary moves, fragmentation tools and/or contamination. The preferably transparent device consists of a metallic or plastic tube with an interior diameter of approximately 9-9.5-10 mm capable of discharging the formations due to the difference of pressure inside and outside the abdomen, difference that may be enhanced by attaching an external vacuum.

Class no. 4. Medicine - Health Care - Cosmetics

RO.79.

Title EN **Autostatic spreader with light projection and suction**

Authors Sabău Dan, Sabău Alexandru Dan, Dumitra Anca Mariana, Țițu Aurel Mihail

Institution **„Lucian Blaga” University of Sibiu**

Patent no. Patent application No. A 00007 2013

Description EN The invention refers to a method and a device useful in minimally invasive or transorifice surgery of a relatively small depth that is able to create an adjustable autostatic spread, an in depth access of 70-150 mm (adjustable) with artificial lighting by projecting distal light (LED or optic cable) and continuous fluid suction protected against cupping and clogging the “air intake”. The device designed for

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narrow places offers comfort, reduces the number of hands necessary, the number of vacuums, frees the operating field, providing adjustable spreading, central lighting, continuous suction, without a major risk of blockage, visibility and the lack of additional maneuvers to unclog the vacuum, fixation and resetting of the scialitic lamp or frontal lamp, the presence of a mobile vacuum that interrupts the activity in the operation theater, occupying a vital operating space.

Class no.

4. Medicine - Health Care - Cosmetics

Ștefan cel Mare University of Suceava

RO.80.

Title EN	Solar motors with paraffin actuators and Bourdon tube
Authors	Dorel CERNOMAZU, Leon MANDICI, Adrian GRAUR, Ilie NIȚAN, Mihai RAȚĂ, Dan Laurențiu MILICI, Mariana Rodica MILICI, Cristina PRODAN, Iulian BACIU
Institution	Ștefan cel Mare University of Suceava
Patent no.	Patent application No. A/01163/16.11.2011; A/01067/26.10.2011; A/00032/17.01.2012
Description EN	<p>The inventions relates to a solar motor with limited movement, operating according to the principle of solar-thermal-mechanical conversion and is constituted of some thermal active modules comprising several resilient Bourdon-type tubes and also, to two solar actuators variants based on the principle of the solar-thermal-mechanical conversion and comprising mainly a thermal-mechanical convertor with paraffin wax, which are positioned in same plane or in parallel planes, with paths in evolvent spiral.</p> <p><i>Applications:</i> solar-thermal-mechanical conversion, the systems of sun tracking of the solar converters.</p> <p><i>Advantages:</i> high torque, low speed, low cost, constructional simplicity</p>
Class no.	2: Energy and sustainable development

**Image/
Photo**



RO.81.

Title EN	Solutions for the cooling of sliding contact used at the transformers with continuously adjustable voltage
Authors	Elena-Daniela OLARIU, Niculina CREȚU, Mihaela GUGOȘĂ, Constantin UNGUREANU, Ilie PRISACARIU, Dorel CERNOMAZU
Institution	Ștefan cel Mare University of Suceava
Patent no.	RO 122752B1; RO 122883 B1; RO 122884B1; RO

NATIONAL

125137B1

The inventions relate to several systems for cooling a roll adjusting slider, used within a transformer or within an auto-transformer with in-load adjustment of the voltage. According to the inventions, the cooling systems are constituted from two pieces which are in permanent contact with the stripped surface of an adjustable and fixed winding, through some metallic rings on a metallic hub, provided, in the central area, with some radial channels, the assembly thus obtained being placed on a hollow axle, provided, in the central area, with an axial slot, so that the slot interacts with the radial channels oriented towards the heated area of the contact, inside the hollow axle it is placed an electric micromotor, a Peltier effect device or two Stirling engines intended for cooling the contact area.

Description
EN

Applications: transformer or within auto-transformer with in-load adjustment of the voltage

Advantages: the possibility overload operation, constructive simplicity etc.

Class no.

2: Energy and sustainable development



RO.82.

Title EN

Integrated drive systems for transformers with continuously adjustable voltage

Authors

Dorel CERNOMAZU, Elena-Daniela OLARIU, Leon MANDICI, Constantin UNGUREANU, Niculina CREȚU, Mihaela GUGOAȘĂ, Iulian BACIU Ilie PRISACARIU, Corneliu BUZDUGA

Institution

Ștefan cel Mare University of Suceava

Patent no.

RO 125640B1; RO 126168B1

Description
EN

The inventions relate two variants of transformer continuously adjusting the in-load voltage, provided with a rotary secondary winding and an integrated driving system. In the first variant, rotary secondary winding is actuated by means of four monophase modules (M1, M2, M3, M4), each module being provided with three pairs of external poles which, by means of a progressive magnetic field, actuates upon a rotary disk made of aluminum or copper and secured on the upper extremity of the

electro-insulating support which is integral with the rotary secondary winding. In the second variant of transformer, secondary winding it is actuated through a stator of an asynchronous three-phase motor secured to the upper front yoke.

Applications: transformer or within auto-transformer with in-load adjustment of the voltage

Advantages: the possibility overload operation, constructive simplicity etc

Class no. 2: Energy and sustainable development

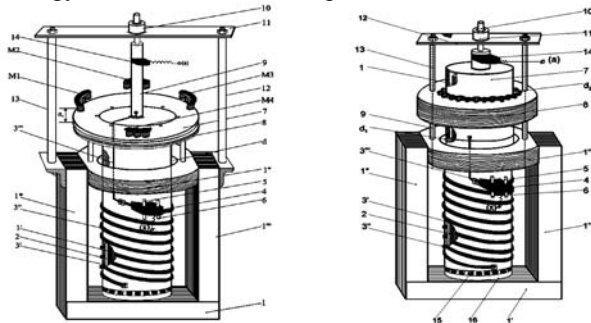


Fig.1 Scheme integrated drive systems for transformers with continuously adjustable voltage:

1- magnetic system of the "in shell"-type; 1'- central column of magnetic system; 1''- circular front yoke; 1'''- lateral yokes; 2- primary fixed winding; 3'- electro-insulating support; 3''- rotary secondary winding 3'''- conducting bridge; 4- sliding brush; 5, 6- guides; d- cut-out; 7- rotary disk (var I) or cylindrical "cup" like rotor (var II); d₁, d₂-air gap; 8-intermediar yoke(var.I) or stator of an asynchronous three-phase motor (var II) ; M1, M2, M3, M4- monophase modules; 9- conductive axle; 10- friction bearing, 11-plate support; 12, 13- supports; 14- brush; 15- insulating rolls; 16- circular channel

RO.83.

Title EN

Hybrid electrochemical actuator

Authors

Dorel CERNOMAZU, Ilie NIȚAN, Mariana Rodica MILICI, Dan Laurențiu MILICI, Constantin UNGUREANU, Ovidiu ȚANȚA

Institution

Ștefan cel Mare University of Suceava

Patent no.

Patent application No. A/00802/04.11.2013

Description EN

The invention relates to an actuator which operates on the basis of physical and chemical effects and is intended for realization of micro-motors with rolling rotor or rotor eccentric, capable of developing relatively high torques at low rotation speeds.

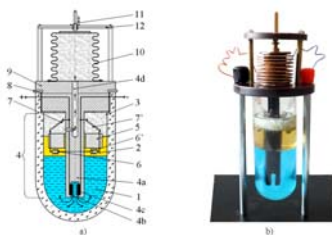
NATIONAL

Hybrid electrochemical actuators carried out based on the principle of non-miscible liquids, the first fluid is an electrolyte and the second is an oil transformer, one of which is the circulating liquid and the other one the gas generating liquid, which is decomposed in gas. A fluid based on the Joule-Lenz effect is decomposed in gas and second fluid is decomposed in gas by electrolysis under the action of an electrolyser.

Applications: solar energy, electrical microdrives, positioning systems

Advantages: high force developed; reducing the response time of the actuator; constructive simplicity etc

Class no. 2: Energy and sustainable development



RO.84.

Title EN

Electrostrictive polymers vibromotors

Authors

Dorel CERNOMAZU, Ilie ROMANIUC, Mihai RAȚĂ, Dan MILICI, Mariana Rodica MILICI, Ilie NIȚAN, Elena-Daniela OLARIU, Constantin UNGUREANU, Mihaela POIENAR

Institution

Ștefan 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 electromagnetic vibrator is replaced with a vibrator realized based on 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"

Applications: electrical microdrives, positioning systems

Advantages: lack influence of external magnet fields; high efficiency; constructive simplicity etc

Class no. 2: Energy and sustainable development

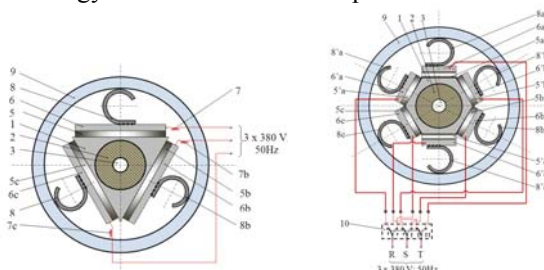


Figure 1. Electrostrictive polymers vibromotors:

- 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.85.

Title EN

PHASE SEQUENCE INDICATORS

Authors

Dorel CERNOMAZU, Daniela IRIMIA, Elena Crenguța BOBRIC, Elena-Daniela OLARIU, Mihaela Brândușa NEGRU, Constantin UNGUREANU, Daniel Ștefan GEORGESCU, Corneliu BUZDUGA

Institution

Ștefan cel Mare University of Suceava

Patent no.

Patents: RO 125568B1; RO 122937B1; RO 123065B1
Patent Application No: A/00423/11.05.2010

Description EN

The inventions relate several phase sequence indicators used for identifying the sense of rotation of the rotary magnetic field in three-phase asynchronous motors. According to the first invention, the apparatus consists a filter of direct and reverse succession associated with a device of electric balance type. Another variant of phase sequence indicator direction indicator consists a glass container where is introduced an amount of water where floats a sphere made of a mixture of ferrofluid and

paraffin, some colored points being marked on the surface of sphere to allow the identification of the rotating magnetic field rotation sense of the synchronous or asynchronous three-phase motor where the glass container is placed. The third invention is based on the active magnetic particle utilization

Applications: identification of the direction of rotation of the rotating magnetic field of a synchronous or asynchronous three-phase motor

Advantages: lack influence of external magnet fields, constructive simplicity etc

Class no. 2: Energy and sustainable development

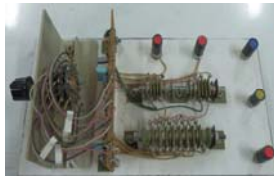


Figure 1. Phase sequence indicator based on the filter of direct and reverse succession principle



Figure 2. Phase sequence indicator, oversensitive, floating rotor

RO.86.

Title EN **METHODS FOR VERIFICATION OF SQUIRREL-CAGE ROTORS**

Authors Dorel CERNOMAZU, Leon MANDICI, Mihaela Brândușa NEGRU, Niculina CREȚU Elena-Daniela OLARIU, Constantin UNGUREANU

Institution Ștefan cel Mare University of Suceava

Patent no. RO 122747B1; RO122756B1

Description EN

The invention relates to a couple of method for checking squirrel-cage rotors. The first installation consists of a universal clamping device, wherein there is vertically fastened a rotor subjected to the test, connected, by means of some clamping collars and some flexible connections, to the terminals of a source of power currents and the local magnetic fields created around the bars, are detected and evaluated by a magnetic probe connected to a numerical flow meter. The second method relate to the flow detection of a rotor with cage winding. According to the invention, the method is based on using the magneto-active powders from a flexible foil, with nickel particles dispersed in a

gelatinous mass and wound on the surface of the rotor whose cage winding is connected to the source of power currents.

Applications: electrical microdrives, positioning systems

Advantages: accurate diagnosis, high efficiency, constructive simplicity etc.

Class no. 2: Energy and sustainable development



Figure 1. Installations for verification of squirrel-cage rotors: a) flaw detection with active magnetic particle; b) flaw detection with flux detector; c) flaw detection with oscilloscope method

RO.87.

Title EN **INSTALLATIONS FOR MODELLING THE EFFECTS IN FERROFLUIDS**

Authors Mihaela Brândușa NEGRU, Corneliu BUZDUGA, Ilie NIȚAN, Constantin UNGUREANU Elena-Daniela OLARIU, Daniel-Ștefan GEORGESCU, Dorel CERNOMAZU

Institution Ștefan cel Mare University of Suceava

Patent no. Patent Applications: No: A/001161; A/001294/; A/001098; A/001293/2011

Description EN The invention relates to an installation for the modeling the effects in ferrofluid. The first invention refers to an apparatus for the analysis of the dynamic behavior of ferrofluids, ferromagnetic colloidal solutions and magneto-active powders placed in a rotating magnetic field of a variable rotation frequency. The second invention relates to a stand used for the study of a ferrofluid surface stability and it is constituted from a glass container which is partially filled with a ferrofluid placed within a system made up of a pair of Helmholtz coil. The third invention relates to a stand for studying the hydrostatic profile of a ferrofluid around an electric current passing through some vertical conductors. The last model consists a device built to simulate the Kagan's effect in ferrofluids.

Applications: ferrofluids magnetization in low intensity magnetic fields

Class no. 2: Energy and sustainable development

Image/
Photo

Figure 1 Effects in ferrofluids

RO.88.**Title EN****SYSTEM FOR CONTROLLING LIGHTED
CROSSROADS****Authors**Călin CIUFUDEAN, Corneliu BUZDUGA, Liviu
PINTILEI.**Institution****Ștefan cel Mare University of Suceava****Patent no.**

RO 125135 B1

**Description
EN**

This invention refers to an automated system for ecological cross roads and automotive traffic. Our system will give traffic priority for polluting vehicles in an adaptive manner and not by respecting an established protocol. Some of the polluting compounds encountered in traffic are: methane gas, carbon monoxide and carbon dioxide, sulphur dioxide, organic compounds, etc. As all these chemical substances harm the human wellness we recommend to have our system mainly in the proximity of schools, hospitals, residential area, etc.

Applications: sustainable systems involved in automotive traffic.

Advantages: constructive simplicity, real time alert, cheap.

Class no.

1. Environment - Pollution Control

RO.89.**Title EN****SYSTEM FOR AVALANCHES PREDICTION****Authors**Călin CIUFUDEAN, Corneliu BUZDUGA, Abel TORAC,
Sergiu PAȚA, Luciean LUNCAȘU**Institution****Ștefan cel Mare University of Suceava**

NATIONAL

Patent no. Patent Application No: A/00495/2013

This invention refers to an automated system which estimates the risk of releasing avalanches. The system consists of electronic equipment capable to determine exactly the possibility of releasing an avalanche by taking into consideration the mechanics and thermal characteristics of snow. Our system is mounted inside a ski stick and is capable to send a wireless message for rescues teams pointing the GPS coordinates of the avalanche exposed location. Also, our system has a weather station which predicts the weather forecast for next two hours.

Applications: winter sport, mountain guards, emergency services.

Advantages: constructive simplicity, real time alert, cheap.

Class no. 12. Safety, protection and rescue of people
13: Sports, Games and Leisure

RO.90.

Title EN **Apparatus for testing the detachment in jumping in vertical direction**

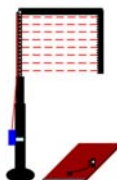
Authors Virgil Adrian Moroşan Larionescu, Alexandru Bogdan Larionescu

Institution Ştefan cel Mare University of Suceava

Patent no. RO 125822 B1

Description EN Apparatus for testing the detachment in jumping in vertical direction consists in a fixed frame provided with a telescopic leg, with an opening at the bottom, the frame having on one side photosensitive cells arranged one above another at 1 cm distance, and on the other side light radiation sources arranged the same way. When the subject's hand passes through the middle of the frame, it interrupts the light beams, determining the calculus of the jumping height. The result will be displayed on a computer screen, which is interfaced with the apparatus.

Class no. 13. Sports, Games and Leisure



RO.91.

Title EN **Sportive game “Touchball” and playing method**
Authors Virgil Adrian Moroșan Larionescu, Paul Constantin Horga.
Institution Ștefan cel Mare University of Suceava
Patent no. Patent application No. A00994/2013

**Description
EN**

The present invention refers to a game which can be played on a pitch 40 meters long and 20 meters wide. Two circles are traced at a distance of approximately 6 meters from the bottom line and two pillars, each with a ball at their top, are placed right in the middle of the circles. Two teams are formed, each consisting of five players. The task of the two teams is to hit using the ball the other ball on the pillar of the opponent team in order to score one point. The circle in the middle of the ground is used for the penalty; the player there can only play with the ball inside the circle. The team that scores most points is the winner.

Class no. 13: Sports, Games and Leisure.

RO.92.

Title EN **Device for measuring and testing the human anticipation.**
Authors Moroșan Larionescu Virgil Adrian, Lazăr Andreea Gabriela
Institution “Ștefan 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

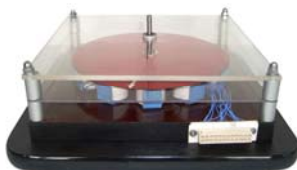


RO.93.

Title EN **Electromagnetic motors wheel drive**
Authors Radu PENTIUC, Lorin CANTEMIR, Leon MANDICI, George MAHALU, Dorel CERNOMAZU
Institution “Ștefan 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

RO.94.

Title EN **Solar engine with rolling flexible rotor**
Authors CERNOMAZU Dorel, MANDICI Leon, UNGUREANU Constantin
Institution Ștefan cel Mare University of Suceava
Patent no. Patent No. RO122758/2009
Description EN The invention relates to a solar engine with flexible rotor-shaped glass, which by deformation under the action of opposite forces rests on a circular guide track mounted on the stator and get through friction forces a rotating motion characterized by low rotational speed and torque of high value.
 Advantages: increased shaft torque, reduced complexity, reduced size, etc.
Class no. 2. Energy and sustainable development



**Banat University of Agricultural Science
and Veterinary Medicine, Timisoara**

RO.95.	
Title EN	Pharmaceutical ointment based on <i>Hippophae rhamnoides</i> fruits carotenoidic extract and process for obtaining
Authors	Dumbravă Delia, Lupea Alfa-Xenia, Ianculov Iosif [†] , Palicica Radu, Moisuc Alexandru, Butnariu Monica.
Institution	Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" Timisoara
Patent no.	RO 122834 B1 / 30.03.2010
Description EN	The invention refers to an therapeutic ointmen based on <i>Hippophae rhamnoides</i> fruits carotenoidic extract, for the treatment of some dermatological diseases (psoriasis, leg ulcers, impetigo, wounds after electrocautery basocellular epithelioma, photodermatosis, lupus erythematosus, chronic eczema).
Class no.	4. Medicine - Health Care - Cosmetics
RO.96.	
Title EN	Valorisation of germinated cereals to obtain food
Authors	Pîrvulescu Panfil, Botău Dorica, Ciulca Sorin, Madoșă Emilian, Alexa Ersilia, Gergen Iosif
Institution	Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" Timișoara
Description EN	Sprouted grain flour (sprouted grains) is rich in many active principles (oligosaccharides, vitamins, antioxidants, enzymes, microelements), making it a very valuable raw material for food, pharmaceuticals, diets, etc. The study investigates carbohydrates, polyphenols content and antioxidant capacity of sprouted grain flours (wheat, barley and oats) from experimental cultures from USAMVB Timisoara for their recommendation as feedstock in obtaining food. Applications. Foods Advantages. Were performed three types of food: Buns, Pasta and Biscuits rich in minerals, antioxidants, oligosaccharides.
Class no.	Innovative Research

RO.97.	
Title EN	Research on antifungal properties of several native Romanian medicinal plants
Authors	IVAN PAULIUC, DORICA BOTĂU
Institution	Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" Timișoara
Description EN	The study investigates the antifungal properties of extracts from several native Romanian medicinal plant species in order to discover new antifungal solutions. <i>Viscum album</i> L. (Sacuieni, Bihor), <i>Melilotus officinalis</i> L. (Zalău, Sălaj County), <i>Astragalus onobrychis</i> L. (Cluj), <i>Aristolochia clematitis</i> L. (Pecica, Arad County) were used in this study. Ethanolic and aqueous extracts from these plants were tested on 12 species of <i>Candida</i> by microdilution assay method (MIC). <i>V. album</i> and <i>A. onobrychis</i> are more effective with a MIC of 0,7 and 1,3 mg/mL. We recommend using all the plants tested, in antifungal treatments and we also recommend investigating the stimulatory effect of <i>A. clematitis</i> extracts. Applications. Medicine Advantages. Effectively on several pathogenic species of <i>Candida</i>
Class no.	4. Medicine - Health Care - Cosmetics
RO.98.	
Title EN	FUNCTIONAL COOKIES BASED ON WHEAT GERM AND <i>Momordica charantia</i> EXTRACT
Authors	Botau Dorica, Alexa Ersilia, Negrea Monica, Pirvulescu Panfil, Vasilcin Anka
Institution	Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" Timisoara
Patent	Trade Mark M 2014 00913 / 12.02.2014
Description EN	Cereal germ flour (sprouted seeds) is rich in many active principles (oligosaccharides, vitamins, antioxidants, enzymes, microelements), making it a very valuable raw material for food, pharmaceuticals, diets, etc. Functional cookies based on whole wheat flour, wheat germ and <i>Momordica charantia</i> extract according to manufacturing prescription and technologic instruction; product for people suffering from diabetes.
Class no.	3. Agriculture and Food Industry

RO.99.	
Title EN	<u>MUFFINS BASED NATURAL BIO PREMIX FLOUR ENRICHMENT IN IRON</u>
Authors	Alexa Ersilia, Botau Dorica, Poiana Mariana, Ravis Adrian, Vasilcin Anka
Institution	Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" Timisoara
Patent	Trade Mark M 2014 00914 / 12.02.2014
Description EN	Product obtained by baking the dough prepared from organic ingredients: premix enriched in iron-based lentils, wheat germ, raisins and figs, butter, brown sugar according to manufacturing prescription and technologic instruction; product for persons suffering from iron deficiency anemia.
Class no.	3. Agriculture and Food Industry

RO.100.	
Title EN	<i>Saintpaulia ionantha</i> Wendl. Variety – VALERIA
Authors	SĂRAC IOAN, BUTNARU GALLIA, BACIU ANCA
Institution	Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" Timisoara
Patent	RO 00220, 30.06.2011. The <i>Saintpaulia ionantha</i> Wendl. variety, African violet, named VALERIA was obtained by sexual propagation between (621) hybrid with mauve flowers and a local population of Chişinău (141) with white flowers boarded with mauve, following of <i>in vitro</i> multiplication. It is a decorative plant with flowers of sky-blue color.
Description EN	
Class no.	3. Agriculture and Food Industry

RO.101.	
Title EN	PLANT DIETARY SUPPLEMENT USED FOR PREVENTION AND CONTROL OF NOSEMOSIS IN BEES
Authors	Mederle Narcisa, Morariu Sorin, Dărăbuş Gheorghe, Bogdan T. Alexandru, Crăciun Cătălin
Institution	Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" Timisoara

EUROINVENT 2014

Patent	A / 00113 -14.02.2014 The invention refers to obtaining and using a natural dietary supplement used for prevention and control of nosemosis in bees. The dietary supplement of the present invention contains sugar syrup and herbal infusion: nettle, chamomile, yarrow, thyme, rattles and mint. For spraying inside the hive, apple vinegar, fresh grape wine and garlic tincture are added to the dietary supplement.
Description EN	The dietary supplement is characterized by comprising only natural ingredients with anti-inflammatory, calming, astringent, antiseptic and antibiotic properties.
Class no.	3. Agriculture and Food Industry

RO.102.

Title EN	VITISTM GRAS ARIPAT DE SILAGIU
Authors	Dobrei Alin, Sala Florin, Grozea Ioana, Poiana Mariana, Malaescu Ioana, Ghita Alina, Borca Victoria
Institution	Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" Timisoara
Patent	<i>Trade Mark 114124</i>
Description EN	Vines vineyard for white wine, coming from local populations through multiple free hybridization, followed by selection.
Class no.	3. Agriculture and Food Industry

**“Alexandru Ioan Cuza”
Police Academy of Bucharest**

RO.103.

Title EN

Optically Variable Devices (OVDs) – a revolution in anti-counterfeiting documents technology

Authors

Petru Ovidiu TANASA¹, Ion SANDU², Marius PĂDURARU¹
¹“Alexandru Ioan Cuza” Police Academy of Bucharest,

Institution

Aleea Privighetorilor, no. 1A, Bucharest, Romania
²“Alexandru Ioan Cuza” University of Iași, 22 Blvd. Carol I, Corp G – Demisol, 700506, Iași, Romania

**Description
EN**

The value of security features tends to decrease gradually, partly because of the continuously increasing ability of counterfeiters to counterfeit or imitate these features and partly because of the increasing capability and availability of equipment. As a countermeasure, numerous non-iridescent and iridescent optically variable devices (OVDs) are continuously being developed. The former comprise novel laser engraving techniques, the latter DOVIDs (diffractive optically variable image devices) and ISISs (interference security image structures). The response is the synergistic combination of those techniques, which combination expectedly remains beyond the capability of criminal organizations.

Class

Innovative Research

Romanian Inventors Forum

RO.104.

Title EN	Streetball board and new game - TWIZBALL
Authors	Pantelimona MIHOC, Ion SANDU, Cezar HONCERIU, Marin CHIRAZI, Andrei-Victor SANDU
Institution	Alexandru Ioan Cuza University of Iasi Romanian Inventors Forum
Patent no.	Pending
Description EN	The inventions refers to a double panel, basketball type, located above the middle of the basketball court, and a new game with this panel, called twizball, like streetball used in training, competitions and various leisure activities.
Class no.	13. Sports, Games and Leisure

RO.105.

Title EN	Poligraph with integrated system and testing method
Authors	I. Sandu, C. Kiss, G. Popa, A.V. Sandu, V. Vasilache, V. Sirbu, L. Gorgan, I.G. Sandu, G. Drochioiu, D. Potolinca
Institution	Alexandru Ioan Cuza University of Iasi Alexandru Ioan Cuza Police Academy
Patent no.	Pending
Description EN	The invention relates to polygraph with integrated system and testing method, which includes, in addition to its basic transducers to detect physiological indicators of emotion and honesty (blood pressure, heart rate, changes in breathing, sweating, muscle pressure or electrodynamic resistance - electroencephalography EEG), recorded as computerized charts and two real-time analysis, one based on the analysis of the temperature at the skin surface and the other on colorimetry reflectance CIE L*a*b* (highlighting any deviation of skin color), last taking data on biometric sensitive areas (nose, cheeks, forehead, ear lobes).
Class no.	12. Safety, protection and rescue of people

RO.106.

Title EN **Artificial halochambers**

Authors SANDU I., STIRBU C., CANACHE M., CHIRAZI, M., STIRBU C., SANDU A.V., VASILACHE V., LUPASCU T.,

Institution **Romanian Inventors Forum**

Patent no. Patents RO126283-A2/2011, RO126284-A2/2011, RO126285-A2/2011, MD4089(B1)/2011

Description EN The invention refers to a artificial halochambers for multiple users, which uses dry aerosols of NaCl and other salts with prophylactic purpose and for treatment of respiratory diseases, but also for improvement of respiratory/cardiac apparatus and neuro-psiho-motric parameters, of persons with intense physical activity. The invention uses diaphragms that cover the walls of the room. The room is airtight and the climatic parameters are monitorized.

Class no. 4. Medicine - Health Care - Cosmetics

RO.107.

Title EN **Method for potabilisation of ground and surface water**

Authors Sandu Ion, Cretu Anca Monica, Lupascu Tudor, Sieliechi Joseph-Marie, Kouame Innocent Kouassi, Guifo Kayem Joseph, Sandu Andrei Victor, Vasilache Violeta, Sandu Ioan Gabriel, Vasilache Viorica

Institution **Romanian Inventors Forum**

Patent no. Pending

Description EN The invention relates to a process for obtaining potable water from ground and surface water sources, which is intended to remove traces of chlorine, arsenic, aluminum, iron and other heavy metals, and microbiological agents in order to obtain drinking water with high organoleptic features and to meet European quality standards. The invention consists in the use of additional steps of filtration with ceramic granules in the form of four varieties and particle sizes.

Class no. 1. Environment - Pollution Control

**Romanian Inventors Forum
Bacău Branch**

RO.108.

Title **Installation for magnetic treatment of fluids**
Authors Mihai LASCHI
Institution **Romanian Inventors Forum – Bacau Branch**
Patent no. RO119535
Description The invention is based on the effects of a magnetic field on a fluid, which has specific intensity, speed and temperature.
In zootechnics: increases the immunity, high quality.
In agriculture: increase of productivity, soil structuration

RO.109.

Title **Device for Dialysis**
Authors Laschi. A. Mihai
Institution **Romanian Inventors Forum – Bacau Branch**
Patent no. RO 122077
Description The invention refers to a device for dialysis, used to produce a magnetic field, used for the treatment of the blood and of the liquid in the infusions, surgical procedures of transplant, limiting the effects of rejecting in the process of cleaning the organism of toxic substances, but also for the equilibration of the organism.

National Institute of Materials Physics
Magurele, Romania

RO.110.**Title EN****'INFIM SPIN 1.0'****Authors**

Ionut ENCULESCU, Alexandru EVANGHELIDIS, Cristina BUSUIOC, Nicoleta PREDA, Elena MATEI, Monica ENCULESCU, Camelia FLORICA, Andreea COSTAS, Mihaela OANCEA, Alexandru GAVRILA, Mihai CIOCA, Liviu CULEA

Institution**National Institute of Materials Physics****Patent no.**

Patent application 2014

Description**EN**

The present prototype is an automatic electrospinning apparatus able to create a scalable, canvas like, thin film of nanometric fibers from an organic or inorganic solution. Voltage difference, drum rotation, sweep velocity and sputtering pressure can be tuned to create specific material properties with applications in transparent & flexible electronics, photovoltaics, photocatalyse, sensors, intelligent clothing.

Class no.

5. Industrial and laboratory equipments

**RO.111.****Title EN****Device and method for detection of the viral antigen - specific antibody interactions by determining the contact angle****Authors**

Stefan FRUNZA, Traian BEICA; Irina Ionela ZGURA. Ligia FRUNZA, Alexandrina NUTA, Ana-Alexandra SORESCU, Corneliu Nicolae ZAHARIA, Ionica BUNEA

Institution**National Institute of Materials Physics****Patent no.****RO 126242 B1/30.10.2013****Description****EN**

The present invention refers to a multilayer device (two types) based on nanosystems which enable to detect the of

specific disturbances resulted from the interaction of the ligand-receptor (antigen-antibody), and a method for determining the presence of in proteins that are antibodies or pathogen agents for humans or for animals in order to be used in the medical diagnosis. The high sensitivity method is based on determining the contact angle of water on the above device and is an alternative to some current techniques of pathogen detection. The invention requests the modern knowledge of interactive multidisciplinary antigen-antibody, nano-sized layers, chemical functionalization reactions, wetting properties assessed by contact angle value.

Class no. 4. Medicine - Health Care - Cosmetics

RO.112.

Title EN NIMP @ EuroFUSION: Development of high heat flux materials and technologies for fusion reactors

Authors Andrei GALATANU, Petre PALADE, Bogdan POPESCU, Magdalena GALATANU, Monica ENCULESCU, Cornel SARBU

Institution National Institute of Materials Physics

By forming the EuroFusion consortium, EU adds more consistency to the roadmap for fusion energy. In 2014-18 our contributions cover the area of material development, proof of principle, joining technologies and laboratory mock-ups creation for high heat flux and irradiation tests. The main objectives are related to the development of the DEMO divertor and include W based structural materials like W-metal layered composites, interlayer materials like W-Cu FGMs, thermal barrier composites and FAST based joining technologies. A special topic allocated to our group is devoted to the investigation of thermal and micro structural properties for the new materials realized in the consortium.

Description EN

Class no. 2. Energy and sustainable development



NATIONAL

RO.113.**Title EN****Magneto-caloric and magneto-resistance effects in Heusler type Ferromagnetic Shape Memory Alloys****Authors**

Mihaela VALEANU, Victor KUNKSER, Felicia TOLEA, Mihaela SOFRONIE, Neculai PLUGARU

Institution**National Institute of Materials Physics****Description****EN**

Ferromagnetic Shape Memory Alloys receive great attention due to the huge magnetic field induced strain of the order of several percents in Heusler alloy. New families of Heusler type alloys, that undergo a martensitic transformation (MT), are intensively studied due to other fascinating phenomena induced by magnetic fields, like metamagnetic transition, or magneto-caloric (MCE) and magneto-resistance (MRE) effects. All these phenomena appeared in systems undergoing magnetic and structural phase transitions, simultaneously or delayed. A simultaneous structural and magnetic phase transition is accompanied by a sharp change in magnetization, inducing a large variation in related properties, such as giant MCE, shape memory and MR effects. The main objective of this proposal is to obtain a stable magneto structural coupling in a broad temperature window close to the room temperature. Tunable magneto caloric and magneto resistive effects based on simultaneous manipulation of the MT and magnetic order-disorder transition temperatures via different stoichiometries and chemical substitutions are the main goal of this project with application in the field of magneto-caloric materials and on switching devices.

Class no.

6. Mechanical Engineering - Metallurgy

National Institute of Research & Development for Technical Physics, Iasi

RO.114.

Title EN

Device for the conversion of mechanical vibrations into electrical energy and procedure for producing the same

Authors

CHIRIAC Horia, TIBU Mihai, ÓVÁRI Tibor-Adrian, LUPU Nicoleta

Institution

National Institute of Research & Development for Technical Physics

Patent no.

Patent application No. a 2013 00158/2013

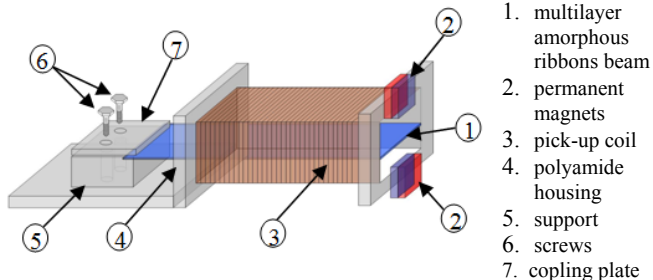
**Description
EN**

The invention refers to a device for the conversion of the mechanical vibrations into electrical energy, used to power various devices with low consumption. The device for the conversion of the mechanical vibrations into electrical energy (Figure) consists of a multilayer elastic beam (1), composed of two or more types of amorphous ferromagnetic ribbons with high magnetic permeability and large magnetic saturation magnetization, arranged alternately or successively one above the other and bonded with epoxy resin by pressing them in a die. Multilayer amorphous ribbons beam (1) is fixed at one end to the support (5) through the coupling plate (7) and the screws (6), the other end being free to oscillate under the influence of mechanical vibrations taken from the environment. The device for the conversion of mechanical vibration into electrical energy consists of a pick-up coil (3) wrapped around a polyamide housing (4) and several permanent magnets (2) for magnetic field biasing, which are attached to the coil's housing by using epoxy resin. The changes in the magnetisation of the multilayer elastic beam (1) located inside of the pick-up coil (3) generates an electrical signal in the coil, of the order of volts, which can be rectified, filtered and used directly. The induced voltage depends on a series of parameters like: frequency spectrum of the vibrations, amplitude of vibrations (acceleration), cross section of the multilayer amorphous ribbons beam, number of turns for the pick-up coil and magnetic properties of the amorphous ribbons.

Class no.

2. Energy and sustainable development

**Image/
Photo**



**„Petru Poni”
Institute of Macromolecular Chemistry Iasi**

RO.115.

Title EN

On temperature-frequency analysis of heterocyclic poly(urethane-urea) elastomers

Authors

Violeta Otilia Potolinca, Stefan Oprea, Emil C. Buruiana

Institution

„Petru Poni” Institute of Macromolecular Chemistry

Poly(urethane urea) elastomers are an important class of polymers which have superior extensibility, toughness and durability compared with conventional polyurethanes. This is a result of the higher cohesiveness given by the urea linkages in the hard segment and of the degree of micro-phase separation.

Broadband dielectric spectroscopy is a non-invasive technique for the investigation of molecular mobility, phase transition, electrical conductivity mechanisms into complex polymer systems. Frequency and temperature can strongly affect dynamic behavior of polymeric materials.

Description

EN

Novel poly(urethane urea)s containing pyridine moieties in their main chains have been prepared by a two-step solution polymerization procedure. These poly(urethane urea) elastomers were synthesized by chain-extending isocyanate end-capped prepolymers with 3,4-diaminopyridine and different crosslinkers.

Dielectric properties were evaluated on the basis of dielectric constant, dielectric loss and electric modulus. Their variation with frequency and temperature was studied. All pyridine based-polyurethanes exhibit three distinct relaxation processes (γ , β and α) in their dielectric loss spectra, while at higher temperatures and low frequencies, conductivity has a great contribution to dielectric losses. A higher amount of pyridine content increases the intensity of primary and secondary relaxation process. At higher temperatures than α relaxation temperature, dielectric loss increases abruptly especially at the lower frequencies, this behavior being attributed to the increasing conductivity. In order to analyze the conductivity process, dielectric relaxation data was interpreted by means of the electric modulus. The activation energy for dc conduction is higher for crosslinked polyurethanes.

Class no.

Innovative Research

National Research & Development Institute for Welding and Material Testing - ISIM Timișoara

RO.116.
Title EN
Procedure and thermal spraying gun with plasma jet and electric arc
Authors

Pascu Doru Romulus, Dragoi Sorin

Institution
National R&D Institute for Welding and Material Testing, ISIM Timisoara
Patent no.

123533 / 30.05.2013

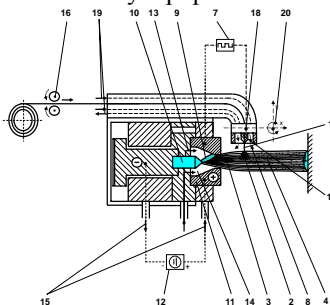
**Description
EN**

The patent is referring to a procedure and a plasma jet thermal spraying gun, having the aim to thermal spray an electrode, made like wire, on a support surface. The procedure according to the patent, allow the melting of the wire electrode in the same time using an electric arc and a plasma jet. The molten metal from the electrode is carrying away in the plasma jet and sprayed on the support surface. The gun according to the patent contains a plasma generator (14), which produces a plasma jet (3), and the electrode (1) is introduced in this plasma jet (3). Un electric arc (2) is produced between the electrode point (1) and the plasma jet (3), which is provide with modulate current from a current source (7). So, the electric arc burns in the shielded gas atmosphere (8) and together with plasma jet (3) melt the electrode (1), and the resulted particles are projected to the support surface. The electrode point (1) is adjusted and positioned given the plasma jet (3) using a mechanical device (20), which assures its positioning in three axis. The presented procedure has the bigger deposition rate among all thermal spraying processes. The deposited materials by PLASMA JET ARC have a low porosity and they are weldable.

Applications: PLASMA JET ARC process can be used to perform the prototype parts (Rapid Prototyping), to produce and to deposit the composites materials, etc.

Class no.

5. Industrial and laboratory equipments



RO.117.

Title EN

Automated nondestructive examination system for heat exchanger tubes

Authors

Nicolae Farbaş, Raimond Grimberg, Iuliu Popovici

Institution

National R&D Institute of Welding and Material Testing ISIM Timisoara

Patent no.

A2008/00727

Description

EN

The invention refers to an automated testing system for defect recognition in heat exchanger tubes. The eddy current based sensor is introduced successively in all tubes of the plate and the sensor indicates the place and nature of the defects identified inside the tubes. The computer controlled system moves the sensor from one tube to the other takes the information about the defects presents in each tube and generate a map of defects on the screen of the computer. The operator has only the task to establish the test program witch is after this executed independently by the system

Class no.

5. Industrial and laboratory equipments



Institute of Biological Research, Iasi

RO.118.

Title EN	Method of treating grapes vine
Authors	Iurea D. Dorina, Mangalagiu Ionel, Munteanu Neculai, Mustea Mihai, Chintea Pavel, Chirilov Alexandru, Contenco Eugenia, Iurea Pavel, Iurea Roxana-Ionela
Institution	Gh. Asachi Technical University of Iasi/ Institute of Biological Research, Iasi/ Al. I. Cuza University, 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 steroidal glycoside [Tomatozid - (5 α - furostan - 3 β , 22, 26 -triol -3 (O- β -D-glucopyranosyl (1- 2) - β -D - glucopyranosyl (1- 4) - β -D- galactopyranosyl - 26 -O- β - D-glucopyranosyl)], biological active compounds of potential interest in agriculture (horticulture). The problem that the invention is solving resides in broadening area of natural bioactive agents used for grape vine growth and development regulator, through the discovery of a new class of steroidal compound of vegetal origin, with significantly antiviral and biostimulator properties. This new compound is much cheaper than 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).
Description EN	
Class no.	3. Agriculture and Food Industry

RO.119.

Title EN	Obtaining process of planting material in currant
Authors	Iurea Dorina, Mangalagiu Ionel, Chintea Pavel, Caulet Raluca Petronela, Morariu Aliona, Chirilov Eleonora, Cotenco Eugenia, Carausu Constantin, Iurea Pavel
Institution	Gh. Asachi Technical University of Iasi/Institute of Biological Research, Iasi/ Al. I. Cuza University, Iasi/ Institute of Genetics and Plant Physiology, Chisinau
Patent no.	Pending
Description EN	The invention relates to agriculture, particularly to horticulture and can be used to estimate the effect of furostanol glycoside treatments on quality of the planting

material in currant.

The experiments established the optimum concentration of treatment solution and its effect on rooting process and studied the influence of furostanol glycoside treatments on foliar apparatus growth and development related with the treatment application method.

The results showed that the treatment application method influenced the growth parameter in relation with the cultivar and glycoside type. Treatment with furostanol glycosides led to an increase in the number of roots with 13-15%, as well as the creation of more qualitative currant seedlings.

Applications: Agriculture - vegetable growing
3. Agriculture and Food Industry

Class no.

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

RO.120.

Title	PRODUCT FOR STRENGTHENING AND PROTECTION OF HISTORIC MONUMENTS AND BUILDING FACADES AND <i>IN SITU</i> IMPLEMENTATION PROCESS
Authors	POPESCU Mariana, VELEA Sanda, OANCEA Florin
Institution	<i>National Research & Development Institute for Chemistry & Petrochemistry – ICECHIM</i>
Patent no.	RO 128466 A2 / 2013, Patent application No. 01078/2011
Description	<p>The invention relates to a bioactive composition for the conservative remediation of damaged stone and old brick of building facades or historic monuments, and a bio-inspired technique for <i>in situ</i> implementing thereof. The product according to the invention consists of 15...30% a source of calcium, 10...20% a source of phosphate, 1...5% collagen sources, 2...5% biologically active extracts or antimicrobial aromatic oils 1:1...1:3 synthetic biocides with low impact to the environment, 5...10% compatible eco-friendly solvent, 10...15% antifreeze agent, 15...20% a film-forming agent, 0.01...0.03% natural pigment, and water to 100%, the percentages being expressed by weight. Biowastes from industrial processing of animal skin and bone joints, phosphate and calcium salts, eco-friendly biocides and volatile oils from aromatic plants with antifungal and bactericidal properties were the raw materials selected for the bioactive composition to achieve a self-assembly bio-mineralization process around the masonry particles that mimics the biosynthesis of animal hard tissue, to restore strength, stability of the walls and resistance against bio-decay. After cleaning and drying mineral substrates of old walls, the composition according to the invention should be applied by loading cracks and micro-craters for <i>in situ</i> bio-mineralization at ambient pressure and temperature, also applying by spray or brush the composition diluted 1:3...1:9 with water over the corrected defects, so that after drying a thin film of about 10 microns should cover the whole surface for a long-term protection against bio-deterioration. Applications: Remediation and conservation of architectural cultural heritage, Environmental protection</p> <p>Gold medals: PROINVENT Cluj-Napoca 2014, Geneva 2012</p>
Class	1. Environment - Pollution Control 7. Buildings and Materials



RO.121.

Title

**PROCESS FOR OBTAINING A SLOW RELEASE
MICROENCAPSULATED FERTILIZER**

Authors

NEAMȚU Constantin, RĂCEANU Gheorghe, POPESCU Mariana

Institution

National Research & Development Institute for Chemistry & Petrochemistry – ICECHIM

Patent no.

RO 128501 A2 /2013, Patent application No. 01034/2011

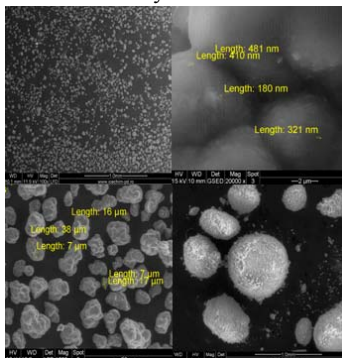
Description

The invention relates to a process for preparing a controlled/slow-release fertilizer. The process according to the invention comprises the pre-polymerization of an aqueous solution of formaldehyde with technical grade urea into granules, with a 1...1.5:1 molar ratio of formaldehyde/urea, stirring and heating for further 2-3 hours at 65...70°C, while maintaining the pH to 8.5...9 with a 40% KOH solution. After that, the reaction mass is cooled to ambient temperature and added with vigorous stirring to a water-in-oil type micro-emulsion consisting of organic hydrocarbon solvent containing a nonionic surfactant, an acid catalyst for microencapsulation and a solution of micronutrient together with a cross-linking agent. The fine dispersion obtained is adjusted to pH 3...4.5, urea is added again to reach a final ratio urea/formaldehyde of 1.6...2.4/1 and the reaction mass is heated to 60...75°C during 2 hours, adjusting the pH to 3...4,4 when the poly-condensation reaction takes place to form the microcapsules of fertilizer. After this step, the water azeotrope is removed and the fertilizer precipitate is filtered

and dried at 70...80°C to a constant weight.

Class

3. Agriculture and Food Industry

**RO.122.****Title**

Innovative project: S.C. SOLVAGROMED S.R.L., spin-off founded by technological transfer of ICECHIM research results

Authors

Sanda VELEA, Olimpiu BLAJAN

Institution

National R & D Institute for Chemistry & Petrochemistry - ICECHIM

INCDCP-ICECHIM in partnership with ICPAO-Medias founded a spin-off company: S.C. SOLVAGROMED S.R.L. designed for technological transfer of ICECHIM research results.

Description

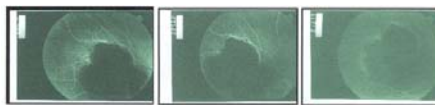
Establishing a spin-off is a way to exploit the research results obtained in a national institute using scientific / technological research experience to capitalize the technologies developed for the purpose of placing on the market of innovative products and services.

Thus, ICECHIM has transferred to S.C. SOLVAGROMED S.R.L. several technologies, its current offer of products comprising:

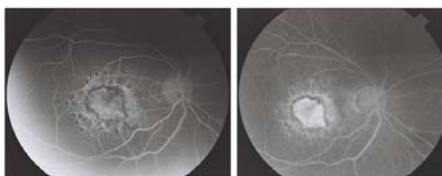
- Soil improvers (RO 123027/2010);
- Foliar fertilizers (technology transfer in PN 09.09.01.12);
- Industrial ecological solvents (RO 121859/2008);
- Microelements protein supplements for poultry and pigs (RO 129051 A0/2013).

Class

Innovative Research

RO.123.**Title**
USE OF RIBOFLAVIN FOR PRODUCING A PHOTOSENSITIZING AGENT**Authors**
Ioniță Marcel-Alexandru, Ion Rodica-Mariana, Cârstocea Benone**Institution**
ICECHIM, Bucharest**Patent no.**
RO121892 (B1)**Description**
The invention relates to the application of riboflavin for producing a photosensitizing agent with photodynamic effect, for ophthalmic therapy in combination with irradiation with visible laser radiation, by dissolving riboflavin in a concentration of 5-6 mg/ml in bidistilled water or physiological serum.**Class**
4. Medicine – Health Care – Cosmetics

Ocular tumor for a 71 year patient
(A) Before PDT treatment with Rb; (B) Disappearance of peritumoral neovascularization (3 months); (C) Complete disappearance of tumoral neovascularization and tumoral atrofia (6 luni).



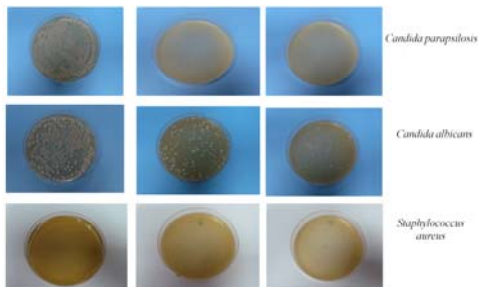
Age related macular degeneration for human patient
(A) Before PDT; (B) after 2 month

RO.124.**Title**
COMPOSITION OF SOLID EXTRAFIN SOAP WITH ANTIMICROBIAN ACTION**Authors**
Ion Rodica-Mariana, Jecu Luiza Maria, Constantin Mariana, Răuț Iuliana, Piscureanu Aurelia Alexandrina**Institution**
ICECHIM, Bucharest**Patent no.**
A2012 00481/29/06/2012**Description**
The present invention relates to a composition of superfine solid soap with antimicrobial activity with skin disinfection use in food, pharmaceutical, cosmetic and medical applications, consisting of 1-3% mixture of lower alcohols C6-C7, obtained by photooxidation and subsequent reduction of the corresponding unsaturated hydrocarbons, 15-18%

palm oil, olive oil 30-33%, 30-32% coconut oil, introduced in the saponification reaction with 18-20% saponification agent, 40-50 °C and the completion of the reaction for about 48 hours at room temperature until solidification.

Class

4. Medicine - Health Care - Cosmetics

**RO.125.****Title**

INNOVATIVE METHOD BASED NANOMATERIALS FOR CULTURAL HERITAGE CONSERVATION

Authors

Ion Rodica-Mariana, Fierascu Radu-Claudiu, Fierascu Irina, Bunghez Ioana-Raluca, Turcanu-Carutiu Daniela, Opreanu Mihai, Meghea Aurelia, Mihaly Maria, Rogozea Adina, Blajan Olimpiu

Institution

ICECHIM, Bucharest/ Ovidius University Constanta/ Polytechnica University, Bucharest/ ICPAO S.A., Medias

Description

Conservation of cultural heritage, mainly based on traditional methods and conventional materials that often lack the necessary compatibility with the original artworks, needs for new and performant solution, as could nanomaterials offer. The main challenge of this paper is the use of some nanomaterials in the restoration of works of art, especially for the Rupester Ensemble from Basarabi/Murfatlar, Tibisir Hill. It is an early religious complex of primitive monasticism, dated IX-X centuries, consisting of six churches, hermitages, galleries and living places and vaults, all in massive chalk. It was accidentally discovered in 1957, during the beginning of modern exploitation of the massive chalk, and now is legally declared a monument of national value. The research activity of our group has been focused on the development of manageable methodologies, based on nanomaterials with a low environmental impact. In the last years nanomaterials have been frequently applied for restoration and conservation of artworks, and the inorganic nanoparticles, proved an improved performance of materials used in this field. The experience in the synthesis and characterization of nanoparticles within PNII 222/2012 project (consortium: ICECHIM, UOC, UPB and ICPAO), combined with

NATIONAL

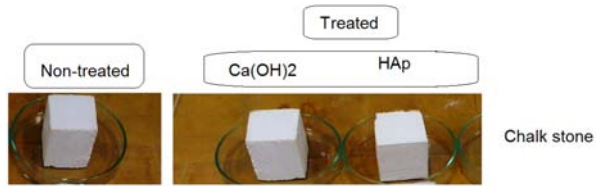
EUROINVENT 2014

the experience in conservation materials in terms of durability of the conservative products, yielded to a serious research investigation on nanomaterials applied to cultural heritage. In this study, performances of nanomaterials ($\text{Ca}(\text{OH})_2$ and Hydroxyapatite), will be comparatively presented.

Acknowledgements: *This work was supported by a grant of the Romanian National Authority for Scientific Research, CNDI-UEFISCDI, project number 222/2012.*

Class

Innovative Research



National Research & Development Institute for Textile and Leather

RO.126.

- Title** **Woven textile structures with differentiated covering degrees for applications in agriculture**
- Authors** Dan Maria, Visileanu Emilia
- Institution** **National Research & Development Institute for Textile and Leather**
- Patent no.** Patent application No. 125607/30.04.2013
The woven fabrics, with 1-3 layers, were designed from transparent monofilamentary yarns, made of UV stabilized polyethylene, with uniforme weft yarn density and uniforme or variable (in ratio 2:1:1, only in the case of triple layer fabric) warp yarn density and covering degrees between 35+90%.
Advantages: large range of woven fabrics with different coverings degrees, to suit different requirements in agriculture; better plant development and higher production indexes of the protected crops; lower water evaporation from the mulched soil.
- Description** Applications
The invention concerns the woven textile fabrics with differentiated covering degrees for the following applications in agriculture:
a) the crop protection in the field against the excessive heat, winds, rains, hail, insects, birds;
b) the crop shading and mulching inside the greenhouses;
c) the reinforcing of the textile composites for the crop protection against the cold and wheaterings;
d) other applications, as sustainment textile structure for the personnel walking along the plant row for crop maintenance.
- Class** 9. Chemical and Textile Industry



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

RO.127.

Title	AUTONOMOUS VEHICLE SYSTEM COMMON PLATFORM FOR TRACKING, GUIDANCE, OBSERVATION AND MEASUREMENT LOCATION
Authors	Plesa Cornel, Lapadat Daniel, Alexei Adrian, Axente Corneliu, Codrea Sabin, Gustil Dumitru
Institution	Military Equipment and Technologies Research Agency Armaments Test & Evaluation and Scientific Research Centre
Patent no.	Pending
Description	The system is composed of autonomous ground and air vehicles, to be extended to naval vehivule Vehiculelele designed modular and can be configured according to user requirements
Class	8. Aviation, car industry and transportation

RO.128.

Title	MOBILE EQUIPMENT FOR POLITRAUMA TREATMENT
Authors	Țigleanu Laura, Mazăre Camelia, Năcioiu Nicolae, Șuteu Daniel, Gherghina Ion, Dumitru Marin
Institution	Military Equipment and Technologies Research Agency Armaments Test & Evaluation and Scientific Research Centre
Patent no.	Pending
Description	The equipment ensures the treatment in case of emergency for the under-jaw fractures, with or without osseous fragment dislocation and controls the direction of osseous development/regeneration
Class	12. Safety, protection and rescue of people

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

RO.129.**Title EN**

Multidisciplinary methodology for the sustainable planning of the Danube Delta habitat

Authors

Vasile MEIȚĂ, PhD (Architecture)

Institution

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

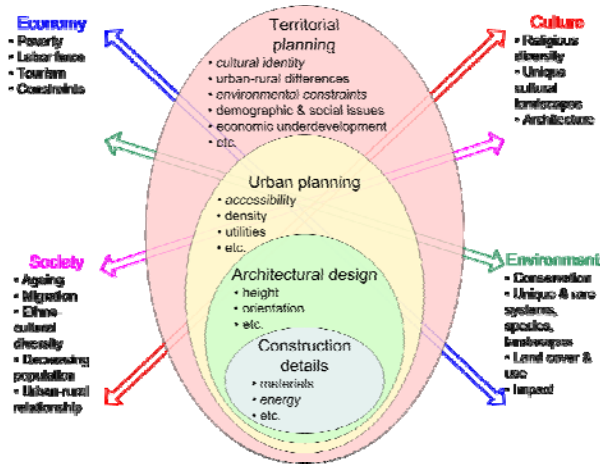
**Description
EN**

The Danube Delta represents a unique area due to its high biodiversity: biodiversity (unique and rare species, habitats, and ecosystems) and cultural diversity (multiple ethnic and religious groups, with an impressive cultural heritage). In accordance with the requirements of “Man and Biosphere Program”, planning for such areas must aim at preserving the natural and cultural heritage, but also ensure the development of the area and access to modern technologies. In addition, in the Danube Delta planning must mitigate the human impact, including the historical one, through the restoration of damaged natural and cultural habitat. The methodology accounts for the most important criteria to be accounted for: (1) spatial integration, meaning that planning must take into account all levels, from civil engineering details to architectural design, regulations imposed by spatial planning, and territorial planning looking at the status of settlements (urban versus rural), and (2) integration of all pillars of sustainability, including ecology (conservation of biodiversity, mitigation of impacts, environmental constraints for future development), society (social and demographic issues, including ageing, declining population and migration), economy (poverty, urban-rural disparities in development), and culture (conservation of ethnic and religious heritage, including traditional crafts, customs, and knowledge). Moreover, a balance must be maintained at all times when accounting for these criteria in the planning process. Planning must be pro-active, taking into account the fact that it addresses future generations in addition to the current ones. Advantages of this methodology include its multidisciplinary character and the fact that it is substantiated by previous research.

Class no.

Innovative Research

EUROINVENT 2014



RO.130.

Title EN

Novel methodology for the elaboration of environmental studies substantiating spatial plans

Authors

Alexandru-Ionuț PETRIȘOR

Institution

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

Description

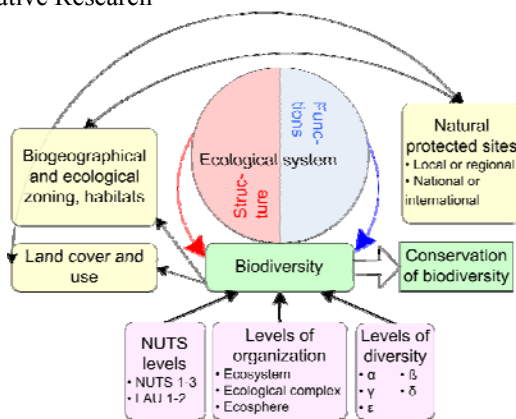
EN

Current methodologies for the elaboration of environmental studies substantiating spatial plans in Romania are outdated, have an uncertain legal status and are no longer reflecting the current theoretical and methodological developments of systems ecology. The methodology presented here is scientifically sound, relies on desk studies employing the Geographical Information Systems to analyze multiple layers of environmental information, which is freely offered by many international, European or Romanian specialized agencies. The concept is focused on biodiversity and its conservation; biodiversity is seen as a reflection of the structure and functions of ecological complexes, including the human interaction at multiple spatial levels. Essentially, the structure is described based on biogeographical and ecological zoning and land cover and use, while changes are reflected by the alterations of land cover and use in relationship with transitional dynamics determined by socioeconomic constraints. The information on natural protected sites of local, regional, national and worldwide importance is overlapped in order to pinpoint 'hotspots' where human impacts could generate significant impacts. The methodology is

NATIONAL

particularly useful for the analysis of large systems over extended periods. So far, its has been applied successfully to over 25 plans carried out at the level of communes, cities, counties or special wider territories, and the results emphasize, in addition to the potential for planning, its research value. Advantages include time savings (due to the use of Geographical Information Systems), flexibility, reproducibility, use of data originated from research, and, more important, scientific soundness and compliance with the current developments of systemic ecology.

Class no. Innovative Research



RO.131.

Title EN

Analysis of informal settlements in Romania – an assessment of the current state to be used for drafting regulations and establishing intervention tools

Authors

Daniel-Gabriel VÁLCEANU, Alina-Tincuța CHICOȘ, Marius VOICA, Dana TOFAN, Amelia CAZACU, Luiza MINCULESCU, Mariana BARBU, Diana-Georgiana TĂMÎRJAN, Simona RADU, Bucur PÎSLARU

Institution

National Institute for Research & Development in Construction, Urban Planning and Sustainable Territorial Development „URBAN-INCERC” / Ministry of Regional Development and Public Administrations

Description EN

In the context of a dynamic of national and international phenomenon and a lack of inclusive policies aimed at alleviating territorial development gaps, tackling the informality of settlements is considered a priority. The analysis of informal settlements in Romania is aimed at: presenting the national and

international contexts in which such housing forms have emerged and developed; making an inventory of, classifying and differentiating between types of informality; taking a census of and mapping informal housing, together with their description and current state. The current housing failures and the particularities of informal settlements require the implementation of socio-economic measures aimed at fighting social exclusion and increasing social inclusion. Socio-economic and urban development policies adapted to these forms of territoriality of informal housing may be appropriate solutions to reduce the segregation of vulnerable social groups and contribute to a smart, sustainable and inclusion oriented spatial development. Conducting such a study at national level has numerous advantages as it serves to drafting regulations and establishing intervention tools aimed at fighting the phenomenon of informal housing in Romania.

Class no. Innovative Research

RO.132.

Title EN

Multi-temporal territorial monitoring using satellite imagery in the Romanian-Bulgarian cross border region

Authors

Alina HUZUI-STOICULESCU

Institution

NIRD Urban-Incerc

Description

EN

The purpose of this research was to produce an analysis of territorial dynamics in the cross border region during 1987-2012 through the combination of satellite imagery processing, conventional cartographic materials and ancillary documents. Spatial pattern analysis of changes underwent by the landscape must be based on multi-temporal information sources which highlight the major turning points in planning. Thus, the years following industrial development under communist production showed that spatial planning in the cross border region faces more a crisis management than an expression of competence. The mechanism behind planning can be identified through the use of multi-scale geospatial database. To fully exploit the combination of satellite image processing in IDRISI and data base interrogation in ArcGis, quantitative indicators were computed for each pair of years available from the LANSAT TM and ETM⁺ image archive. The advantages of this approach in spatial planning consist in creating a global image of the entire study area at different times and in identifying areas that are more vulnerable to spatial mutations by delineating the nature of these changes.

Class no.

Innovative Research

NATIONAL

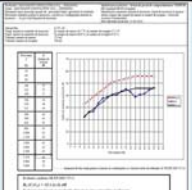
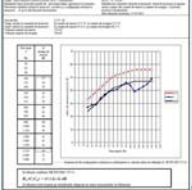
RO.133.	
Title EN	A SYSTEM FOR MANAGEMENT OF POST-EARTHQUAKE INVESTIGATIONS ON BUILT ENVIRONMENT IN ROMANIA
Authors	Claudiu Sorin DRAGOMIR, Daniela DOBRE, Ioan Sorin BORCIA, Emil-Sever GEORGESCU
Institution	National Institute for Research and Development in Construction, Urbanism and Sustainable Spatial Development "URBAN_INCERC" <p>Since the seismic setting of Romania requires a special preparedness, especially for the impact of Vrancea earthquakes, the paper presents a research project of URBAN-INCERC, financed by MDRPA (Contract 399/2009), to create and operate a system for interdisciplinary assessment of earthquake effects, upon buildings, infrastructure networks and environment.</p> <p>Regulation, organization, coordination, implementation and monitoring of legal and administrative policies and measures on post-seismic investigation is at the central level, to the Ministerial Committee for Emergency Situations, organized by the Ministry of Regional Development and Public Administration. At regional level, co-ordinating the investigation will be made by the regional centers which will be prepared in advance through cooperation under the aegis of MDRPA - Ministerial Committee and GIES - National Committee, in all the five cities designated to be activated when needed.</p> <p>The system is managed by the National Institute URBAN-INCERC, and has a central unit in INCERC Bucharest Branch, other five regional centers in Romania, including URBAN-INCERC Branches in Iasi, Cluj and Timisoara, while construction inspectorates and universities are associated partners.</p> <p>The system will use advanced IT, will serve the ministerial emergency committee for earthquake emergencies under MDRPA coordination, and will collect the necessary data, to provide lessons in engineering and disaster management regulations, as a knowledge base for future research and regulations.</p>
Description EN	
Class no.	Innovative Research

RO.134.	
Title EN	Traditional and modern materials used for stabilization of difficult soils in the context of present technical progress
Authors	Cornelia-Florentina Dobrescu, Elena-Andreea Calarasu
Institution	National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development URBAN-INCERC
Description EN	The research projects were carried out in order to analyze several mixtures of soils and traditional materials with role in stabilization and improvement of geotechnical characteristics. The studies were performed by setting an experimental program based on laboratory tests, by using different types of soils, combined with various mixtures of traditional additives (lime, chalk powder, sand, wood ash). The aim of experimental applications is to establish the suitability level of percentages and mixtures of local materials for each studied soil types in stabilization process. Based on the obtained results, the future research projects will study the effectiveness of Romanian soil using enzymes agents as modern organic material in the context of present climate changes.
Class no.	Innovative Research
RO.135.	
Title EN	Modern partitioning of glass walls - acoustical properties
Authors	Marta Cristina ZAHARIA, Ioana Mihaela ALEXE
Institution	NIRD URBAN-INCERC, Branch INCERC Bucharest, Building Acoustics Laboratory
Description EN	In <i>Building Physics</i> the domain of <i>Building Acoustics</i> is a very special one. When an engineer or an architect make a project and design a building, it must be with a good acoustical configuration and to help people to feel and live in acoustically comfortable conditions inside that building. In the poster we present the results of studies that were made, in year 2013, in Building Acoustics Laboratory of NRDI URBAN INCERC, INCERC Bucharest Branch, considering a project with laboratory measurements, carried out for the determination of airborne sound insulation properties for 5 modern partitioning glass walls systems, type VITRUM, DUO, DIVIDO, MODULO and SKY, with destination especially for workplaces offices as "open-space".

Laboratory measurements for determining the airborne sound insulation of walls were performed in accordance with EN ISO 10140 - 2 "Acoustics. Laboratory measurement of sound insulation of building elements. Part 2: Measurement of airborne sound insulation".

In the project there were made acoustical analysis comparing both results obtained for airborne sound insulation index, R_w , for all 12 types of glazed partitioning walls samples, specific for the 5 types of analyzed partitioning systems and the results obtained for the samples of glazed partitioning walls, coupled taking into account the characteristics of the glazing components (thickness of the glass sheets and of the air layers). There were studied comparatively both airborne sound insulation index values, R_w , and the response of the acoustic behavior on the frequency range represented in graphs.

Class no. Innovative Research

No. Partitioning glass walls systems	Type of Partitioning glass walls systems	Description of glazing structure	Obtained result: R_w (C,C ₂)	Graphical representation of results
1:	VITRUM® (10-73-10)	<ul style="list-style-type: none"> •• Glazing: 4 →safety glass side of 10 mm thickness* →intermediate layer of air of 73 mm thickness →safety glass side of 10 mm thickness* 4 Note: Joining of glass panels located in the current field has been done with double-sided silicon tape with a thickness of 1 mm. VITRUM system is built without vertical mullions. ☺ 	R_w (C,C ₂) = 42 (2; 5) dB	
2:	VITRUM® (5.1.5-73-5.1.5)	<ul style="list-style-type: none"> •• Glazing: 4 →duplex glass of 10 mm thickness (with the structure 5.1.5 mm)* →intermediate layer of air of 73 mm thickness* →duplex glass of 10 mm thickness (with the structure 5.1.5 mm)* 4 Note: Joining of glass panels located in the current field has been done with double-sided silicon tape with a thickness of 1 mm. VITRUM system is built without vertical mullions. ☺ 	R_w (C,C ₂) = 43 (2; 4) dB	

RO.136.

Title EN

Building Envelope with Variable Thermal Resistance and Parieto-Dynamic Effect on Air Exhaust

Authors

CONSTANTINESCU Dan, PETRAN Horia, PETCU Cristian

Institution

National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development "URBAN-INCERC"

Patent

RO125612

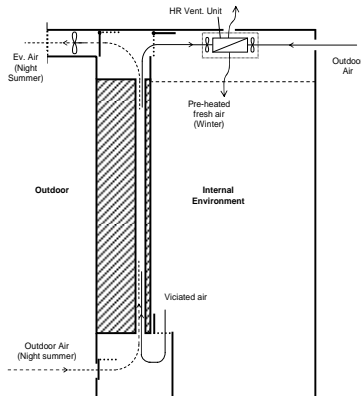
Description

The object of invention consist in a building envelope system

EN composed by a 3-layers building element (opaque vertical external wall, ventilated air layer and internal panel), balanced mechanical ventilation device with heat recovery from vitiated air, fan for air circulation intensification within the wall, air grilles, air ducts and flaps, which ensures high equivalent thermal resistance in winter and low equivalent thermal resistance during cool nights in summer. The main characteristics of the system are:

- In winter days and during the sunny summer hours an equivalent thermal resistance superior to the conventional thermal resistance is ensured as a result of the succession of layers of fabric that make up the envelope element, namely higher than the minimum required value imposed by the legislation in force with respect to the energy performance of new buildings ;
- It uses a mechanical ventilation system with heat recovery (which provides significant reduction of the heating/cooling loads necessary to ensure the fresh air ratios for physiologic comfort and which should be provided in any configuration of a building with very high energy performance) for maintaining temperature levels very close to the temperature of the occupied space on the inner side of the exterior envelope element;
- During the night hours in summer, it provides an equivalent thermal resistance inferior to the conventional thermal resistance, allowing the inner cooling of the occupied space through transmission.

Class no. 7. Buildings and Materials



RO.138.**Title EN****Integrated systems for the anticorrosive and biocide protection of wooden and steel construction elements****Authors**

Irina Popa, Alexandrina Mureşanu,

Institution**INCD "URBAN-INCERC", INCERC Branch Bucharest**

The anticorrosive and biocide integrated system was designed as an ensemble of products – a biocide protection for wood and an anticorrosive protection for steel – projected according to the mixed aggressiveness attack, in order to provide: biological protection for wood, anticorrosive protection for the steel surfaces of wooden and steel construction elements and an induced biocidal protection" for steel surfaces adjacent to the protected wood. The experimental program was carried out in parallel through: biodegradation tests, exposure to climatic chamber, to salt spray chamber and exposure in marine and urban-industrial atmospheric environments. Simple test pieces (wood, steel/galvanized steel) and mixed pieces (pieces of wood with steel/galvanized steel gripping elements) were exhibited. The anticorrosive components of the integrated systems were selected depending on the class of corrosiveness of the exposure environment and also on the environments in which joint targeted attack can take place in reality.

**Description
EN**

Applications. Integrated systems for the anticorrosive and biocide protection can be useful in the case of the old timber constructions, when the wooden part has not been properly treated against biodegradation but also in the case of new constructions in which the wood is poorly preserved during storage and unprotected against biodegradation in the stage of implementation.

Advantages: An integrated system of corrosion and biocidal protection contributes to increasing the sustainability of the wooden and steel construction elements, especially when the biocidal component once being chosen properly, the anticorrosive component is selected taking into account the corrosivity of the environment.

Class no.

7. Buildings and Materials

RO.139.**Title EN****Volatile organic compounds emissions in indoor air of the office spaces****Authors**

Vasilica Vasile, Alina Dima, Mihaela Ion

Institution**NIRD URBAN-INCERC, INCERC Bucharest Branch**

Indoor air quality is a field of great interest in European and international area, research projects being in progress at national or transnational and worldwide.

International studies have shown that in the office spaces can be found a wide range of volatile organic compounds with multiple and complex adverse health effects, emission sources for these compounds are numerous, including materials used as finishes, elements furniture, modern electronic equipment, such as printers, photocopiers, computers and so on, different odorants and cleaning products and as well the activities carried in this spaces.

Description**EN**

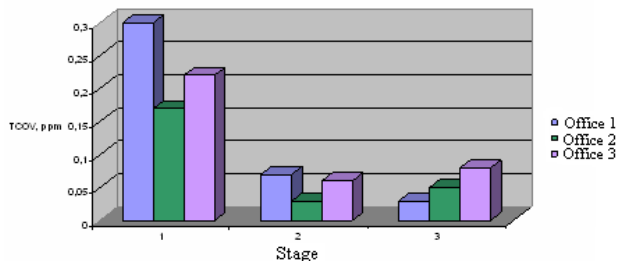
In the office spaces located in urban area of Bucharest - Romania were monitored a number of sixteen volatile organic compounds, selected based on the effect they may have on the health of the occupants, using equipment based on a photo ionization detector (PID) that detects compounds and real time recording their concentrations.

The advantages of the monitoring activity of the volatile organic compounds are to obtain useful information on air quality from office spaces, and awareness of acute necessity for action to improve the quality of the indoor environment in which we operate.

Class no.

1. Environment - Pollution Control

Total volatile organic compounds concentration during of experimental



RO.140.**Title EN****Stability assessment of the coloured coatings under the action of environmental factors****Authors**

Alina Dima, Mihaela Ion, Vasilica Vasile

Institution**NIRD URBAN-INCERC, INCERC Bucharest Branch**

External environment can act on coloured coating products used as construction finishing materials through climatic factors (UV radiation, moisture, temperature) causing photochemical degradation reactions at the structural level, with direct implications on the aesthetic character through loss of the colorimetric properties but also on the protective role by reducing physical and mechanical properties. From this perspective, accelerated test exposure to UV radiation under conditions that simulate the action of climatic factors from natural environment are of particular importance and evaluating methods for coloured coating products degradation at the end of exposure offers the possibility to obtain the data about their behavior in service.

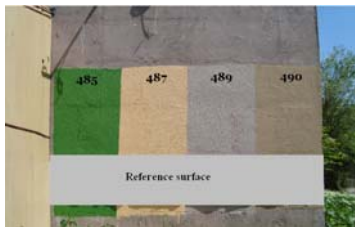
Description**EN**

Based on the results obtained in experimental research, performed by our laboratory, the changes of color were quantified using weighting coefficients applied to the following characteristic values for color evaluation under the action of UV radiation: the modification of gloss through determination of specular gloss and the change of the colorimetric properties through color total difference, ΔE^*_{ab} and tint difference, ΔH^*_{ab} . Score obtained after application of weighting coefficients has been reported to the optimal situation (control sample unexposed to UV radiation) resulting percentage assessment of stability in terms of colorimetric.

The advantages of instrumental methods for assessing of the degradation products colored coatings versus visual assessment methods consist of reducing the uncertainty induced by human factor and will produce accurate and quantifiable results, which can contribute in establishing the sustainability and the performances of the finishing coating materials.

Class no.

7. Buildings and Materials



NATIONAL

RO.141.	
Title EN	Study to evaluate the characteristics of masonry from Stirbey family chapel
Authors	Claudiu-Lucian Matei, Cristian Grigorasenco, Ruxandra-Cristina Matei
Institution	National Institute for Research and Development in construction, Urban Planning and Sustainable Spatial Development - INCDC "URBAN-INCERC", INCERC Bucharest Branch; Romanian-American University Bucharest Romania is a very strong earthquake area in the south-east part of the Europe, which is why it is very important to know the characteristics of the masonry, in order to retrofit the buildings in correct way. The paper presents the ways to determinate the characteristics of the bricks and mortars used in old clay brick masonry, which was commonly used in old cultural masonry construction in Romania.
Description EN	
Class no.	Innovative Research
RO.142.	
Title EN	Experimental device for determining the thermal conductivity of moist materials
Authors	Monica CHERECHEȘ, Nelu-Cristian CHERECHEȘ, Livia MIRON, Adrian IACOB,
Institution	¹ National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development "URBAN-INCERC" Iasi Branch ² Technical University Gheorghe Asachi of Iasi, Faculty of Civil Engineering and Building Services, Department of Building Services
Description EN	Contributions to the study of hygrothermal characteristics of the thermal insulation materials, The research work was also partially supported by Ministry of Education and Research through the AMTRANS Project no. 7B16/2004 – 2006: "Differential study on climate zones for evaluation of the long time Technical University "Gh. Asachi" of Iași, Faculty of Civil Engineering and Architecture, 2008. The method used in measuring the thermal conductivity of materials is based on the heating and cooling by contact (considered perfect) of two homogeneous and semi-infinite

bodies (Câmpan, 1957).

The principle is based on the fact that through the contact surface of two solid bodies, each of them having a different but uniform temperature occurs a heat transfer under unsteady state conditions.

The experimental setup is composed by a cube shaped standard specimen made of white marble, equipped with three Cu-Constantan thermocouples.

Appropriate application for the experimental device:

- simplified operating procedure (heating and cooling of samples through contact)
- short time needed for testing (4÷5 minutes), compared to the methods performed in stationary state (4÷8 hours for achieving steady state regime);
- application of the method on humid materials, as water content distribution is not altered in the few minutes of measurement in transient heat transfer;
- application of the method on any type of building material (insulations, natural stones, glass, ceramics, bulk materials, composites, etc.);
- method precision, estimated to $\pm 2\%$ of the thermal conductivity values.

Class no.

Innovative Research

RO.143.

Title EN

Seismic Qualification of MT 17-50-12-8x15x22 Cell Equipment through Computer Simulation

Authors

Florentina LUCA, Septimiu-George LUCA, Florin-Radu Hariga

Institution

¹⁾**National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development “URBAN-INCERC” Iasi Branch**
²⁾**Technical University Gheorghe Asachi of Iasi, Faculty of Civil Engineering and Building Services, Department of Structural Mechanics**

Description EN

The reason of the scientific research relates to verify the way in which the cell MT 17-50-12-8x15x22 performances are satisfied during the exploitation limit states. The analyzed cell consists of two assemblies having geometrical dimensions of 2200x800x800 mm and respectively 2200x700x800mm. These assemblies have vertical and horizontal structural elements

joined to one another with bolts. According to the theme the peak ground acceleration is $a_g=3\text{m/s}^2$. In assessing the seismic response, the rigidity of the panels was taken into account by modeling their stiffness as equivalent diagonals. The stiffness of the equivalent bracing panels was determined by numerical simulations of GMNIA type, on the initial panels of sheet. Finite elements capable to model the buckling of shells were used for this purpose. The numerical simulations have shown that all of the panels resist at a horizontal force applied to the upper side of at least 50 KN. The determination of the seismic response was achieved by two methods, the response spectrum method and the linear dynamic method.

The chosen structural model represents the appropriate general configuration, the distribution of masses, stiffness and damping characteristics, leading to a correct determination of the eigenvectors, seismic forces and seismic response characteristics. As a result, the value of acceleration value that the check was made it is $\gamma_1 \cdot \eta \cdot a_g = 1,4 \cdot 1,2 \cdot 3 \text{ m/s}^2 = 5,04 \text{ m/s}^2$. The distribution of normal and share stresses was drawn for the sections of the elements with maximum internal forces determining their maximum values. The maximum stress values are lower than the design strength.

Class no. Innovative Research

RO.144.

Title EN	Rehabilitation waterproofing basements and underground constructions elements
Authors	Ursu Silviana
Institution	National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development „URBAN-INCERC” – INCERC BUCHAREST BRANCH
Description EN	Short description of your research. Rehabilitation basements of buildings is the main element in terms of water seal, ensuring comfort and modern impact on sustainable construction solutions in specific climatic conditions of our country. We studied and analyzed the whole basement buildings in terms of design details, tank interior and exterior waterproofing systems, penetrations and joints in the light of modern technologies and hybrid materials based on new energy and economic performance.
Class no.	Innovative Research

RO.145.**Title EN****Fire barriers for ETICS systems****Authors**

Octavian Lalu, Lapadat Bubulete

Institution**INCD "URBAN-INCERC"**

The exterior cladding systems with polystyrene insulation are vulnerable to fire action. The ETICS can ignite (in case of fire) and spread the fire vertically on façade of the buildings thermally rehabilitated.

The Laboratory of fire testing and research for fire safety in constructions conducted a series of preliminary tests on composite systems ETICS to evaluate the behavior in case of fire. It was considered that for the exterior cladding systems, the most common and worst situation of fire exposure is the case of a compartment fire. The compartment fire is considered the worst case of fire exposure for the exterior cladding systems in relation to external fire situation.

Description**EN**

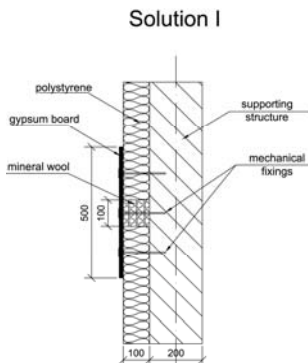
After the tests we concluded that to improve the behavior in case of fire of the exterior cladding systems with polystyrene insulation (ETICS) it is necessary to interrupt the continuity of polystyrene insulating layer on walls. The breaks can be made with insulating materials, noncombustible, which has a minimum thickness equal with the thermal insulation layer.

The fire barrier with the width of 30cm height limit the fire spread on the composite system tested ETICS. The fire barrier with the width of 50cm, together with the graphited polystyrene significantly reduce the vertical fire spread on composite system tested ETICS.

Also we proposed new solution of fire barriers for future research.

Class no.

Innovative Research



NATIONAL

RO.146.**Title EN****Study of hot dip galvanized rebar corrosion in concrete****Authors**

Andreea HEGYI

Institution**INCD "URBAN-INCERC"****Technical University of Cluj Napoca**

The experimental researches regarding the study of kinetics and corrosion mechanism of the hot dip galvanized steel rebars in concrete were compared with black steel by electrochemical techniques (chronoamperometry, linear polarization and electrochemical impedance spectroscopy), using modern equipment and specialized software for processing and interpretation of the results.

The experimental research part approaches the problem by combining study methods that come from the electrochemical side as well as from the practical needs required in the construction field, the resistance to the attack of chloride ions being a main concern because this is the most aggressive and frequently met attack in practical situations.

The studies of the hot dip galvanized rebars corrosion in hardened concrete have analyzed the phenomena both in healthy concrete and in concrete with modified composition (with CaCl_2 content).

Description**EN**

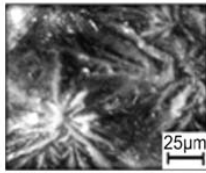
The zinc corrosion products, in to healthy concrete, were identified by X ray diffraction as being calcium hydroxyzincate and zinc hydroxide. The calcium hydroxyzincate is the product with passivating properties and has an important influence on the corrosion resistance of the hot dip galvanized steel.

Results indicate that the hot dip galvanized steel supports a higher concentration of chloride ions in the concrete. Initiation of hot dip galvanized reinforcement corrosion caused by chloride ions is produced at a concentration of 2.5-4 times higher than the concentration of chloride ions in the concrete wick initiated the unprotected reinforcement corrosion.

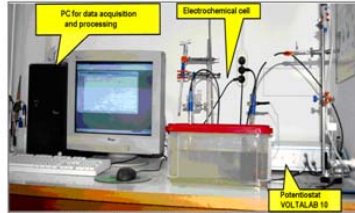
The process of galvanizing steel does not replace the use the concrete of appropriate quality, but may increase the durability of reinforced concrete structures with 70-100 years, and increased costs due to the use of thermal zinc coating of the reinforcement, is only 0.5-3 % of total costs of a project.

Class no.

Innovative Research



Specimen aspect, 40:1 optical microscopy



Experimental stand used for electrochemical tests



RO.147.

Title EN

Self Compacting Concrete with mineral additions for precast concrete industry

Authors

Henriette SZILAGYI

Technical University of Cluj Napoca

Institution

National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development “URBAN-INCERC”, Cluj-Napoca Branch, Romania

Description EN

The qualities of self-compacting concrete (SCC), such as faster placing with reduced labor and equipment, no vibration and less finishing, an improved quality and durability of elements, encourages the use of SCC by contractors in general, and by the precast concrete industry in particular.

The experimental researches are focused at SCC, and it was performed during the author’s PhD thesis and two extend research projects carried out at the N.I.R.D. INCERC, Cluj-Napoca Branch and at the Technical University of Cluj-Napoca. More than 100 SCC mixes were designed and realized, using local materials or currently used materials in the precast plant: Portland cement CEM I 52,5R; river fine aggregate (0/4 mm), river coarse aggregate (4/8, 8/16) mm; mineral additions like limestone filler or silica fume; high-range water reducing admixture (HRWRA) and viscosity modifying admixture (VMA). The obtained results confirm the possibility of producing SCC with local materials and usual cement, with remarkable properties in fresh state. In hardened state, the SCC strength had a good evolution in time and a high early strength which permits the

prestress forces transfer at only one day after casting.
The selected SCC mixes meet the specific requirements for reinforced concrete precast elements regarding the compressive strength evolution; the concrete surfaces after removal from the mould were impeccable.

Class no. Innovative Research



Slump-flow test



Testing prestressed precast SCC floor element

RO.148.

Title EN

Study regarding shear behaviour of high strength concrete elements

Authors

Horia CONSTANTINESCU

Institution

**INCD “URBAN-INCERC”
Technical University of Cluj Napoca**

**Description
EN**

The study revealed previously unknown aspects of the behaviour in shear of elements cast using High Strength and Performance Concrete (HSPC) bringing the use of this new form of the most widely used construction material in the world closer to wide spread use in constructions, use that will bring about important savings in materials and time needed for the construction of buildings.

Class no.

Innovative Research

**RO.XX.****Title EN****Sustainable Seismic Resistant RC Frames****Authors**

Mircea PĂSTRĂV

Institution

National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development “URBAN-INCERC”, Cluj-Napoca Branch, Romania

Special hybrid moment reinforced concrete frame structure with modified hybrid joints is proposed as a sustainable seismic resistant building structure.

They are made out of discretely precast reinforced concrete column and beams, assembled by post-tensioning with non-adherent tendons with special joints. The joints are named hybrid, as they contain both prestressed tendons and special ductile reinforcement, placed only at the beam ends and through the columns. Special hybrid joint respects the provision of ACI T1.2-03 standard, but the proposed **modified special hybrid joint** is assembling the structure by unbonded prestressed and special reinforcement.

Description EN

Two specimens, one of each type, were subjected to seismic type loading, representing an internal joint extended up to mid-span of adjacent members, of actual six storey frame structure, located in a seismic hazard region.

The tests revealed some important characteristics of such frames:

- a mainly rigid body displacements of the beams and a concentration of movements at the beam-columns interfaces;
- the return of the joint to its initial configuration and the closing of the interfaces cracks after the force removal;
- removability of unbonded tendons.

The modified hybrid joints provide also sustainable characteristics for structure:

- high resilience of joints, as yielding of special bars occurs only

in tension, regardless the direction of the seismic action; no uncontrolled failure is possible due to repeated buckling - tension action.

- restoring of the structural integrity, after an earthquake by removal of special reinforcement (low cost);
- easy monitoring of the building after events, compared with traditional structures, due to the fact that the damages are clearly located.

Class no. Innovative Research



Seismic type loading of modified special hybrid joint specimen



The specimen after test, restoring its initial geometry and with interface cracks virtually closed

RO.149.

Title EN **Fiber reinforced high strength concrete at elevated temperatures**

Authors Oana Eugenia CAZAN

Institution **Technical University of Cluj Napoca
INCD “URBAN-INCERC”**

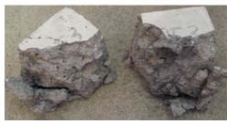
**Description
EN**

This research examines the behavior of high strength concrete with fibers addition. Steel and polypropylene fibers were used in this experimental program. Eighteen cubes of 100 mm were casted for each mix. The class of the concrete determined at 28 days was C70 for the compositions with only polypropylene fibers and C90 for the compositions with hybrid fibers (steel and polypropylene) and steel fibers. The specimens were heated up to 3 target temperatures (500 °C, 700 °C and 900 °C) in an electric furnace. After the heating it

was noticed a slight change of color, but no explosive spalling has occurred in the case of the specimens with polypropylene and hybrid fibers addition. Mass loss, residual compressive and splitting tensile strength were determined on the heated specimens. Samples with polypropylene fibers addition showed no explosive spalling followed by the breaking for any of the temperatures of exposure, but a slight exfoliation of the surface after exposure to 900 °C was noticed. The obtained results pointed out the major influence of the polypropylene fibers in preventing the phenomenon of spalling. The greatest compressive strength loss was registered in the range of 500 °C - 700 °C by all the compositions (with values between 35 %÷ 55%), reaching between 700 °C – 900 °C to values of 31%÷39% of the compressive strength determined at room temperature. Referring to the residual splitting tensile strength, it was observed a linear decrease of the resistance with increasing the temperature of exposure.

In order to attenuate or eliminate the phenomenon of spalling is recommend the add polypropylene fibers in concrete matrix.

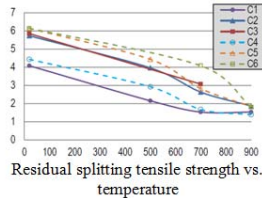
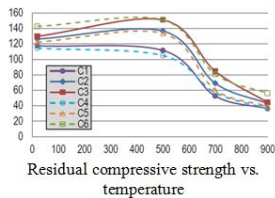
Class no. Innovative Research



Steel fiber reinforced concrete after exposure to 500 °C



Polypropylene fiber reinforced concrete after exposure to 500 °C



Iasi Border Police Territorial Inspectorate

RO.150.

Title	Different working-methods of counterfeiting the Romanian passport
Authors	Daniel POTOLINCA ¹ , Cristi Ioan NEGRU ¹ , Ion SANDU ²
Institution	¹ Iasi Border Police Territorial Inspectorate ² "Al. I. Cuza" University of Iasi, 22 Blvd. Carol I, 700506, Iasi, Romania
Description	<p>Since Romania has joined European Union in 2007, persons having a travelling document given by Romanian authorities can freely move within European Union and Schengen space. Although, in 2001 the Romanian passport had numerous security elements which were very difficult to imitate or copy, security features tend to decrease gradually mainly due to the on-going increasing ability and capability of counterfeiters to imitate these features and due to access to technological equipment.</p> <p>In 2009, Romania introduced the electronic passport; however 2001 model is still being used until 2019 due to its period of availability which is 10 years.</p> <p>In order to analyze security features of any passport a magnifier glass or a microscope should be used.</p> <p>Romanian bio-data page is a paper with dual-tone watermark, background offset printed and use an inkjet printer for personalization. After personalization, the bio-data page is secured by a Transparency Kinegram Overlay laminate. Printing techniques are studied on the Romanian passports. Bio-data page can be examined in white light reflection and transmission and in long wave ultraviolet (UV) light, using the naked eye or a magnifier.</p> <p>An adequate inspection requires knowledge, attentiveness, evaluation of more than one security feature and possibly of using tools as well. This mean the genuineness of a passport cannot be confirmed by a rapid inspection of one security features.</p>
Class	Innovative Research

RO.151.

Title	Security Features in the Substrates of Valuable Documents
Authors	Cristi Ioan NEGRU ¹ , Daniel POTOLINCA ¹ , Ion SANDU ²
Institution	¹ Iasi Border Police Territorial Inspectorate ² "Al. I. Cuza" University of Iasi, 22 Blvd. Carol I, 700506, Iasi, Romania
Description	<p>This paperwork discusses levels of security that can be inserted in the substrates of paper and plastic documents. Valuable documents for one particular application are usually non-commercial and not available for the generic public. They are manufactured on security paper containing specific features.</p> <p>During its history and stages of development, paper substrates and subsequently plastic substrates were quickly followed in different countries by the issue of polymer bank notes.</p> <p>In the course of time numerous paper-based features have been developed, however, the rise of plastic value cards required incorporation of new elements of security that were aimed not to be copied and replicated by unauthorized persons. Paper substrates have a recognition since the ancient times especially in the form of the oldest paper-based security feature, the watermark.</p> <p>Altogether we witnessed how specifics for plastic and paper-based features as well as other have been developed and used in the printing industry in order to ensure a satisfactory level of security.</p>
Class	Innovative Research

S.C. AREXMAN CONSTRUCT S.R.L.**RO.152.****Title** Earthquake, Antiblast & Bulletproof Personal Protection Shelter**Authors** Mircea MANOLESCU**Institution** AREXMAN CONSTRUCT**Patent no.** Pending

S.U.P.E.R. SHELTER (Safe - User friendly - Personal - Emergency - Rescue SHELTER) is an individual shelter capable to withstanding extreme downward forces, which assures the life saving of the user, and on the other hand sustains the life untill the rescue team's intervention. Designed to be transported through any standard interior door, in already constructed buildings. The shell has antiblast and bulletproof properties, making this shelter able to protect the user in case of war and terrorist attack.

Description Taking care of the persons in danger individually S.U.P.E.R. SHELTER has the best results regarding the integrity of their bodies and life. This is a very resistant **personal** shelter which saves the life in various situations. The equipment inside helps the user to keep his body integrity even if the building collapses, and offers various functions to sustain the life until the rescue team arrives, as well as to keep the mind busy and to communicate with the outside helpers and family.

Class Searching for a business partner: office@seisme.ro
12. Safety, protection and rescue of people



NATIONAL

RO.153.

Title Earthquake, Antiblast & Bulletproof Children Protection Desk
Authors Mircea MANOLESCU
Institution AREXMAN CONSTRUCT
Patent no. Pending

S.U.P.E.R. DESK (Safe - User friendly - Personal - Emergency - Rescue DESK) is designed to work as a conventional school desk and, in case of earthquake, war or terrorist attack, by sliding a panel, it becomes a student shelter, capable of withstanding extreme downward forces, bullets and blasts, protecting our children nested safely within.

Description

S.U.P.E.R. DESK is a convertible school desk which can be used normally and, when needed, as a protective shelter. Even in case of the building collapse it preserves a safe place inside due to its design and construction materials which make it undeformable and impenetrable. Converting the normal desk into a shelter, S.U.P.E.R. DESK becomes a closed safe box with the children inside.

An adapted form of the S.U.P.E.R. DESK can be used also in office buildings for adult persons.

Searching for a business partner: office@seisme.ro

Class

12. Safety, protection and rescue of people



RO.154.**Title****SENTINEL G07 – Automatic system for antiseismic protection****Authors**

Mircea MANOLESCU

Institution**AREXMAN CONSTRUCT****Patent no.**

Pending

Description

Approximately 50% of the damage from a major earthquake is due to explosions and fires caused by the gas system installation's loss of their tightness and the electrical installations producing shorts. The system designed by us, before every major earthquake, closes the gas flow outside the building facilities and the electricity. We have developed an intelligent electric panel that I used as input signal generated by the best available on the market early quake alarm, and, as installations output the closing gas automatic order for electricity .

The smart switchboard SENTINEL G07 provides independent and autonomous operation of the system, making it perfectly suited for use anywhere in the country and able to grasp the seismic waves from any epicenter. In fact, these are also the main advantages over currently existing similar systems, that only works in certain areas and announce only earthquakes with epicenter in Vrancea.

Class

12. Safety, protection and rescue of people

S.C. BIOTEHNOS S.A.

RO.155.

Title	The efficient impact on the foreign market of an innovative Romanian high-tech product in algorithm of restoring the homeostasis in the inflammatory, degenerative and the rheumatic diseases
Authors	Laura Olariu, Emilia Buse, Roxana Nita
Institution	SC Biotehnos SA
Patent no.	Pending
Description	<p><i>“PNII-IN-SEH-2012-I-0009” project INNOVATION PROGRAM</i></p> <p>The high-tech pharmaceutical valorisation of an innovative structurally group that contains a biocomplex of marine organic resources in combination with other active ingredients with synergistic effects enhances the effective pharmacological action and low toxicity in inflammatory and degenerative rheumatic diseases. The launching of a high-tech product is mainly based on the request of certain foreign markets for a type of drug that SC Biotehnos SA is able to conceive, develop and produce at a high level of competitiveness. The technologies and processes for manufacturing of proposed high-tech product are in an advanced development stage from the entire algorithm of achievement as drug. The innovative group exhibits a preliminary efficacy/ toxicity ratio superior to other formulations in target pathologies which has been proven by high-tech experiments. The <i>antioxidant effect</i> of complex is sustained at <i>acellular</i> level by significant reduction of free radicals DPPH, a high total antioxidant status and peroxidase capacity to inhibit ROS; at <i>cellular</i> level by annihilation of O₂⁻ and H₂O₂ by flow cytometry analysis and also at <i>genetic</i> level by RT-PCR target gene expression for essential antioxidants (nuclear promotor factor, glutathion-peroxidase, superoxide dismutase and catalase). The <i>anti-inflammatory action</i> has been evidenced by reducing of pro-inflammatory cytokines, VEGF, TGFβ growing factors and at <i>genetic</i> level by down-regulation the expression of pro-inflammatory genes. The <i>articular matrix restructurant</i> role was proven by inhibitory action on hyaluronidase. The interrelated and synergic action of complex generate the idea for export of a high tech product based on socio-political and economical strategies, romanian products promotion and external market demand for competitive drugs.</p>
Class	4. Medicine - Health Care - Cosmetics

S.C. CEPROHART S.A.**RO.156.**

Title	Security paper and method for thereof manufacturing Zăpodeanu Ion, Buteică Dan, Nechita Petronela, Gavrilă
Authors	Ionel, Stanciu Constantin, Cârâc Geta, Dinică Rodica, Dumitru Petrică, Aniculăesei Gherghina
Institution	SC CEPROHART SA
Patent no.	(Pulp and Paper Research and Development Institute) Patent application No. 126417 din 30.08.2013
Description	The invention consists of a manufacturing process of specialty paper grade for value documents, having a high protection provided by a securing elements system (watermark, UV and VIS marked fibres, UV fluorescent pigments, chemical compounds with color reaction to the attack of documents with acids and alkaline substances or solvents). These security elements assure a lower risk to the many possibilities of falsification and counterfeiting. <i>Application:</i> printing of the value documents, different banking payment instruments, invoices and tax receipts, vouchers and gift vouchers, documents for public records, notarial documents, travel documents etc.
Class	12. Safety, protection and rescue of people



RO.157.

Title **Papers for security printing with magnetic properties**
Authors Daniela Manea, Constantin Constantin, Dan Buteică
Institution **SC CEPROHART SA**
Patent no.

Description

Project's objective is application at industrial level of a innovative technology in order to secure the value papers (for banknotes, ID cards, passports, etc) by the introduction within the paper support of a security element – ferromagnetic microwire (FM), as discontinuous and continuous wire – that assures a superior warranty of authenticity and a high level of security against thievery and evasion. Estimated results of the project are:

- identification of some FM with superior chemical and physico – mechanical resistance and with maxim magnetic efficiency, suitable for use in an aqueous-colloidal medium, subjected to stretching – destretching actions, such as the one existing in the manufacture of paper technology
- identification of some inovative techniques to include the FM within the base paper structure as continuous or discontinuous wires and to assure the compatibility of the elements from the matrix paper – FM - process additives
- application at industrial level of the continuous FM insertion within the paper sheet technology in terms of ensuring microwires parallelism and a high magnetic efficiency of the FM
- obtaining at industrial scale of the paper with discontinuous FM, the main focus being directed towards ensuring a uniform distribution of the microwires and their parallel orientation
- patenting of the product “Paper with continuous FM and his manufacturing technology”.

This project is realized by Innovation Program – Development Products-Systems-Technologies Subprogram - PN II, implemented with the support of MEN, CCCDI – UEFISCDI, project's number PN-II-IN-DPST-2012-1-0028.

Class

12. Safety, protection and rescue of people

S.C. Erika Power Systems S.R.L.**RO.158.**

Title	Underwater camera designed for Kirby Morgan helmet compatible with Vision 1712-Communication and underwater inspection system
Institution	Cristi ISAC, Dogan ASAN, Nicolae TUDOR, Tiberiu NEAGU, Lucian CHIRILA, Stelica MOCANU, Alexandra BURUEANA, Ion PREDA, Robert COROIANU, Gheorghe PAVALOAI
Authors	S.C. Erika Power Systems SRL S.C. Atlantis Mar Group SRL
Patent no.	Pending
Description	<p>The underwater camera is designed for surveillance and supervision during specific underwater tasks as follows: maritime, pillars of oil platforms, bridge pylons, nuclear power plant , underwater pipes and other installations.</p> <p>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.</p> <p>The cable design allows the equipment to be operated for video and audio transmission simultaneously and separately.</p> <p>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.</p> <p>Additionally the system supports wireless communications that could prove very useful for tender or any other third party operator.</p> <p>The display is a 17' daylight viewable with high brightness and wide viewing angles which offers excellent clear image of underwater operations.</p> <p>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.</p> <p>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.</p> <p>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.</p>
Class	10.Information Technology and Communication



SC HIDROELECTRICA SA**RO.159.**

Title	Flat valve position tracking system
Authors	Maioreanu Andrei Petrisor, Raicu Ticusi Pantelie, Nemtoiu Simona Greta, Poenaru Dragos Andrei, Balasan Claudia
Institution	SC HIDROELECTRICA S.A.
Patent no.	A 00651 / 02.09.2013
Description	<p>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 consists of a pressure sensor mounted on the presson system of the hydraulic installation, an inductive transducer with a roll mounted on the rod of the servoengine, a hydraulic drive unit, hydraulic machines and an PLC.</p> <p>The facility, according to the invention, presents the following advantages:</p> <ul style="list-style-type: none">-displaying on the operator panel the valve qouta;-the hunt quota display is jammed in the guides;-constructive simplicity;-high reliability;
Class	2. Energy and sustainable development

SC HOFIGAL EXPORT -IMPORT SA

RO.160.

Title	Natural phytotheraphic product for improving vision and eye health and its obtaining process.
Authors	Manea St, Tamas V Ivopol G, Neagu M
Institution	SC HOFIGAL EXPORT IMPORT SA
Patent no.	A201001098
Description	The product, known as "Vedisan" is made as dietary supplement in the form of capsules / tablets with high antioxidant activity and appropriate content of natural products, necessary for the health and extension of natural vision (carotenoids, anthocyanins, flavones, vitamins, minerals, enzymes, amino acids, polyunsaturated fatty acids, etc.). For making this product, there were used extracts of: mulberries / blueberries, barley grass, tomato parings / marigold, red corn, selenium yeast. The treatment is lasting, and the results, good and efficient.
Class	4. Medicine - Health Care - Cosmetics

RO.161.

Title	Natural Fur Treated With Medicinal And Aromatic Plants And Plant Extracts, Health Products Developed On This Basis And Procedures For Obtaining Them
Authors	V.Tamas; Manea St., C., Gaidau, D. Simion, Ivopol G, N. Bordei; A. Cozea
Institution	SC HOFIGAL EXPORT IMPORT SA
Patent no.	a 201100083/02.02.2011
Description	The products are made from fine Merinos fur is ecologically (organically) tanned, which is worked/treated with organically-certified medicinal and aromatic plants and plant extracts has natural health effects for preventing, ameliorating and/or treating of certain health-problems. The raw materials used and the means of working them and are presented in different forms of utilization that improve human health and comfort: neck support ; car-seat head-rest cover, healthy insoles, seat pillow, lumbar vertebrae support girdle, knee-supports, ankle supports etc.
Class	4. Medicine - Health Care - Cosmetics

RO.162.

Title Natural phytotheraphic product for improving vision and eye health and its obtaining process.

Authors Manea St, Tamas V Ivopol G, Neagu M

Institution SC HOFIGAL EXPORT IMPORT SA

Patent no. a201001098

Description The product, known as "Vedisan" is made as dietary supplement in the form of capsules / tablets with high antioxidant activity and appropriate content of natural products, necessary for the health and extension of natural vision (carotenoids, anthocyanins, flavones, vitamins, minerals, enzymes, amino acids, polyunsaturated fatty acids, etc.). For making this product, there were used extracts of: mulberries / blueberries, barley grass, tomato parings / marigold, red corn, selenium yeast. The treatment is lasting, and the results, good and efficient.

Class

S.C. PROCOMIMPEX S.R.L.**RO.163.****Title****Procedure and paste adhesion to achieve multilayer metal parts****Authors**

Corăbieru P, Vasilescu D.D, Corăbieru A

Institution**SC Procomimpex SRL****Patent no.**

Patent application No. A00295/11.04.2013

Description

The invention relates to achieve the multilayer metal parts by immersion centrifuging vertical. Deposition of layers of metal (copper, aluminum, nickel, chromium) is performed using heat and mechanical energy, by mixing the metallic materials brought into pressing contact conditions at elevated temperatures.

The problem solved by the invention is to obtain multilayer parts (bearings, bearings, bushings, shafts) by deposition of metals melt. Deposition is done by immersion and centrifuging vertical using a deposition system with the components: drive spin vertical, the preheating pickling plant, induction furnace, cooling system.

Deposition of the liquid metal on the base material consists of: immersion of steel substrate into the bath of metal; support raising the bath to about half the height thereof; rotating the substrate at a speed of rotation needed to achieve the deposit. The centrifugal force that arises by rotating bracket metal bath determines: distribution support steel metal walls; adhesion layer and diffusion of atoms at the interface steel - liquid metal; formation of interphase area.

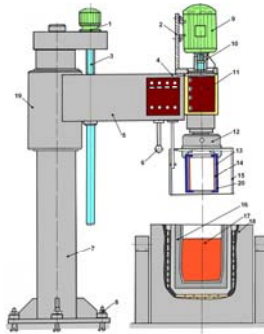
The paste adhesive for application of the process consists of the 55% protective elements against oxidation and 45% intermediate adhesion elements.

The chemical composition of the adhesion paste

Symbol paste adhesion	The composition of the adhesive paste, %									
	Elements of protection against oxidation 55%					Elements of intermediate adhesion 45%				
	Na ₂ SiO ₃	CaO	CaF ₂	CaCl ₂	Borax	Ni powder	CaCO ₃	BaCO ₃	Na ₂ CO ₃	binder
PA	14	14	11	8	8	30	4	5	4	2

Class

6. Mechanical Engineering - Metallurgy



Centrifuging machine and vertical immersion

1 – gearmotor for vertical advance; 2 – continuous current electromotor support; 3 – vertical advance screw nut mechanism; 4 – panel; 5 – folding arm; 6 – maneuver handle; 7 – column directions; 8 – foundation bolts; 9 – continuous current electric motor; 10 – coupling; 11 – main spindle; 12 – universal mechanical; 13 – steel workpiece support; 14 – bronze layer deposited; 15 – slide cylinder guard; 16 – crucible; 17 – bath of molten bronze; 18 – induction furnace; 19 – machine centrifugation vertical; 20 – interlayer connection Ni 95%

Fructex Bacau SRL**RO.164.****Title****SERPENTA – seabuckthorn variety (Hippophae Rhamnoides)****Authors**

Rati Ioan Viorel and Rati Luminita

Institution**Fructex Bacau SRL****Patent no.**

00152 – 30/3/2009

The SERPENTA variety is characterized by medium size plants with semi vertical growth and moderate ramified branches, with multiple long thorns.

The SERPENTA tree trunk has 60-80 cm in diameter, pyramidal shaped crown with annual lateral branches of 15-20 cm and medium density, with dark green shoots. The multi annual strains are light grey in color and the annual strains have medium thickness. High density of shoots, covered with medium sized thorns. The buds are producing 6 to 8 flowers each, on the entire length of the branch, resulting in a very high fructification. The elliptical shaped leaves are medium sized and are covered with very thin light colored hairs. Early blossoming, in the month of April. Disease resistant, especially fungi infections.

Description

The fruit is medium in size (0.38 grams) and the diameter is averaged at 10.4/7.6 mm. The orange fruits have an elliptical shape, with medium thick skin and are burst resistant. The pulp is bright orange, very juicy with an astringent specific taste. The seeds have an elongated elliptical shape, dark brown in color.

Recommendations: The fruits are rich in biochemical compounds, antioxidants, oil, carotene, tocoferol and vitamin C, being very valuable for the medical, cosmetic and food industry. It is highly recommended for exploitation in various areas of the country, due to very high adaptability to soil and climate conditions.

Class

3. Agriculture and Food Industry
4. Medicine - Health Care - Cosmetics



RO.165.

Title **DIANA – seabuckthorn variety (Hippophae Rhamnoides)**
Authors Rati Ioan Viorel and Rati Luminita
Institution **Fructex Bacau SRL**
Patent no. 00156 – 30/3/2009

Description

DIANA variety is characterized by pyramidal tree shaped plants of medium vigor. Medium density of shoots with a reduced number of thorns. The thorns are long and flexible.

The DIANA tree is medium sized, with long and flexible branches. The buds cover most of the branch length and are partially covered with dark red colored scales. The leaves are thin and long in shape, light green in color, covered with small light hairs. Raceme flowers, with a short peduncle, situated right next to the leaves. The oval shaped fruits are medium in size and weight (0.28 grams) and the average size is 7.4/6.2 mm. The uniform fruit color is yellow – orange. The skin is medium thick and burst resistant. The pulp is light orange in color, very juicy with an astringent taste and specific aroma. The seeds are elliptical shaped and dark brown in color. The best time for harvesting is the end of August.

Recommendations:

This variety has a very high productivity and quality of fruits. The biochemical compounds richness along with high adaptability to various types of soils and climate, make it very efficient and valuable for exploitation. High harvesting yield, due to density of the fruits and low presence of thorns (flexible). It is highly recommended for exploitation in various areas of the country, due to very high adaptability to soil and climate conditions.

Class

3. Agriculture and Food Industry
4. Medicine - Health Care - Cosmetics



RO.166.

Title Barbeque whit sliding valve
Authors BERDILA OCTAV
Institution S.C. MIC IND S.A.
Patent no. Pending
Description Grill with cast iron cooking surface and tray to feed the fire.
 Grill is equipped with removable legs
Class 14. Other



RO.167.

Title **Development of an ecological dyeing process for yarn, denim fabric, jeans applicable at industrial scale based on vegetable and natural dyes - “VEGDENIM”**
Authors Corneliu E. SAVENCU, Gabriel MARTINESCU, Vasile MARTINESCU, Ramona SAVENCU
Institution S.C. PLASTPROD S.R.L.
Patent no. Pending
 1 - The extraction method of natural dyes
 2 - Equipment for extraction and concentration of natural dyes
 3 - Application technology of natural dyes on fibers
Description Created in the program: Partnerships in priority areas (materials, processes and innovative products) the Era Net CROSSTEXNET project, in a partnership with MODAZEN Turkish company, is focused on getting industrial methods of extraction and concentration of dyes from plants, machinery realization and its automation, creating the possibility of making real-time adjustments to production parameters (concentration repeatable extraction time, pressure, temperature, ...) and providing solutions for reducing the environmental impact on the surrounding environment, impact produced by textile technologies and equipment serving these technologies.
Class 9. Chemical and Textile Industry

Individual Inventors

RO.168.

Title

MULTIFUNCTIONAL DESK CALENDAR

Authors

POPESCU Mariana

Patent no.

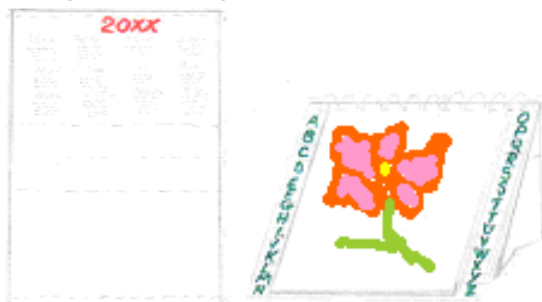
Patent application No. A/00868/2013

Description

The invention relates to a desk calendar with various facilities for the user: having nearby as needed an overall view of all the months and days of the current year, an easy access to complete information about important people in his life and career, maintaining wellbeing and reducing stress by placing in the frontal pocket relaxing and pleasant photos (pictures from nature, family photos or advertising). The calendar covers made of a cardboard sheet bent so as to render its own stability should be placed on the desk on horizontal position. On the frontal cover the desk calendar is provided with an alphabetical directory made of paper sheets marked with letters equally ordered into both lateral edges and cut so that they can access the pages by hand in the letters corresponding points. The components of the calendar are connected using a plastic coil and the frame edges are placed inside the letter spaces on the frontal cover where photos could be inserted through a slot. Expired calendar yearly with printed months and days on the back should be covered yearly with a new calendar printed sheet and pictures of front frame should be easily changed whenever the user wants, thus prolonging their time of utility. It is also a solution for saving energy consumption, limiting wastes and protecting the environment, the main materials being biodegradable.

Class

11. Printing and advertising



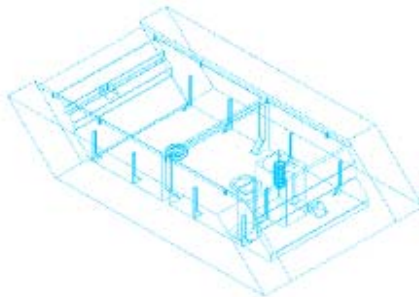
RO.169.

Title EN Hybrid car
Authors Lupu Vasile, Gavrilas Dumitru Gabriel, Colpos Bogdan
Patent no. Pending
Description EN The invention relates to a hybrid car, powered by electric engine and both combustion engine.
Class no. 2. Energy and sustainable development

RO.170.

Title EN Mechanical brick with joining
Authors Pop Horea-Vasile
Future "CIMPrint"
Patent no. Not patented yet, only 2D&3D drawings with a prototipe made manually, at scale 1:6.67
 Brick consists of a body in inclined sides with bolt. Has a mechanical joining and holes for low and medium voltage. The body consists of a casing filled with mineral wool as insulation. The lines are sealed with special tape adhesive. For a normal house with one arc circle there are max. 18 models.
Description EN Materials can be in my vision: Hard Ceramic or LDPE. Models can be printed at 3D printer. For the next 25 years the printed production at 3D printer is still to expensive. Maybe the innovations in chemistry and mechanics can solve the problem. Maybe just lego toys for the next 10 years. In 2034, advanced mechanics and chemistry will allow to implement house constructions at medium scale.
Class no. 7. Buildings and Materials

**Image/
Photo**



RO.171.

Title Modernization of oil extraction probe

Authors Ionel Dorofte

Patent no. Pending

Description

Through a simple mechanism transmission coefficient is uniformly force / displacement // of // rotation linear. This invention is important because the crank mechanism used creates a sinusoidal coefficient. The effects are increasing the efficiency / performance of extraction wells 20 = 30%.

Class

5. Industrial and laboratory equipments



RO.172.

Title Transparent Welding mask

Authors Ionel Dorofte

Patent no. Pending

Description

New welding mask in transparent view is based on a plug-mechanical or LCD - bright povocate obstructing discharge arc welding. In this way the human operator can work safely clear seeing and the object to be welded sudura.Se get a clear increase productivity and work quality. In addition it comes to new conditions, more ergonomic to the human operator.

Class

12. Safety, protection and rescue of people



RO.173.

Title Hydroforming press Generation III

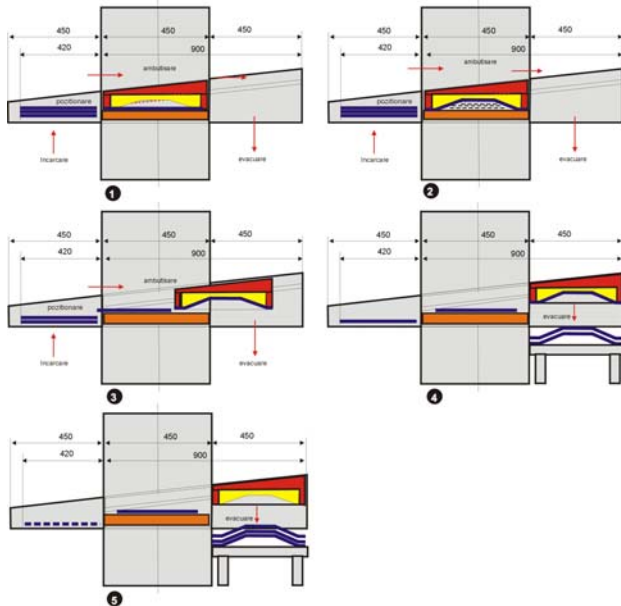
Authors Ionel Dorofte

Patent no. Pending

Since 1983 we approved the designs and two generations of hydroforming presses. Press Defeat in production of 1985-20000 tons / force - is today one of the largest and most versatile in the world. The new conception of hydroforming presses - patent pending - takes into account the information and experiments over three decades of innovation in the field. The new system keeps closing on up but with one mold furniture. What is completely new is the fact that the fix before the start of the race moves in the same direction as the mold to avoid seal damage. It creates a hydroforming machine that can reach the same productivity as mechanical presses.

Description

Class 5. Industrial and laboratory equipments



RO.174.

Title Manhole cover in Concrete / Asphalt

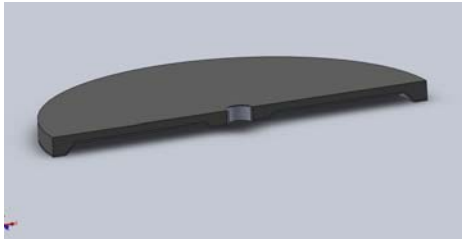
Authors Ionel Dorofte

Patent no. Pending

Description

The basic structure of the cap is a piece of metal sheet cold pressed 1.5-4 mm. Prefer crimping by hydroforming: we exposed another invention catalog. One novelty is that the metal plate is placed in the hole upside down: a hat extraplataHas several elements: a metal cord and holes welded smooth edge grip.All cover with rubberized asphalt concrete. Ensure good adhesion to those of iron. In addition: can't be stolen.

Class 7. Buildings and Materials



RO.175.

Title Mechanism of transforming rotary motion into linear and reverse

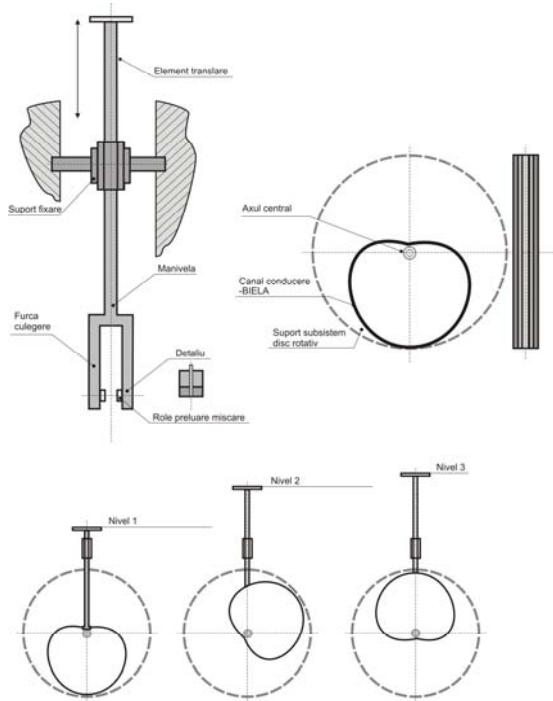
Authors Ionel Dorofte

Patent no. Pending

Description

Mechanism invention transforms circular motion into linear and reverse. Unlike the classical crank mechanism is obtained almost a factor - the transmission ratio uniform. It is made of a cam with a heart-shaped profile obtained on computer and collectors fork movement. That the practical and reliability is comparable to the crank. Applications throughout industry and primarily mechanical motors and pumps.

Class 6. Mechanical Engineering - Metallurgy



RO.176.

Title

Reinforced plasterboard with horizontal goals – PIAGO – and procedure

Authors

Colbu Gheorghe, Stangaciu Dumitru

Patent no.

A/00152 din 24.02.2014

Description

Gypsum board in two horizontal directions hollow plaster made of condensed , the two -way reinforcement fiberglass mesh prestressed , goals longitudinal horizontal , funnel-shaped holes made perpendicular to the lateral surface of the horizontal gaps seen just before the board , sound-absorbing material that fills gaps horizontal insulating material behind the plate resulting in a bilayer panel replacement designed interior cladding of external walls , cladding interior walls and ceilings of public listening rooms .

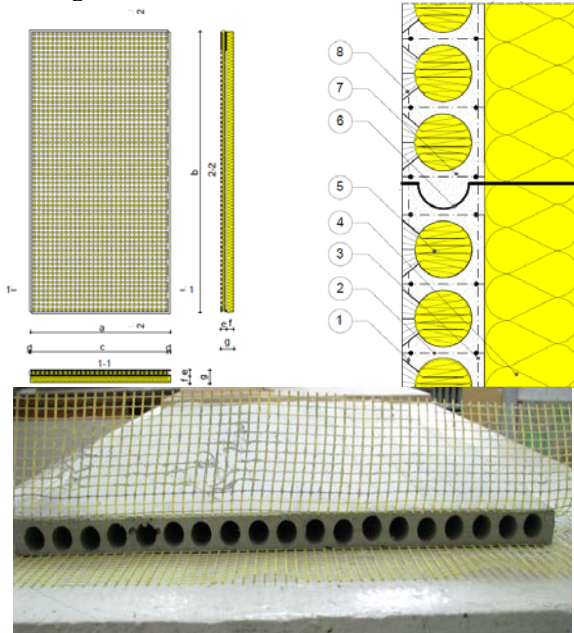
Gypsum board in two horizontal directions hollow casting is provided for connecting the tongue and the groove of the other trapping surface and the safety of the application is achieved by means of special plastic parts .

Gypsum plate in two directions hollow horizontal thermal and sound dampening material has the following characteristics :

- increased sound absorption
- Improved thermal protection
- high mechanical strength
- Easy handling and installation

Class

7. Buildings and Materials



RO.177.

Title

Domestic Energy Recovery Integrated System

Authors

Huiduc Philip Damian

Patent no.

Pending

Description

The integrated system designed by me made reduces electricity consumption in households by the recovery of mechanical work dissipated routinely in various household activities. First system recovers the energy from water currently used in the household. Water enters the house with a pressure greater than that required one for use. For use the water pressure is lowered by reducing the crossing section, so by the actual waste of energy. Our solution achieves

gradual reduction of water pressure through the variable drive of a turbine, generating electricity, which is integrated inside the pipe. The recovered energy can be used in low energy lighting sources or any other similar utility.

The second possibility of energy recovery is the rotation of the doors when people passing through them, which coupled to a dynamo generates electricity that can be used as shown above. The two systems, possibly together with other similar ones, not shown here, can be coupled to obtain a uniform result, larger, more efficient and with improved uniformity coefficient.

Class 2. Energy and sustainable development

RO.178.

Title **The fastest spectroscopy LIDAR used for atmosphere monitoring, detection and ranging: DARLIOES**

Authors Silviu GURLUI, Mihai CAZACU, Adrian TIMOFTE

Institution „Alexandru Ioan Cuza” University of Iasi, Faculty of Physics, Atmosphere Optics, Spectroscopy and Lasers Laboratory (LOA-SL)

Description

- DARLIOES offers highest spatial and temporal resolution and is able to detect a variety of chemical tropospheric compounds (including toxic elements like mercury or lead), chemical transformations, evidencing their physico-chemical properties;
- DARLIOES may be used to carefully investigations in real-time a variety of the optical phenomena, measuring the profiles of the temperature, humidity, pressure; monitoring the gas mixture influences to regional weather, ice nucleation-organic compound and freezing influences, storms, health and climate changes;
- DARLIOES may be used to measure concentration of sulphur dioxide injected in the troposphere from the volcanic eruption ash, water profiles and their dynamics, acid rain, chemical transformation/physical properties;
- DARLIOES may remotely detecting trace explosive by monitoring NO photo-fragmentation of TNT under UV radiation, detection and characterization of carcinogenic BaP or PAH compounds adsorbed on the soot in a given smoke plume, bacterial and fungal spores, etc.

Class Innovative Research



PALATUL COPILOR

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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 Iași.

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

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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 opțiunilor 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 naționalitate, sex și religie, corespunzător 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 dinamică puternică în ceea ce privește numărul de cercuri și diversitatea lor.

În prezent la Palatul Copiilor funcționează un număr de 60 de cercuri cu profile din domeniile cultural-artistice, tehnico-științifice, tehnico-aplicative și sportiv-turistice. Acestea se adresează celor 76,154 de copii din grădinițe, școli primare, gimnaziale, profesionale și liceale din municipiul Iași.

Activitățile sunt conduse de o echipă de cadre didactice calificată și specializată pentru activitățile 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.

THE PALACE OF CHILDREN, IAȘI

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Bejan Irina Mădălina cl. a IX a
Ilievici Alexandra cl. a VIII a
Prof. Pantelimonescu Remus
2. DISPOZITIV PENTRU DETECTAREA FISURILOR ÎN PIESE FEROASE
Axinte Ștefan cl. a VIII a
Manolache Mihai cl. a VIII a
Prof. Pantelimonescu Remus
3. TABLĂ ȘAH –MAGNETICĂ PENTRU DEMONSTRAȚII
Balan Gheorghe cl. a XI a
Popescu Andrei cl. a X a
Prof. Pantelimonescu Remus
Prof. Colbu Gheorghe
4. SISTEM ENERGETIC NECONVENȚIONAL
Balan Gheorghe cl. a XI a
Motoc Smaranda cl. a VI a
Prof. Pantelimonescu Remus
Prof. Colbu Gheorghe
5. VEHICUL DE AGREMENT SOLAR
Ilievici Alexandru cl. a VIII a
Gheorghîță Sebastian cl. a VIII a

Niculăiță Teodora cl. a IV a
Prof. Pantelimonescu Remus
Prof. Colbu Gheorghe

6. BIO LINE – ROBOT URMĂRITOR DE LINIE

Josanu Rareș cl. a VI a
Prof. Pantelimonescu Remus

7. DETECTOR PERSOANE CU MESAJ VOCAL

Cohal Alexandru
Prof. Pantelimonescu Remus

8. CALCIMETRU

Popescu Andrei cl. a X a
Motoc Smaranda cl. a VI a
Prof. Colbu Gheorghe

9. DISPOZITIV MATRIȚARE FOLIE POLIURETANICĂ PRIN
VACUUMARE LA CALD

Toma Daniel cl. a IX a
Nedelcu Cristian cl. a IV a
Prof. Chiriță Daniel

10. JIGLER REGLABIL PENTRU CARBURATOARE CU
PLUTITOR, MOTOARE ÎN DOI TIMPI

Tanase Radu Matei cl. a VIII a
Stoian Matei cl. a IV a
Prof. Chiriță Daniel

11. NAVĂ ECOLOGICĂ

Popescu Andrei cl. a X a
Prof. Stratulat Mihai, Pof. Sandu Carmen

12. COMPOZIȚII

Munteanu Alice cl. a VI a
Pascaru Anuța cl. a VIII a

Prof. Colbu Dumitru-Eugen **Liceul Tehnologic „Oltea Doamna” Dolhasca**

13. COMPOZIȚII

Marian Maria cl. a X a
Vieru Alexandru cl. a X a
Prof. Toma Mădălina

Palatul Copiilor Iași

Alexandra Alina LUCA

Young painter



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