Proceedings of
The 8th Edition of

EUROPEAN EXHIBITION OF CREATIVITY AND INNOVATION

2016

Editors: Andrei Victor SANDU and Ioan Gabriel SANDU

All the patents and research information are provided
by the authors. No major corrections were applied by editor.

Message to EUROINVENT 2016 Participants

On behalf of International Federation of Inventors' Associations (IFIA), I wish to extend my sincere appreciations on the organization of the eights annual of European Exhibition of Creativity and Innovation (EUROINVENT) to be held between May 19 and 21, 2016 in Romania.

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

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

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

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

Alireza Rastegar
IFIA President

www.ifia.com

Message to EUROINVENT 2016 Participants

First of all, I wish to share my firm conviction that the organized exchange of ideas is the most important fact for understanding the complex world we are living in and its importance for a life free from threats of any kind.

Secondly, it is my privilege to congratulate and to thank to the Romanian Inventors Forum, Europe Direct Iasi, Gheorghe Asachi University of Iasi and Alexandru Ioan Cuza University of Iasi, who have made great efforts to organize this 8th EUROPEAN EXHIBITION OF CREATIVITY AND INNOVATION.

I believe that an exhibition of inventions and innovations is a great opportunity to develop the dialogue between creative minds from different countries and it is gratifying to see that talented and creative people are willing to put in open and fair competition their intellectual achievements and to search a way for innovative co-operation.

As representative of Romanian Government in Iasi County, it is my honorable duty to address all of you, organizers, participants and visitors, our sincere greetings and best wishes.

MARIAN GRIGORAȘ
PREFECTUL JUDEȚULUI IAȘI

Message of Interim Mayor of Iasi

Your Excellencies,

On the occasion of the 8th European Exhibition of Creativity and Innovation, I am very happy to welcome you in Iasi, a modern and opened city for all cultures and people all over the world.

It is such a privilege to have such wonderful, talented and undeniable international inventors in the middle of the people in Iasi, a symbol of unity, peace and tolerance across borders.

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

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

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

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

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

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

Mihai CHIRICA
Interim Mayor of Iasi

Mesajul
Autorității Naționale pentru Cercetare Științifică și Inovare
Ministerul Educației Naționale și Cercetării Științifice

În contextul actual european, marcat de imperativul dezvoltării prin inovare, realizarea la Iași a celei de a 8-a ediții a Expoziției Europene a Creativității și Inovării – EUROINVENT, în perioada 19-21 mai 2016, reprezintă un succes.

În primul rând, doresc să adresez felicitări pentru perseverența organizării acestui eveniment, care a căpătat amploare de la an la an, EUROINVENT – 2016 fiind unul dintre cele trei evenimente la nivel mondial, care figurează în Calendarul Evenimentelor IFIA (Federația Internațională a Asociațiilor de Inventatori) din luna mai. Este un semn de recunoaștere a prestigiului la nivel internațional.

Organizarea în România a acestui important eveniment internațional din domeniul inventicii confirmă în mod indiscutabil faptul că România, prin strategia și programele sale naționale specifice, se implică în mod activ în realizarea obiectivului strategic de creștere a competitivității europene prin cercetare și inovare.

În acest sens, România urmează liniile directoare configurate prin Strategia Europa 2020 și prin una din cele mai importante inițiative rezultate din Strategie, aceea de a transforma Uniunea Europeană într-o adevărată Uniune a Inovării – *Innovation Union*.

România se află în clubul select din Europa, care discută despre *"voucher de inovare"*, instrumentul specific prin care se oferă soluții inovative pentru IMM-uri de către unitățile de cercetare furnizoare de soluții, astfel încât să asigurăm o dinamică pozitiva în zona inovării.

Bugetul pentru CD pe anul 2016 este cu 33% mai mare și se estimează o crestere de circa 30% și anul viitor. În aceste condiții, există premiza ca în 2020 România să investească din bani publici 1% pentru Cercetare-Dezvoltare-Inovare.

Predictibilitatea resurselor din zona publică va genera acțiune din zona privată, sub forma unor investiții majore, orientate spre produsele și tehnologiile de vârf.

Autoritatea Națională pentru Cercetare Științifică și Inovare (ANCSI) este organul de specialitate al administrației publice centrale, cu personalitate juridică, în subordinea Ministerului Educației Naționale și Cercetării Științifice, prin care acesta își realizează atribuțiile în domeniul cercetării științifice, dezvoltării tehnologice și inovării.

Este un fapt binecunoscut acela că ANCSI promovează o serie de acțiuni care urmăresc susținerea performanței științifice, impulsionarea inventivității și inovării în România, creșterea vizibilității interne și internaționale a rezultatelor acestor activități, ca și mijlocirea contactului între cercetători și inventatori cu mediul economic și social în cadrul unor târguri și expoziții de profil.

România este țara numeroșilor inventatori medaliați în repetate rânduri cu aur la cele mai prestigioase saloane internaționale de inventică, dintre care le menționăm pe cele mai reprezentative: Salonul Internațional de Invenții de la Geneva și Salonul Internațional INNOVA de Bruxelles, Belgia.

Având în gând toate cele prezentate, urez deplin succes tuturor inventatorilor participanți la EUROINVENT-2016, pentru care această ediție să reprezinte o experiență minunată, plină de inspirație pentru activitatea lor viitoare.

Ioan URSU
Vicepreședintele Autorității Naționale pentru Cercetare Științifică și Inovare
Ministerul Educației Naționale și Cercetării Științifice

Gheorghe Asachi Technical University of Iasi

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

Besides its educational mission, the *Gheorghe Asachi* Technical University of 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 Iaşi

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

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

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

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

ROMANIAN INVENTORS FORUM

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

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

FORUMUL INVENTATORILOR ROMÂNI

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

EUROPE DIRECT IAŞI

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

Contact:
Str. Păcurari 85, Iaşi, Romania
Email: +40.232.260410
Fax: +40.232.260122
e-mail: office@eudirect.ro
web: www.eudirect.ro

EUROPE DIRECT IAŞI

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

Contact:
Blvd D. Mangeron 41A,
RO - 700050, Iaşi, România
Tel: +40.232. 230009
web: www.sim.tuiasi.ro

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

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

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

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

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

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International Conference on Innovative Research EUROINVENT – ICIR 2016

Organized by:

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

With support of:

- **Ubudiyah University of Indonesia**
- **National Institute for Research and Development URBAN INCERC**
- **International Federation of Inventors' Associations - IFIA**
- **World Invention Intellectual Property Associations**

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International Conference on Innovative Research EUROINVENT – ICIR 2016

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International Conference on Innovative Research EUROINVENT – ICIR 2016

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EUROINVENT JOINT PROGRAM

EUROINVENT Exhibition Palas Mall	EUROINVENT ICIR Conference Hotel Ramada
DAY 1 – THURSDAY MAY 19	
Free program for participants at the Euroinvent Exhibition Visit at Palas of Culture	8.00 Participants registration 10.00 ICIR Opening Ceremony 10.30 Keynote Speaker 1 11.00 Keynote Speaker 2 11.30 Keynote Speaker 3 12.00 Coffee break 12.20 Plenary Session 1 14.00 Lunch 15.00 Plenary Session 2 17.00 Plenary Session 3 19.00 Dinner
DAY 2 – FRIDAY MAY 20	
8.00 Participants registration 11.00 Opening Ceremony Welcoming Speeches 12.30 First Jury Meeting Tour of exhibition 16.00 **Book Award Ceremony** 17.00 **Visual Art Exhibition** 20.00 Jury Final Decision 22.00 Exhibition closure	10.00 Keynote Speaker 4 10.30 Keynote Speaker 5 11.00 Keynote Speaker 6 12.00 Plenary Session 4 **15.00 Conference Closure**
DAY 3 - SATURDAY MAY 21	
10.00 Exhibition Start 12.00 Demonstrations 15.00 Artistic moment 18.00 **Euroinvent Award ceremony** 20.00 Cocktail dinner **22.00 Exhibition teardown**	

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AWARDS LIST

Euroinvent GRAND PRIZE

The Youngest Inventor Award
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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
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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
Special Prizes from Participant Institutions

EXHIBITS CLASSIFICATION

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

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 Iaşi inventics school contribution in its aim to form young inventors. Meetings and workshops in the inventions exhibitions should put light on and find

solutions to turn the inventics schools in institutions and to improving and harmonizing the laws regarding the intellectual propriety and the industrial one.

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

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

This eight edition of EUROINVENT sent invitations to inventors associations from many countries, as Armenia, Azerbaijan, Brazil, Bulgaria, Bosnia & Herzegovina, Cambodia, Canada, China, Croatia, Czech Republic, Egypt, Greece, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Japan, Kyrgyzstan, Korea, Libya, Macedonia, Malaysia, Marocco, Moldova, Philipines, Poland, Russia, Slovenia, South Africa, Taiwan, Tunisia, Turkey, Turkmenistan, Ukraine, United Kingdom, United Arab Emirates, United States of America, Vietnam. A big number of institutions and individual inventors are participating from Romania, a remarkable fact being to have here many young inventors (from schools or universities) as well as older inventors. This show is exhibiting more than 500 inventions and research projects from 42 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 – Honorary President of Romanian Inventors Forum

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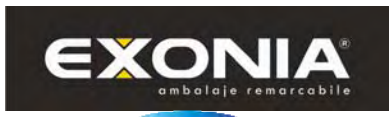

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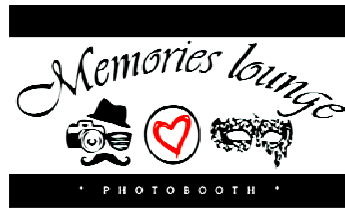

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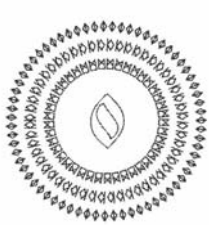

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În cei peste 20 de ani de activitate, Fundația Dan Voiculescu pentru Dezvoltarea României a urmat cu stăruință același obiectiv, care a reprezentat credo-ul pe care a fost clădită Fundația: susținerea și promovarea valorilor românești autentice.

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

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

„Dezvoltarea României" a reprezentat și va continua să reprezinte pe mai departe destinația acestei călătorii pe care am început-o acum 24 de ani. Acesta este și rostul prezenței acestui deziderat în denumirea Fundației. Încurajând, stimulând și ajutând talentul, munca, dăruirea, credem că ne putem îndeplini misiunea.

REALIZĂRI

24 de ani de activitate a Fundației Dan Voiculescu pentru Dezvoltarea României în cifre:

- peste **5.000 de tineri** cu reale performanțe au beneficiat de programele FDV;
- numai în ultimii 6 ani, cel puțin **1.500 de copii**, cu vârsta între 4 și 18 ani, au participat la cursurile FDV;
- peste **50 de programe și proiecte** pe termen mediu și lung în domeniul educațional, cultural și social, unele dintre acestea în curs de desfășurare;
- mai mult de **150 de spectacole**, concerte și evenimente cultural-educaționale doar în ultimii 3 ani;
- cel mai mare premiu individual din istoria recentă a României, în valoare de **300.000 RON** decernat în 2007 inventatorului **Justin Capră;**
- recunoașterea adevăratelor **valori naționale** prin acordarea premiilor de excelență ale Fundației unor oameni deosebiți precum **Radu Beligan**, **Gabriella Ficz**, **Grigore Leșe** sau **Tudor Gheorghe**;
- premierea și susținerea actorilor tineri în cadrul evenimentului Gala Teatrului Tânăr.

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

CLUBUL DE EXCELENȚĂ AL FUNDAȚIEI DAN VOICULESCU PENTRU DEZVOLTAREA ROMÂNIEI

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

În cadrul Clubului de Excelență, Fundația Dan Voiculescu pentru Dezvoltarea României a demarat încă din anul 2007, programul anual de cursuri gratuite pentru copii și tineri, menit să-i încurajeze să-și dezvolte abilitățile și să-și atingă maximul de potențial. În total, peste **2.000 de copii** au beneficiat de programul de cursuri gratuite.

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

Pentru al șaptelea an educațional consecutiv, Fundația Dan Voiculescu organizează cursuri gratuite pentru copiii cu vocație și talent, câștigători de premii naționale și internaționale, cu rezultate școlare deosebite. Copiii cu vârste cuprinse între 7 și 18 ani participă, în funcție de rezultatul obținut în urma testărilor, la cursurile specifice vârstei lor. În anul educațional 2015 - 2016 cursurile desfășurate sunt: Arta fotografică, Istoria artei și pictură, Dezvoltare personală, Limba Engleză, Cursuri National Geographic Learning, Scriere creativă și ateliere creative (origami, quilling).

SENATUL ȘTIINȚIFIC

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

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

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

SENATUL ȘTIINȚIFIC
AL FUNDAȚIEI DAN VOICULESCU

SENATUL ŞTIINŢIFIC
AL FUNDAŢIEI DAN VOICULESCU

Fundația Dan Voiculescu pentru Dezvoltarea României
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Atribuţii specifice ale O.S.I.M. conform obiectului său de activitate:

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

State Office for Inventions and Trademarks

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

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

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

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

Agenţia de Stat pentru Proprietatea Intelectuală a Republicii Moldova

The State Agency on Intellectual Property of the Republic of Moldova

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

State Intellectual Property Agency (the Agency) is a public Institution subordinated to the Government, responsible for promoting and implementing activities in the field of legal protection of intellectual property.
Through AGEPI you can effectively protect your intellectual property (IP):

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

AGEPI issues titles of protection of IP objects, informs and provides legal consultations relating to the protection and enforcement of IP rights, publishes the Official Bulletin of Intellectual Property (BOPI) and the journal of intellectual property "Intellectus", promotes and popularizes intellectual property, organizes the attestation of patent attorneys, training and retraining courses for specialists in the field, provides IP pre-diagnosis services and other related services.
Agency's services are provided according to the Quality Management System ISO 9001: 2008, which ensures quality according to international standards.

Agenția de Stat pentru Proprietatea Intelectuală (AGEPI) este o instituție publică aflată în subordinea Guvernului, responsabilă de promovarea și realizarea activităților în domeniul protecției juridice a proprietății intelectuale.
Prin intermediul AGEPI vă puteți proteja eficient proprietatea intelectuală (PI):

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

AGEPI eliberează titluri de protecție a obiectelor de PI, informează și oferă consultații juridice ce țin de protecția și realizarea drepturilor de PI, editează Buletinul Oficial de Proprietate Intelectuală (BOPI) și revista de proprietate intelectuală "Intellectus", promovează și popularizează proprietatea intelectuală, organizează atestarea mandatarilor autorizați, cursuri de instruire și perfecționare a specialiștilor în domeniu, acordă servicii de prediagnoză a PI și alte servicii aferente.
Serviciile AGEPI sunt prestate conform Sistemului de Management al Calității ISO 9001:2008, ceea ce garantează calitate în conformitate cu standardele internaționale.

INDUSTRIAL PROPERTY OFFICE OF THE CZECH REPUBLIC

The Industrial Property Office of the Czech Republic (IPO CZ) is one of the central bodies of the Czech Republic State Administration and its activities are not only in the field of patent and trademark protection but it also acts as a special information centre with regard to industrial property. The Office engages in education of public on the topic of IP by offering e-learning courses and regular seminars. In recent years the IPO CZ also focuses on increasing awareness about IP among children and youth from elementary and secondary schools. Lectures and training materials were developed explaining the field of industrial property rights in an interesting and entertaining way. The Office also provides a lot of industrial property information for public via Internet. The searchable databases are available on the Office website (www.upv.cz) – Patent and Utility Model Database, Trademark Database, Industrial Design Database and Database of Geographic Denomination and Appelation of Origin. The informative searches in these databases can be carried out free of charge.

The IPO CZ stand provides visitors with possibility to get acquainted with information about national and international IP databases which are accessible via its website and with ways to search for information on the state of the art as well as possibility to consult various issues related to IP rights field.

Name:	Industrial Property Office of the Czech Republic
Address:	Antonína Čermáka 2a
	160 68 Prague 6
	Czech Republic
http:	www.upv.cz
Email:	posta@upv.cz
Phone:	+ 420 220 383 111
Fax:	+420 224 324 718

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

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

- Implementation of the state policy in the sphere of innovation and technology transfer;
- Defining main directions in the sphere of innovation and technology transfer, in terms of different programs and projects at all levels;
- Participating in establishing partnerships between different organizations in the sphere of science and innovation, higher education institutions and production units;
- Coordinating the process of creating infrastructure in the sphere of innovation and technology.

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

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/

Deşi recentă, înfiinţarea în 2009 a Institutului Naţional de Cercetare-Dezvoltare în Construcţii, Urbanism şi Dezvoltare Teritorială Durabilă URBAN-INCERC a avut doar rolul de a comasa peste 60 de ani de tradiţie şi experienţă de cercetare în construcţii şi economia construcţiilor, planificare urbană şi teritorială şi locuire a trei institute – INCD INCERC, INCD URBANPROIECT şi CDCAS, cu activităţi concentrate asupra habitatului uman şi a dezvoltării sale durabile într-o viziune multiscalară asupra dezvoltării spaţiale (urbane şi teritoriale).

Din acest proces a rezultat singurul institut din aceste domenii, cu peste 100 de cercetători şi proiectanţi, o bază materială substanţială şi un vast portofoliu de proiecte de cercetare, naţionale (programul Nucleu, Planul Naţional de Cercetare – Dezvoltare – Inovare, studii şi cercetări finanţate de administraţia centrală şi locală) şi internaţional (NATO, SEE, ESPON, FP7), ce au condus la recunoaşterea naţională şi internaţională (IAFOR, IAESTE, RED, URBACT, ENBRI, UEAtc, WFTAO, EOTA, ECI-ICE, Acordul EUROPA, Global Green Award).

Ca organism aflat în coordonarea Ministerului Educaţiei Naţionale, INCD URBAN-INCERC este singurul institut abilitat să fundamenteze politicile publice naţionale din domeniul său de activitate, de la Conceptul Strategic de Dezvoltare Teritorială şi secţiunile Planului de Amenajare a Teritoriului Naţional şi studiile de fundamentare aferente la reglementările tehnice în construcţii. Institutul elaborează studii de fundamentare a strategiilor, politicilor şi reglementărilor naţionale din domeniile urbanismului, amenajării teritoriului, locuirii, dezvoltării regionale, competitivităţii inter-regionale, dezvoltării reţelei de localităţi, policentricităţii, protecţiei mediului natural şi construit, reabilitării şi reconstrucţiei ecologice, zonelor defavorizate din punct de vedere economic şi/sau social, ariilor rurale dezavantajate şi altor probleme.

INCD URBAN-INCERC asigură, de asemenea, secretariatele tehnice ale comisiilor tehnice de specialitate şi comisiilor de atestare profesională a specialiştilor din domeniul construcţiilor, este organism de certificare a produselor din construcţii şi a sistemelor de management, de inspecţie în fabrici, şi poate desfăşura activităţi de formare profesională continuă, dar şi activităţi comerciale şi de producţie.

http://www.incd.ro/

SkyQuest Technology Group - a Global IP focused research accelerator & commercialization organization, engaged within the innovation ecosystem with myriad stakeholders helping them leverage external sources of R&D and create value from Intellectual Property. SkyQuest works as the only private sector workstation of South South Global Technology & Assets Exchange (SS-GATE), A UNDP promoted initiative; SkyQuest has collaborated with Industrial Technology Research Institute (ITRI), Taiwan, Korea Invention Promotion Association (KIPA), Korea, SkyQuest recently signed up an co-operation agreement with IFIA to facilitate innovation exchange, global strategy and commercialization to accelerate high impact innovations. Please visit www.skyquestt.com.

IPRX - Innovation **P**roduct **R**esearch e**X**change (IPRX) - a one-of-its-kind global IP marketplace that brings together various stakeholders from the ecosystem on a common platform to: Bring together diverse stakeholders from the ecosystem on a common platform; Accelerates innovative products and solutions to new markets; Solicits high impact solutions and enable their adoption at Societal, Industrial and Humanitarian levels; Builds innovation communities to solve large problems; Connects with citizens, problem solvers, incubators, mentors, collaborators, buyers, product designers & development experts, funding agencies, investors/HNIs etc; Brings in a growing network of 800+ users from 40 countries, 1100+ solutions. The IPRX innovation exchange platform challenges the ecosystem, solicits solutions, facilities community engagement and interaction within the ecosystem, technology promotion, due diligence, expert mentoring, product design & development, negotiation and deal making. I would also like you to visit our first cut - www.iprx.co.

PLATFORM

INNOVATIO

www.plataformainnovatio.com.br

Innovatio is an online platform which has the main goal to connect Inventors, Innovators, Universities, Investors and Companies to make the process of commercialization and partnerships easier for all actors of the Innovation World Ecossystem.

You can apply to have your inventions and innovations announced at Innovatio and, once we identify clients or investors interested in buy, licence or even establish some scientifical or technological partnership we will let you know and will help the process

This plataform is organized by ABIPIR with the support of IFIA.

For more information: abipir@outlook.com

ABIPIR
INTERNATIONAL BRAZIL INNOVATIVE INVENTORS, SCIENTISTS AND ENTREPRENEURS ASSOCIATION

IFIA
INTERNATIONAL FEDERATION OF INVENTORS' ASSOCIATIONS

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

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 medicineand member of European project **„Adaptation of the superior dental medical education offer to the labor market needs and the knowledge - based society”,** contract no.: POSDRU/86/1.2/S/63699.

ASOCIAŢIA DENTARĂ ROMÂNĂ PENTRU EDUCAŢIE (ADRE) - membră AMR (Asociaţia Medicilor din România), afiliată ICOI (International Congress of Oral Implantologists) şi **ADEE (European Association for Dental Education)** - are ca scop crearea unui cadru de specialitate care să reunească în rândurile sale pe baza voinţei libere a fiecărui candidat, specialişti atât în domeniul medicinei dentare cât şi în cel destinat învăţământului superior, racordarea învăţământului românesc la cel european, uniformizarea curriculară, în plan naţional şi în plan european.

OBIECTIVE:

- ✓ Racordarea curriculelor naţionale în teritoriul medicinii dentare la învăţământul european;
- ✓ Realizarea de granturi în domeniul educaţiei cu impact practic, crescând performanţele în fiecare specialitate în parte; Realizarea unei interrelaţii între aspectele de asistenţă medicală şi latura educaţională, reflectată în cadrul procesului de educaţie medicală continuă;
- ✓ Crearea de centre metodologice pe teritoriul ţării, adiacente centrelor universitare cu tradiţie, care să identifice gradul de pregătire al practicienilor în domeniile de specialitate ale medicinii dentare şi să pledeze pentru susţinerea teoretică şi practică de cursuri şi demonstraţii practice în aceste domenii, ridicând ţintit nivelul de pregătire al acestora ;
- ✓ Realizarea de workshopuri pe diferite aspecte curriculare atât din cadrul pregătirii pentru licenţă cât şi în cadrul activităţii postuniversitare;
- ✓ Diversificarea specialităţilor în domeniul medicinii dentare în acord cu necesităţile prevalenţei unui anumit tip de patologie pe anumite zone ale ţării sau creşterea numărului de competenţe;
- ✓ Colaborarea între decanii din România şi celelalte organisme abilitate din teritoriul educaţional şi profesional pentru sincronizarea aspectelor educaţionale cu necesităţile practice;
- ✓ Implicarea cadrelor didactice în activitatea postuniversitară pentru optimizarea procesului de educaţie medicală continuă;
- ✓ Ridicarea nivelului de sanogenitate populaţională prin identificarea nivelului deficitar pe teritoriul ţării şi formarea de specialişti în acele teritorii;
- ✓ Realizarea de cursuri în vederea obţinerii titlurilor în cadrul ierarhiei medical – profesionale;
- ✓ Realizarea de conferinţe, seminarii, congrese şi alte activităţi adiacente acestora;
- ✓ Editarea de publicaţii, cataloage sau periodice pentru promovarea imaginii şi informare în sectorul medical, social şi economic ;
- ✓ Încheierea de parteneriate – acorduri de cooperare, cu structuri similare din ţară şi străinătate.

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

ADRE este organizator a numeroase manifestari stiintifice internationale cu profund impact in domeniul medicine dentare si partener al proiectului european **„Adaptarea ofertei învăţământului medical dentar superior la nevoile pieţii muncii şi ale societăţii bazate pe cunoaştere”,** nr. contract: POSDRU/86/1.2/S/63699.

Publicaţie oficială:
ROMANIAN JOURNAL OF DENTAL EDUCATION
Sub redacţia Prof. Dr. Norina Forna

DATE CONTACT:
Str. Kogalniceanu, Nr. 9, Iaşi , România
Tel./Fax: 0232/218876
E-MAIL: contact@adre.ro
SITE: www.adre.ro

Romanian Inventors Forum

2003 – 2016
13 years of creativity

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

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

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

www.afir.org.ro

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

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

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

Malaysia Research & Innovation Society
No. 22 & 24, Taman Kechor Indah Fasa 2, Jalan Abi Tok Hashim,
01000 Kangar, Perlis, Malaysia
Phone: +604-9798885 & **Fax:** +604-9774026
Website: www.myris.org.my & **Email:** info@myris.org.my

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

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

PARTNER EVENTS

14-15 June 2016, Katowice, Poland

www.intarg.haller.pl

- Venue : International Congress Centre in Katowice, Poland
- Size: 300 sqm
  120 inventions from 10 countries
  Conference: 300 participants
- Participants: inventors, international inventors associations, scientific and research units, innovative enterprises, universities

GENERAL INFORMATION:

Participation in International Exhibition of Economic and Scientific Innovations INTARG is an important and effective mean of international promotion of scientific and technical achievements of scientific and research units and other economic entities. Moreover, INTARG serves as a platform for direct contact and meetings of representatives of the world of science, industry, business and other institutions supporting and financing research and development.
The Exhibition will be held in a newly opened International Congress Centre in Katowice, modern world-class building. Its additional advantage is attractive location, in the heart of the capital of the most industrial region of Poland.

EXHIBITION CATEGORIES:

Health/ Medicine/Chemistry/Biotechnology/ Nanotechnology; Industry (Industrial equipment, Engineering, Metallurgy, Electricity and Electronics, Energetics, Textile Industry, Construction/Building); Food industry; IT (Hardware and software/ Radio/ TV/ Communication); Transport and Logistics (Packaging/ Storage/ Aviation industry/ Car industry and road safety/ Land, sea, air transport); Safety/ Security/Protection; Everyday facilities (Jewelry/ Hobby/ Decoration/ Design/ Games/ Toys/ House and Garden); Services/ Consulting/ Insurance/ Finance; Young inventors

PROGRAM OF THE EXHIBITION INCLUDES :

Invention contest- Evaluation of presented inventions by the jury of experts; Business meetings; Conferences; Networking cocktail party; Award ceremony; Walking trip around the city of Katowice / Industrial Monuments Route

INTARG INVENTION CONTEST AND AWARDS

All inventions are evaluated by the panel of international jury.
Types of awards: Bronze, silver, gold medals; Platinum awards; President of the jury award; Best international invention Award; Grand Prix.

HONORABLE PATRONAGE :

Ministry of Science and Higher Education, Polish Patent Office, Main Council of the Research Institutes, National Centre for Research and Development, Polish Federation of Engineering Associations; Polish Agency for Enterprise Development; Polish Chamber of Commerce for High Technology, Silesia Voivodeship and City of Katowice

Eurobusiness – Haller

HALLER pro Inventio FOUNDATION

EUROBUSINESS-HALLER
ul. Obroki 133, 40-833 Katowice
tel.: 32 355 38 00
e-mail: intarg@haller.pl


2016 INTERNATIONAL
INVENTION INNOVATION
COMPETITION IN CANADA
"BECAUSE WE CAN"
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WIIPA
Organized by
www.tisias.org
iCAN 2016
2016 International Invention Innovation Competition in Canada
North York Memorial Community Hall - Toronto
PRELIMINARY REGISTRATION PERIOD
JANUARY 15 - JUNE 15
FINAL ROUND AND AWARD CEREMONY
AUGUST 27
FOR MORE INFORMATION www.tisias.org | ican@tisias.org
Organized by Toronto International Society of Innovation & Advanced Skills (TISIAS)
Supported by International Federation of Inventors' Associations (IFIA)
World Invention Intellectual Property Associations (WIIPA)


XII
International Salon
of Inventions and New Technologies
«New Time»
September 28-30, 2016
Sevastopol
Russian
Federation
ph: +7-978-7393718, +7-978-7915913
E-mail: el-voz@yandex.ru, aed-sevastopol@yandex.ru
www. newtime-ayumel.ru

10th International Warsaw Invention Show

Patent Office of the Republic of Poland

Association of Polish Inventors and Rationalizers

Warsaw University of Technology

19 - 22th OCTOBER 2016
Barbican Exhibition Centre

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Armenia

AM.1.

Title	**Modular Landing Gear**
Authors	**L.V. Petrosyan, T.A. Petrosyan**
Institution	**-**
Patent	Pending
Description	Prefabricated modular designed landing gear landing gear of two couples end levers, united into a single design by a.s. no. 233857 "Capture for products with apertures" entered the oppozition tabs on a.s. no. 1731719. The chassis consists of two carriages, which are set forth on the axis of the front wheels in pairs of small diameter and the rear pair of wheels with a larger diameter to ensure a smooth transition during take off with the front pair of small diameter wheels on the rear pair of wheels, and when landing-on the back a couple of wheels and moving to the front pair of wheels. The ammortizor effect, peculiar only to design a modular chassis. The simplest chassis assembly using identical end levers number in fasteners, which considerably simplifies the process of assembling the chassis. extended resource durability of steel struts of rolled-up eyes end of levers, which embody two axis trolleys with pairs of small wheels and larger diameters
Class	

Azerbaijan

AZ.1.

Title	**Innovative Overtaking Crashes Prevention**
Authors	Musa Baghirov, Anar Alimzade
Institution	School-lyceum №6 named after T.Ismayilov
Description	Most of road crashes happen during overtaking. Carelessly driving, hurrying up lead to overtaking crashes. What is overtaking? Overtaking is the act of one vehicle going past another slower moving vehicle, travelling in the same direction, on a road. The lane used for overtaking another vehicle is almost always a passing lane further from the road shoulder which is to the left in places that drive on the right and to the right in places that drive on the left. Sometimes overtaking crashes happen because small sized car behind large sized cannot observe road too much, it means that car may not see coming cars from opposite side. It leads to motor vehicle collisions during overtaking too. Our project may solve this problem and decrease overtaking crash percentage. We want to introduce new innovative technology which named ”IOCP” (Innovative Overtaking Crashes Prevention) consists technological signal transmitter inside front bumper of a car, signal transmitter inside back bumper of a car and electronic “no overtaking” sign on back window of a car. Chip transmits signal between two opposite moving cars. Signals transmission distance depends on cars speed. Therefore, if opposite cars moving at high speed they get signals further than cars moving at low rate. After signals receiving, electronic “no overtaking” sign on back window of a car flashes and car behind of it notified that overtaking is dangerous at this situation. Second transmitter, which situated in back bumper, is able to transmit signals with receiver in front bumper of the car rear of it if there are more than two cars and cars are moving in successively. Main problem about this innovation is “How can we set up this innovation on every car”? After determined years cars checked by government, in this case during this checking period this technology will be installed on every car from yearly.
Class	Innovative Research

Brazil

& Dubai, United Arab Emirates

BR.1.

Title **Smart Walking Stick**

Authors Ahmed Abdulla Mohammed Majjan

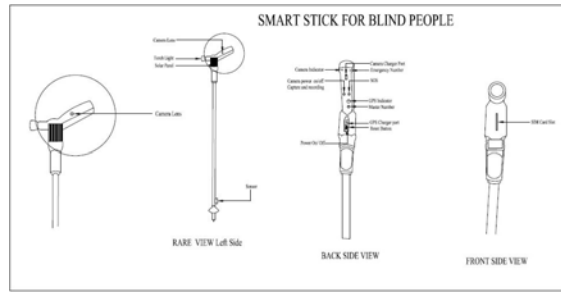
Institution **Majjan Technology Solutions**

Patent Pending No. BR2020160075535 (Brazil Patent Office)

Description

This Smart Walking Stick is created with humanitarian care for senior-aged, disabled and visually impaired people. Its innovative features comprise as below:
1. Rechargeable Solar PV power supply; 2. Illumination- Handy LED flash light; 3. Hands-free phone calls with emergency contacts and SOS alert message including current location map; 4. GPS tracking by Mobile app & web; 5. Removable pin to trigger security alarm and make a sound of siren; 6. Proximity sensor and buzzer to detect the obstacles nearby and help stick user avoid them; 7. Micro-spy camera to stream live video, shoot pictures and record audio

Class 12 (Safety, Protection and rescue of people)



Bulgaria

BG.1.

Title	**Development of a protocol for analysis of acid nitrating mixture**
Authors	Andriana Surleva, Gabriela Atanassova, Iliana Bacheva, Boryana Borissova, V. Peshkov, Mohd Mustafa Al Bakhri Abdullah
Institution	**University of Chemical Technology and Metallurgy**
Description	Process control of nitration of organic compounds and adjustment of optimal technological conditions are based on analytical data for water content in spent acid mixture. Time of analysis and accuracy of the results are critical factors in the choice of analytical method. The most popular method for determination of water content in acid mixture is based on total acidity determination and sulfate determination after evaporation of nitric acid. The content of sulfuric acid is determined directly, but contents of nitric acid and of water are obtained after calculation. The technology demands for a fast and accurately method for determination of water content in raw and spent acid mixture. The present study is aimed at development of a protocol for analysis of composition of raw and spent acid mixture. The main components of the mixture (nitric and sulfuric acids) are determined by redox and precipitation titrations, total acidity is determined by alkalimetry. Water is determined as a difference. The main advantage of proposed protocol is the skipping of separation step. Thus, sulfuric acid is determined in the presence of nitrates and nitric acid – in sulfuric acid media. The obtained results are characterized with good accuracy and precision. Recovery of nitric acid is (98.91±0.89)% and of sulphuric acid is (100.5±1,4)% (n=3,P=95%). Water content was calculated as a difference between total acidity and acids content. The developed protocol was applied to spent acid nitrating mixture. The results are not influenced by the minor components usually presented in the raw and spent acid mixtures.
Class	Innovative Research

Bosnia & Herzegovina

BA.1.

Title	**SpesRobo**
Authors	Darko Lukić, Mile Savić & Milan Stanojević
Institution	**Faculty of Technical Sciences**
Description	SpesRobo is modular robotic prototyping platform allowing to create, share and distribute interactive applications. It is developed to solve nowdays problem of robot development, it integrates and gives best techniques to develop, prototype and share robotic applications. This robotic platform has application store. It allows to developers to share their's applications, get critics from users, and proof that application is usable. Moreover, application users are able to try SpesRobo featuries. Platforms also support plugins and they are developed to expand hardware possibilities. There is user friendly way to switch plugin and add more sensors and actuators to base platform. Our technology stack with well designed library allows to simply develop application for multiple platforms writting code once. We see SpesRobo as ideal robotic platform to learn basic of robotics and test algorithms in real world enviroments.
Class	5. Industrial and laboratory equipments 10. Information Technology and Communication

Cambodia

KH.1.

Title **Digital Energy Meter Reader System by using GPRS**

Authors Mr. LENG Prohors, Mr. SENG Sela, Mr. KEO Chansokong, Mr. SOUR Tola, Mr. SIN Rotha, Mr. CHAN Mithona (Advisor), Dr. KY Leng (Advisor)

Institution **Norton University**

Description

Nowadays, in Cambodia is still using the old technology of energy measurement by using the analog energy meter that uses labor to record all data then type it into computer that face many problems like:

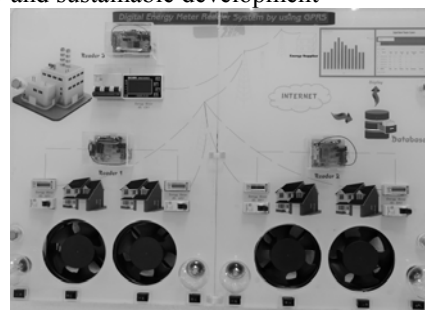
- It can be dangerous while record the energy consumption (Kwh)
- Data is recorded by the manual reading can be confuse
- Some places are difficult to record
- Spend a lot of time and labor

So, we decided to research and create the new system that can solve the problems above. The system is named **Digital Energy Meter Reader System by using GPRS** which is a new technology of electricity meter that can digitally send the energy consumption measurement by a wireless transmission through GPRS module to the internet then store data in the energy supplier's server, and all data of energy usage can be monitored at anytime from anywhere by a website. This system will deliver the following advantages:

- To make more safety
- No more estimated or manual meter reading
- Saving time, labor, and money
- Improve reliability
- Better management of energy usage through real time display

Report back electricity issues to improve better quality of supply

Class 2. Energy and sustainable development



2

Canada

by

Toronto International Society of Innovation & Advanced Skills (TISIAS)

CA.1.

Title **Multiple Viewer Video and 3D Stereophonic Sound Player System including Stereophonic Sound Controller and Method there of**

Authors SUHO HA (NATIONALUX) & MOONSUK CHANG

Institution **NATIONALUXEMBOURG**

Patent no. PCT/KR2014/008450

Description

Media industry is a socio-economic and technological focal point where recording, capturing, and facilitating the most humanized audio and video is an extreme innovative factor for numerous media categories including concerts, musicals, movies, animations, media marketing and many more aid the biggest industry that we call “entertainment”. Enjoyed by everyone, “play” has always been the most indefinite vocabulary for us to define, but at the same time, it is the core fundamental cornerstone that advances our economy, politics, and lifestyle through all history of mankind. With multi-viewer and stereophonic sound player and its system, we can take media and entertainment to the next level and change the entire phenomenon of how we can react to sensing video and sound in the most realistic way.

The Stereophonic sound controller records the video while the 3D stereophonic sound player system transmits data into numerous channels simultaneously where the retrieved data can be set up in all XYZ-axis dimensions to allow multiple sounds to be audible from all angles for the audience. The controller can measure and adjust the 3-dimensional distance direction, and angle to enable a real-time control for the sizing, enlargement and minimization of video in multiple viewer standpoint as well separate angled areal sound/video (100% synchronization) along with sound equalizer (EQ) adjusting the realism and cubic effect of sound audible from multiple speakers to allow a theatre-style realistic audible reception for all audience.

Class 10. Information Technology and Communication

China

CN.1.	
Title	**A new medicine for lactic Acid Reliever**
Authors	**Korver Zhang (Yiqing Zhang) and Dexter Dai (Ruichen Dai**
Institution	**Guiyang No. 1 High School, Sino-Canadian Department**
Patent no.	-
Description	It's a combination of all the sources of vitamins and made their own yogurt to relieve the lactic acid to avoid muscle fatigue during workout or sports activities.
Class	4. Medicine - Health Care - Cosmetics

Croatia

Represented by
Croatian Inventors Association / Savez Inovatora Zagreba

HR.1.

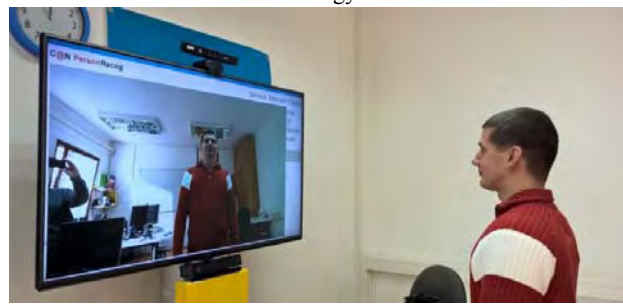
Title	**CONTRACEPTIVE SPIRAL FOR DOGS**
Authors	**Almir Karabegovic**
Institution	**ADLEJA d.o.o.**
Patent no.	PCT/SI2014/000083
Description	Female dog´s contraceptive intracervical device is coppered/silvered V-shaped spring with curved „wings“. PVC-thread is conected in the middle of spiral. Spiral, incertor and solid stick (pushing spiral out of incertor) are in sterile package. This way of preventing unwished pregnancy is a mechanical contraception, which acts in two ways: presence of spiral (as foreign body in organism), and copper/silver´s electrochemical activity on spermatozoa.
Class	3. Agriculture and Food Industry

HR.2.

Title	**NiKEL protection against harmful effects of UV rays with plants and antioxidants that regenerate, soothe and protect the skin against premature aging**
Authors	**Mag. Pharm. Mirjana Brlecic**
Institution	**PRIRODA LIJECI d.o.o.**
Patent no.	Registered Trademark
Description	For a beautiful, velvety soft skin and a healthy tan. NIKEL sun care is rich with valuable naturale integridients. Perfect for all skyn types including sensitive baby skin. **COCONUT BUTTER** Coconut Butter is a natural and preservative free balm rich in natural oils and vitamins that protects and nurtures even the most sensitive skin. It has a rejuvenating, regenerating, soothing effect. It naturally protects skin against harmful UV rays, speeds up tanning and prolongs bronze suntan. protects from the sun after-sun care to relax and calm the skin protects the skin from premature aging soothes the skin ideal daily care for the whole family during the entire year **SILKY SUN** This hydrating milk provides powerful protection from sun rays and sunburns. Prevents development of free radicals that damage the skin. Protects skin from premature aging. Suitable even for delicate children's skin. high protection from sun rays and sunburns nourishes, moisturises and soothes
Class	4. Medicine - Health Care - Cosmetics

HR.3.

Title	**C@N PersonRecog - Gender & Age Group Recognition Software**
Authors	**Tomislav Bronzin**
Institution	**CITUS Ltd.**
Patent no.	Patent pending - P20150707A
Description	**C@N PersonRecog** is one of the latest addition to the list of the different modules that is part of **C@N Motion**– it is innovative IT solution that uses a 3D sensor and proprietary mathematic algorithms to provide anthropometric measurements of human body. Based on those measurements, **C@N PersonRecog** determinates person gender and age group. Innovation is based on digital analysis that identifies characteristics of the human face and body in the real time, without usage of large database of photos/images. **C@N PersonRecog** provides remarkable business opportunities: - Enables creation of solutions that provides custom made content that is appropriate for the selected target group according to recognized gender and age group - Enables reporting based on analyses of user preference regarding the content that is displayed, grouped/filtered by gender and age group - Enables identification of security risks, in combination with emotion detection module, based on recognized gender and age group C@N PersonRecog is based on patent pending technology in Europe, Croatian Patent Office No.: P20150707A
Class	10. Information Technology and Communication



HR.4.

Title	**HELLOQUENT**
Authors	**Tomislav Juratovac**
Institution	**PRO-HEPRO d.o.o.**
Patent no.	Patent application – P20130543A
Description	**Helloquent** a specially designed case for mobile phones with implemented special reflex-absorbent material (Premium Ultra protect), an extremely high protective effect (98%) of electric and magnetic fields of mobile phones to the head. The effectiveness has been scientifically confirmed with a detailed, extensive testing in the European institutions. Case also includes a section for the protection of RFID no-contact credit / debit cards from abuse. Due to the innovative design daily use of a mobile phone for talking and/or at stand-by has minimal risk to the health and has no loss for users' commodity. High quality of product provides and secures protection for mobile phone of physical damage, which targets a large group of customers who are looking for quality and a nice holder for, usually very expensive, a mobile phone. Special card slot, located inside of the **Helloquent** holder, is secured by additional protective materials that prevent any interception or misuse of data. **AREA SCIENCE PARK, SICOM lab**, SAR testing according to the latest world standards Exceptionally high score - 98% of protection (reducing SAR) pleasantly surprised the whole team in the lab
Class	12. Safety, protection and rescue of people

HR.5.

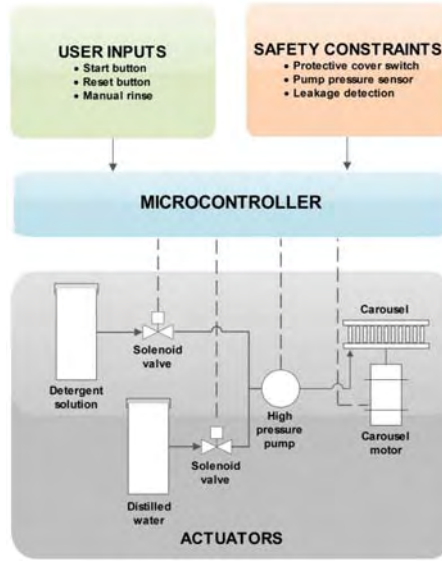
Title	**ALVA (Automated Laboratory Vial washing Assistant)**
Authors	**Marin Kovacic**
Institution	**-**
Patent no.	-

Description

Automated Laboratory Vial washing Assistant (ALVA) is an useful addition to analytical laboratories. Vials are small glass containers with a volume up to 2 mL, which are used to store samples immediately before instrumental chromatographic analysis equipped with auto-sampling. Dozens or even hundreds of vials are routinely used during analysis per chromatographic instrument. Usually it is adequate to wash the vials in order to reuse them. However, due to their small size and usually sheer numbers, manual washing is tedious and requires large amounts of deionized water. ALVA features a rotating carousel on which the vials are situated. A high pressure pump injects a thin stream of aqueous detergent and deionized water into each vial individually. ALVA can also be used to wash the accompanying screw caps with septa. The integrated automation system takes care of achieving the optimal washing cycle, ensuring good result repeatability during analysis. This innovation achieves a significant reduction of personnel labor and a large reduction in water consumption, which makes this innovation a step forward in environmentally responsible laboratory practices.

Class

5. Industrial and laboratory equipments



HR.6.

Title	**GRYNCO – SAVE THE PLANET**
Authors	**Tomislav Marjanovic**
Institution	**FOSCROT j.d.o.o.**
Patent no.	Industrial property Z20150907A
Description	Grynco - Save the Planet is an educational board game whose main goal, besides fun and development of tactical skills, is to educate about the importance of environmental protection in a fun and easy-going manner. By playing this game, people around the world will learn about easy actions and activities that help save energy, natural resources and our planet. This board game is the result of complex mathematical and logical considerations, as well as implementation of gathered knowledge about the protection of the environment. Combining of all of the mentioned elements resulted in a new, unique, globally scalable and attractive board game. The game is extremely dynamic and interesting to play, but also very educational and in some parts unquestionably funny. Conducted research indicates that so far no one has created an educational and fun board game with the environmental protection and energy efficiency theme. In relation to widely known board games, this game also contains a number of innovations such as the possibility of playing in anti-clockwise direction, time limit that depends on the number of players and so on. Grynco is designed as a commercial product with strong sales aspects and other benefits. The product aspect is primarily social, but the rules also give it a family game attribute.
Class	13. Sports, Games and Leisure

HR.7.

Title	**NEW CELL CREAM AHA 8%+GREEN TEA - Natural cell regeneration**
Authors	**Melita Pavlek-Mocan, dipl.ing.chem.**
Institution	**COSMEL d.o.o.**
Patent no.	Registered Trademark
Description	Organic cream for quick renewal of skin cells. It contains a complex of 8% **alpha nad beta hydroxy acids** (glycolic, lactic, tartaric, citric and salicylic) which are natural exfolliants and accelerate removal of surface dead cells and production of new young cells. Young skin is protected by **green tea extract** which is, as a strong antioxidant, a great addition to AHA i BHA acids. It neutralizes free radicals, by which it protects the skin from DNA lesions caused by harmful UV radiation. Natural organic **JOJOBA, ROSEHIP and GRAPESEED** oils infiltrate deeper skin layers and provide vitamins, unsaturated fatty acids (Omega 3,6,9) and ceramides which slow down aging. Extract of **ALOE VERA**, rich in vitamins A, B, C, E, minerals and aminoacids, hydrates, tones and has antibacterial effect. Special Mediterranean ingredients **HELICHRYSUM OIL** (immortelle) and **LAVANDER** have a powerful effect on skin cell renewal, antiinflammatory, antiallergical, antifungal and soothing effect. The safety of the product is completed by **Croatian mineral water**.
Class	4. Medicine - Health Care - Cosmetics

HR.8.

Title	**ANTI-TERRORIST LOCK ON THE MANHOLE**
Authors	**Slobodan Rajic**
Institution	**TELECOR ZAGREB d.o.o.**
Patent no.	Patent pending
Description	The anti-terrorist lock on the manhole lid has been designed to prevent unwanted opening of a road manhole in order to prevent a terrorist attack and the steeling of the lid. It has been designed to ensure undisturbed passage of vehicles, preventing at the same time the penetration of water and filth. It has a leaden seal as a security element that indicates someone's attempts to open the lock, if any. The seal can be seen from a passing vehicle, thus enabling the security personnel protecting diplomatic columns to control the safety of manholes immediately before passing them. Except for the above purpose, the lock can be used wherever a robust lock resistant to harsh climate is needed.
Class	12. Safety, protection and rescue of people

Czech Republic

CZ.1.

Title	**Plasma torch with dependant arc and hollow cathode**
Authors	**Zdeněk Noga, Jiří Hamáček**
Institution	**VŠB – Technical University of Ostrava, (www.vsb.cz)**
Patent no.	**CZ305303 / Patent application No. PV2014-60 /**
Description	In the present invention, there is described a new type of a plasma torch with dependant arc, hollow cathode and accessory thereto, which plasma torch makes it possible to feed a charge in the form of a wire, a rod as well as grain. A frame, which is adjustable for height, has been performed for connection of all three material feeders and ensuring coaxial feeding of charge and hermetic connection of the plasma torch with all the feeders. Through feeding of charge through the mediation of a hollow cathode into a plasma column and melting thereof, qualitative change in the preparation of new materials is enabled. There is also described the connection of the plasma torch with a device for melting.
Class	6. Mechanical engineering - Metallurgy

CZ.2.

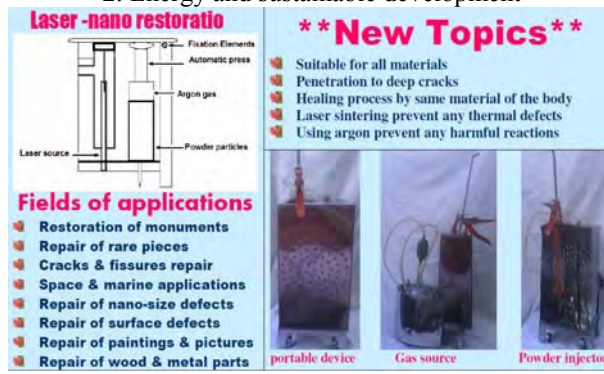
Title	**Registration of rheological properties of liquids by electromagnetic levitation**
Authors	**Rostislav Dudek, Václav Kolář**
Institution	**VŠB – Technical University of Ostrava, (www.vsb.cz)**
Patent no.	**CZ304430 / Patent application No. PV2012-875 /**
Description	The levitation-vibrating device for measuring viscosity, density and interfacial tension according to the present invention comprises a photodiode, an electromagnet holding the measuring corpuscle in uplift, LED and a control circuit wherein the photodiode, electromagnet and LED are unidirectionally connected to the control circuit and the photodiode and LED form a light barrier. Preferably, the device is connected through a converter that can be replaced by a microcontroller, to an evaluation apparatus
Class	5. Industrial and laboratory equipment

Egypt

By
The Egyptian Inventors Syndicate
The Egyptian Society For Women & Youth Inventors

EG.1.

Title	**LASER RESTORATION DEVICE**
Authors	Hebatalrahman Ahmed
Institution	(**The Egyptian Inventors Syndicate**) **The Egyptian Society For Women & Youth Inventors**
Patent no.	Patent 142/2014-Egyptian patent office
Description	Method and Apparatus for repairing surface defects in different bodies. The unit consists of the injector device for payment and distribution of powders by inert gas, The unit has also source of a laser beam for sintering process. Laser source and injector are placed inside holder above the treated body and moves horizontally. The preparation process is done by impeding powder particles inside the crash, Jet of argon gas is pushed to distribute powder, the UV laser beam is focused inside the crack. Sintering process is done for powder particles which leads to the healing of the granules with the original body and with each other.
Class	2. Energy and sustainable development



EG.2.	
Title	**E-Safety Glasses Electronic Protection**
Authors	Khaled Abdul Hamid Elnems
Institution	**(The Egyptian Inventors Syndicate)** **The Egyptian Society For Women & Youth Inventors**
Patent no.	Registered Patent No.: 2015/801 (EGY Patent)
Description	It is a Safety electronic protection glasses (for protection the eyes) only when worn it in the face will be order another device by connected wirelessly to powered the (dangerous consequences) like (cutter and trimmer trees devices or a welder or holder devices) to protect the worker **The Advantages :** only by worn this Safety electronic protection glasses can protection the eyes from (dangerous consequences) like (cutter and trimmer trees device or welder or holder device) to protect the worker otherwise this Dangerous Device it will not working, **(**Video links https://www.youtube.com/watch?v=VdSqNE6yrfg**)**
Class	12. Safety, protection and rescue of people

EG.3.

Title	**Solar Energy and Light Emitting Diodes (LEDs) To Control Agricultural Pests**
Authors	Rania Ahmed Abd **El-Wahab**
Institution	(**The Egyptian Inventors Syndicate**) The Egyptian Society For Women & Youth Inventors
Patent no.	Patent 142/2014-Egyptian patent office
Description	Present invention is depending mainly on the effect of Light Emitting Diodes (LEDs) against certain agricultural pests. LEDs were powered by solar energy to be able to do its effect in fields and greenhouses specifically in night when most pests are active. LEDs colors with their different wavelengths showed that they were successfully able to control pests directly and also they can attract special predator to each pest and can attract others to the same pest with other color. Besides, LEDs showed their effect on the metabolic resistance of pesticides in insects and mites.. Instrument Prototype Parts: 1-Solar Panel 2-Container Molecules of battery and the Sprayer of Normal and Nano of Biocides 3-Power 4- Light Emitting Diodes (LEDs)
Class	3. Agriculture and Food Industry

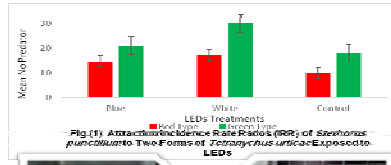
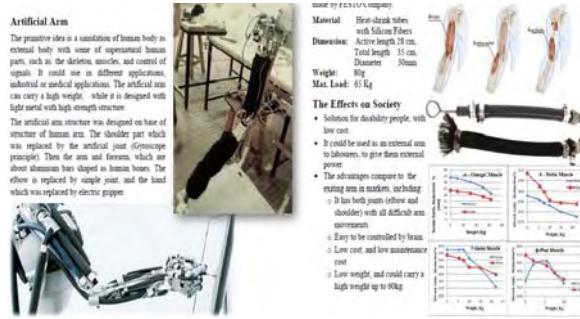


Fig.(1): Attraction Incidence Rate Ratios (IRR) of *Stethorus punctillum* to Two Forms of *Tetranychus urticae* Exposed to LEDs

Instrument Prototype Parts:
1-Solar Panel
2-Container Molecules of battery and the Sprayer of Normal and Nano of Biocides

EG.4.

Title	(**Enjad**) Human Arm by Using Air Muscle "Artificial Arm"
Authors	(Mohamed Elmously) & Moustafa Moh'd Hassen)
Institution	(**The Egyptian Inventors Syndicate**) The Egyptian Society For Women & Youth Inventors
Patent no.	Registered EGY Patent No.: 2009/456
Description	The projects focus on increasing the human muscle strength and help the disabled people, makes their life easier. In addition to build a new generation of machines works on principle of human muscle with pneumatic power. The project is a Prosthesis or Artificial Limb as a cure of muscle dystrophy. The arm was designed to sense the movement of human body through variable semiconductor elements, or imitating the body movement by brain signal. The objective of this arm is for helping the muscle atrophy disease, and increase or enhance their strength. The Effects: 1.Solution for disability people, with low cost. 2. It could be used as an external arm to laborers, to give them external power. 3. The advantages compare to the exiting arm in markets, including:
Class	4. Medicine - Health Care - Cosmetics



EG.5.

Title	**MT Smart Pelvic Trainer**
Authors	**Mohammad Al Tookhy**
Institution	(**The Egyptian Inventors Syndicate**) The Egyptian Society For Women & Youth Inventors
Patent no.	Registered Patent No.: 1840/2011 (Patent Office)).
Description	A surgical training device composed of face wall cover with female anatomy, basal box with dimensions 30x30x60 cm ,Led light camera tube, organs(uterus, fallopian tubes, ovaries)attached with sensors to be placed inside the box. It is considered as dry Lab for training purpose for doctors specified to gynecological laparoscopic and hysteroscopy operations
Class	4. Medicine - Health Care - Cosmetics

Greece

GR.1

Title	**Development of tailored ceramic microstructures using recycled marble processing residue as pore-former**
Authors	A Domopoulou, X Spiliotis, G Charalampides, A Baklavaridis, G Papapolymerou, V Karayannis
Institution	**Technological Education Institute of Western Macedonia, 50100, Kozani, Greece** **Technological Education Institute of Thessaly, 41100, Larissa, Greece**
Description EN	Recycling of marble processing residue is significant since marble processing constitutes an important industrial sector. Therefore, the sustainable management and the valorisation, in an economically profitable manner, of this industrial by-product should be considered. In this work, the potential use of marble residue as pore-former into clayey mixtures for the production of lightweight, porous and thermal insulating ceramics is investigated. Four samples consisting of clayey ceramic body incorporating up to 50 wt.% fine marble residue powder were produced. The final ceramic products were produced upon firing (sintering) at 950oC. Porosity and thermal conductivity measurements were carried out in order to assess the thermal insulating behavior of the produced sintered ceramics. The porosity of the sintered ceramics increases substantially by increasing the marble residue admixture loading. This, in turn, leads to a decrease in thermal conductivity. Consequently, the marble residue can be successfully employed as pore-forming agent, in order to improve the insulating behavior of the ceramic materials.
Class no.	Innovative Research

Hong Kong

GR.1

Title	**Magnetic Universal Holder**
Authors	LAU CHUN
Institution	-
Description EN	No drilling to stall. Strong Magnet securely holds any cell phone in place. Any cellcase clip can be hold easily. Holder is adjustable for any angles. Square base of holders is flexible adapt to stick on any shape of dashboard.
Class no.	14. Other

India

by
Indian Innovators Association

IN.1.

Title	The Digital Controlled Valve for Precise Liquid Dispensing by Gravity Flow
Authors	Satish V. Pathak
Patent no.	Application no 172/DEL/2001
Description EN	The new profile of the valve plug and seat in combination of Digital Control results in Dynamic Aperture size in proportion to ON-Time duration of the valve. This Dynamic Aperture and the varying valve open duration combined (in milliseconds) generate a fluid dispensing profile of discrete packets with fine deviations in the quantity. I.E. Change in milliseconds proportionally changes the quantity in milligrams. This change is of non-linear proportion type. The smallest packet quantity can be a drop weighing fraction of a gram. This functionality is not found in on-off or other valves using digital algorithm as they do not have the profile in plug and seat.
Class no.	5. Industrial and laboratory equipments

IN.2.

Title	Vestibular
Authors	Prof GG Ray, IITB
Patent no.	-
Description EN	Vestibular stimulation is an important part of therapeutic program to improve the neuromuscular function of a person with physical disability. There is no existing therapeutic equipment to facilitate the function of vestibular system of cerebral palsy (CP) children. The vestibulator should be designed to provide rotational stimulation along with forward-backward tilting because semicircular canals are oriented in three mutually perpendicular planes, so they are stimulated by motions as follows: 1. Horizontal parts of stimulator canal are activated by turning the head. In practical terms, the right acceptors are activated by turning the head to the left side, hence vestibulator should provide free rotational movement. 2. The vestibulator should provide forward tilting because receptors of anterior vertical(superior)part of semicircular canal in both right and left ears are stimulated by flexion of the head (forward bending) 3. The vestibulator should provide also backward tilting because posterior vertical (posterior) part of semicircular canal in the both right and left ears are activated by the extension of the head (backward bending)
Class no.	4. Medicine - Health Care - Cosmetics

IN.3.

Title	**Wrapper Picker**
Authors	Mukul Malviya, Diptanshu Malviya
Institution	**MALVIYABROTHERS**
Patent no.	Patent application No. **3275/DEL/2014**
Description EN	The presented innovation is regarding to wrapper picker device. It helps to pick wrapper (plastic bag of edible item plastic/paper tea cups, paper pieces and other packing box). It can be widely used especially at public places like railway platform, bus stops, and tourist places and even at malls, hospital. It is very easy to use and operated by battery In modern age everything packer in plastic bag. People don't care about the disposal of empty wrapper. Although, local administration keeps dustbin at most of the places but People don't use them. So waste Spreads over surrounding areas. Generally, wrappers are found as scattered, so it is difficult to pick. it is very tedious job. But it can be very easy by our innovation "wrapper picker device"
Class no.	1. Environment-Pollution Control

IN.4.

Title	**Movable Seat for Physically Disabled in Cars (An Angularly and Laterally Displaceable Seat for Vehicles)**
Authors	Khushkumar Patel
Institution	**Ganpat University**
Patent no.	Patent application No.: 3548/MUM/2014
Description EN	An objective of this invention is to provide sliding and rotating seat for a vehicle which aids in ease of getting into and getting out of a vehicle for a needy person; which is facilitate to push-pull, back-forward, up-down and rotational movements of the seat. This invention is to have a movable seat in four-wheeler so that they can be rotated on their axis and pulled outside. After opening the door, the base part of seat can pulled outside from the car (like table drawer). This having the facility to move left-right, back-forward, up-down and rotational movements (like office chair). Passenger or driver can easily sit on the seat, then after the seat can be push inside the car. The rotatable middle portion of seat can be rotate back to the front side for properly sitting. It is move horizontal and vertical plane both. The seat can be locked so that it can't move during the travelling. Here we are use additional mechanism of automation with remote control system. It is different from other swivel seat because my invention can be move 360 degree and it works on the different principles and methods. This invention is very useful for... 1. Physically disabled persons. 2. Elderly citizens who are suffering from the problem of back pain or knee pain. 3. Patients of arthritis, sciatica, bodily injury and surgical trauma. 4. Pregnant ladies. 5. Obese people (over-weighted people). 6. Taxi drivers for long journey because they need many time to sit down and stand up from their seat.
Class no.	8. Aviation, car industry and transportation

Indonesia

Represented by
Indonesian Invention And Innovation Promotion Association (INNOPA)

ID.1.

Title	**From Peel to Fuel**
Authors	**Adjienda Maullana, Elzan Kurnia Oktajaya**
Institution	**Surya Buana Senior High School**
Patent no.	-
Description EN	Orange peel contains pectin and volatile oil (gasoline). Furthermore, the gasoline contained in Orange peel can be easily burned. For example, in a fresh condition, if we spray the volatile oil from Orange peel to a candle light, it can cause larger fire lit and stimulate sparks. It proves that the volatile oil (gasoline) contained in Orange peel can be potential as fuel. And the result is, its fuel power can be useful without undergoing other processes or adding with other chemical. It shows that the volatile oil in Orange peel is very potential to be used as an alternative fossil fuels. Meanwhile, by adding pectinase enzyme, the substances in Orange peel can be transformed into ethanol through a sugar fermentation process, so that it can be used as an alternative fuels in the future.
Class no.	2. Energy and sustainable development

ID.2.

Title	**Nepelactobi: Solution for Prevention Colorectal Cancer**
Authors	**Qonita Kurnia Anjani, Satriyani**
Institution	**Hasanuddin University**
Patent no.	-
Description EN	*Nepelactobi* Health Supplement is a microcapsules formed by combination of *Nephelium lappaceum* extract and *Lactobacillus casei* to prevent colorectal cancer at an early stage to maintain the health of the digestive organs. Probiotics are defined as live microbial supplements, which beneficially affect the host by improving its intestinal microbial balance. However, this bacteria must survive through the stomach to reach the lower gastrointestinal tract in order to contribute a health benefit. One method to protect this probiotic is encapsulation. Flavonoid is one of substance that have antioxidant and prebiotic activity. *Nephelium lappaceum* is one of typical fruit from South Sulawesi, which has flavonoid content and high antioxidant activity. *Nepelactobi* can used in wide food application such as ice cream, yoghurt, mayonnaise,

cheese, and many more.

Class no. 4. Medicine - Health Care - Cosmetics

ID.3.

Title **The Use of Egg Shell as a Material to Produce Gypsum**

Authors Nirmaya Amalia Putri, Mardiyah Jusuf Hasan Mansoor

Institution **Surya Buana Senior High School**

Patent no. -

Description EN Egg is a kind of food which contains animal protein and is widely eaten by people around the world. So far, part of egg which mostly consumed is the content while the shell is thrown away. Actually, the egg shell contains material which can be used to produce gypsum. By blending and mixing the egg shell with glue, it can be used as a material to produce gypsum directly.

Class no. 14. Other

Dry the clean eggshell

After that, hit with hammer

Filter the eggshell

Can be used to plaster part of broken doll's body

ID.4.

Title	**Being Beautiful by Using Cosmetic from Waste of Fruit**
Authors	Mardiyah Jusuf Hasan Mansoor, Sri Istuti Mamik, Elzan Kurnia Oktajaya
Institution	**Surya Buana Senior High School**
Patent no.	-
Description EN	Facial and body skin care does not always use expensive substance. Nutritious food containing essential nutrients for the skin and body as well as the use of waste fruit is more than enough. Fruits and seeds that are important for skin health and body are sweet orange peel, avocado peel, avocade seed and pinneaple peel. From the research that we have done, fruit peels which usually regarded as waste can be processed into something useful, such as cosmetics.
Class no.	4. Medicine - Health Care - Cosmetics

Indonesia

Represented by
Universitas Ubudiyah Indonesia

ID.5.

Title	**Water Detector using Sensor Water and SMS Gateway**
Authors	Mirza Purnandi, Alfiz Zikra, Zuhar Musliana, Zahrul Maizi, Fadly Heriadi
Institution	**Universitas Ubudiyah Indonesia**
Description EN	Water is the main sources for human to survive and for their daily needs. Indonesia has the Regional Water Company (RWC), there is the problem and misscomunication occurs between people as the customer when RWC turned on the water which is there is no fix schedule about water supply. Therefore, this system programs needed in order to give the information for the customer (community) about the water launch/ supply schedules. This system is very useful for water detection to inform the public that the water was lit by RWC is already flowing in the house complex/community village. Water detector working uses a water sensor to determine the movements of water which will transmit data to the phone number has been added beforehand using SMS Gateway.
Class no.	10. Information Technology and Communication

ID.6.

Title	**Tea Extract From Fruit Crown Of God (*Phaleria Macrocarpa*) As Treatment of Hypertension**
Authors	Ulfa farrah Lisa, SST., M.Keb, Teddy Rida, Mutia Putri, Putri Amalia, Hesti Widari
Institution	**Universitas Ubudiyah Indonesia**
Description EN	High blood pressure or hypertension causing heart attacks, strokes and kidney failure. Expert say last year hypertension causes 45 percent of deaths from heart attacks and 51 percent of deaths from stroke worldwide. The prevalence of hypertension in the population aged 18 and over in Indonesia in 2013 based on the diagnosis of health personnel by 9.4%, and the measurement of blood pressure by 25.8%.
Class no.	3. Agriculture and Food Industry

Iran

Represented by Rayan Innovation Institute

IR.1.

Title	**Design and construction of a new organic polymer solar cells**
Authors	**Kimiya Sadeghy, Melika Mohammadi, Fatemeh Lotfi, Zahra Zaghari**
Institution	**-**
Patent no.	-
Description EN	A solar cell is one of the sources of energy that converts sunlight to electrical energy by the photovoltaic method. Polymer solar cell is one of the most research topics in new technologies of solar cell that has attracted numerous attention because of the simplicity of construction, being flexible and the ability to build in large dimensions
Class no.	7. Buildings and Materials

IR.2.

Title	**Design a biosensor of H_2O_2, using by carbon Nano tube.**
Authors	**Zahra Dadjoo, Zahra Zaghari, Mahsa Dadjoo, Mohammad Hossein Rezaei Ghavam Abad**
Institution	**-**
Patent no.	-
Description EN	In this study, we introduced a new biosensor for measurement of hydrogen peroxide (H2O2) by using of Catalase enzyme and single wall nanotubes (SWNT) and carbon paste electrode. Using of CNT is very important in several fields of science and technology, due to their excellent mechanical and electrical properties. Transmission Electron Microscope was used to observe the internal structure of CNTs. Scanning Electron Microscope is powerful instrument for imaging of fine structures of materials and nanoparticles fabricated by the nanotechnology. This method gives information mainly about surface morphology of the sample.
Class no.	9. Chemical and Textile Industry

IR.3.

Title	**Cerium oxide nanoparticles for specific targeting of Aβ aggregates modulate neuronal survival pathways.**
Authors	**Zahra Zaghari, Yaghmaei Parichehreh, Paria Abazari, Mahdiyeh Karimi**
Description EN	Mitochondrial oxidative stress is a key pathologic factor in neurodegenerative diseases, including Alzheimer's disease. Abnormal generation of reactive oxygen species (ROS), resulting from mitochondrial dysfunction, can lead to neuronal cell death. Ceria (CeO2) nanoparticles are known to function as strong and recyclable ROS scavengers by shuttling between Ce3+ and Ce4+ oxidation states. Consequently, targeting ceria nanoparticles selectively to mitochondria might be a promising therapeutic approach for neurodegenerative diseases
Class no.	4. Medicine - Health Care - Cosmetics

IR.4.

Title	**Medical beds muscle stimulation**
Authors	**Ali Shirani**
Institution	Damesh Sepahan New Technologies Center
Decription EN	This scheme is applicable in the field of medical engineering and for the elderly, the disabled, etc and and stimulate the use of muscles as well as In order to prevent destruction of the poor is theirs. This bed has legs for circulation around the bed and also has a few pieces, moves vertically upwards and down to force a patient to take a few minutes your arms and legs to keep the contract for the work
Class no.	4. Medicine - Health Care - Cosmetics

IR.5.

Title	**Liquid Smart Bumper**
Authors	**Amir Hossein Mohammad Shafiee**
Institution	Bellerbys college, Brighton United Kingdom Independent school
Description EN	This invention is related to safety and accident prevention system of vehicles which results in absorption of most of car energy in accidents compared with its counterparts.These bumpers are usually more suitable for usage in heavy and semi-heavy utility vehicles and their functional basics are based on the spiral movement of liquids (Oils…etc) and the effect of force on them which results in better absorption of stroke resulted from the accident
Class no.	8. Aviation, car industry and transportation

IR.6.	
Title	**Vehicle hybrid control system**
Authors	**Hesam Alidin Ahmadi Afzadi**
Institution	Damesh Sepahan New Technologies Center
Patent no.	-
Description EN	The abovementioned system is suitable for different kinds of hybrid vehicle and can be used for the control of multi fuel or multi _ engine (gas- electric systems. The gas or electric engine, the gear shift, the input shaft and belt to the gear box which is the output shaft of hybrid control system. At the beginning of movement when the gas engine tries to convert to the electric system as the result of the drivers actions id is activated through the movement of the intermediate gear towards the gear of electric engine and on the gearbox and the gas engine will be out of the circuit and is shut down and electric engine controls the moment of the vehicle
Class no.	8. Aviation, car industry and transportation

IR.7.	
Title	**New theoretical models to calculate the elastic modulus of nano-composites reinforced with carbon nanotubes**
Authors	**Mohammad Reza Mohammad Shafiee, Amirhossein Mohammad Shafiee, Mohsen Heydari Beni,**
Institution	Islamic Azad University, Najaf Abad Branch Bellerbys college, Brighton United Kingdom Independent school Damesh Sepahan New Technologies Center
Patent no.	-
Description EN	Eminent mechanical, electrical and chemical properties of carbon nanotubes including high strength, unique electrical properties, low density and good thermal conductivity caused these amplifiers to be an ideal choice to strengthen metal matrix nanocomposites, polymer and ceramic. In this article, nanocomposite reinforced with carbon nanotubes is modeled as a single string which is a nanocomposite representative
Class no.	9. Chemical and Textile Industry

IR.8.	
Title	**Investigate of various green solvent on the synthesis of Copper Oxide nanoparticles**
Authors	**Mahboubeh Kargar, Majid Ghashang**
Institution	Damesh Sepahan New Technologies Center
Patent no.	-
Description EN	In this work, copper oxide nanoparticles have been synthesized via two various green method: extractive Rosmarinus Officinalis leaves, and sour cherry juice. The simple and economic green co-precipitation method at ambient conditions which has significant effect on crystalline size, and morphology. Furthermore, the calcination temperature (400, 600, and 800C) and changing the amount of solvent (20, 40, and 80 mL) have been concentrated to control crystal growth.
Class no.	9. Chemical and Textile Industry

IR.9.	
Title	Color recognition for blind people
Authors	Farzad Khalil, Masoud Safari
Institution	Damesh Sepahan New Technologies Center
Description EN	Today, in all small and large industries, an accurate method feels instead of manpower for detecting the color, therefore electronics came to help the industries with the development of different inventions, color detection is embedded by using advanced circuits in important industries such as the production of paints and packing. Moreover, we know that the sense of vision is one of the blessings which God has placed at the disposal of mankind
Class no.	4. Medicine - Health Care - Cosmetics

IR.10.	
Title	Designed health village
Authors	Seyedeh Sajedeh Mohammadi, Somayeh Mozafary
Institution	Damesh Sepahan New Technologies Center
Description EN	the proper design of such a complex, and understanding the needs and spaces can be briefly stated goals set for this species: 1.Environment can cause a positive impact on one's emotions. 2.The main goals of the relationship between man and nature. 3.Special collection is not a particular group And all members of the community may be exposed to conditions that could benefit from this collection. 4.Services suite includes various recreational activities (such as sports, entertainment)
Class no.	12. Safety, protection and rescue of people

IR.11.

Title	**Energy producing unit (gas production in effect acceptance of surrounding air**
Authors	Amir Hossaine Vakilifard
Description EN	Energy producing unit is a unique unit which has had no similar one in the world and it is for the first time that it is invented in the world. This unit is capable of collecting surrounding air and converting it to a very clean gas with combustion as high as possible and is able to be used at homes, factories, automobiles, and also power plants for production of electricity
Class no.	2. Energy and sustainable development

IR.12.

Title	**Smart vehicle of Persian Gulf**
Authors	**Mohammad Reza Mohammad Shafiee, Masoud Saffari**
Institution	Islamic Azad University, Najaf Abad Branch Damesh Sepahan New Technologies Center
Description EN	This vehicle is a gasoline car of the municipal class which consumes 4.6 liters fuel per hundred kilometers, on the other hand to reduce consumption as well as to secure and etc.; some new technologies are installed on the vehicle. Technologies include: 1-Intelligent system for the identification of road and management of fuel injection (fuel injection is set based on the state road) navigates with the 4-cylinder engine in the uphill, 3-cylinder on a flat surface and 2-cylinder in downhill.
Class no.	8. Aviation, car industry and transportation

IR.13.

Title	**Foot Massager and slimming**
Authors	**AmirHossein Mohammad Shafiee, Masoud Saffari, Farzad Khalili Esfahani**
Institution	Bellerbys college, Brighton United Kingdom Independent School Damesh Sepahan New Technologies Center
Description EN	This invention is in the field of medical engineering science through the identification of the human foot nerves, as well as a series of veins and capillaries in it, we have designed a massage device to stimulate them. The benefits of the present invention: 1.Its popularized use in any working conditions (such as

	offices, gyms, hair salons, etc.)2.Prevention of muscle fatigue 3.Prevention of varicose disease through moving blood circulation in the capillaries in the body 4.Calm nerves by stimulating the foot nerves so that all the nerves in the body lead to foot
Class no.	4. Medicine - Health Care - Cosmetics

IR.14.

Title	**Cameraman Robot and Identification**
Authors	**Mohsen Heydari Beni, Masoud Saffari, Farzad Khalili Esfahani**
Institution	Damesh Sepahan New Technologies Center
Patent no.	-
Description EN	This invention is in the field of mechatronics as the part of the move, rotate and balance of the robot is related to the mechanics science and the robot control, processing and transmitting information are related to electronics science. Technical problems and objectives of the invention: The main problems cause the creation of such an invention is limited human access to locations that need to be investigated. So we were thinking of making the robot in this field. This robot applies for tunnels, narrow wells, places with pesticides and chemicals, very cold places (-50°C), very hot places (+70°C), and high-risk locations such as wildlife and any places where the presence of man is dangerous and impossible.
Class no.	5. Industrial and laboratory equipments

IR.15.

Title	**Organic Waterproof Sealant Paste**
Authors	**Mohammad Reza Mohammad Shafiee**
Institution	Islamic Azad University, Najaf Abad Branch
Patent no.	-
Description EN	The sealant paste is from the organic pastes, which means that all materials are from natural ingredients such as beeswax, turmeric, paraffin, plant oil, etc. with different percentages and its main feature is that it does not cause any harmful effect on human (even by eating) and for sealing the places where should be avoided from penetration of water and vermin animals into it can be used. It has a soft and flexible texture so that this feature makes it easy to take and moreover by the momentum or the small movements of mediums such as sinks, this sealant does not collapse.
Class no.	9. Chemical and Textile Industry

IR.16.

Title	**Anti-radiation Argon welding chamber**
Authors	**Masoud Saffari, AmirHossein Mohammad Shafiee**
Institution	Damesh Sepahan New Technologies Center Bellerbys College, Brighton United Kingdom Independent School
Patent no.	-
Description EN	The main risks of argon welding are their extremely dangerous radiation that causes cancer and super-lasting negative effects on the body. To prevent this, use special leather protective clothing for welders is obligatory. But the main drawback of these clothes is their being heavy and conditioning. Therefore, it makes the user of Argon welding feels fatigue during exercise performance and limits his movement during welding. That's why we decided to create chamber argon that the person could put the workpiece into the chamber and without any direct physical contact and no wear certain clothing can easily be welding
Class no.	12. Safety, protection and rescue of people

IR.17.

Title	**Investigation of Optical Properties and Electrical conductivity of One-Pot synthesized Magnesium and Chromium Oxide Polyaniline Nanocomposites**
Authors	**Ahmad Sattari, Mahboubeh Kargar**
Institution	Damesh Sepahan New Technologies Center
Patent no.	-
Description EN	Tree-dimentional metal oxide-PANi nanocomposite with spherical morohologies were prepared by using various salts as reactive oxidants in a one-pot oxidation- reduction method. Aqueous solutions of aniline, a free-radical oxidant, and/or a metal salt were exposed together and caused aniline to polymerize as shell on the surface of metal oxides which were prepared during the reaction. The particle size and morphology of as-prepared narrowly dispersed PANi nanocomposites were revealed by Scanning electron microscopic (SEM) images. Fourier transform infrared (FT-IR) spectra of nanocomposites indicate that the PANI exists in the emeraldine form
Class no.	2. Energy and sustainable development

IR.18.	
Title	**Detection of objects with the help of cameras and image processing with a very fast method**
Authors	**Seyed Majid Zanjani**
Institution	Damesh Sepahan New Technologies Center
Patent no.	-
Description EN	The plan with the help of pictures taken from various objects and image processing computer through a mathematical formula with great speed and accuracy to image the object; from the other images are detected. Mathematical methods used in computer image processing. This is the first camera images Converted to black and white The image matrix on three horizontal, vertical and 45 degree imagery (the sum of the number) and any image to be converted into vectors.
Class no.	10. Information Technology and Communication

IR.19.	
Title	**Mitteilungen Saechsischer Entomologen Polycyclic Aromatic Effects on Food and Its Effects on Human and Animal**
Authors	**Farshad Ahmadi, Mohammad Reza Mohammad Shafiee, Mozhdeh Khosraviyan**
Institution	Department of Core and Basic Science Faculty, Islamic Azad University of Najafabad Damesh Sepahan New Technologies Center
Patent no.	-
Description EN	When grilling meat at high temperatures, Polycyclic Aromatic Hydrocarbons (PAHs) substance called there. High levels of this substance in cigarette smoke and automobile exhaust can also be found. Polycyclic Aromatic Hydrocarbons, a large group of stable lipophilic organic chemical contaminants containing 2 or more aromatic rings are joined together, and the presence of potential carcinogens in food, even in small amounts, is undesirable. Hundreds of PAH have been identified as a product of incomplete combustion but so far Benzo Pyrene or BaP that is studied further.
Class no.	3. Agriculture and Food Industry

IR.20.	
Title	**Investigating the Effect of Regular Participation in Congregational Prayers on Dr. Shafiee High School Students' Happiness**
Authors	**Ahmad Molavi**
Institution	Damesh Sepahan Research and New Technologies Center
Description EN	From a psychological perspective, for the devoted believer, prayers might be a meaningful path that will help reincorporate health into one's life. The purpose of the study in hand is to investigate the amount of the effect of regular participation in congregational prayers on Dr. Shafiee High School Students' happiness. A group of 25 students who regularly participated in congregational prayers and 25 students who didn't participate in congregational prayers were selected through random sampling method
Class no.	4. Medicine - Health Care - Cosmetics

Iran

Represented by
Aydin New Idea's Association

IR.21.	
Title	**ALPHA UAV**
Authors	Aram Razmjoo Nejad , Maryam Karimi , Amir Gorji , Mohammad Hosseini , Milad yazdani
Institution	**REFAH chain store**
Patent no.	Pending
Description EN	ALPHA is a small UAV that uses for up 15 KM full autonomous missions. It has made by balsa wood and ply and covered by ORA cover. The camera is GoPro HERO 3 and 1.2 GHz VTX 1000 mw low mate with 15 Km range. features: 1- Endurance more than 2.5 Hours 2-Flying up to 4,000 feet 3- Safe flight in 10-15 knots winds 4-The aspect ratio up to 8 5-Circular Flying at a determined height by no hands 6-Most endurance flight with minimal energy consumption
Class no.	8. Aviation, car industry and transportation

IR.22.

Title	**Diagnosis device Recognition, recording and display patient data using fingerprint sensor**
Authors	Mehdi Tale Masouleh, Atousa Hatami, Ali Ravari, Arya Saboury, Mehran Khosravani, Amirali Hatami
Institution	**Human and Robot interaction laboratory, IRAN**
Patent no.	Pending
Description EN	ATIS is a widely used device in the medical field which helps the physician to access his patient's medical records through his fingerprints. ATIS is consisted of a fingerprint sensor and an open source hardware which is connected to a laptop using a cable and works with a specifically designed software. The fabrication of this device has two goals. The first one is saving patients' records which uses the Big Data system. The second goal is the display of patient information on the screen for the physician to observe. One of the most important uses of this device is when ER, MS, Diabetes and particularly Alzheimer's patients are brought to a hospital. Due to the nature of their condition, their medical record could be accessed instantly by the physician. The patient can easily place his fingers on the device and the physician can view his medical records using the prepared database. Among the features of this device is its integrated system, online accessibility, portability and low cost. In addition to its use in the medical field, its software has the ability to create any database for other applications.
Class no.	4. Medicine - Health Care - Cosmetics

IR.23.

Title	**Diagnosis of Mental States through Receiving and Analyzing Brain Signals and Performing Optimal Performance**
Authors	Seyede Negin Kaboli ,Shakiba Jozaghi, Ensiyeh Sarichloo, Ghazal Shabani , Fatemeh Shamloo, Mahtab Moghadam
Institution	**Solaleh High School , IRAN**
Patent no.	Pending
Description EN	Claude system is a system designed to study the signals obtained by human brain. First using the designed system the received signals are transmitted to the open source hardware via the leads. This system is activated by 5 channels and classifies Alpha, Beta, Delta and Theta after receiving them. Based on the existing noises by placing appropriate filters the values of these noises are minimized and in addition to filtering for better performance the devise is set on the meditation and attention modes and works. Accordingly we define activities for the system by the Open Source System and the individuals will be able to used this device to achieve their desired operation.
Class no.	4. Medicine - Health Care - Cosmetics

Iraq

Represented by

Iraqi Forum of Inventors

IQ.1.

Title	Innovation of a new technique for evaluate histological traits, volume density and relative weight of tissues components
Authors	**Prof. Dr. Hazim Jabbar Al-Daraji**
Institution	University of Baghdad, Baghdad, Iraq
Patent no.	3440 on 24 / 9 / 2012.
Description EN	The present procedure that used for evaluate general status of tissues depended principally on morphological changes in tissue histological traits. This procedure was not accurate to a considerable extent as it depended basically on gross examination of tissues. For this reason we innovate new technique for evaluate histological traits of different tissues in the body. This technique depended basically on measure volume density and relative weight of each component in the body tissues in addition to calculate all measurements of dimensions of different tissues. This New technique demonstrate good efficiency for determine all features of histological traits of all body tissues.
Class no.	4. Medicine - Health Care - Cosmetics

IQ.2.

Title	The use of artificial insemination in falcon for the first time in the world
Authors	**Prof. Dr. Hazim Jabbar Al-Daraji**
Institution	University of Baghdad, Baghdad, Iraq
Patent no.	4162 on 11 / 3 / 2015.
Description EN	Many studies have indicated that that breeding and proliferation of falcon facing at the same time problem of great decline in fertility and hatchability rates and there is an urgent need to adopt new procedures and ideas to curb this problem and overcome it. Therefore the current study aimed to use artificial insemination process for the first time in Iraq as a method to overcome the problem of fertility decline in falcons. As practical and actual application for this problem, the current study was conducted at specialized farm for breeding and proliferation of falcons which suffers from big problems as regards the fertility and hatchability of falcon eggs. Results of this study that the procedure was adopted for

collecting the semen from male falcons was very successful as indicated from the results of semen volume, spermatozoa concentration, mass and individual motility of spermatozoa, and percentages of dead and abnormal spermatozoa and acrosomal abnormality which the means of all of these traits within the normal values that reported in the previous studies which conducted in male falcons. Second part included the adoption of special procedure for artificial insemination of female falcons which also take in account the fierce nature of these birds and all the characteristics that distinguish the females of falcons from the females of another birds. Results revealed that the procedure of artificial insemination was very efficient as indicated by the results of rates of fertility; hatchability of set eggs and hatchability of fertilize eggs and percentage of embryonic mortality. Third part included the hatching of eggs that obtained after artificial insemination of females by adopting standard method for incubate and hatch the eggs of falcon in addition to using new apparatus for the first time in this study to determine the fertility of eggs and the livability of chicks. The processes of incubation and hatching the eggs were successful as indicated by the results of fertility and hatchability rates during all three hatches that included in the present study. It was concluded from this study that the use of artificial insemination process was effective tool to overcome problems of low rates of fertility and hatchability associated with breeding and proliferation of falcon that reported by many studies that conducted on different species of falcon.

Class no. 4. Medicine - Health Care - Cosmetics

IQ.3.

Title **An engine for generating movement by using winds**

Authors ***Layth Mohammed Ridha Ali AL-Alak***

Institution

Patent no. 3268 / Patent application No. 41/2009

Description EN

Yara engine," a mechanical engine works with clean energy (wind energy), (terrain) and in all the atmosphere can kinetic energy caused by the rotation of converting the sails to the torque is very large capable of generating energy electrical economically beneficial it can be used in various places of the world (weather) and night and night, it's the equivalent of a wind farm for the production capacity and quality, engineering idea in this engine Premium Epeshklleha fixed and mobile (the idea of genuine non-derivative of any geometric shape previously no form nor substance nor outputs, contains four sails with different modes (fully open Set a distance called the

day, and with closure Fulbright grants Tdregeya specified distance and called the sunset, just closed a specified distance and called the night, gradually Bamuftouh specified distance and called Sunrise) these labels and the mechanism for the whole movement inventor in addition to all the parts and internal components and everything described in the joint.

Class no. 2. Energy and sustainable development

IQ.4.

Title **Effect of Bisoprolol gel 1% on bone healing**

Authors Abeer Mansoor, Nahalaothaman Rafha sami

Institution Health and environmental health, **Nineveh heath**

Patent no. 4325 Patent application No. 14-9-2015

Description EN

New dosage form asbisoprolol gel in new used in bone healing Bisoprolol fumarate (BF) is a synthetic β1-selective (cardio selective) adrenoreceptor-blocking agent. BF can only used in treatment of cardiovascular disease such as (Hypertension and Myocardial Infarction). To our knowledge; this is the first experimental study to demonstrate the local effect of beta -1 selective blocker Bisoprolol fumarate gel 1% (BFG1%) used in bone healing (experimental study).

The aims of this study are to evaluate the physicochemical properties of BFG1% as well as study the effect of this preparation on bone healing on rabbit through assessing certain biochemical parameters and histological and histomorphometric examination of induced defect on rabbits femur The local application of BFG1% showed a positive effect on bone healing through histological and histomorphometric analysis. Osteoblast diffusion and multiplication as osteiod presentation visually progressed as compared with two weeks treatment groups also appeared to be more prominent as compared with 4th week control group, vascularity, capillaries maturation and soft callus mininralization were better performed than control, few multinucleated osteoclasts noticed in some sections.Also histomophometric analysis showed increased new bone area percentages at the end of 4th week of local application of BFG1% on the defect area.

Conclusion: local application of BFG1% can stimulate the regeneration of the bone defect sites because it promotes the proliferation of osteoblasts and enhance mineralization; it can be suggested for beneficial use in the practice of dentistry and good effect after removal of tumor.

Class no. 4. Medicine - Health Care - Cosmetics

IQ.5.

Title **Treatment of sewage water using cob toasted of *zea mays* L. plant**

Authors **Prof.Dr.Abedaljasim M.Jasim Almanssoori, K.A.Rasheed**

Institution **Al-Nahrian University**
Biotechnology Research Center

Patent no. **3279 / Patent application No. 12/11/2009**

Description EN Toasted cobs of maize plants were used as a medium for the treatment of sewage water .The parameter measured were color scent, dissolved oxygen (DO), biochemical and chemical oxygen demand(BOD_5 and COD) and Ph. In addition to the ability of the medium to remove certain pollutants such as nitrates, sulfates, phosphates, calcium and TSS. The results showed effectiveness of this medium to increase the DO concentration from 1.1-6.8 mg/l, reducing quantity of BOD_5 from 150-50mg/l and COD from 113-46.5mg/l.The TSS were also decreased from 100-40 mg/l ,NO_3 from 6.8 -2.0 mg/l,SO_4 from 217.7-62.4 mg/l,PO_4 from 6.2-1.0 mg/l and Ca from 140-60 mg/l. In addition to that clear color water with no scent was obtained .The results demonstrated the potential of using toasted cobs of maize plants in treatment of sewage water and making it available for reusing in irrigation of plants in accordance with international standard.

Class no. 1. Environment - Pollution Control

IQ.6.

Title **The Efficacy of Endophytic Beauveria bassiana Isolets to Control Dubas Bug, Ommatissus lybicus (Deberg) (Homoptera: Tropiduchidae) in Date Palm Orchards.**

Authors Hussain F. Al-Mayyahi and Mohammad W. Khudhair

Institution **Integrated Pest Control Research Center, Agricultural Research Directorate, Ministry of Science and Technology, Baghdad- Iraq**

Description EN Two entomopathogenic Beauveria bassiana isolates were identified to have endophytic property isolated from date palm, Phoenix dactylifera L. leaves; in addition to one isolate originally from soil. Laboratory bioassay test was conducted to examine the efficacy of the three endophytic

isolates against G. mellonella larvae. Concentration 1×109 conidia/ml expressed the highest mortality rate for all isolates reaching over 70%. Therefore, this concentration was used in the field targeting Dubas bug, Ommatissus lybicus nymphs via injection, scoring high mortality rate reaching 92, 96, and 100% of the three endophyte isolates (MARD 92, 100, and 108) after 15 days from the treatment. The successful establishment in the date palm tissue was determined using B. bassiana species - specific primer for the first time via using conventional PCR amplification technique before and after injection and the positive gel band representation was the identification signs. The novel results depicted for the first time the presence of natural endophytic B. bassiana isolates within date palm tissues and their field efficacy in controlling dubas bug, Ommatissus lybicus (Deberg).

Class no. 3. Agriculture and Food Industry

IQ.7.

Title A project of a new way for the production of liquid hydrogen (fuel) from sen water without loss of energy and in less consumption in production and in a fast way of previous ways and without the addition of chemicals .

Authors Bahzad Salih Salyfani
Institution **Student**

Patent no. 4154 / Patent application No. 110/2014

(convert sea to fuel)

Description EN Production of the liquid hydrogen (the everlasting fuel) from sea or dams water is implemented at a less cost in a new method at production , as a faster method for production within a short period and without an addition of chemical materials.It is used for operating the huge gas or thermal power stations and engines of internal combustion in addition to all the equipments that depend upon energy , where it is a friend to the environment , which would solve the problem of the thermal detainment and after being burnt in air it would directly turn into water vapor (H2O) and it would change to pure water after the process of quick condensation throughout saw water or by waterfall and to be used in the field of agriculture and other fields for the operation of the quick dissolution of the project (the reborn energy) , and it"s very very economical about productivity (free) ……

Class no. 2. Energy and sustainable development

IQ.8.

Title	**A Novel Artificial Intelligence System for Controlling a Traffic Jam**
Authors	Ali Adham, Ali Hasan Taresh, Mohamed YOUNIS
Institution	[1]Council of Ministers, Baghdad, Iraq, [2]University of Information Technology [3]Queensland University of Technology, QUT, Australia
Description EN	Traffic jam is a significant problem in the recent days. In most of the modern cities, congestion is increasing and becoming a critical problem because of the population growth. There are similar problems have been solved in some methods. In this case (A Novel Artificial Intelligence System "ANAIS") will be used to solve the traffic jam. The ANAIS is a hybrid system that involves the hardware and the software parts. Hardware part (HP) includes sensors and cameras which retrieve and sends signals between these two parts of the system. The software part includes multi functions which are Fuzzy logic, Visual Basic and MATLAB. The both parts (SP) and (HP) recognize and analysis the traffic jams. Hence, the activities between sensors and cameras response will send signals to the computer's software which controls the congestion by switching on and off the traffic light depend on sensor response. As a result, the ANAIS provides a better solution and minimum queuing at the traffic congestion.
Class no.	10. Information Technology and Communication

Israel

IR.1.	
Title	**Wetting and spontaneous infiltration: the case study of TaC/(Au, Al and Cu) compared to TiC/Cu**
Authors	M Aizenshtein, N Froumin, O Nafman, N Frage
Institution	Materials Department, NRC-Negev, Beer-Sheva, Israel Ben-Gurion University
Description EN	Spontaneous infiltration of molten metals in to ceramic skeletons, in the course MMCs' production, is related to improved wetting of the ceramic by metals. TiC is considered a "metal-like" carbide and is supposed to be wetted well by metals through metallic bonding mechanism. Nevertheless, TiC/Cu exhibit an unusual behavior since spontaneous infiltration of molten Cu takes place, while TiC is partially wetted by Cu (θ=90º). In this work we studied the relation between wetting and spontaneous infiltration in the TaC/Au, Al and Cu systems. TaC is also considered a "metal-like" carbide and indeed no chemical interaction was observed at the interfaces of the studied systems. Sessile drop experiments showed almost perfect wetting in the three system but spontaneous infiltration occurred only in the first two (e.g. TaC/Au or Al). Thermodynamic calculation shows the difference between the systems which also has its' influence on the mechanical properties of the MMCs'. Further calculation clarifies the difference between TaC/Cu and TiC/Cu infiltration behavior, but is unable to explain the wetting results differences. Correlation between wetting and spontaneous infiltration in some cases is not straight forward and more studies and calculations on the atomistic level should be done in order to clarify this matter.
Class no.	Innovative Research

Japan

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

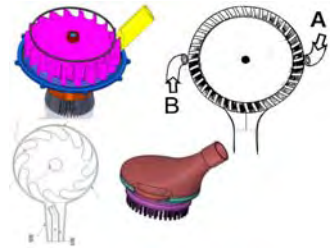
Kyrgyzstan

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

Korea

KR.1.

Title	**The Multipurpose Cleanser that have Several Fluid Inlets**
Authors	PARK, SUNG GUI
Institution	**CLEAN & SCIENCE**
Patent no.	KOREA PATENT: 2016-0025481
Description EN	By applying the lever principles, the cleanser head gains a huge magnitude of power while economically utilizing the tap water pressure combined with the air compressor's compressed air produced together in order to operate the cleanser brush at a much higher efficiency with stronger force. Such way would enable the cleanser to perform both brushing and rinsing at the same time and spray out high-pressure air using the pressure jet attached to the cleanser handle that would conclude the performance with the dryer function to completely finish the all-around job of a cleanser. Thus, the multipurpose cleanser is an all-in-one washer and dryer which are economic at the same time for saving the amount of water being used. This invention was created to solve the common problem of normal cleansers' inefficiency of low torque variable. The waterwheel inside the cleanser's head has been applied with the lever concept of wheel and axle to generate a much higher torque volume despite using low water pressure. Furthermore, the tap water and air compressor together produce compressed air which allows the brush to operate on high power. In addition, the cleanser handle's one-touch method uses high-pressure jet to gun a mixture of high-pressure air and tap water for rinsing and drying tasks altogether. The advantage of using this cleanser is that it sprays powerful water for both highly efficient and faster cleansing and rinsing tasks where the water power is generated by the friction of the cleanser's rotating brush.
Class no.	5. Industrial and laboratory equipments



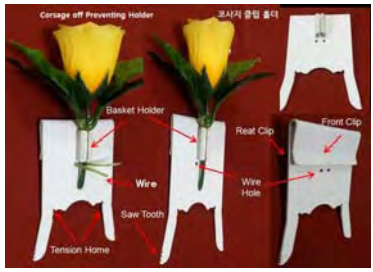
Korea

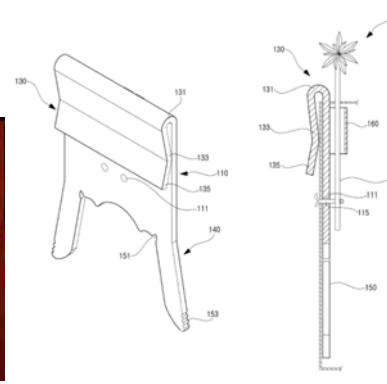
by

Asia Invention Association (AIA)

KR.2.

Title	**Corsage off preventing holder**
Authors	**Park, Sang Hyun**
Institution	Gwangju Science Academy For The Gifted,
Patent no.	Patent application No. 10-0039903/2016
Description EN	Pinning a corsage is an important tradition in wedding, parents' day and teacher's day events and various other ceremonies. However, many modern clothes using synthetic fiber is not suitable to pin a corsage, it might damage the clothes, and loosely pinned corsage can be easily dropped when the wearer band his body. The "Corsage clip holder" is designed for safe and convenient use of corsage without pinning. Corsage clip holder is composed of a holding part and a basket. Saw-tooth bump and tension frame of the holding part strongly holds the product in front of the suit pocket. Basket has a hole which is fit to the wire part of corsage. User can stably fix a corsage by coil the wire around the hole.
Class no.	14. Other





KR.3.

Title	**Multifunctional Bath Chair**
Authors	**Hwang, Chang Hyeon**
Institution	Seoul Mullae Elementary School
Patent no.	NA
Description EN	This invention is a toddler's Bath Chair which allows the baby to sit down and wash the head safely and comfortably. It also has a magnetic back support which can be attached and removed. The toddler Bath Chair is safe and convenient for use and when it is flipped over the mother and baby can use it simultaneously. This multi-functional Bath Chair also has 2 leg supports in the front which safely supports the baby's legs in place and prevents any possible falling accidents.

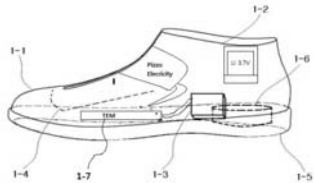
Class no. 12. Safety, protection and rescue of people

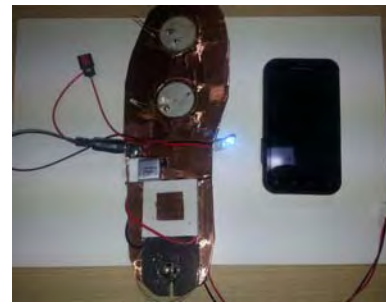
Korea

by
Korea University Invention Association (KUIA)

KR.4.

Title	**Self-powered cell phone charging and shoes with hot and cold function**
Authors	**Jung Hoon Ok**
Institution	Chungdam High School
Patent no.	-
Description EN	An object of the present invention can also function in the shoe as well as warm and cold charging the cell phone battery and are used to enable the self-powered. People moving into kinetic energy consumption and can use the principle of the Faradays Law by the body weight to electrical energy on shoes. An electromagnetic induction method or the inside and outside of the temperature difference of the thermoelectric semiconductor may be applied. By the use of piezoelectric ceramic plate using electric polarization due to the pressure change or shock. As well as self-development is also possible to make one able to recycle the used electricity is an object of the present invention.
Class no.	2. Energy and sustainable development



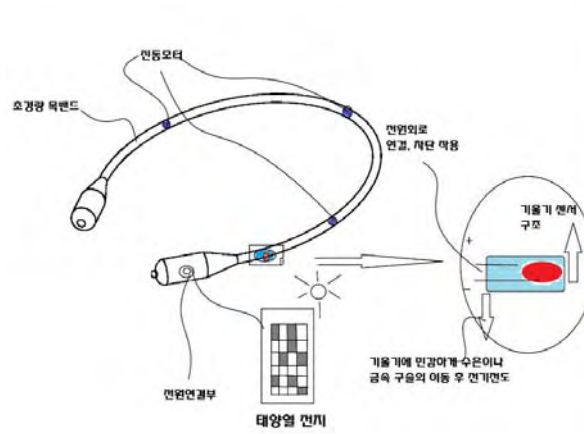


KR.5.

Title	**Antibiotic Mask using antibiosis of oxidized graphene and photocatalysis**
Authors	**So Chung, Park**
Institution	Hankuk Academy of Foreign Studies
Patent no.	
Description EN	Harmful bacteria cause various types of diseases, thereby also causing serious social problems, such as food poisoning caused by pathogens and MERS, which has recently caused social problems. Therefore, well-functioning antibiotics are needed in order to prevent them, and many studies are being held. Antibiotics can be classified into two major categories: organic and inorganic compounds. Until now, we have been using mainly the organic antibiotics—the cause of increased resistance of bacteria against antibiotics. Hence, this study intended to make an antibiotic mask using oxidized graphene, a typical example of inorganic compounds
Class no.	4. Medicine - Health Care - Cosmetics

KR.6.

Title	**Posture correction device with wireless headphone using a Tilting sensor and IoT**
Authors	**Tae Hyun Lee**
Institution	Minjeok Leadership Academy
Patent no.	-
Description EN	Nowadays there are people who long for your smartphone and your computer, and increasing pain in the neck and spine, and I said even if it slightly tilted upright posture when someone else was worrying to see how to correct your posture. While the tilt sensor to the idea that this research can solve these problems was also thinking how you can also prevent drowsiness**.**
Class no.	4. Medicine - Health Care - Cosmetics



Libya

LY.1.

Title	**Geological Survey Networks Detection Device (C1.G1) utilized in oil exploration field**
Authors	**Jalal Alnakasah**
Institution	**National Foundation For Libyan Inventors**
Description EN	The device was manufactured in 1993 and used by the Arab Company for Geophysical Services; it also has been re-developed in 2014. The device mechanism 1. It detects the cable that connects the stations used in the process of drilling for oil. As this cable has the six wires transmit information to the imaging machine, The (C1.G1) device measured the strength of the wires, the humidity and identifies any cutting in the cables. It also has the capacity to detect one thousand cables per day at least! 2. The device detects the links that connect the Stations / Terminals and the geophones used in the drilling process. The link has five headers, four of them are installed with twelve geophones each and 3. the fifth header connects to the station's terminal. The device detects each header separately and measures the humidity and the weakness of the existing wiring in the links. The device can detect one thousand cables per day at least. 1. The device detects and tests each geophone separately by measuring its resistance which is predetermined according to the geophone's type. The device can test up to five thousand geophone per day 'which is a record figure' and assist the sustainability and continuity of the work without any delay; given that such faults may caused delay in the work for a few hours or days. This device is also a friend of the environment
Class no.	14. Other

Macedonia

MK.1.

Title **Eco-Friendly Electrostatic generator**

Authors Vasilija Miteva, Dragi Kamov

Institution **Yahya Kemal College**

Description EN

Our experiment is a new way of gaining electricity. The electricity is gained from water which has a constant flow. It passes through an electrolyzed and normal can (like it is bought from shop) and then lends in two downwards placed cans (where they transmit everything that they lose or gain during the flow). The cans are connected crosswise and the last two (which are placed downwards) are connected to metal balls by wires with crocodiles. The electricity gained can be seen and measured on the balls.

All of this can be used for getting an eco-friendly electrostatic generator, so that the voltage achieved by this device can be in range of kilovolts.

Effects of using eco-friendly generator are very practical and applicable, which means that this system can be installed in every house. In order this system to become a part of our daily life a special and not complicated mechanism should be made in our houses. We must mention that the installation for such a thing in our homes is also cheaper. We have calculated how much the electricity from city's net costs and it is from 18% to 59% cheaper.

This project has a big advantage because it saves the environment and people's money!

Class no. **Innovative Research**

MK.2.

Title **The Importance of an Effective Purification of the Drinking Water – The Problem of Water Pollution In Skopje, Republic of Macedonia**

Authors Elena Doneva, Eva Zaeva

Institution **Yahya Kemal College**

Description EN

Republic of Macedonia has one of the safest forms of water supply. However, often we are able to obtain data on the quality and safety of drinking water that comes from the tap, and it is in part because the quality of drinking water depends on the conditions of surface and groundwater used for water supply of settlements and their treatment.

Regarding the importance of water supply for the Macedonian citizens, we will try a little bit to answer some questions and give what it means to see the meaning of quality drinking water, while answering some of the main important questions like:

- *What are the dangerous substances that can be found in drinking water?*
- *How the management system functions in order to prepare a safe, clean drinking water in one of the biggest cities in Macedonia, like Skopje?*

Ministry of Agriculture, Forestry and Water Management, Directorate for Water in According to the Law on Water Management is responsible for the issuance of water management acts to supply water settlements in Republic of Macedonia.

Regarding this, the Criteria for evaluating the sustainable management of water supply systems and wastewater should include environmental, social and economic aspects of utility infrastructure.

These aspects should provide the level of services to all citizens without compromising community integrity of the natural, constructed and social system of which the provision of these services depends. Drinking water from the supply systems and wastewater cleaning are provided by basic services enabling the economic and social development and at the same time have an impact in a way that society treats water as a resource for further development.

Class no. **Innovative Research**

MK.3.

Title	**The air pollution in Skopje, Macedonia alternative measures for protection**
Authors	Elena Doneva, Eva Zaeva
Institution	**Yahya Kemal College**
Description EN	Long time ago man lived in harmony with nature and its laws.Modestly exploit natural resources without violating the balance in nature.But with the development of civilization,the rise of population,the emergence of craftmenship and the industrial revolution,human conquer nature,achieving unprecedented technological and economil progress,but also the intakes on the enviroment have become increasengly larger-cutting and deforestation,construction of water supply, mining, roads, ports,the production and consumption of diffrent energy raw materials,the use of chemicals etc...have led to illegal irresponsibility regarding destruction of natural resources,enviromental pollution and disturbance of balance in nature.Mankind for the first time in its long history face the fact that the country's resources are not inechaustible,and its ecological capacity is not infinite.This research is expected to contribute mostly to finding the most effective and efficient alternative measures that not only can reduce air pollution,but also to make the city of Skopje clean and green for the future generations
Class no.	**Innovative Research**

MK.4.

Title	**Innovative way of cooling with the system of solar absorption**
Authors	Ljubica Pop-Trajkova
Institution	**High School "Jane Sandanski"**
Description EN	Developing ideas opens a new spectrum. One where we notice that our own well-being shouldn't be a priority but our consent to be raised for a much wider world. Combining the recently popularized solar systems and the well-known absorption reaction I have come out with something that could change the way we cool our homes and use the sun as an energy source. It is upon us to make a change. Mending the things we know can guide us to new resolutions. The experiment is about comparing and combining the ammonia-water and water-lithium-bromide absorption systems. The heat needed for the systems will be taken from the sun. Combining the old absorption systems driven by the heat obtained from the sun we can create a new way for us to cool our homes and offices

and keep our food unspoiled. This would include a detailed description on the ways of implanting the systems in use.
This project's main focus isn't about gathering data, but to use that data in order to invent something new that could revolutionize our lives. In order to change the world, creativity and experience are mandatory.
Overall this is an ecological project that puts simple things in use thus gaining high benefits. It is an environmentally friendly system and way because it is closed, it only exchanges heat, it is safe and what is most important it uses the heat of our sun.

Class no. **Innovative Research**

MK.5.

Title Reduction of Temperature

Authors Vasilija Miteva, Boris Mitev

Institution **Yahya Kemal College**

Description EN

Our purpose is to save the Earth from global warming. We all know that the biggest causers of global warming are the greenhouse gasses and the most present one is the carbon dioxide (it mostly contribute to global warming). So far we have made many researches and we have found a gas that reduces the temperature when reacting with carbon dioxid.
We made two prototypes of a carbon dioxide atmosphere in two bottles. After that we put calcium hydroxide in one of the bottles and we put thermometers with stoppers at the top of the bottle. Temperatures are measured on same time intervals. The final result was: the bottle with the extra substance had 4 celsius degrees lower temperature then the other one. So, our project is concerned with a new way for solving one of the biggest problems on Earth. Later we have made a research how this substance could be implied in cars and we have find a real practice with our project. The substance can be put in a filter placed in the outermost part of the cars where the gasses are released. The temperature will be lowered and some greenhouse gasses will lose the ability to cause harmfull effects.

Class no. **Innovative Research**

MK.6.

Title **Shirt Heated By Breath**

Authors Furkan Ejupi, Besar İbraimi

Institution **Yahya Kemal College**

Description EN

This invention is using our own breath to make the body warmer in cold weather or at cold places. We designed a shirt covered by small pipes. Through these pipes breath will pass.

Normal Breath temperature is 34.5^0 and body temperature is around 36.6^0. So when weather is so cold like freezing weather below 0 degree temperature difference is so high between the outside temperature and body temperature. This shirt will be very useful in cold weathers or especially for mountain climbers, doing sport in cold places or living in cold places. It is also useful while sleeping in cold places or in case of emergency like being inside the snowslide. You do not need any energy resource just you need to be alive and keep going breathing. We also tried this shirt in winter it really works. With professional design and material it can be better.

Class no. **Innovative Research**

MK.7.

Title **The Most Economic Font**

Authors Selaudin Agoli, Agni Ramadani, Ardian İbishi

Institution **Yahya Kemal College**

Description EN

This research is about choosing the best font for saving money in two ways from the ink and from the paper. We did not try to make new font but we checked the most common fonts that people are using which are coming ready in office programs and windows operating systems. So just changing fonts without spending any money you can save money.

With same methods we tried to find the most economic language to express your thoughts.

Class no. **Innovative Research**

Malaysia

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

MY.1.

Title	**Low temperature green composite solder for electronic packaging application**
Authors	Ervina Efzan Mhd Noor, Nur Faziera Mhd Nasir
Institution	**MULTIMEDIA UNIVERSITY**
Patent no.	pending
Description EN	A new low temperature In-based lead free solder (non-toxic) has been developed for electronic application. In-Zn-Ga solder alloy was investigated as a potential candidate replacing Sn-Ag-Cu(SAC). Differential Scanning Calorimetry (DSC) testing shows that this solder alloy gives low melting, 141.31°C compared SAC, 230°C. The addition of Ga in In-Zn solder alloy lowered the melting temperature compared to SAC and Sn-37Pb. The density of In-Zn-Ga solder alloy is 6.801g/cm^3, lower than SAC and Sn-37Pb. The wettability of this solder is good and shows the higher in spreading area and lower in contact angle compared with SAC. Wettability is one the important test for solder alloy.
Class no.	1. Environment - Pollution Control

MY.2.

Title	**GeoDeco**
Authors	Prof. Ir. Dr. Muhd Fadhil Nuruddin, Amir Fauzi, Prof. Dr. Nasir Shafiq, AP. Dr. Bashar S. Mohammed, Ahmad B.Malkawi
Institution	**UNIVERSITI TEKNOLOGI PETRONAS**
Patent no.	PI 2015701608
Description EN	Power plants globally utilize coal to generate energy

could produce million tons of coal ash. The ash has been used as a cement replacement material for concrete construction but its utilization rate is very small. To further utilize the ash, it can be used as a based material for geopolymer system. Decorative products made of cement needs proper and sufficient curing to allow for cement to hydrate. It may take 2 to 3 days before the product can be sent to the market.

Problems faced are:

- Costly disposal of ash
- High CO_2 emission when using cement. One ton of cement produced emits one ton of CO_2 to the environment
- Long curing period for cement products

GeoDeco is a geopolymer system that can be as hard and durable as concrete. Geopolymer is made of source material (fly ash) and alkaline solution (sodium silicate and sodium hydroxide)

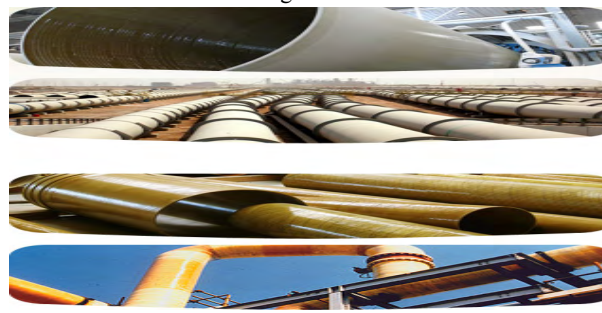
Class no. 7. Buildings and Materials

MY.3.

Title	**Geopipe: A Novel GRE Pipe Based Geopolymer Filler for High Performance Pipeline**
Authors	Mohammad Firdaus Abu Hashim, Kamarudin Hussin, Che Mohd Ruzaidi Ghazali, Mohd Mustafa Al-Bakri Abdullah, Yusrina Mat Daud, Mohammed binhussain
Institution	**Center of Excellence Geopolymer & Green Technology/Universiti Malaysia Perlis (UniMAP)**
Patent no.	PI 2014701034
Description EN	Geopipe: A Novel GRE Pipe based geopolymer filler offers renewable of geopolymeric materials as filler in plastic piping application for residential, commercial and industrial structures. This new form of geopolymer materials with cement characteristics proposed several economic benefit, durability, good mechanical

properties, less water absorption, and fire and heat resistance. Continuous glass fibers were impregnated (“wet-out”) with geopolymeric plastic resin via filament winding technique. This product also can help to reduce global warming due to the geopolymerization process.

Class no. 7. Buildings and Materials



MY.4.

Title	**QUAT SERUNDING**
Authors	**MOHAMED ZARIMI MOHAMED ZAHIDI**
Institution	**FX GROUP SDN. BHD**
Patent no.	-
Description EN	Premier Ready To Eat Meat Floss (Serunding) with Black Cumin Seeds. "Serunding" is described as a heritage food of a meat floss in Malay cuisine. This food is best eaten with the main dishes (Rice) in Malay cuisine. It is originated in Kelantan, Malaysia. Ever since, Serunding is a well known delicacies as a tourist attraction in Kelantan, one of the states in Malaysia.

Class no. 3. Agriculture and Food Industry

MY.5.

Title	**QUAT VIRGIN COCONUT OIL (VCO) & QUAT ADDICT AWAY**
Authors	**MOHAMED ZARIMI MOHAMED ZAHIDI & AZZAH AMRAN**
Institution	**FX GROUP SDN. BHD**
Patent no.	-
Description EN	**Quat VCO** is cold pressed from selected fresh coconut without chemicals. Its purest form of coconut oil zero turbidity and the appearance is as clear as water. It has small molecules easily absorbed by the skin and hair. Mint and honey has always been used as a traditional remedy throughout the world. Using mint leaves as an addiction suppressant has been a traditional yet illusive concoction in rural Kelantan. **Quat AddictAway** has used modern techniques and science to perfect the production of an all-natural addiction suppressant for smokers, alcoholics and even drug abuse.
Class no.	3. Agriculture and Food Industry

MY.6.

Title	**NIFTY CLEANER KIT**
Authors	SARIPAH BT EMBONG, AFRINA MARDHIAH BT AB MANAN, NUR ATHIRAH BT NOOR ASA'ARI, HANIE HAYATIE BT HASHIM
Institution	**SM IMTIAZ YT KUALA TERENGGANU**
Patent no.	-
Description EN	Nifty Cleaner Kit consists of Swener, Trimop, D'sser,

Bage, Husbric, Fan Stick, Holder together with organic liquid (Novely). This Kit can be used to clean various types of surfaces such as glass windows, grills, sliding door, furniture, fan blades, walls, naco window and whiteboard. Most of our products are made of recycled waste materials.

'Swener' is used to remove the spider web and it is made from trimmer line and remnants fabric. 'Trimop' is to clean the glass windows with grill and also fan blades.

'D'sser' contains 'Sucapper' which is made from sugarcane bagasse to polish the surface after cleaning it and also can be used to clean the whiteboard. 'Bage' is a tool that is made from sugarcane bagasse and remnants fabric to clean the flat surfaces such as furniture, sliding door, wall and glass windows.

'Husbric' contains coconut husk and remnants fabric to remove the stubborn dirt on every surfaces and the remnant fabrics will make the surfaces become clean and smooth like usual. 'Fan Stick' is a tool to clean the casing and blade of the stand fan. 'Holder' is an adjustable rod. It can help the users to clean the high area.

Nifty Cleaner Kit is an eco-friendly product as it is equipped with organic liquid-Novely that only contains the natural chemical from plants. Our target user are cleaner staff at schools, offices, shops, hospitals, mosque, factories, students, teachers and housewives.

Class no. 4. Medicine - Health Care - Cosmetics

MY.7.

Title **DR DUSTER WITH GREEN CLEANER**

Authors SARIPAH BT EMBONG, AFRINA MARDHIAH BT AB MANAN, NUR ATHIRAH BT NOOR ASA'ARI, HANIE HAYATIE BT HASHIM

Institution **SM IMTIAZ YT KUALA TERENGGANU**

Patent no. -

Description EN

Our product is called Dr Duster With Green Cleaner. Dr is a short form for two letter 'D' and 'R'. 'D' means double while 'R' stands for 'Reuse' 'Reduce' and 'Recycle'. Dr Duster is a duster that combined together

with natural liquid.

Dr Duster With Green Cleaner is an eco-friendly product because it contains natural substances. We would like to avoid people from using chemical substances such as ethanol and thinner because these substances are very harmful to human especially through continuous inhalation.

It is easy to handle and safe to be used. Another significant for Dr Duster With Green Cleaner is we use coconut husk for erasing the dirt. Furthermore, we use the recycled material as the body of the duster and handling part. In addition, the colour of the body is white so it can maintain the temperature inside the duster to avoid the liquid from evaporated.

Most of dirt comes from over-used dusters so we had create a duster that can be disposable. We use coconut husk so that it can be disposed and making in use of recycle waste material.

We found that the extract of Aloe Vera can be used to clean whiteboard markers, smudgy inks and permanent markers on smooth surfaces such as whiteboards. After all, this product is very safe and eco-friendly.

Class no. 4. Medicine - Health Care - Cosmetics

MY.8.

Title **DRY LEAVES FIBREBOARD AS A NEW SOLUTION OF FURNITURE MATERIAL**

Authors MOHAMAD HAMIDUDDIN B HAMDAN, SUGGAVANISH A/L MUTHU

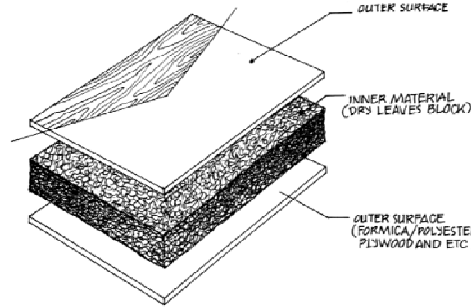
Institution **KLUANG HIGH SCHOOL, MALAYSIA**

Patent no. NO

Description EN Dry Leaf Fiberboard is a processed product for various

uses, specifically in furniture-making. The problems we have analyzed regarding to the available fiberboard in the market is the raw material, typically sawdust is generally scarce and wood pulps are costly to obtain. We came out with a new recipe of fiberboard – dry leaves as the main component. With the use of dry leaves that often viewed as useless expendables, we managed to concoct a solution to a low-cost fiberboard. Various grades of density of Dry Leaf Fiberboard ranging from Low Density Fiberboard to High Density Fiberboard are made available for specific uses.

Class no. 7. Building and Materials



MY.9.

Title **3T PANEL FOR TECHNICAL DRAWING, TRACING & TEACHING TOOL**

Authors MOHAMAD HAMIDUDDIN B HAMDAN, MOHAMAD AMIR HAKIM B HAMDAN

Institution **KLUANG HIGH SCHOOL, MALAYSIA**

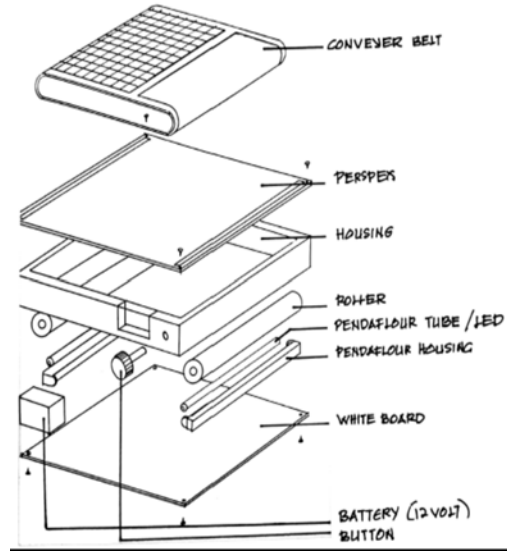
Patent no. NO

Description EN

3T panel is a technical, tracing and teaching tool. 3T Panel is a sketch –based tool for drawing oblique and isometric drawings, also orthographic projections. The motivation behind developing is to explore the main challenges faced when developing a sketch-based modelling tool. The problem statement is the lack of convenience and unintelligible errors made in conventional method for producing technical drawings. Our research's long-team goal is to assist technical student and professional to have a user friendly and convenient method of making drawings that comply

with the standards

Class no. 14. Other



MY.10.

Title **THE POTENTIAL OF *Elaies guineensis* OIL PALM BIOMASS AS A MEDIUM TO GENERATE ELECTRICAL ENERGY**

Authors Samuel Sumok Albert Gundie, Frederick Laga Narang, Venessa Leyma Jawa and Shirley Joshua

Institution **MRSM BETONG SARAWAK**
(MARA Junior Science College of Betong Sarawak)

Patent no. -

Description EN

Empty Fruit Bunch (EFB) and Palm Kernel Shell (PKS) mainly contribute the total of 27.5% from 90% biomass of palm oil agriculture. This study was done to optimize the use of EFB and PKS mineral as the medium to generate electrical energy. The samples were taken from SAPOMILL SDN. BHD. and turned into ash by a specific treatment. The ash than undergo physical observation, followed by a few physical and chemical evaluation such as solubility in water, alkalinity, electrical conductivity, the ability to generate electricity and the sustainability. The method used has successfully obtained 5.82% and 1.06% of ash from EFB and PKS

respectively. More than 50% of EFB ash is soluble in water while only 4% - 20% for PKS ash. The ash solutions showed an alkaline properties with the pH 10.9 for EFB while pH 9.4 for PKS and the ability to conduct electricity in the present of free moving ion particularly K^+, Ca^{2+} and Mg^{2+}. Different concentration of EFB and PKS ash solution ranges from 5.0 gdm^{-3} to 25.0 gdm^{-3} does not affect the generation of 0.20V and 0.10V of electrical energy. With a single voltaic cell the energy generated by EFB electrolyte can sustained for 4 days while a gradual descend showed by the PKS. A serial number of 0.0008M EFB electrolyte voltaic cell shows a better significant difference compared to PKS electrolyte and other prepared solutions using several manipulated electrodes mainly Mg//C. This study has obtained the potential of EFB and PKS to generate electricity and also promoted the biomass from waste to wealth.

Class no. 2. Energy and sustainable development

MY.11.

Title **Multifuctional Eco-RubFoam From Rubber Wastes**

Authors Professor Dr Hanafi Ismail, Indrajith Rathnayake and Nabil Hayeemasae

Institution **Universiti Sains Malaysia**

Patent no. Patent

Description EN

The annual production of rubber was 18 million tonnes in 2002. After 13 years of time (2015) it has been increased up to 30 million tonnes. Most of these rubber products are disposable and can cause a big impact on the environment.

The main source of rubber waste is disposable latex products such as gloves, catheters, condoms, latex threads etc, discarded rubber products, such as: discarded tyres, rubber pipes, rubber belts, rubber shoes, edge scraps and waste products which are produced in rubber processes.

Using our novel technology and low cost, all rubber wastes can be recycled to produce MultiFunctional Eco-Foam i.e. sound absorbance, fire retardant, and anti-microbial engineering foam products .

Class no. 1. Environment - Pollution Control

MY.12.

Title	**Geo-Ceramics**
Authors	Romisuhani Ahmad, Kamarudin Hussin, Nur Ain Jaya, Mohd Mustafa Al Bakri Abdullah, Mohammad Binhussain
Institution	**Universiti Malaysia Perlis (UniMAP)**
Patent no.	US 20110290153
Description EN	Ceramic composites have received wide attention because it has a number of unique properties such as high melting point, high elastic modulus, high hardness and good abrasiaon resistance. The motivation to develop Kaolin Geoceramics was to overcome the problems associated with the conventional technical ceramics like alumina, silicon carbide, aluminum nitride or zirconia- they fracture easily under mechanical or thermo-mechanical loads because of cracks initiated by small defects or scratches. But on this material kaolinite geopolymer based were used as a precursor. Geopolymer technology which is still new, activate the aluminosilicate materials to become compacted network like cement binder was used for production of this novel ceramics. Geopolymers have advantage to be used in various fields because of their properties are better than those of ceramics and cement-based materials. Due to their excellent physical and mechanical properties, geopolymer ceramic composites are expected to emerge as a potential robust material that can meet the demanding requirements in various material applications.

Class no. 7. Buildings and Materials

MY.13.

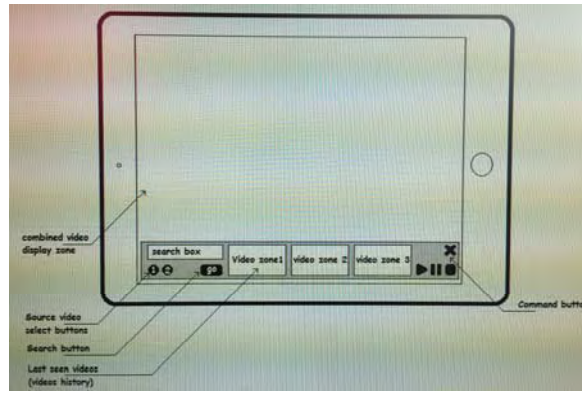
Title	**I-EBN: A Portable and Handy Edible Bird Nest Instant Drink**
Authors	Zainab Hamzah, Othman Hashim
Institution	**University Malaysia Perlis**
Patent no.	PT 4627
Description EN	Edible Bird Nest (EBN) is a valuable natural product. Also known as 'Caviar of the East', it is an expensive edible food product derived from salivary secretion of swiftlets (*Aerodamus* sp.) species. People consumed EBN products for health, power and prestige. EBN composition of high protein, carbohydrate and many bioactive compounds make it a highly valued food giving many health benefits such as strengthening lungs and kidneys, immune system, enhances metabolism, improves skin complexion and maintains youth and beauty. The traditional tedious harvesting and cleaning process is one of the factors that EBN products are highly priced. New research is suggesting the use of bio-enzymes and centrifugation method for a rapid and efficient cleaning process of raw unclean EBN. Traditionally, EBN is consumed as a soup cooked with rock sugar as a gastronomic health and wellness delicacy known as 'bird's nest soup'. Currently, clean EBN is marketed in various packaging including boxes, bottles and jars which are unfriendly to consumers as they can be heavy, fragile and less portable. However, EBN can also be packaged as an instant drink. This EBN product is invented for the preparation of ready-made instant EBN drink sweetened with rock sugar packed in convenient satchets. This product is handy and portable and can be served with any kind of beverages or just plain water. Besides rock sugar, stevia leaves can be used as an optional sweetener for diabetic consumers.
Class no.	3. Agriculture and Food Industry

Marocco

Represented by
Union of Inventors

MA.1.

Title	**Multiview Screen**
Authors	Majid EL BOUAZZAOUI
Institution	**Union of Inventors**
Patent no.	Patent Application No : PCT/MA14/000051
Description EN	This device will help people to watch different video sources simultaneously on the same screen, where each person can watch one video source depending on his point of view in relation to this screen. This device can be used in existing video displays and don't require any special wearable glasses or any other viewing accessories. Applications: TV screen, iPad, Billboard advertising, Concert screens, etc.
Class no.	10. Information Technology and Communication



Moldova

Botanical Garden of Academy of Science Republic Moldova

MD.1.

Title	**VARIETIES OF BERRY PLANTS ALECSANDRINA**
Authors	**Alexei PALANCEAN, Elisaveta ONICA, Ion ROȘCA**
Institution	BOTANICAL GARDEN (INSTITUTE) OF THE ACADEMY OF SCIENCES OF MOLDOVA
Patent no.	**Pending 2016.**
Description EN	***ARONIA MELANOCARPA* (MICHX) ELLIOT 'ALECSANDRINA'** The variety **"Alexandrina"** is a 1-1.5 m tall shrub, with glabrous stems and simple leaves that turn red in autumn. The leaves are elliptic or ovate to oblong oblanceolate, sharply acuminate or obtuse. Their length varies between 7 and 9 cm. On the upper side, the leaves are green and glossy, and on the lower side – lighter green, glabrous. Its vegetative stage starts in early spring (March-April), depending on the climate conditions of Moldova. The shoots start growing when buds open and end – in late July or early August. The flowers are white, 1.5 cm in diameter, grouped by 5-25 in glabrous, corymb inflorescences. It blooms in April-May.
Class no.	3. Agriculture and Food Industry

MD.2.

Title	**VARIETIES OF BERRY PLANTS Elisa**
Authors	**Alexei PALANCEAN, Elisaveta ONICA, Ion ROȘCA**
Institution	BOTANICAL GARDEN (INSTITUTE) OF THE ACADEMY OF SCIENCES OF MOLDOVA
Patent no.	**Pending 2016.**
Description EN	*HIPPOPHAE RHAMNOIDES* L. **'ELISA'** The variety **"Elisa"** is a 3-4 m tall shrub with medium compact crown. The annual growth of stalks reached 8-10 cm, under drought conditions, and 10-15 cm, under favorable conditions. The bark of the branches is brownish and the fruit stalks have few thorns. The leaves are linear lanceolate, dark green on the upper

side and with a silver hue on the lower side. They are 60-65 mm long and 5-7 mm wide. The petiole is 2-3 mm long. The flower buds develop on second-year stalks, near the top of the crown. There are about 37-45 fruits on a 10 cm long, annual stalk. The weight 100 fresh seeds is 1.5 g. The fresh seeds constitute about 9% of the mass of a fruit; the remaining 91% are fleshy coating. The seeds are 5 mm long and 3 mm wide. The fruits should be picked by hand, undamaged, not crushed and not wetted during harvesting. 1 kg of fruits contains 80-90 g of seeds. The fruits contain 93.2 mg/100 g ascorbic acid, 0.862 mg% flavonoids and 2.070% tannins.

Class no. 3. Agriculture and Food Industry

MD.3.

Title **VARIETIES OF BERRY PLANTS Regina**

Authors **Alexei PALANCEAN, Elisaveta ONICA, Ion ROȘCA**

Institution BOTANICAL GARDEN (INSTITUTE) OF THE ACADEMY OF SCIENCES OF MOLDOVA

Patent no. **Pending 2016.**

Description EN

HIPPOPHAE RHAMNOIDES L. **'REGINA'**

The variety **"Regina"** is a 5-6 m tall shrub with compact crown. The annual growth of stalks reached 8-10 cm, under drought conditions, and 20-25 cm, under favorable conditions. The leaves are green on the upper side and with a silver hue on the lower side. They are 40-60 mm long and 3-4 mm wide. The petiole is 2-3 mm. The flower buds develop on second-year stalks, near the top of the crown. The stalks of mature plants start growing rapidly after the end of the flowering stage and continue till August, and descendants in the first year of life grow rapidly till late autumn. The length of the fruit peduncle varies between 1 and 3 mm. The fruits are oval, 8-9 mm in diameter, orange and have medium sour taste. They mature at the end of August and remain on the plant until October. There are about 35-50 fruits on a 10 cm long, annual stalk. The weight 100 fresh fruits is 16-20 g, depending on the climatic conditions. The weight of 100 fresh seeds is of 1.3 g. The fresh seeds constitute about 8% of the mass of a fruit; the remaining 92% are fleshy coating. 1 kg of fruits contains 80-90 g of seeds. The fruits contain 99.0 mg/100 g ascorbic acid, 0.685

mg% flavonoids and 1.650% tannins.

Class no. 3. Agriculture and Food Industry

MD.4.

Title **VARIETIES OF ORNAMENTAL PLANTS Catrin**

Authors PALANCEAN ALEXEI, ROŞCA ION

Institution BOTANICAL GARDEN (INSTITUTE) OF THE ACADEMY OF SCIENCES OF MOLDOVA

Patent no. Patent application No. 327/2016.04.01.

Description EN

***Sorbus* x *hybrida* L. 'CATRIN'**

Description of the variety. Leaf wide ovate to oblong ovate, 7-14 pairs of ribs inside tomentous, petiole of 1.5 - 3 cm. Inflorescence 6-10 cm, flowers approx. 1cm. Globular fruit 1-1.5 cm., Red. Very decorative in foliage, fruit and port, widely globular crown. Resistant to frost, drought and urban conditions. Light and it can be grown in semidarkness. The arrangement of green spaces as isolated specimens or in groups also excellent utility tree for streets and roads.

Class no. 3. Agriculture and Food Industry

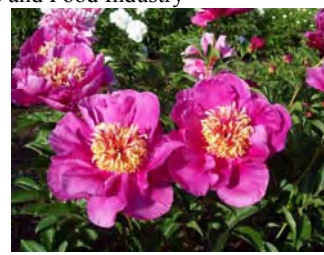
MD.5.

Title	**Varieties of Ornamental Plants Melancolie**
Authors	**Manole Svetlana, Sîrbu Tatiana**
Institution	BOTANICAL GARDEN (INSTITUTE) OF THE ACADEMY OF SCIENCES OF MOLDOVA
Patent no.	**20140026, y. 2014**
Description EN	***Hemerocallis x hybrida* 'MELANCOLIE'** **The variety was obtained in the** Botanical Garden (Institute) of the Academy of Sciences of Moldova by hybridizing **the varieties** ♀ Angel Mine X ♂ Chiper Chery. **Description of the variety.** Rhizome perennial plant with abundant radical foliage: linear, light green leaves about 50 cm long. It grows about 80 cm tall in the flowering stage. It has simple funnel-shaped flowers, wide open, obtuse petal lobes. The diameter of the flower is about 17 cm. Internal and external petals are peachy at the base and golden in the center. Petals have wavy margins. The inflorescence has 2-4 branches, each with 3 flowers. 5-7 year old plants form 20 flower stalks. The plants have fragrant flowers. The flowering stage lasts from June till July. It lasts about 55 days. The variety can grow in sunny and half-shaded areas. It is undemanding towards soil, but prefers rich, well-irrigated substrate. The plants are very resistant to pathogens and pests. **Use:** for cut flowers in various floral decorations, in landscape planning: flower beds, mixed flower beds, solitary groups, on the banks of water basins; can be promoted as a container plant.
Class no.	3. Agriculture and Food Industry

MD.6.

Title	**VARIETIES OF ORNAMENTAL PLANTS Traian**
Authors	**Sîrbu Tatiana, Sfeclă Irina**
Institution	BOTANICAL GARDEN (INSTITUTE) OF THE ACADEMY OF SCIENCES OF MOLDOVA

Patent no.	**It was registered at the State Agency on Intellectual Property of the Republic of Moldova, in order to be patented: v 20140028, y. 2014**
Description EN	***Paeonia lactiflora* 'TRAIAN'** The variety was obtained in the Botanical Garden (I) of the Academy of Sciences of Moldova by hybridizing the varieties ♀ *'Westerner.'* x ♂*'Felix Suprem'* **Description of the variety.** Horticultural group with *japanese* form of flower. Rhizome perennial plant. Compact, vigorous bushes which grow 90-120 cm tall. Flowers, about 19 cm in diameter, have a fine aroma. During the flowering stage, petals change their color in different shades of purple. 5-7 year old plants can form 20-25 flower stalks. It flowers in the 2nd-3rd ten day period of May, for 12 days. Leaves are glossy, numerous, dark green; in early autumn – reddish. The variety grows well only in sunny areas. It prefers rich, well drained soil. It isn't affected by drought and frost, it is resistant to pathogens and pests. **Use:** for cut flowers, floral arrangements, in landscape planning: flower beds, mixed flower beds, solitary groups in parks and gardens.
Class no.	3. Agriculture and Food Industry



MD.7.

Title	**Medicinal, Aromatic And Energy Plants - Lavinia**
Authors	**Chisnicean Lilia, Ciocârlan Nina, Colţun Maricica**
Institution	BOTANICAL GARDEN (INSTITUTE) OF THE ACADEMY OF SCIENCES OF MOLDOVA
Patent no.	**Pending No. 193, 31.08.2015**
Description EN	The variety: „*Lavinie de grădină"* ("Garden Lavinia") of lavender, *Lavandula angustifolia* Mill Description: The variety „*Lavinie de grădină"* ("Garden Lavinia") of lavender has been created in the Botanical Garden (Institute) of the ASM, by selection of local and French varieties. It was registered in the Catalogue of Plant Varieties of the Republic of Moldova in 2014. It is a crop with multiple utility: in perfumery, cosmetology, medicine, beekeeping

(meliferous plant) and as ornamental plant.
Productivity of the variety: raw material – 7-8 t/ha, volatile oil – 107 kg/ha, the growing season lasts 99-110 days until raw material harvest. From every hectare of lavender, 150-200 kg of flavoured honey is obtained.
The volatile oil has a very rich chemical composition: ethyl linalool, geraniol, free linalool, linalool valerate, boreol, coumarin, bitter substances, herniarin, cineol, nerol, furfural, alpha pinene, caryophyllene. The most important component of the essential oil is an aliphatic alcohol, linalool (up to 60%) and acetic acid. It also contains bitter substances, tannins, cineol, mineral substances.
Pharmacological Action: antiseptic, disinfectant, antispasmodic, healing, soothing, insecticide, flavour, diuretic, carminative, sedative, cholagogue, stimulant, analgesic, combats increased intracranial pressure, stimulates appetite, increases bile secretion, relieves abdominal pain, antispasmodic, reduces psychological sensitivity, combats panic attacks, combats hair loss, repels insects.

Class no. 3. Agriculture and Food Industry

MD.8.

Title **Medicinal, Aromatic And Energy Plants - Solar**

Authors **Alexandru TELEUȚĂ, Victor ȚÎȚEI**
Institution BOTANICAL GARDEN (INSTITUTE) OF THE ACADEMY OF SCIENCES OF MOLDOVA

Patent no. **It was registered at the State Agency on Intellectual Property of the Republic of Moldova, in order to be patented: No 315 /2016.03.01**

Description EN The variety "*SOLAR"* of Jerusalem artichoke, *Helianthus tuberosus* L.
Description: The variety "*SOLAR"* has been created, in the Botanical Garden (Institute) of the ASM, by clonal selection in populations of tall plants (3-5 m). This

variety was registered in the Catalogue of Plant Varieties of the Republic of Moldova in 2014. It is a crop with multiple utility: food, medicine, fodder, biomass for energy production, nectar for beekeeping. The tubers (36-43 t/ha) can be used as: fresh food, raw material for pharmaceutical industry (inulin), fodder, bioethanol.

Natural fodder: 124.1-153.6 t/ha annually, dry matter content: 25-28%. Biochemical composition of the dry matter: 9.32% of protein, 21.29% of cellulose, 58.71% of nitrogen-free extractive substances, 8.75% of minerals, 1.93% of fat. It can be given to animals fresh or as silage.

Production of renewable energy: biogas – 370 m^3/t dry matter. The potential of biogas production is 16 000 m^3/ha, equivalent to 7.5 thousand m^3/ha of natural gas.

Solid biofuel (briquettes and pellets) with gross calorific value 18.5-18.8 MJ/kg of dry matter or 17.2-17.4 MJ/kg net calorific value can be obtained. Bulk density of the dry matter constitutes 268-288 kg/m^3, density of the briquettes – 710-754 kg/m^3, ash content – 2.3- 3.5%, bioethanol – 3850 l/ha.

As a late-flowering melliferous plant, it provides *30-40 kg/ha of honey*.

Class no. 3. Agriculture and Food Industry

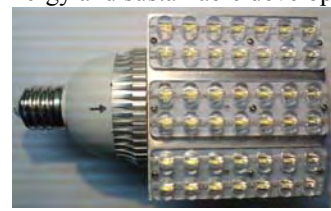
Technical University of Moldova

MD.9.

Title	**Device for mobilizing the cervical region**
Authors	**Dorogan Valerian, Vieru Tatiana, Secrieru Vitalie, Vieru Stanislav, Munteanu Eugen, Ciobanu Gheorghe, Groppa Stanialav, Duca Victoria, Danail Serghei, Pîrţac Ion.**
Institution	Micro-Optoelectronics Laboratory / Technical University of Moldova National Scientific-Practical Center of Emergency Medicine
Patent no.	Industrial Models: Nr. 1611, from 2015.01.16; Nr. 1612, from 2015.01.16; Nr. 1614 from 2015.01.15.
Description EN	The device comprises a programmable electronic control unit based on a microcontroller with the possibility to store and set the operating parameters (angles of rotation, cycle time, number of cycles, number of procedures, etc.). The parameters displayed on the LCD can be selected with buttons. The start and end of the procedure is indicated by audio and visual signals. The mechanical part consists of a high precision stepper motor. The speed and rotation angle can be programmed. The mechanism ensures the turning-back axis, which is connected to the mobile platform. The procedure can be urgently stopped by patient or medical staff. Applications: Medicine, Kinetotherapy.
Class no.	4. Medicine - Health Care - Cosmetics

MD.10.

Title	**Lamp for outdoor lighting based on LED**
Authors	**Dorogan Valerian, Vieru Tatiana, Secrieru Vitalie, Vieru Stanislav, Munteanu Eugen, Dorogan Andrei, Zaporojan Sergiu.**
Institution	**Micro-Optoelectronics Laboratory / Technical University of Moldova**
Patent no.	Patent pending
Description EN	The functionality of the street lamp is based on a power supply block, which permits to form the supply voltage without using high frequency transformers. The stabilization of work current assures a uniform spreading of load and optic flow homogenization. The small number of electronic components allows increasing reliability and optimizing device gauges. Applications: Energetics.
Class no.	2. Energy and sustainable development



MD.11.

Title	**Polarization sensors based on anisotropic crystals**
Authors	Syrbu N., Dorogan A., Stamov I., Dorogan V.
Institution	**Technical University of Moldova**
Patent no.	Patent pending
Description EN	The research presents the azimuthal dependence of optical absorption effects in anisotropic crystals $ZnAs_2$ and the potential for any optical device sensitive to linearly polarized optical radiation, based on two Schottky diodes differentially connected. The detection of polarization plane is done by comparing the different photocurrents generated in the structure. The device enables calibration and determination of polarization plane of the optical radiation in the IR domain with high precision.
Class no.	10: Information Technology and Communication 5: Industrial and Laboratory Equipment

MD.12.

Title	**Optical devices based on polarized light filters**
Authors	Syrbu N., Dorogan A., Stamov I., Dorogan V.
Institution	**Technical University of Moldova**
Patent no.	Patent pending
Description EN	The paper presents several concepts of devices based on anisotropic crystals, which permit to separate polarized light signals. The devices are elaborated using semiconductor waveguides and $ZnAs_2$ layers, which can filter the polarization plane of optical signals and can operate as switches or splitters of polarized light. These prototypes assure the interleaving/deinterleaving operations used in modern optic communication systems.
Class no.	10: Information Technology and Communication

MD.13.

Title	**Functional apparel products for premature babies**
Authors	Victoria Danila, Marcela Irovan, Stela Balan
Institution	**Technical University of Moldova**
Patent no.	Patent application No. F20160006/2016
Description EN	Functional apparel products for premature babies intended for putting the child in the incubator. The products are made of natural materials featuring constructive solutions. These are tailored to technological, physiological and anthropo-morphological characteristics of the premature baby, where the proper care requirements in pediatrics and neonatology are department-compatible medical equipment in neonatal medicine. Products can be easily and quickly dressed and undressed without manipulations that would traumatize the child in the incubator. Functional apparel products for premature babies are adapted for carrying and for treatment in incubator, where will be all necessary elements for early childcare, contributing to increased survival of premature babies. Constructive solutions and original technologies that are proposed provides thermal comfort and good hygiene for the children preterm correspondence anthropometric both for static positions of the child, and for its dynamics. The system of winding allows attaching medical devices needed and reduce time dressing/undressing in medical emergencies.
Class no.	14. Other

Clothes for premature baby

MD.14.

Title **Installation and method for manufacturing a reeled article with $\overline{RC-0}$ type structure**

Authors Dimitrachi Sergiu, *Scientific leader (conducător ştiinţific)*; Dimitrachi Nicolae, *doctorand;* Iov Vasile, *doctorand*; Iliescu Grigore, *student*; Ciolan Alexandru, *student*.

Institution **Technical University of Moldova**

Patent no. MD 1010 Y 2016.02.29

Description EN

The invention relates to processes for making coiled pieces and can be used in construction of precision instruments, in radio electronics and computing techniques, in manufacturing of phase shift elements and elements for selective circuits.

That equipment performs a process of producing coiled pieces with a type of structure $\overline{RC-0}$ that provides manufacturing of microelements phase shifters type $\overline{RC-0}$ constructed on the base of resistive coaxial microcable.

The indirect measurement of the preseted phase shift of the signal with required frequency provided by a given process is a superior precision. The measurement error and the manufacturing of phase shifter element with the preseted signal phase shift with the given frequency, not exceed 0,01...0,05%.

The measuring of the phase shift occurs in dynamic mode, during the process of manufacturing of the element, without breaking both cover coaxial conductor and internal insulation of coaxial. The quality factor of this class of phase shifters greatly exceeds (a hundred times and more) quality factor of phase shifters also made based on coaxial microcable.

Their thermal stability is ~ $5 \cdot 10^{-6}$ 1/°C versus $5 \cdot 10^{-3}$ 1/°C proper for discrete phase shifters. The dimensions and the weight as compared to discrete phase shifters (on equal terms) are hundreds times smaller and more, because the capacity and the resistance of the phase shifter element are combined in a single phase shifter element with micrometer sizes.

Class no. 5. Industrial and laboratory equipments

MD.15.	
Title	Cycle of inventions " **TECHNIQUES FOR MEASURING IMPEDANCE COMPONENTS OF LIQUID PRODUCTS** "
Authors	**Nastas Vitalie, Dorogan Valerian, Nicolaev Pavel, Zaporojan Sergiu, Munteanu Eugen**
Institution	**Technical University of Moldova**
Patent no.	**MD 790Z, MD 818Z, MD 985Z**
Description EN	Cycle of inventions includes a method for measuring impedance components of the liquid products (milk, oil, alcohol, etc.) (MD 790Z), an impedance converter, used as reference element (MD 818Z) and an device for practical application of the method (MD 985Z). The proposed inventions provides automatic measurement of active and reactive components of the sample of fluid, the result is used for the liquid products quality control.
Class no.	5. Industrial and laboratory equipments

MD.16.	
Title	**Planetary Precesional transmission**
Authors	**Bostan I., Dulgheru V., Malcoci Iu., Bodnariuc I., Vaculenco M., Trifan N., Dicusară I., Ciobanu R.**
Institution	**Technical University of Moldova**
Patent no.	4354 MD
Description EN	The elaborated precessional transmission is a multi-couple gearing (up to 100% of teeth pairs are gearing simultaneously). Increased bearing capacity, constructive advantageous, very large kinematical possibilities (i=8...3600) have favored the elaboration of a large range of precessional reducers for various field.
Class no.	5. Industrial and laboratory equipments

MD.17.	
Title	Precesional hydromotor
Authors	Bostan I., Dulgheru V., Ciobanu R., Ciobanu O.
Institution	**Technical University of Moldova**
Patent no.	MD1000
Description EN	The precessional hydraulic motor include a hydraulic motor and a precessional transmission K-H-V. The

	function of the link mechanism of satellite with housing meet the hydraulic motor piston rods.
Class no.	5. Industrial and laboratory equipments

MD.18.

Title	**Sun system guidance of a group of photovoltaic panels**
Authors	Bostan I., Dulgheru V., Bostan V., Dumitrescu C., Ciobanu R., Ciobanu O., Cozma I.
Institution	**Technical University of Moldova**
Patent no.	Pending 0896/RO.2015
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 include a group of panel with solar cells, and only one mechanism for automatic sun orientation.
Class no.	5. Industrial and laboratory equipments

MD.19.

Title	**Aeolian turbine with Vertical Axle**
Authors	Bostan Ion, Vişa Ion, Dulgheru Valeriu, Porcescu Gavril
Institution	**Technical University of Moldova**
Patent no.	127909 RO, MD 934Y
Description EN	To increase the conversion efficiency of wind energy at speeds *V=2...5 m/s* a new wind working element has been designed, based on combined effect of the Darrieus and Savonius rotors. The Darreus rotor is connected to the stator, and Savonius rotor – to the rotor of the electric generator with permanent magnets.
Class no.	5. Industrial and laboratory equipments

MD.20.

Title	**Tidal plant**
Authors	Bostan Ion; Dulgheru Valeriu; Bostan Viorel; Guţu Marin.
Institution	**Technical University of Moldova**
Patent no.	deposit 2015-0130
Description EN	Tidal facility includes a rotor with three blades with symmetrical airfoil. Focus on tidal currents direction is performed by installing blade rotatably around their axis within an angle equal to double the size of the optimum

	angle of attack.
Class no.	5. Industrial and laboratory equipments

MD.21.

Title	**Installation for bioethanol production**
Authors	Manoli I., Siliuc P
Institution	**Technical University of Moldova**
Patent no.	Application 1455 (18.02.2016)
Description EN	The invention relates to the continuous distillation equipment. The design of the invention enables continuous use of the equipment at fermented mash distillation and at periodic distillation. The essence of the proposed invention is increasing the efficiency of extracting ethanoi from brewed mash, reducing energy costs in the production process, simpiifying construction, mobility facility, decreasing the cost of the equipment. Distillation equipments designed for continuous and periodic fermented mash distillation to obtain bioethanol as a fuel for internal combustion engines.
Class no.	5. Industrial and laboratory equipments

Technical University of Moldova
Industrial Design Group

MD.22.

Title	Design Concept „Logical toys for children”
Authors	***Chiperceanu Oxana , Podborschi Valeriu.***
Institution	**Technical University of Moldova**
Description EN	The goal of development is the developing of imaginative thinking of children, and the ability of assembly – disassembly. Toy models are grouped three each, which are based on three geometric figures: circle, square, triangle.
Class no.	Innovative Research

MD.23.

Title	**Design Concept „Airport fire truck”**
Authors	**Chirileac Alexandru, Podborschi Valeriu**
Institution	**Technical University of Moldova**
Description EN	Truck, designed for firefighting at airports
Class no.	Innovative Research

MD.24.	
Title	**Design Concept „Electric car”**
Authors	**Țăruș Mihai, Podborschi Valeriu**
Institution	**Technical University of Moldova**
Description EN	Electric vehicle, to be used in the urban areas
Class no.	Innovative Research

MD.25.	
Title	**Design Concept „Ambulance”**
Authors	**Lîcichin Dumitru, Podborschi Valeriu**
Institution	**Technical University of Moldova**
Description EN	Vehicle for transporting of two sick persons were injured to, from or between places of treatment, equipped with drone for promptness intervention of the special team.
Class no.	Innovative Research

Moldova State University

MD.26.

Title **Coordination compound with antibacterial activity based on copper(ii) thiosemicarbazone**

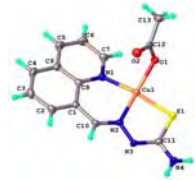
Authors STRATULAT Elena, PRISACARI Viorel, REVENCO Mihail, DIZDARI Ana, ŞOVA Serghei, CORJA Ion, PALAMARCIUC Oleg

Institution **Moldova State University**

Patent no. Granting decision of patent 8210 from 2015 15.09

Description EN The invention relates to chemistry and medicine, special to the synthesis and study of new copper coordination compound, biologically active - non toxic based on heterocyclic thiosemicarbazide. Due to these properties this compound can by applied in medicine as antimicrobial product. This invention proposes a new coordination compound with antibacterial activity which is eight times higher than the existing.

Class no. 4. Medicine - Health Care - Cosmetics



Substanţa	Microorganismele gram-pozitive				Microorganismele gram-negative					
	Staphylococcus aureus (t. 209-P)		*Entrecoccus faecalis*		*Escherichia coli* (t. ATCC 25922)		*Proteus vulgaris* (t. HX 19222)		*Pseudomonas aeruginosa* (t. ATCC 27853)	
	CMI	CMB	CMI	CMB	CMI	CMB	CMI	CMB	CMI	CMB
CuLOAc	9,37	9,37	4,68	9,37	75	75	75	75	300	300
furacilina	18,7	37,5	37,5	75	18,7	37,5	150	300	>300	>300

Structure of compound and antibacterial activity

MD.27.

Title **Technology of Mixoxanthophyl Obtaining from *Spirulina Platensis* Biomass**

Authors **BULIMAGA Valentina, RUDIC Valeriu, PISOVA Maria, ZOSIM Liliana, DENCICOV Lidia, GONŢA Maria, DUCA Gheorghe**

Institution **Moldova State University**

Patent no. **MD**4360

Description EN New technology of myxoxanthophyll obtaining have been elaborated and the new antioxidant and anticancer product was obtained. The proposed procedure ensures the realization of a complex technological cycle of industrial obtaining of a new bioactive natural product from spirulina.

Class no. 4. Medicine - Health Care - Cosmetics

MD.28.

Title	**Photovoltaic cell with nCdS-pInP heterojunction and p°InP layer.**
Authors	**Botnariuc Vasile, Gorceac Leonid, Coval Andrei, Cinic Boris, Raevschi Simion**
Institution	**Moldova State University**
Patent no.	**MD 4280, MD 972**
Description EN	The technological growth process fof p^+InP-p°InP-n^+CdS structure has been elaborated. The process includes intermediate epitaxial layer deposition of p°InP from gas phase in the system of H_2-PCl_3-In, its complete etching in the HCl-gas and repeated growth with the better electorphysical parameters. The front layer of nCdS is deposited at 710°C temperature by physical vapour deposition method. In or Ag was used as a contact for the frontal nCdS layer and Ag+5%Zn was used as a bottom contact to pInP substrate. After the deposition by thermal evaporation in vacuum, the obtained structure was thermally treated. The efficiency of the solar energy conversion into electrical one is 18% (AM1).
Class no.	2. Energy and sustainable development.

MD.29.

Title	**Process for water purification from nitrates and nitrites**
Authors	**Gutsanu Vasile, Bulicanu Vladimir**
Institution	**Moldova State University**
Patent no.	**MD 4318**
Description EN	The process consists in the filtration of water, which contains nitrate/nitrite ions, through a column containing a layer of cadmium, a selective sorbent that is a commercial cross-linked strongly basic polymer modified with chromium (III) compounds and a layer of cross-linked carboxylic polymer for eventual capture of cadmium or chromium (III) cations. The polymers are allowed for use in the food industry. The method allows purification of water in flow. The column has a good hydrodynamics and can operate several years. The process may be made easily. The chemical composition of the purified water practically does not change.
Class no.	1.Environment- Pollution Control

"N.Testemiteanu"
State Medical and Pharmaceutical University

MD.30.

Title	**New methods for audiology diagnosis, predicting the hearing instrument care and pharmacological treatment in ear disorders**
Authors	PARII Sergiu, RUDIC Valeriu, MANIUC Mihail, VALICA Vladimir, UNCU Livia, ABABII Polina, NICOLAI Eugeniu, JUCOVSCHI Constantin
Institution	State University of Medicine and Pharmacy „Nicolae Testemiţanu" of the Republic of Moldova
Patent no.	No. MD 291 Z; MD 4163 C1; MD 792 Z; MD 4277 C1; MD 4291 C1
Description EN	The inventions relate to medicine, particularly to pharmacology otorhinolaryngology, pharmacology and pharmacy and can be used for diagnosis, treatment and rehabilitation of patients with sensorineural hearing loss and otitis. Summary of the inventions is that the elaboration of a new Method for the determination of Speech Intelligibility Score, Method for predicting the development of adverse effects in hearing aids fitting, method for treatment of patients with sensorineural deafness using an extract of *Spirulina platensis* (Nordst.) Geitl., CNMN-CB-02 cyanobacterium biomass. Elaboration of combined drug preparation drafting new treatment of acute and chronic otitis (pharmaceutical form of medicinal product is *ear drops*, active substance: ciprofloxacin hydrochloride, basil essential oil, loratadine, dexamethasone) and combined drug preparation for treatment of complications of ENT diseases (*gel*, active substances: thrombin, lidocain, norsulfazol, riboflavin). The advantage of the proposed applications of the inventions involves measuring the effectiveness audiometric diagnosis, hearing care and drug treatment in children and adults with inflammatory and non-inflammatory diseases of external, middle and inner ear.
Class no.	4. Medicine - Health Care - Cosmetics

MD.31.

Title	**Method of treatment of intravesical obstruction caused by benign prostatic hyperplasia**
Authors	Ghicavîi Vitalie
Institution	Department of Pharmacology and Clinical pharmacology
Patent no.	H 8292/ 2015.12.18 MD
Description EN	The method consists in the fact that once a day, *per rectum*, by microclisme is administered in an amount of 30 ml of a mixture of ozone based pumpkin oil obtained by cold pressing, which contains 5 mg of nanoparticles of zinc oxide and silver , in the ratio of 9:1, the concentration of ozone 9000 μg/l and 5 mg of a 5 α-reductase inhibitor, and 2,5 hours after emptying the bladder and is instilled 150 ml of a mixture of ozone, based on amaranth oil obtained by cold pressing of the ozone concentration 10000 μg/l, containing 5 mg of nanoparticles of zinc oxide and silver in the ratio of 9:1, a series of treatment is 40 days.
Class no.	4. Medicine - Health Care - Cosmetics

MD.32.

Title	**Method for prevention of pathological reflexes during surgical manipulation**
Authors	Ghicavîi Victor, Coreţchi Ianoş
Institution	Department of Pharmacology and Clinical pharmacology
Patent no.	No. **675 Z**
Description EN	In various pathological conditions and massive surgery execution of certain techniques and manipulations during surgery, particularly in reflexogen regions, can produce local pathological activation of somatic and autonomic nervous system. The problem solved by the invention consists in the elaboration a method of prevention of hemodynamic and metabolic disturbances and cardiovascular protection against pathological reflexes by general anesthesia supplementation with profetur and azametoniu for surgery or other traumatic manipulations reflex areas. The result consists in obtaining ganglionic blockage with preventing the development of pathological reflexes as a pharmacologycal denervation result and hemodynamic and metabolic disturbances which may develop during anesthesia, due to the drug stabilization of the level of systemic blood pressure, which ultimately decreases the frequency of undesirable complications and reduce the cost of treatment
Class no.	4. Medicine - Health Care - Cosmetics

MD.33.

Title	**Coordinative compounds of copper (II) containing 4-Phenyl-2-formyl pyridine thiosemicarbazone and sulfanilamide which exhibit antimicrobial activity against bacteria of the species Bacillus cereus**
Authors	Gulea Aurelian, Lozan-Tîrşu Carolina, Ţapcov Victor, Cotovaia Aliona, Ghicavîi Victor,
Institution	Department of Pharmacology and Clinical pharmacology
Patent no.	No. **4179 C1**
Description EN	The invention relates to chemistry and medicine, namely to the copper coordinative compounds containing 4-phenylthyosemicarbazone 2-formylpyridine and sulfanil-amide which can be used as antimicrobial preparations. The technical result is conditioned by the fact that for the first time as inhibitors of growth and multiplication of bacteria of the genus Bacillus cereus are proposed I-XII coordinative compounds, containing a combination of new chemical bonds already known. Compounds I-XII are obtained from the interaction of hot ethanol solutions of chloride hydrate or nitrate to copper 2-phormylpyridine and 4 phenylthyosemicarbazone sulfanil-amide taken in the molar ratio 1: 1: 1. The reaction proceeds in 50-60 min. The mechanism of the reaction is given in deprotonation the thiol group of the 4-phenylthyosemicarbazone 2-formylpyridine in the presence of the nitrogen pyridine of azomethine and coordination of formed ion to the copper ion as a ligand N, N, S-tridentate monodeprotonizate. The determination of the antimicrobial activity of the complexes of I-XII were carried out in the liquid nutrient medium (meat broth peptone 2%, pH 7.0) by the method of successive dilutions. As culture reference in vitro experiment were used standard strains of S. aureus, Bacillus cereus, E. coli, and Salmonella Abony Shigela sonnei. Nominated properties of the detected compounds are of interest point of view of enlargement of antimicrobial remedies arsenal, and those complexes can be used in case of resistance of microorganisms of the genus Bacillus cereus to traditional medicines.
Class no.	4. Medicine - Health Care - Cosmetics

MD.34.

Title	**Method for prevention of postoperative intraabdominal adherence process**
Authors	Ghicavîi Victor, MD; Ostrofeţ Constantin, MD; Nemerenco Octavian, MD; Catcov Carolina, MD.
Institution	Department of Pharmacology and Clinical pharmacology
Patent no.	No. **3526 G2**
Description EN	Summary of the invention consists in the fact that after the surgery, up to the laparotomy is administered into the peritoneal cavity 2-8 ml of sterile crude oil of grape seeds. The advantage of the method consists in preventing the formation of abdominal adhesions due to the formation of protective gear, but also because cytoprotective action and regenerating local effect depriving local irritation, allergic reactions and grape seed oil is nontoxic to the body.
Class no.	4. Medicine - Health Care - Cosmetics

MD.35

Title	**Method of treatment of complicated cataracts in patiens with anterior uveitis**
Authors	Cuşnir Valeriu, Dumbrăveanu Lilia, Cuşnir Vitalie
Institution	Department of ophthalmology
Patent no.	s2015 0037
Description EN	The invention relates to medicine, ophthalmology field. It can be used for the treatment of complicated cataracts in patients with complicated anterior uveitis with iris neovascularization. During preparation, parabulbar solution of Diprospan at a dose of 40 mg-1 ml is administered once. Intravenous infusions with dexamethasone solution are performed, calculated as 0.5 mg/kg/day dissolved in 200 ml of 0.9% NaCl solution in 3 infusions, conducted over 1 day, subsequently halving the calculated dose to 2-3 infusions over a day. Then into the anterior chamber solution of Bevacizumab 10-15 mg is administered once. After 12-15 days since the injection of Bevacizumab cataract surgery is performed. For 10-14 days after surgery solution of Dexamethasone eye drops of 0,1% is administered, 2 drops 3 times a day.
Class no.	4. Medicine - Health Care - Cosmetics

The State Agrarian University of Moldova
Republic of Moldova

MD.36.

Title	**Process for increasing the productivity of pigs**
Authors	***Caisîn Larisa, Vrancean Vasile, Eremia Nicolae, Harea Vasile, Grosu Natalia, Bivol Ludmila, Buşev Vitalie, Snitco Taisia***
Institution	**The State Agrarian University of Moldova**
Patent	Patent application No. MD a 2015 0127
Description EN	The invention consists in the elaboration of a process for feeding pigs during their growth period with equilibrium combined feeds, containing in %: corn – 24.65, barley – 30.0, wheat – 10.0, forage peas – 10.0, soybean meal – 5.0, wheat bran – 6.0, fish meal – 5.0, premix – 2.5, salt – 0.35, chalk – 0.50 with a concentration of crude protein of 15.03% and metabolic energy of 12,46 Mj in the growing period; and in the growing-finishing period in %: corn – 31.0, barley – 26.0, fodder wheat – 24.0, soybean meal – 15.0, premix – 2.50, salt – 0.50, chalk – 1.0; with a concentration of crude protein of 14.65% and metabolic energy of 12.46 Mj. Feeding of young pigs during the first period of growth was in average daily 0.7…1.0 kg/head, respectively, in the growing-finishing period feeding was on the average daily – 2.0…2.5 kg/head.
Class no.	3. Agriculture and Food Industry

MD.37.

Title	**Process for growing for the young swine**
Authors	***Caisîn Larisa, Carpincic Valeriu, Buşev Vitalie, Bivol Ludmila***
Institution	**The State Agrarian University of Moldova**
Patent	MD 849
Description EN	The invention relates to livestock, namely to a process for breeding young pigs. The process, according to the invention, provides for the feeding of pigs with combined feed by adding a feed additive, containing, in mass %, extruded wheat bran – 10, bentonite – 25, vermiculite – 25, polygorskite clay – 30, acidifier – 5, yeast autolysate – 5, at the same time the feed additive is added in an amount of 4.0 kg per 1000 kg of combined feed. The result consists in increasing the productivity of livestock, reducing the consumption of feed, as well as improving the feed use efficiency.
Class no.	3. Agriculture and Food Industry

MD.38.

Title	**Process of feeding pigs**
Authors	***Caisîn Larisa, Danilov Anatolie, Donica Iov, Ceban Vitalie, Eremia Nicolae, Covalenco Alexei, Carpincic Valerii, Snitco Taisia***
Institution	**The State Agrarian University of Moldova**
Patent	H nr 8271 2015.11.19.
Description EN	The process for feeding sows consists in feeding sows with combined feed and is characterized in that the combined feed is introduced a probiotic feed additive in an amount of 0.5 kg/t, which includes Lactobacillus acidophilus ($2*10^9$CFU/g), Lactobacillus plantarium ($1*10^9$CFU/g), Lactobacillus fermentum ($5*10^9$CFU/g), Bifidobacterium bifidum ($3*10^9$CFU/g) and an adsorbent in an amount of 4,0 kg/t, containing: extruded wheat bran - 10%, bentonite at least - 25%, vermiculite at least – 25%, palygorskite clay – 30%, acidifying agent – 5%, autolyzed yeast – 5% (in the dry state) and are administered in group or on animals individually during the period from weaning until the end of their growth.
Class no.	3. Agriculture and Food Industry

MD.39.

Title	**THE METHOD OF BEE FEEDING**
Authors	***Eremia Nicolae, Modvala Susana, Zagareanu Andrei, Caisîn Larisa, Naraevscaia Ina***
Institution	**The State Agrarian University of Moldova**
Patent	Patent **No. 812 Z 2015.04.30**
Description EN	The invention relates to beekeeping, particularly to bees feeding. Method is based on bees feeding that includes using of sugar syrup of 50%, and a feed additive in the quantity of 1 liter of mixture for one bee family, in the evening over each 10 ..... 12 days, beginning with the first days of April till the beginning of the main harvest. At the same time the feed additive contains in mass (%) no less than: humate of sodium / potassium – 0.1, extract / yeast autolysate, lactic acid, beta glucan, the rest is water and it is added in the sugar syrup in the quantity of 1.5 .... 4.5 ml / l of syrup.
Class no.	3. Agriculture and Food Industry

MD.40.

Title	**METHOD OF BEEKIPING**
Authors	***Eremia Nicolae, Zagareanu Andrei, Caisîn Larisa, Modvala Susana, Rotaru Ilie Naraevscaia Ina***
Institution	**The State Agrarian University of Moldova**
Patent	Patent **No. 848 Z 2015.07.31**
Description EN	The invention relates to beekeeping, in particular to the process of bee colonies raising. Beekeeping method includes bee feeding with a mixture of sugar syrup 50% and 50….200 mg/L of feed additive, in the quantity of 0.5…..1.0 L for the bee family, in the evening, every, 6-12 days from the first days of April until the beginning of the main harvest, at the same time the feed additive, contains in mass (%):Lactobacillus acidophilus with a titer of $1x10^8$ CFU/g – 10, Lactobacillus plantarum with a titer of $1x10^8$ CFU/g – 10, Lactobacillus bulgaricus with a titer of $1x10^8$ CFU/g – 10, Enterococcus (Streptococcus) faecium with a titer of $1x10^7$ CFU/g – 4.5, Bifidobacterium bifidum with a titer of $1x10^8$ CFU/g – 10, and pectin, yeast extract, lactulose, lecithin.
Class no.	3. Agriculture and Food Industry

MD.41.

Title	**METHOD OF NURSE BEE FEEDING**
Authors	***Eremia Nicolae, Zagareanu Andrei, Caisîn Larisa, Mardari Tatiana, Modvala Susana, Sarî Nelea, Eremia Igor***
Institution	**The State Agrarian University of Moldova**
Patent	Patent **No. 878 Z 2015.09.30**
Description EN	The invention relates to beekeeping, in particular to the process of bee feeding. The process of nurse bee feeding includes using the sugar syrup 50% with addition of 50….200 mg/L of feed additive daily from the day of frame introduction with transferred larvae to the nurse family until larvae capping, at the same time the feed additive contains in mass %: Lactobacillus acidophilus with a titer of $1x10^8$ CFU/g – 10, Lactobacillus plantarum with a titer of $1x10^8$ CFU/g – 10, Lactobacillus bulgaricus with a titer of $1x10^8$ CFU/g – 10, Enterococcus faecium with a titer of $1x10^7$ CFU/g – 4.5, Bifidobacterium bifidum with a titer of $1x10^8$ CFU/g – 10, and pectin, yeast extract, lactulose, lecithin , bee feeding is performed in the quantity of 1.0 L to the family in the first day from the day of frame introduction with the transferred larvae and using 0.5 L in the rest of the days.
Class no.	3. Agriculture and Food Industry

MD.42.

Title	**TREATMENT PROCESS OF ARAHNOENTOMOZY AND NEMATODES IN PIGLETS AND CALVES**
Authors	***Iatusevici Anton, Samsonovici Vladimir, Subbotin Alexandr, Crasocico Petru, Eremia Nicolae, Cahanovici Alexandr, Subbotina Irina***
Institution	**State Academy of Veterinary Medicine in Belarus** **Scientific Institute of Experimental Veterinary in Belarus** **The State Agrarian University of Moldova**
Patent	Patent application **No. 8305 din 2016.01.16**
Description EN	The invention relates to veterinary medicine, in special to treatment process the of arahnoentomozies and nematodes in piglets and calves. The process according to the invention includes the administration of a remedy in piglets or calves, that contains, in mass%: concoction contains aversectin C, that contains 40% of lactulose and polyethylene glycol 400, at the same time remedy is administered twice in a dose of 0.1 ml per 1 kg of body weight, using dry food, with an interval of 24 hours.
Class no.	3. Agriculture and Food Industry

MD.43.

Title	**REMEDY OF STRONGILOIDOSIS AND IMMUNODEFICIENCY STATE THERAPY IN PIGS**
Authors	***Iatusevici Anton, Samsonovici Vladimir, Crasocico Petru, Eremia Nicolae***
Institution	**State Academy of Veterinary Medicine in Belarus** **Scientific Institute of Experimental Veterinary in Belarus** **The State Agrarian University of Moldova**
Patent	Patent application **No. 0098 din 2014**
Description EN	The invention relates to veterinary medicine, in special to the obtaining of antiparasitic remedy that can be used for therapy of strongiloidosis and immunodeficiency state in pigs. The remedy for strongiloidosis and immunodeficiency state therapy in pigs includes univerm, that is caracterised as a concoction that additional contains lysozyme G3x.
Class no.	3. Agriculture and Food Industry

Institute of Emergency Medicine (IEM)

MD.44.

Title	**APPARAT FOR CLOSED REPOSITION AND EXTERNAL FIXATIONS OF BASIN BONE FRAGMENTS.**
Authors	**Borovic E., Ciobanu Gh., Pavlovschi E.**
Institution	**INSTITUTE OF EMERGENCY MEDICINE (IEM)**
Patent no.	**Brevet Nr.4263 C1 2014.07.31**
Description EN	The invention relates to medicine and veterinary medicine, in particular to the medical instrument, and can be used in veterinary traumatology and orthopedics as an apparatus for closed reduction and external fixation of bone fragments of the pelvis of mammals in the osteosynthesis. The advantage of the method is the ease of implementation of osteosynthesis in the time limit, and no need to use special tools, such as drills, the ability to provide an early feature of the hip fractures of the acetabular.
Class no.	4. Medicine - Health Care – Cosmetics

MD.45.

Title	**THE METHOD OF OLECRANON OSTEOTOMY OF TRAUMATIC CONTRACTURE OF THE ELBOW JOINT AND COMPLICATED FRACTURES METAEPIFIZARE TYPE C (AO).**
Authors	**Borovic E., Ciocanu M., Pavlovschi E.,**
Institution	**INSTITUTE OF EMERGENCY MEDICINE (IEM)**
Patent no.	Certificate ODA OŞ Nr.5292 din 29.03. 2016
Description EN	Original method of osteotomy olecranonului used during surgery on the arm distal patients with superb stiffness (contractures) posttraumatic elbow joint and fractures complicated metaepifizare type C (AO) of the distal humerus, which was chosen approach transolecranian consisted the skin incision on the posterior surface of the humerus, the radial edge olecranonului Christ ulna (posterolateral approach) protection and ulnar

osteotomy of the proximal ulna. Creating conditions to restore active flexion-extension movements of the forearm in maximum volume using the method of osteotomy olecranonului change the radius of curvature of the trochlear notch.

The method by the invention includes osteotomy olecranonului change bend radius notch trochlear in surgery in patients with contracture posttraumatic elbow joint and fractures complicated metaepifizare of the distal humerus, with good results during the rehabilitation and examination of functional outcome remote.

Class no. 4. Medicine - Health Care – Cosmetics

MD.46.

Title **PLATFORM FOR FIXING THE PATIENT'S HEAD.**

Authors **Ciobanu Gh., Groppa St., Dorogan V., Vieru St., Vieru T., Pîrţac I.**

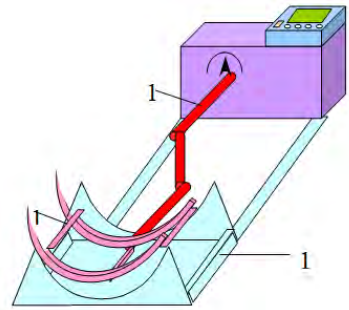
Institution **INSTITUTE OF EMERGENCY MEDICINE (IEM)**
TEHNICAL UNIVERSITY OF MOLDOVA

Patent no. Certificat de DMI Nr.1612-MD 10.07. 2015

Description EN

Stroke is a major problem, with important socio-economic implications, because patients who survive are often left with severe cognitive and motor disabilities, most unable to resume work they were carrying before disease onset. Spasticity is a common problem in the chronic phase and may have adverse effects on current activities and quality of life. Physical therapy includes - massage, kinesiology individual passive / active, physiotherapy, occupational therapy and alternative. The most important therapeutic intervention is to maintain freedom of movement articulating ararticulating member. The apparat refers to medicine, as well as the rehabilitation. The apparat consists of control unit, the mechanical part, for defining a rotation and the platform for fixing the head of pacient. Platform for fixing the head of pacient consists of a fixed base and a mobile portion comprising the fastening elements of the head of the pacient. The device has an emergency stop procedure for the patient or medical staff.

Class no. 4. Medicine - Health Care – Cosmetics



MD.47.

Title	**TRANSVERSUS ABDOMINIS PLANE (TAP) MULTIMODAL POSTOPERATIVE ANALGESIA PROGRAM THAT PROVIDES ANALGESIA FOR ANTERIOR ABDOMINAL WALL.**
Authors	**Chesov I.**, **Fatnic E.**, **Borovic E.**, **Belîi A.**
Institution	**INSTITUTE OF EMERGENCY MEDICINE (IEM)** **UNIVERSITY OF MEDICINE AND PHARMACY "N. TESTEMITANU"**
Patent no.	Certificate ODA OŞ Nr.5103 10.07. 2015
Description EN	The transversus abdominis plane block remains a technique of regional anesthesia/analgesia with unfulfilled clinical potential. Usually, TAP is cited as a component of multimodal postoperative analgesia program. Further studies are needed to specify the range of surgical interventions that can be done only under protection of TAP block, as well as to develop of methodological aspects of TAP block, used as distinct anesthetic technique. TAP block is a robust, inexpensive technique of regional anesthesia, that consolidates surgical team efforts to increase patient safety, reduce complications related to surgery, accelerate postoperative recovery and hospital discharge. Since 2012, TAP has been implemented successfully for multimodal postoperative analgesia in clinical practice of the Republic of Moldova.
Class no.	4. Medicine - Health Care – Cosmetics

MD.48.

Title	**IMPERFORATE HYMEN: PECULIARITIES OF CLINICAL MANIFESTATION, DIAGNOSIS AND SURGICAL CORRECTION**
Authors	**Mişina A.**, **Gudumac E.**, **Cerneţchi O.**, **Mişin I.**
Institution	**INSTITUTE OF EMERGENCY MEDICINE (IEM)**
Patent no.	Certificat ODA OŞ Nr.5212 16.11. 2015
Description EN	AH is the most common abnormality of the vagina obstructive. The use of MRI in the preoperative period allows for detection of radiological anatomy and planning features and volume access surgery. Using crescent transverse incision allows proper drainage hematocolposului in AH, and if hematocolpos massive drainage catheter Foley prolong the vagina. The authors presents pecularities of manifestation, diagnosis and immediate results of surgical correction of symmetrical malformations of the vagina - imperforate hymen.
Class no.	4. Medicine - Health Care – Cosmetics

MD.49.

Title	**DIAGNOSIS AND MANAGEMENT OF THE HERLYN-WERNER-WUNDERLICH SYNDROME**
Authors	**Mişina A., Gudumac E., Cerneţchi O., Mişin I.**
Institution	**INSTITUTE OF EMERGENCY MEDICINE (IEM)**
Patent no.	Certificat ODA OŞ Nr.5214 16.11. 2015
Description EN	HWW syndrome refers to a rare malformation quite genitourinary tract. OHVIRA anatomical variants syndrome defined by peculiarities of clinical manifestations. HWW appropriate diagnosis of the syndrome is the main tool in keeping prophylaxis fertile and possible complications (endometriosis, inflammatory processes, adherence process) of the pelvic organs. There are present clinical manifestation, methods of diagnosis and treatment of very rare Mulleryan anomaly Herlyn-Werner-Wunderlich syndrome (HWW) – uterus didelphys, obstructed hemivagina, ipsilateral renal agenesis.
Class no.	4. Medicine - Health Care – Cosmetics

MD.50.

Title	**SEPT VAGINAL - DIAGNOSIS AND FULL CROSS SURGICAL CORRECTION**
Authors	**Mişina A., Gudumac E., Cerneţchi O., Mişin I.**
Institution	**INSTITUTE OF EMERGENCY MEDICINE (IEM)**
Patent no.	Certificat ODA OŞ Nr.5213 16.11. 2015
Description EN	Complete transverse vaginal septum refers to congenital anomalies rare and are much rarer than hymen atresia. The structure of this anomaly in most cases transverse vaginal septa meet thin and are isolated anomalies. Rezectarea subtotal septal through vaginal approach is the method of choice in the surgical treatment of this anomaly. Obstructive imperforate transverse vaginal septae is a rare congenital anomalies of Müllerian duct. Authors present a case series of patients with such malformations, including clinical manifestations, diagnosis and surgical treatment.
Class no.	4. Medicine - Health Care – Cosmetics

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

MD.51.

Title	**Technology of β-glucans products obtaining from *Saccharomyces* yeast**
Authors	Usatîi Agafia, Chiseliţa Natalia, Chiseliţa Oleg.
Institution	**Institute of Microbiology and Biotechnology of ASM**
Patent no.	No . MD 4048, BOPI 6/2010; No. MD 4086, BOPI 12/2010; No. MD 4329, BOPI 2/2015
Description EN	The technology is based on the use of *Saccharomyces cerevisiae* CNMN-Y-20 yeast strain with enhanced potential for synthesis of β-glucans, optimal parametres of application of millimeter waves of high intensity for seed material producing, optimized culture medium for β-glucans biosynthesis. Technical results of inventions consist in increase of β-glucans biosynthesis by 23,9... 26,4 %.
Class no.	3. Agriculture and Food Industry

MD.52.

Title	**Method of cultivation of *Trichoderma koningii* Oudemans CNMN FD 15 micromycete strain**
Authors	Ciloci A., Tiurina J., Guţul T., Clapco S., Bivol C., Labliuc S., Dvornina E., Nicorici A., Rusu E.
Institution	**Institute of Microbiology and Biotechnology of ASM**
Patent no.	Patent application: **a 2015 0107, 2015.10.28**
Description EN	The method for the submerged cultivation of the strain of the micromycete *Trichoderma koningii* Oudemans CNMN FD 15, according to the invention, includes the inoculation of the sterile nutrient medium with the suspension of spores of the culture grown for 12-14 days on the oblique surfaces of malt-agar and the cultivation under continuous stirring at the temperature of 28-30^{0}C for 240 hours; characterized by the fact that prior to the inoculation the inoculum is treated with nanoparticles of zinc oxide - ZnO with dimension of 29 nm, in the concentration of 0.005%. Technical results of inventions consist in increase of acid proteases biosynthesis by 83,7...87,6 % (around 2 fold) and neutral proteases by 342,7...350,8% (around 4,4...4,5 fold).
Class no.	3. Agriculture and Food Industry

MD.53.

Title	**The method of obtaining an enzyme preparation of β-glucosidase with the use of the micromycete strain *Aspergillus niger* CNMN FD 10**
Authors	Deseatnic-Ciloci Alexandra, Tiurina Janetta, Clapco Steliana, Labliuc Svetlana, Bivol Cezara, Dvornina Elena, Grumeza Maria
Institution	**Institute of Microbiology and Biotechnology of ASM**
Patent no.	**Brevet MD 4388, 2015**
Description EN	According to the invention, the method consists in: - submerged cultivation of *Aspergillus niger* micromycete strain for 7 days under continuous stirring at a temperature 28-30°C on the selected growing medium; further separation of the cultural liquid from biomass; - acidification of the cultural liquid to pH value 3.0; - sedimentation (at 4-5°C) of the enzyme complex from cultural liquid with 96° rectified ethanol in the ratio 1:2. Technical result of the invention consists in obtaining of partially purified enzyme preparation with β-glucosidasic activity 5.6-6.3 times higher than in prototype.
Class no.	3. Agriculture and Food Industry

Academy of Sciences of Republic of Moldova
Institute of Chemistry

MD.54.

Title	**Synthesis of 2-(propylthio)-5H-[1,3,4]thiadia-zole[2,3-b]quinazoline-5-one compound**
Authors	Macaev Fliur, Pogrebnoi Serghei, Zveaghinţeva Marina, Boldescu Veaceslav, Duca Gheorghe
Institution	Academy of Sciences of Moldova Institute of Chemistry
Patent no.	**Brevet MD no 4404 B1**
Description EN	The invention refers to the pharmaceutical chemistry and can be applied in the development of new medicines with antituberculosis activity. The essence of the invention includes the synthesis of 2-(propylthio)-5*H*-[1,3,4]thiadiazole[2,3-b]quinazolin-5-one and its use in the development of new antituberculosis medicines. The problem solved by the invention includes the selectivity of S-alkylation of 2-mercapto-5*H*-[1,3,4]thiadiazole[2,3-b]quinazolin-5-one and the obtaining of new compound with antituberculosis activity. It has been detected that 2-(propylthio)-5H-[1,3,4]thiadiazole[2,3-b]chinazolin-5-one possesses high level of antituberculosis activity against *Mycobacterium tuberculosis $H_{37}Rv$ (ATCC 27294).* The result of antituberculosis activity determination presented in inhibition procent is equal to 100% at minimum inhibitory concetration 6.25 μg/mL as compared to Rifampicin.
Class no.	4. Medicine - Health Care – Cosmetics

MD.55.

Title	**New iron(III) coordination compounds with (iso)nicotinoylhydrazone ligands and cultivation procedures of microalgae *Porphyridium cruentum***
Authors	Bulhac Ion, Rudic Valeriu, Dragancea Diana, Rudi Liudmila, Shova Sergiu, Cepoi Liliana, Gusina Liudmila, Miscu Vera, Ciobotari Alina, Chiriac Tatiana, Sadovnic Daniela, Valuta Ana
Institution	Academy of Sciences of Moldova Institute of Chemistry Institute of Microbiology and Biotechnology
Patent no.	**Brevet MD** 4356 C1, 4367 C1
Description EN	The invention relates to chemistry and biotechnology, in particular to the synthesis of new

coordination compounds of iron(III) with antioxidant properties that can be used in food industry and in medicine. According to the invention, two coordination complexes, bis[N'-(2-hydroxy-κ*O*-benzylidene)pyridine-4-carbohydrazidate(-1)-k^{2}N',*O*]iron(III) nitrate - water (2/3) and bis[N'-(2-hydroxy-k*O*-3-carboxybenzylidene)pyridine-3-carbohydrazidate(-1)-k^{2}N',*O*]iron(III) perchlorate - water (4/5) are claimed. The processes for cultivation of microalgae *Porphyridium cruentum* on a nutrient medium additionally containing 0.009…0.012 g/L of named complexes are also claimed.

The technical result of inventions consists in increasing the content of phenols in the microalgae *Porphyridium cruentum* biomass, which is an advantage of 17 ... 21% in comparison to the nearest solution. Administration of the compounds starting the first day of cultivation stimulates the accumulation of phenolic components in microalgae biomass that improve the significance of *Porphyridium* biomass as a producer of antioxidants.The synthetic procedures of the claimed compounds are simple in execution, the starting materials are easily available, the yield is 60-70%. Their properties are of interest to biotechnology as stimulators for production of phenols that are antioxidant components in *Porphyridium cruentum* biomass.

Class no. 4. Medicine - Health Care – Cosmetics

MD.56.

Title **Coordination compounds based on 1-phenyl-1,3-butanedione isonicotinoylhidrazone as stimulators of the biosynthesis of phenolic components by microalgae P*orphyridium cruentum***

Authors Maria Cocu, Valeriu Rudic, Ion Bulhac, Ludmila Rudi, Victoria Gutium, Liliana Cepoi, Cristina Balan, Vera Miscu, Tatiana Chiriac, Viorica Ghelbet, Svetlana Djur

Institution Academy of Sciences of Moldova
Institute of Chemistry
Institute of Microbiology and Biotechnology

Patent no. MD **4365 C1, 4366 C1**

Description EN The invention relates to two new coordination compounds: bis[1-phenyl-3-methyl-6-(pyridinium-4-il)-4,5-diaza-hexa-1,3-dien-1,6-diolato(-2)-O^1,N^4,O^6]iron(III) nitrate and bis[1-phenyl-3-methyl-6-(pyridinium-4-il)-4,5-diaza-hexa-1,3-dien-1-hydroxi-6-olato(-2)-O^1,N^4,O^6]iron(III) sulfate tetrahydrate and to the cultivation process of microalgae *Porphyridium cruentum,* with their use for increasing the phenol content in

the porphyridium biomass.

The obtained data demonstrate the increase of biomass content of phenols in *Porphyridium cruentum* with 18-20 % for $[Fe(LH)_2]NO_3$ and 15-17% for $[Fe(L)_2]_2SO_4 \cdot 4H_2O$ according to the claimed process, compared to the nearest process. The *Porphyridium cruentum* microalgae biomass is a modern source of antioxidants, for this reason, the growth of phenols content is a factor of increasing of the porphyridium value as producer of substances with antioxidant properties.

Class no. 4. Medicine - Health Care – Cosmetics

MD.57.

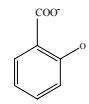
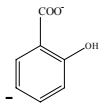
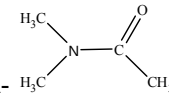
Title **Inhibitor of steel corrosion in water**

Authors Gorincioi Viorina, Turtă Constantin, Parşutin Vladimir, Şoltoian Nicolae, Covali Alexandr, Cernîşeva Natalia

Institution Academy of Sciences of Moldova
Institute of Chemistry
Institute of Aplied Physics

Patent no. MD no 4321

Description EN The invention relates to the field of metal protection from cor-rosion in water and can be used for corrosion inhibition in closed steel pipeline systems. According to the invention, the use of a heteronuclear salicylate coordinative compound of the formula $[FeSr_2(SalH)_2(Sal)_2(NO_3)(DMAA)_4]$, is claimed, wherein:

Sal -  SalH -  DMAA- 

as an inhibitor of steel corrosion in water, at a concentration of 0.05...0.75 g/l.

Class no. 9. Chemical and textile industry

MD.58.

Title **Inhibitor of steel corrosion in water**

Authors Coropceanu Eduard, Parşutin Vladimir, Şoltoian Nicolae, Cernîşeva Natalia, Covali Alexandr, Croitor Lilia, Bulhac Ion, Bologa Olga, Fonari Marina

Institution Academy of Sciences of Moldova
Institute of Chemistry
Institute of Aplied Physics

Patent no.	MD no 4330C1
Description EN	The invention relates to the field of metal protection against corrosion in water and can be used for corrosion inhibition in closed steel pipeline systems. According to the invention, use of tetraacetate-di-(1,2-cyclohexanedionedioxi-me)-di-aqua-(μ2-4,4'-dipyridyl)-di-zinc(II) compound of formula [Zn2(CH3COO)4(NioxH2)2(dpy)(H2O)2] is claimed, where NioxH2– 1,2-cyclohexa-nedionedioxime, dpy – 4,4-dipyridyl, as an inhibitor of steel corrosion in water, in a concentration of 0.05...1.0 g/l.
Class no.	9. Chemical and textile industry

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

MD.59.

Title	**Laboratory facility and technique for determining the yield of reagents used in operations of active influence on hydrometeorological processes.**
Authors	ZASAVIŢCHI Efim, CANŢER Valeriu, SIDORENKO Anatolie, ŞAPOVAL Oleg, BELENCIUC Alexandr, CHIRIŢA Arcadi
Institution	**Institute of Electronic Engineering and Nanotechnologies "D. Ghiţu" of Academy of Sciences of Moldova**
Patent no.	MD924 (Y) — 2015-07-31; MD3898 (B1) — 2009-05-31
Description EN	The technique is based on the use of a small aerodynamic stand, which makes it possible to simulate the dynamic characteristics similar to those that take place while seeding hail clouds with reagents by the rocket technology in laboratory conditions. The economic advantages consist in the use of pyrotechnic compounds subjected to independent tests and the possibility of precisely determining the number of rockets required for operations of active influence, which will allow a high level of protection of agricultural crops from hail damage. The problems solved via applying the new technology include a high-precision operating control of the yield of pyrotechnic compounds used for protection from hail damage.
Class no.	3. Agriculture and Food industry

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

MD.60.

Title	**Process for extraroot treatment of vine**
Authors	**Veliksar Sofia, Tudorache Gheorghe, Lemanova Natalia, Toma Simion**
Institution	**Academy of Sciences of Moldova / Institute of Genetics, Physiology and Plant Protection ASM**
Patent no.	MD 845 Z 2015.07.31
Description EN	The invention relates to agriculture, namely to a process for extraroot treatment of vine during vegetation period, which can be used to increase the resistance of plants during the winter. The process, according to the invention, comprises the extra root treatment of plants before flowering and in 2 and 4 weeks after the first treatment with an aqueous solution containing 0.09% of trace elements complex (Mn, Fe, Zn, D, Mo and Co), taken in the ratio of 1:1,95:0,23:0,44:0,001:0,001 correspondingly, and 300 ppm of product obtained by culturing for 48 hours of bacteria strains *Azotobacter chroococcum* CNMN-AzB-01 and *Pseudomonas fluorescens* CNMN-PsB-04 with a titer of 10^7 CFU/ml with centrifugation and removal of precipitate, the treatment being carried out at a total consumption of 0.3…0.5 L/bush. The result consists in improving the processes of growth and maturation of annual shoots, the mobilization of protective substances in the shoots of grapes in the period of dormancy, improving viability of wintering buds after the low temperatures action, that indicate about more complete realization of the potential of grapes resistance to winter.
Class no.	3. Agriculture and Food industry

MD.61.

Title	**Electronic device and methods for determining the resistance of new varieties of plants to unfavorable climatic conditions and time in watering of vegetable plants (variants).**
Authors	**Ştefîrţă Anastasia, Prodan Oleg, Brînză Lilia, Botnari Vasile, Melenciuc Mihail, Buceaceia Svetlana**
Institution	**Academy of Sciences of Moldova / Institute of Genetics, Physiology and Plant Protection of ASM**
Patent no.	**MD 1579 (2001); MD 1625(2001); MD 683 (2013); MD 912 z (2016)**
Description EN	The inventions relates to electrical and electronic measurement systems (br. Nr.683) and can be used in the test runs of tolerance varieties, hybrids and new forms of plants to unfavourable environmental conditions (br. No. Nr.1579, 1625) and to determine the time for watering vegetable plants (variants) (br. 912 Z). Processes are achieved by using biophysical and physiological tests, which highlight the plant's reaction at the time of the action stresogen factor and the ability to restore the plant functions after improving the external environment conditions. Processes ensure: highlighting the varieties with specific resistance to concrete factor (dehydration, and hypo- and hypothermic stress) and varieties with complex resistance; electronic equipment allows memorization up to 2000 results of measurements, which can be read on the display of our device, or computer, inspecting the autonomous power source with the possibility of battery recharging if need.
Class no.	3. Agriculture and Food Industry

MD.62.

Title	**Tomate (*Solanum lycopersicum* L.), Anatolie**
Authors	Sîromeatnicov Iu., Jacotă A., Cotenco E., Botbari V., Ciobanu R., Chirilov E.
Institution	Institute of Genetics, Physiology and Plant Protection Academy of Sciences of Moldova.
Patent no.	Patent application No. MD 191 0930/2015
Description EN	The vegetation period is 118-125 days, it is the early variety. The fruit is round and flat with the weigh 65-90g, without the wrinkled peduncle, with fleshy pericarp and interior pulp. Fruits with high taste qualities, the dry

matter content of the fruits 5,3-7,0%, sugars 4,9-5,1%, ascorbic acid 35,6-59,5%, titratable acidity 0,32-0,35mg/%. The total harvest of tomato is 43,7- 47,3 t/ha. The share of commodities is 97%.

Class no. 3. Agriculture and Food Industry

MD.63.

Title **A new growth and development regulator for grape**

Authors Kirilov Alexandru, Cozmic Raisa, Harciuc Oleg, Bashtovaya Svetlana, Mashcenco Natalia, Kirilov Eleonora, Kistol Marcela

Institution Institute of Genetics, Physiology and Plant Protection

Patent no. Patent MD 1012/2016

Description EN The invention provide a new solution to the problem concerning the regulation and increase of grape productivity and yield quality, and minimizing of environmental pollution through administration of a new ecologically friendly, physiologically active substance of natural origin belonging to the phenolic glycosides, named Linarosid, application of which do not require supplementary expenses because it may be used simultaneously with plant treatment against different diseases. The application of the proposed product contributes to the optimization of the ratio of the processes of growth and development, providing a optimal manifestation of the productivity and quality of yield, including in unfavorable conditions.

Class no. 3. Agriculture and Food Industry

MD.64.

Title **Cycle of inventions "Process for presowing treatment of seeds"**

Authors **Borovskaia A., MaȘcenco N., Botnari V., Ivanova R.,**

Institution	**Gumaniuc A., Vasilachi I., Poltavcenco I., Academy of Sciences of Moldova / Institute of Genetics, Physiology and Plant Protection**
Patent no.	**MD 893; MD 901; MD 922**
Description EN	The process according to the invention includes the presowing soaking of seeds for determined time in different solution of natural bioregulators of growth having glycoside structures, namely: a) **cucumber seeds** for 24 hours in 0.01% aqueous solution of flavonoid glycosides - dehidroconiferil alcohol-9-O-β-D-glucopyranoside (verbascozide); b) **onion seeds** for 15 min in 0.01% aqueous solution of flavonoid glycosides 5.4 - dimetilchempferol - 3 - O - β - D - (6II- α - L - ramnopiranozil) - glucopyranoside (linarozide); c) **carrot seeds** for 15 minutes in 0.01% of pyrido-glycosides (melampyroside). The presowing treatments of seeds make for their uniform germination, sustained seedlings growth as well as for increasing of cultures productivity and improving of commercial quality of vegetables.
Class no.	3. Agriculture and Food Industry

MD.65.

Title	**Devices for signaling, monitoring and combating harmful insects**
Authors	Gorban Victor, Voineac Vasile, Volosciuc Leonid, Bradovschii Victor., Batco Mihail, Nastas Tudor, Zavtonii Pantelimon
Institution	**Academy of Sciences of Moldova / Institute of Genetics, Physiology and Plant Protection**
Patent no.	-
Description EN	The devices are traps to attract and capture harmful insects in which as bait is used the source of ultraviolet light of 365nm wavelength. Their design elements provide the insects capture for identification species present in agrocenoses, signaling pest occurrence, monitoring their development and determination conditions for conducting protection measures in time. The devices designed contribute to reduction up to 30% of chemical treatments, becoming an important element of inoffensive technologies for plant protection. The

proposed devices are designed as a variant with an autonomous power supply with electric current of 12V, and stationary variant connected to 220V current network.

Applications. Advantages.

The developed devices are being implemented in various parts of the Republic of Moldova, in particular, by District Departments of Food Safety, and agricultural producers and farmers. Getting the necessary data, they develop short-term forecasts of crop pests development in their respective districts and coordinate timely adoption of measures to combat them. Systematic catch of insect pests contributes to a significant reduction of pests populations density and creates favorable conditions for developing beneficial insects and increase of their efficiency.

Class no. 3. Agriculture and Food Industry

MD.66.

Title **New variety of *Pimpinella anisum* L. (Anise) Aroma Dalba**

Authors Goncearuc Maria; Balmus Zinaida; Cotelea Ludmila; Butnaraş Violeta; Maşcovţeva Svetlana; Botnarenco Pantelimon

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

Patent no. Patent application No. V20130034/2013.

Description EN Distinguished by plant with waist of 58.0cm, glabrous, striated, branched (10.8) at the top that ends with inflorescences. The leaves are differentiated by upstairs; the lower 2-3 leaves are arranged in alternating whole long petiole, ovate, with toothed edges; also the upper few, of sessile, 2-3 times pinnate sections with linear lanceolate leaflets. The flowers are arranged in 15.2 umbrellas composed without involucre, with one 16 umbelelles, flowers, lacking calyx, five white petals ciliated on the sidelines with a cutting lower lobe bent, 1-5 mm long.

Small fruits are duchene, ovoid, with hardly separable halves, with five ribs less prominent, greenish. The 1000 seeds weighing 1.99g, 1g contains 675 seeds.

The yield of seeds – 258 kg/ha, production of the essential oil – 20.0 kg/ha, essential oil content in seeds, 7.702% (s.u.). Major compounds in essential: *Trans*-Anetol, 89.0%; *cis* – Anetol, 0.22%

Class no. 3. Agriculture and Food Industry

MD.67.

Title **Balsam - a new variety of *Salvia sclarea* L. (Clary sage)**

Authors Gonceariuc Maria, Balmus Zinaida, Cotelea Ludmila Botnarenco Pantelimon, Butnaraş Violeta, Maşcovţeva Svetlana

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

Patent no. Patent application No. v20130033/2013

Description EN

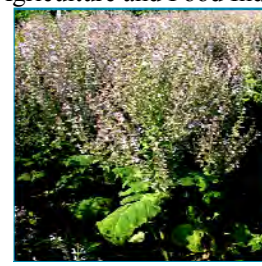
Clary sage (*Salvia sclarea* L.) new high-effective early ripening variety Balsam represent very complex backcross hybrids and suitable for both processing technology of raw material as well as production of essential oil through distillation and production technology of concrete through organic solvent extraction. Balsam variety

is winter-hardy, resistant to drought and diseases, and with an enhanced producing capacity in three years exploitation of the plantation: **row materials: 21.2 tons/ha crop of raw material** (6.3t/ I^t year; 10.4t/ha II year; 4.4t/ha III year);

Essential oil production: 79.5 kg/ha (18.9 kg/ha, I year; 46.5 Kg/ha, II year; 14.1 Kg/ha, III year). Thus each ton of raw material tests ensures getting 3.7 kg of essential oil. Together with other medium and late varieties during harvesting variety Balsam forms a conveyor 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 and concrete production);
Medicine (balneology: baths, massage; treatment diseases of the respiratory apparatus, rheumatic diseases);
Perfumery (component in producing of the high quality perfume).

Class no. 3. Agriculture and Food Industry



MD.68.

Title **Methods for mass-rearing Sitotroga cerealella Oliv and entomophages *Trichogramma* spp.**

Authors Gorban Victor,Gavriliţa Lidia,Voineac Vasile, Nastas Tudor

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

Patent no. -

Description EN

The paper presents methods to improve technologies for mass-rearing of the alternative host - the Angoumois grain moth (Sitotroga cerealella Oliv.) and to obtain the sterile eggs used for mass reproduction of the entomophage *Trichogramma spp*. In order to create optimal conditions for developing the moth, to increase efficiency of receiving the eggs used for rearing of the entomophage *Trichogramma spp.,* to reduce the degree of injury of the biological material, the infestation of the nutrient substrate occurs directly in the container with the grain. To increase the efficiency of mass-multiplication of the entomophage *Trichogramma spp*. the eggs of the Angoumois grain moth used as a nutrient medium, are sterilized by means of infrared rays, which having the properties of penetration through the shell of eggs are absorbed by its liquid content and affect thermally only the insect embryo, which in its turn dies, and the eggs become sterile. At the same time further development of larvae ceases while the irradiated eggs retain

nutritional properties required for the development the entomophage *Trichogramma spp.* and may be stored much longer under optimum conditions.

Applications. Advantages.
The methods used in mass rearing technology of the Angoumois grain moth (Sitotroga cerealella Oliv.) and reproduction of the entomophage *Trichogramma spp.* in small batches are recommended for introducing into production. The grain infestation method is based on a uniform distribution of the Angoumois grain moth eggs (*Sitotroga cerealella Oliv*.) directly in the container on the grain surface in the ratio which provides a high degree of the substrate colonization (about 90-95%). Optimal conditions for larval development are maintained indirectly by controlling the parameters of the microclimate and air balance in the room where this technological procedure process is carried out. The method of sterilization by means of infrared rays provides high efficiency of the process from 80 to 90%, while preserving the nutritional quality of eggs used for mass reproduction of the entomophage. The sterilization process is easy to carry out, it provides no aggressive impact on the biological material and working staff and that is why it refers to the clean technology with low power consumption.

Class no. 3. Agriculture and Food Industry

MD.69.

Title **Process for microclonal propagation of *Actinidia arguta* plants *in vitro***

Authors **Călugăru-Spătaru Tatiana, Dascaliuc Alexandru**

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

Patent no. **MD 605Z 2013.10.31**

Description EN

The invention is related to biotechnology and can be used for micropropagation of *Actinidia arguta* (mini-kiwi) plants *in vitro*. Multiplication of *A. arguta* is performed vegetative with more pronounced difficulties than vines. Therefore we developed the method of plants micropropagation *in vitro* conditions. The problem resolved by this invention consists in the decreasing of micropropagation period, increasing of the multiplication coefficient from 300 to 8000 annual

plants and respectively reduction of the costs for a new *A. arguta* plant obtained. Induced changes in the content of nutrient medium resulted in a higher number of internodes (which increased the potential multiplication coefficient) and parallel in rooting induction, resulted in the better developed root system.

Applications: Agriculture

Class no. 3. Agriculture and Food Industry

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

MD.70.	
Title	**Biologically active food additive**
Authors	**T. Strutinsky**
Institution	The Institute of Physiology and Sanacreatology of the Academy of Sciences of Moldova
Patent no.	Patent MD 993
Description EN	The invention relates to food industry, namely to biologically active food additives based on natural vegetable products. The food additive, according to the invention, comprises, in mass %: flour of bean pods 30…50, of amaranth seeds 18…22, of floral pollen 8…12, of cardamon 8…12, of cinnamon 8…12 and of ginger 8…12.
Class no.	3. Agriculture and Food Industry

Practical Scientific Institute of Horticulture and Food Technology
Republic of Moldova

MD.71.

Title	**Food functional product on base of vegetable oils**
Authors	Svetlana Popel, Lidia Parshacova, Janna Cropotova, Inesa Soboleva
Institution	**Public Institution Practical Scientific Institute of Horticulture and Food Technology**
Patent no.	MD579 / Patent application No. 579/2013
Description EN	The invention relates to the food industry, in particular to a functional food product on base of vegetable oils. The product, according to the invention, contains grape seed oil and a mixture of vegetable oils, consisting of linseed or rapeseed oil and of sunflower or corn, or soybean oil, the components being taken in the following ratio, mass %: - grape seed oil 2…16 - mixture of vegetable oils 84…98 at the same time the ratio of polyunsaturated fatty acids ω-3 to isω-6 in the product is (5…10):1. The result of the invention consists in the production of a food product with an optimum ratio of polyunsaturated fatty acids.
Class no.	3. Agriculture and Food Industry

MD.72.

Title	**Processes for producing acidifier and juice from Vitis Labrusca varieties**
Authors	Roman Golubi, Eugen Iorga, Tatiana Achimova,
Institution	**Public Institution Practical Scientific Institute of Horticulture and Food Technology**
Patent no.	MD 913 Z / Patent application No. 0112/2014
Description EN	Process for producing acidifier and juice, according to the invention, comprises blanching of grapes at a temperature of 78…80°C for 2…3 min, destemming, crushing of berries, treatment of the squash with pectolytic enzymes for 12…15 min, pressing, ssettling and filtration of the resulting must, cooling to a temperature of 0…1°C with maintenance for 45…48 hours, filtration and thermal treatment at a temperature of 84…86°C for 20…25 min. At the same time, for production of acidifier are used grapes with the content of dry substances of 10.0...13.9% and the titratable acidity of 1.21…2.50%, and for production of juice - grapes with the content of dry substances of 4.0…18.0% and the titratable acidity of 0.7…1.2%.
Class no.	3. Agriculture and Food Industry

MD.73.

Title	**Method for obtaining of natural wines**
Authors	Taran Nicolae, Soldatenco Eugenia, Stoleicova Svetlana
Institution	**Public Institution Practical Scientific Institute of Horticulture and Food Technology**
Patent no.	Patent application: AGEPI, No. 8266/17.11.2015
Description EN	Correction of alcoholic content in white and red wines using blending method consists in partial dealcoholization of wine using vacuum distillation method, with subsequent blending in different proportions with natural full wine. This method allows obtaining of white and red dry wines with corrected alcoholic content, restoring the fullness of wine, and to regulate the composition of the wine. According to obtained results, blending of initial wine with dealcoholized wine in proportions 50%:50% and 70%:30% contributes the improvement of the effectiveness of dealcoholization process, leads to substantial reduction of operating time and amelioration of quality for wines with reduced alcoholic content.
Class no.	3. Agriculture and Food Industry

MD.74.

Title	**Appreciation method of yeast strain potential for secondary fermentation for the red sparkling wine production.**
Authors	TARAN Nicolae, SOLDATENCO Eugenia, MORARI Boris, SOLDATENCO Olga
Institution	Scientific and Practical Institute of Horticulture and Food Technologies
Patent no.	Patent application: AGEPI, No. 8207/11.09.2015
Description EN	The invention relates to biotechnology, namely appreciation method for secondary fermentation capacity of yeast strain for the production of red sparkling wine. Method of the invention contemplates the addition of the yeast strain in an amount of 3 million at. / cm^3 into the wine with a sugar content of 22 g / dm^3 and phenolic substances from 1000 to 2500 mg / dm^3, the process of fermentation is going over 5 days at 20 ° C in a test tube with a diameter of 2 cm and a height of 15 cm, in which is placed a pipe with one end soldered and with a diameter of 0.3 cm and a height of 10 cm, with neck oriented towards the bottom of the tube, pipe is graduated in scale where one unit have a volume equal to 0,071 cm^3, in process of testing from pipe air is exhaust and

filled with fermentation solution from the tube. And by determining the volume of gas accumulated in the pipe we can judge about fermentation dynamic in the tube. As the accumulated gas volume is greater, the more increased capacity of secondary fermentation the yeast strain has.

Class no. 3. Agriculture and Food Industry

MD.75.

Title **Innovative technologies for food ingredients and diversified food products obtained by adding CO_2 extract and CO_2 meal from tomato wastes**

Authors Olga Migalatiev, Vavil Caragia, Marina Carelina, Valentina Gordeeva, Roman Golubi, Stanislav Fiodorov

Institution **Public Institution Practical Scientific Institute of Horticulture and Food Technology**

Patent no. -

Description EN

The complex processing of tomato, the complete extraction of important components, and the rational management of tomato cannery wastes represent an important issue that needs to be solved. After making tomato juice it is obtained a mixture of seeds, peels and a small amount of pulp, which represent 25-35% of the raw material mass.

These wastes could serve as a raw material for a safe, environmentally friendly and innovative technology - the supercritical CO_2 extraction. By this method the non-polar, lipid soluble compounds are extracted and it is obtained two new products: the lipophilic CO_2 extract and the defatted CO_2 meal from tomato wastes.

The CO_2 extract from tomato wastes is rich in biologically active compounds like monounsaturated (24.40 % from total) and polyunsaturated (53.20 % from total) fatty acids, antioxidants: carotenoids (84.85 mg/100g) and namely the lycopen (13.00 mg/100 g). The CO_2 meal from tomato wastes is a good source of dietary fiber (25.1 %) and protein (37.6 %).

The lipophilic extracts and defatted meal, which are obtained from the tomato wastes, may be used as ingredients in the production of a wide assortment of products with different functional properties due to the biologically active compounds. The CO_2 extract can be added to mixed grated vegetable salad – a traditional dish, and the CO_2 meal can be added to extruded snacks. Adding the extract and the meal to the typical dishes will improve the organoleptic and physiochemical characteristics and will contribute to the proper functioning of the human body.

Class no. 3. Agriculture and Food Industry

Institute of Crop Science "Porumbeni"

Republic of Moldova

MD.76.

Title	***Hibrid of corn, Porumbeni 461 MRf***
Authors	G. Pritula., V. Gorceacov., N. Frunze., N. Vanicovici., V. Micu., V. Ştirbu., I. Bejenari., E. Partas., V. Ciobanu., I. Garbur., I. Frunze., C. Guţanu., A. Rotari.
Institution	**INSTITUT OF CROP SCIENCE "PORUMBENI"**
Patent	**Patent no.MD109, 2012.08.31.** Patent application no. 240413/1-2013
Description EN	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 15.0-19.0 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 and Romania for grain and silage use.
Class no.	3. Agriculture and Food Industry

MD.77.

Title	***Hibrid of corn, Porumbeni 427 MRf***
Authors	V. Ciobanu, V. Micu, V. Ştirbu, S. Mistreţ, V. Maticiu., V. Gribincea, I. Frunze, C. Guţanu, E. Rotari, P. Pîrvan, S. Bruma, G. Lebediuc, A. Patlatîi, A. Spînu.
Institution	**INSTITUT OF CROP SCIENCE "PORUMBENI"**
Patent	***In patenting***
Description EN	Medium-late single cross hibrid of maize, FAO 430. The grain is dent, yellow, weight of 1000 kernel is 340-350 g. The average content of 9,8% protein, 5,0% oil and 73,0% starch. Potential productivity - 10-12 t/ha. High resistance to drought and to falling and breaking of the strains. Tolerant to diseases and pests, also to spring cool conditions. Fast grain dry down. Registered in Moldova and Romania for grain and silage use.
Class no.	3. Agriculture and Food Industry

MD.78.

Title	***Hibrid of corn, Porumbeni 397 MRf***
Authors	V. Maticiuc, V. Koterneak, Gh. Caraivanov, V. Micu, V. Mîrza, E. Partas, I. Garbur, I. Frunze, C. Guţanu, I. Bejenari, A. Rotari, V. Ciobanu.
Institution	**INSTITUT OF CROP SCIENCE "PORUMBENI"**
Patent	**Patent no.MD115, 2012.10.31.**
Description EN	Medium-late single cross hybrid of maize, FAO 390. The grain is flint, deep-orange, with an average content of 11.5% protein, 5.8% oil and 70.3% starch, 4.9 mg/kg carotene, 1000 kernel weight is 280-300 g. Potential productivity 9.0-11.0 t/ha. Resistant to lodging and drought. Tolerant to diseases and pests. Registered in Moldova for food production (flour, cereal).
Class no.	3. Agriculture and Food Industry

MD.79.

Title	***Hibrid of corn, Porumbeni 310 MRf***
Authors	S. Musteaţa, P. Borozan, L. Nujnaia, V. Ştirbu, S. Mistreţ, E. Rotari, O. Criucicov, G. Rusu, V. Pojoga, V. Maticiuc, S. Bruma.
Institution	**INSTITUT OF CROP SCIENCE "PORUMBENI"**
Patent	***In patenting***
Description EN	Medium single cross hibrid of maize, FAO 310. The kernel is dent, yellow-orange, with an average content of 9,9% protein, 4.3% oil and 71.0% starch, weight of 1000 kernel is 346 g. Potential productivity 9-12 t/ha. Resistant to falling and breaking. Tolerant to drought. Fast grain dry down. Responsive to high yield environment and irrigation. Registered in Moldova and Romania for grain and silage use.
Class no.	3. Agriculture and Food Industry

MD.80.	
Title	***Hibrid of sweet corn, Porumbeni 196 CRf***
Authors	V. Maticiuc, V. Koterneak, Gh. Caraivanov, V. Micu, V. Mîrza, E. Partas, I. Garbur, I. Frunze, C. Guţanu, I. Bejenari, A. Rotari, V. Ciobanu.
Institution	**INSTITUT OF CROP SCIENCE "PORUMBENI"**
Patent	**In patenting**
Description EN	Early single cross of sweet hybrid of maize, FAO 190. The grain is yellow, with an average content of 13.1% protein, 14.3% sugars, 21.8% dextrins and 34.8% starch at the picking maturity phase. Is characterized by good taste. Tolerant to diseases and pests. Yield of ears at the picking maturity phase reaches 10.0-12.0 t/ha. Is distinguished by fast seedling growth. Registered in Moldova for use in food.
Class no.	3. Agriculture and Food Industry

Agency for Innovation and Technology Transfer
Republic of Moldova

MD.81.	
Title	**Homeopathic product**
Authors	Postolachi Aureliu, Claudia Belinsky
Institution	**Individual Enterprise "Postolachi Aureliu"**
Patent	Patent application No. 3721/2008
Description EN	Floral-is a clear, colorless gel that will help you cope with problems such as swelling and felling of heaviness in the lower limbs, cramps in the calf muscles, sprains, bruises and contusions of soft tissues, nonspecific inflammation of the joints, premenstrual syndrome, herpes labialis and insect bites
Class no.	4. Medicine - Health Care - Cosmetics

National Centre of Public Health
Republic of Moldova

MD.82.

Title	FUNGI *RHIZOPUS STOLONIFER* 67 CNMN-FD-18, FOR SOLUBILIZING/BIODEGRADATION OF TOXIC HEAVY ELEMENTS COMPOUNDS
Authors	**Coreţchi Liuba, Plăvan Irina, Bahnarel Ion**
Institution	National Centre of Public Health
Patent	Patent application No. **1436/2016**
Description EN	The invention relates to biotechnology and environmental protection. The novelty consists in developing a new biotechnological process to reduce the risk of environmental pollution, based on the use of non-pathogenic microorganisms. It is proposed fungi *Rhizopus stolonifer* 67 CNMN-FD-18, which possesses the solubilization/biodegradation of toxic heavy metal compounds (cobalt and nickel) in the soil.
Class no.	1. Environment – Pollution Control

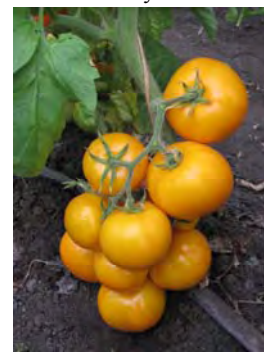
MD.83.

Title	**IMMUNE STATUS ASSESSMENT PROCESS**
Authors	**Coreţchi Liuba**, **Bahnarel Ion**
Institution	National Centre of Public Health
Patent	2667 C2 MD A 61 B 5/145
Description EN	The invention relates to the field of medicine, in particular to processes for the evaluation of the immune status under the conditions of stressogenic factors, including increased ionizing radiation conditions. There is provided a process for the individual assessment of the immune status in patients exposed to radiostresogen factor, according to the correlation of sum of the populations of T-lymphocytes, including correlation of TCD4+ (T-helper lymphocytes) and TCD8+ (T-suppressor lymphocytes) populations to the TCD3+ (pan T-lymphocytes) x 100, investigated by using imunofluoriscent imunoterapy or the biphenotypic method. The technical result consist in increasing of individual assessment of immune status in patients exposed to radiostresogen factor with detection of the correlation between expression of tension index of immune response and manifestation of clinical pathologies. **Applications:** Evaluation of the exposed patients to ionizing radiations.
Class no.	4. Medicine - Health Care - Cosmetics

Transnistrian Research Institute of Agriculture
Republic of Moldova

MD.84.

Title	**The hybrid of tomato "Zador F_1"**
Authors	Pitiul M.D., Niculaeș M.D., Țăpordei A.E.
Institution	**Transnistrian Research Institute of Agriculture**
Patent	0833965/17.02.16
Description EN	The early hybrid, determined for the open and protected ground. From determination to fruiting – 88-89 days. Fruits are round, yellow, smoth, stable to craching, mass – 120-140 g, contains 35 mg/kg, β-carotin. Productivity in film greenhouses – 14-16 kg/m^2 or 50-60 t/ha in the open ground. Suitable for fresh consumption and manufacturing tomato juice for the zones with high radiation to basic diseases.
Class no.	3. Agriculture and Food Industry



MD.85.

Title	**The hybrid of tomato "Mariel F_1"**
Authors	Pitiul M.D., Niculaeș M.D., Țăpordei A.E., Recets R.C.
Institution	Transnistrian Research Institute of Agriculture
Patent	0833698/20.02.15
Description EN	The early hybrid, determined for the open and protected ground. From determination to fruiting – 88-90 days. Fruits are dark-red, mass – 150-160 g, solid. Productivity – 18-20 kg/m^2 or 65-70 t/ha. Suitable for fresh consumption and procession. Stable to basic.
Class no.	3. Agriculture and Food Industry

MD.86.

Title	**The hybrid of tomato "Zolotaya zhemchuzhinka"**
Authors	Niculaeș M.D., Recets R.C., Țăpordei A.E.
Institution	Transnistrian Research Institute of Agriculture
Patent	0843711/20.02.15
Description EN	Zolotaya zhemchuzhinka - indeterminate early ripening (90-95 days) carpal hybrid of generative type for film greenhouses and open ground, orange fruit, rounded, solid, maturation, mass 40-50 g, productivity - 15-20 kg/sq.m., contents in beta carotene fruits - 3-3.5 mg/100g, solids - 6,5-7%, sugar - 3,5-4,5%, vitamin "C" – 45 mg/100 g. Features an integrated disease resistance.
Class no.	3. Agriculture and Food Industry

MD.87.

Title	**The hybrid of tomato "Malinovaya zhemchuzhinka"**
Authors	Niculaeș M.D., Recets R.C., Pitiul M.D., Țăpordei A.E.
Institution	Transnistrian Research Institute of Agriculture
Patent	0843710/20.02.15
Description EN	Malinovaya zhemchuzhinka – indeterminate carpal hybrid with the shortened interstices of universal type, rareripe – from shoots to fruitage 95-98 days, fruits are crimson roundish, solid, mass - 45-50 g, productivity - 15-18 kg/sq.m. Solids content - solid 6-6,5%, sugar - 3,5-4%, vitamin "C" – 40-45 mg/100 g. Resistant to disease complex.
Class no.	3. Agriculture and Food Industry

MD.88.

Title	The hybrid of tomato "Margaritka F_1"
Authors	Niculaeș M.D., Recets R.C., Țăpordei A.E., Pitiul M.D.
Institution	Transnistrian Research Institute of Agriculture
Patent	0843709/20.02.15
Description EN	Margaritka F_1 – indeterminate, universal, ultra early (85-90 days), together ripening, carpal hybrid of generative type, fruits roundish, smooth, solid, dark red, mass 25-30 g, productivity 10-15 kg/sq.m. Dry matter – 6-7%, sugar – 4,5-5%, vitamin "C" - 45-55 mg/100 g. Unfluctuating to the basic diseases.
Class no.	3. Agriculture and Food Industry

Research Institute „ELIRI”
Inventors and Innovators Union „INOVATORUL” of the Republic of Moldova

MD.89.

Title	**HIGH-VOLTAGE DIVIDERS**
Authors	Ion DANILIUC, Iulian COLPACOVICI, Vladimir CLEIMENOV and Dumitru COJOCARU
Institution	**Research Institute „ELIRI”; Inventors and Innovators Union „INOVATORUL” of the Republic of Moldova**
Patent	MD 2180, MD 3239, MD 4128
Description EN	The cycle of inventions relates to the field of electric measurements and is intended for measurement and transformation of large-scale voltage of direct-, alternating- and pulse-current high-voltage circuits. Based on this inventions it was developed a series of new type of high-voltage dividers providing: - a high precision up to 0.05%, similar to standard transformers; - a wide range of operating frequencies (0…50000 Hz); - an extended range of rated voltage (6…80 kV); - a wide range of operating temperatures (-40…+60°C); 1. an increased protection against the influence of electromagnetic fields.
Class no.	2. Energy and sustainable development 5. Industrial and laboratory equipments

Beruf-Auto-Em SRL
Republic of Moldova

MD.90.

Title	Device for controlling valve timing and valve lift
Authors	Oleg Petrov First Author, Vladimir Veilert
Institution	Beruf-Auto-Em SRL
Patent	Patent application No. a0068/2015
Description EN	The invention relates to engine building, in particular for internal combustion engines gas distribution control devices and may be used in the production of new engines and to upgrade engines in use, which are used hydraulic lash adjuster in the valve operating mechanism a cam shaft and the throttle valve. The device performs the function of automatic compensation of backlash in the mechanism of the valve timing. A magnitude of valve lift of the engine valve - in process stages 7 - 9 mm, while for the idle enough to open the valve 2 - 3 mm, therefore for controlling valve lift height enough to have an impact on the order of 6.5 mm. Commensurability given values gave grounds to seek construction of lift control valve device by means of the rocker. The advantage of the opening of the control valves by means of support is the use of the rocker. This device can, with a suitable length ratio of the rocker arms, ensure exposure to a valve 6 mm with support height change only 3 to 4 mm. The device for the implementation of the principle described is protected by patent application and is shown in Figure 1. The operation of the valve control modes are shown in Figure 2. The apparatus automatically eliminate play from the valve train and allows smooth load control over the entire range of ICE operation modes without a throttle valve, and to provide idling restriction timing for late opening and early closing of the valve without overlapping phases. The device provides ICE emergency operation in case of failure the drive control system, as well as the valve closing mode to turn off the cylinder. Commercial introduction of the device without any problems, as is done by replacing the hydraulic lash adjuster to the proposed device, removing the throttle and by switching it to the drive device. The expected effect of the device is to reduce the fuel consumption of the engine at idle for 18% and under a load of up to 10%. Furthermore, the use of the device helps reduce atmospheric pollution by exhaust gases. Said efficiency is confirmed by actual testing a similar system Valvetronic valve control effect on the BMW cars. (claims are 4 points, 5 figures)

Class no. **8. Aviation, car industry and transportation**

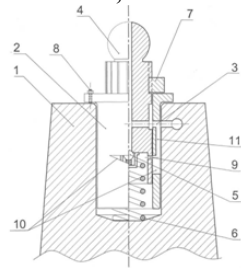


Fig. 1

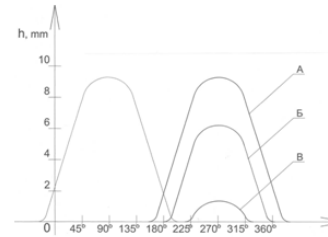


Fig. 2

MD.91.

Title **Device for controlling valve timing and valve lift**

Authors Oleg Petrov First Author, Vladimir Veilert, Corina Gribincea

Institution Technical University of Moldova

Patent Patent application No. a0069/2015

The invention relates to engine building, in particular for internal combustion engines gas distribution control devices, and can be used for producing new engines and to upgrade in use, which uses the drive valve camshafts with hydro pushers and throttle valves with mechanical drive or electrical and electronic.

The technical solution of the device for continuously variable valve timing allows for cycle Atkinson-Miller implement by changing the moments of opening and closing valves, the specified Cam Profile Switching and give up the throttle.

Description EN Valve lifting magnitude of the engine is 7 - 9 mm, and for idling valve open sufficiently for 2 - 3 mm. Therefore, to control the valve lift height enough to have an impact on the order of 6.5 mm. Commensurability given values gave grounds for finding ways to lift the control valve using hydraulic lifters.

The device for the implementation of the principle described is protected by patent application and is shown in Figure 1. The operation of the valve control modes are shown in Figure 2.

The device provides an emergency combustion engine mode, in case of failure of the valve actuator control

system, as well as the valve closing mode to turn off the cylinder.
The expected effect of the device is to reduce the fuel consumption of the engine at idle for 18% and under a load of up to 10%. Furthermore, the use of the device helps reduce atmospheric pollution by exhaust gases. Efficiency confirmed by the real test is similar to the effect achieved by the control system Valvetronic by car group BMW.
(claims are 3 points, 5 figures)

Class no. **8. Aviation, car industry and transportation**

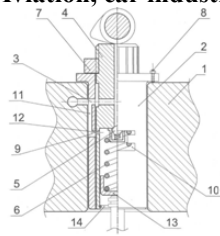


Fig. 1

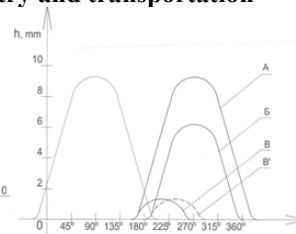


Fig. 2

Junior Achievement Moldova
Republic of Moldova

MD.92.

Title	**Hazzy, Miro, Mos Barbuta**
Authors	Daniel Ganja, Iovu Vasile, Sergiu Barbuta
Description EN	Toys made out of recyclable materials

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Philipines

PH.1.

Title	**Cytotoxicity of *Lukot Proteins* from Wedge Sea Hare Eggs against MCF7 (Breast Cancer) Cell Line *In Vitro***
Authors	Sheena Krista L. Rufila, Rex Belli O. Peji, Jay Marie V. Lumantas
Institution	**AGUSAN DEL SUR NATIONAL HIGH SCHOOL**
Patent no.	-
Description EN	The use of protein for cancer therapy is popular recently because proteins tend to have lower toxicity compared with known chemotherapeutic drugs. This research explored the potential use of *Lukot Proteins* as anticancer agent against MCF7 Breast Cancer Cell. Lukot proteins were isolated from Lukot (*Dolabella auricularia eggs)* and were tested against MCF7 Breast Cancer Cell *In Vitro* using MTT Assay. SDS Page analysis shows that the prominent band obtained from the sample after PEI treatment and ASF precipitation (considered the major protein component of the extract) is at ~70 kDa. MTT Assay, Doxorubicin has the highest average cytotoxicity level followed by *Lukot Protein Pellet* while Lukot Protein Supernatant with PEI has the lowest cytotoxicity level. *Lukot Protein Supernatant with PEI* still exhibits inhibition of the cancer cells but it less toxic to MCF7 compared with the rest of the treatments. In summary, *Lukot Protein* is comparable to Doxorubicin (standard anticancer drug used in laboratory testing) in inhibiting the growth of MCF7 (Breast Cancer Cell line). This research reports the chemotherapeutic potential of *Lukot Proteins* as source of anticancer drug against Breast Cancer Cells.
Class no.	4. Medicine

Poland

Represented by **Eurobusiness-Haller**

PL.1.

Title	**Innovative technology of producing dried ostrich meat with enhanced nutritional and health-promoting properties**
Authors	Jarosław Horbańczuk, Ewa Poławska, Andrzej Półtorak, Agnieszka Wierzbicka, Żaneta Zdanowska-Sąsiadek, Paulina Lipińska, Adrian Stelmasiak, Aleksander Sieroń, Jarosław Wyrwisz, Nina Strzałkowska, Marek Łukaszewicz, Krystyna Gutkowska, Jolanta Oprządek, Henryk Naranowicz, Edyta Juszczuk-Kubiak, Cyprian Tomasik, Artur Jóźwik, Mariusz Pierzchała, Arkadiusz Szpicer
Institution	Institute of Genetics and Animal Breeding of the Polish Academy of Sciences Warsaw University of Life Sciences
Patent no.	P.414678
Description EN	Dynamic increase in the rate of civilization diseases, such as obesity, hypertension, atherosclerosis, diabetes, **anemia** caused by lifestyle and consumed food, results in the need to produce low-calorie food with enhanced nutritional and health-promoting properties, offering the feeling of satiety and energy, while providing reduced quantity of calories, which is ever more pressing. There is a large number of overweight people and people **with iron deficiencies** in Poland and in Europe, for whom food industry shall be releasing food products meeting their expectations. Thus the invention concerns production of low-calorie food products from ostrich meat with enhanced nutritional and health-promoting properties, high content of micro- and macro-elements especially iron, with optimized n6/n3 fat ratio, natural spices extracts and dried vegetables i.e. tomato, pepper, reduced content of salt, at reduced heat treatment.
Class no.	3. Agriculture and Food Industry

PL.2.

Title	**The method of producing pork products with controlled allergenicity**
Authors	Agnieszka Wierzbicka, Krystyna Gutkowska, Jarosław Horbańczuk, Dominika Guzek, Ewa Poławska, Andrzej Półtorak, Monika Marcinkowska-Lesiak, Jarosław Wyrwisz, Cyprian Tomasik, Maciej Kuboń
Institution	Institute of Genetics and Animal Breeding of the Polish Academy of Sciences Warsaw University of Life Sciences
Patent no.	P.404630, Patent no. 220814
Description EN	The problem of allergenicity becomes more and more pronounced in Poland, Europe and worldwide, and concerns substantial share of population with diagnosed food allergies. Allergies are among the important health problems due to their chronic and relapse nature and allergies are getting more and more common. Hence it is important to produce food with reduced and controlled allergenicity, with improved nutritional value, available to consumers with allergen intolerance. The essence of innovative production method of pork products with improved nutritional value, as well as reduced and controlled allergenicity, keeping the original taste and utility characteristics, is suitable selection of raw materials, spices and production process, as well as packaging and testing of finished products, and also marking of products so that they obtain certificates of meeting the standards and can be marketed.
Class no.	3. Agriculture and Food Industry

PL.3.

Title	**Car Seat Increasing Safety of the Child Transported in a Vehicle during Side Collision**
Authors	Andrzej Muszynski, Artur Muszynski, Karol Zielonka, Pawel Trzaska, Pawel Skoniecki
Institution	IDAP TECHNOLOGY Sp z o.o.
Patent no.	P.399144 date : 11.05.2012
Description EN	The object of the invention is a safety seat increasing the safety of the children transported in a vehicle during traffic collision. The operation of the seat is different for two cases of side blow to the vehicle. In the case of side blow to the side further form the place where the seat is fastened the child is moved, together with the seat, towards the center of the vehicle. The value of dynamic loads acting on the body of the child is controlled through the element dissipating the energy. After the movement stops, the seat with appropriately shaped sides, cooperates with integral safety belts and acts on the body of the child in a way which allows to dissipate the remaining kinetic energy in the system child- seat, as well as to limit the possibility of the uncontrolled movement of child's head. Thanks to this solution, during the side collision (in comparison with standard constructions of restraining devices) the child experiences less dynamic loads and it is less possible for child's body to get in contact with the deforming elements of the vehicle's body. The deforming elements of the vehicle's body, posing the biggest threat for the child seating very close, can move the seat of the device together with the child form the zone of the biggest threat to the center of the vehicle. The device is easy to install (using ISOFLEX system + Top tether commonly used for fastening this kind of devices in the vehicles.)
Class no.	12. Safety, protection and rescue of people

PL.4.

Title	System Reducing Dynamic Load Acting on the Body of the Child Transported in a Vehicle during Traffic Collision
Authors	Andrzej Muszynski, Artur Muszynski, Karol Zielonka, Pawel Trzaska, Pawel Skoniecki
Institution	IDAP TECHNOLOGY Sp z o.o.
Patent no.	P.399041 date: 30.04.2012
Description EN	The object of the invention is a safety system increasing the safety of the children transported in a vehicle during a traffic accident. The system consists of properly profiled cushion made of energy dissipating material, fastened to the front seat of the vehicle and the safety seat cooperating with the cushion. Additionally, the seat is equipped in a mechanism, which allows the seat to move in relation to the ISOFLEX fastening elements, alongside the longitudinal axis of the vehicle. The construction limits the distance, which the seat can travel in order to ensure constant distance between the end position of the moving seat and selected point of the cushion, regardless of the positioning of the front seat to which the cushion is attached. In the event where the energy absorbing cushion is not installed at the back of the on the front seat the system shall act as a standard seat without the option of moving. The seat's moving mechanism is additionally equipped in energy absorbing element with correctly selected characteristics, which undergo controlled deformation during the movement of the seat. Using energy absorbing element in movement mechanism allows to dissipate a part of kinetic energy of the objects participating in the collision and first of all allows to control the phase of movement of the seat to ensure correct cooperation of integral safety belts and energy absorbing cushion. The device is easy to install (uses ISOFLEX system + Top tether commonly used for fastening this kind of devices in the vehicles).
Class no.	12. Safety, protection and rescue of people

Poland

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

PL.5.

Title	**The technology of simultaneous production of enzymatic modyficates and starch hydrolyzates**
Authors	**Roman ZIELONKA, Leszek JAROSLAWSKI, Lucyna SLOMINSKA, Marek BUSZKA**
Institution	Prof. Wacław Dąbrowski Institute of Agricultural and Food Biotechnology, Warsaw - Poland Department of Food Concentrates and Starch Products
Patent no.	P.401041 ; P.402016
Description EN	The technological method of simultaneous two different products relies on the enzymatic reaction treatment of various botanical starches such as starch - water suspension (25 - 35%, favourably 30% d.m.) using typical amylolytic enzymes. This reaction runs favourably in the temperature of 45°C, which is below the temperature of starch gelatinization. After reaction, lasting between 24-48 hours, the post-reaction mixture of products divides into two phases: solid phase (70-75% efficiency), fluid phase (25-30% efficirency). (max 250 words)
Class no.	3. Agriculture and Food Industry

PL.6.

Title	**Innovative III generation chitosan dressings containing magnetic nanoparticles**
Authors	Bożena Tyliszczak , Agnieszka Sobczak-Kupiec, Katarzyna Bialik-Wąs, Dagmara Malina, Anna Drabczyk, Sonia Kudłacik
Institution	***Cracow University of Technology, Department of Chemical Engineering and Technology***
Patent no.	-
Description EN	The proposed invention refers to the preparation of bioactive wound dressings based on chitosan containing magnetic nanoparticles, which not only protects the wound from external factors, but also due to its properties cooperate with healing processes. Both chitin and chitosan are widely

used in cosmetics, biotechnology and biomedicine. They are commonly used in preparation of hydrogel dressings, because they belong to a group of substances which accelerate the wound healing process. Great interest in these polysaccharides is primarily due to their properties, which include: biocompatibility, biodegradability, bacteriostatic properties, non-toxicity, good adsorption, very good mechanical strength and bioadhesion.

The innovation of this invention is modification of chitosan polymer matrix by introducing magnetic nanoparticles in the colloidal form at the stage of synthesis. The synthesis of wound dressings take place under the influence of UV radiation. The proposed method for the preparation of dressings is a modern and waste-free method classified as "green chemistry". In the proposed solution, the finished product is sterilized by microwave irradiation. This technology is simple, fast and very efficient.

Magnetic nanoparticles are of great interest for researchers from a wide range of disciplines, including magnetic fluids, catalysis, biotechnology/biomedicine, magnetic resonance imaging, data storage and environmental remediation. By incorporating advanced features, such as specific targeting, multimodality and therapeutic delivery, the detectability and applicability of MNPs have been dramatically expanded.

Class no. 4. Medicine – Health Care - Cosmetics

PL.7.

Title **Beetosan based on polymer matrices containing nanogold for biomedical application**

Authors Bożena Tyliszczak, Agnieszka Sobczak-Kupiec, Katarzyna Bialik-Wąs, Dagmara Malina, Sonia Kudłacik, Anna Drabczyk

Institution ***Cracow University of Technology, Department of Chemical Engineering and Technology***

Patent no. -

Description EN

The proposed invention refers to the preparation of polymer matrices using Beetosan - chitosan derived from bee endoskeleton. The parameters of conducted the process of obtaining the Beetosan and the conditions for the synthesis of polymer matrix under microwave radiation and UV radiation as waste-free method classified as "green chemistry", have been developed. This solution allowed to the use energy to initiate the polymerization reaction and sterilization of biomedical products in one step.

The obtained polymeric matrix from Beetosan was

modified with gold nanoparticles. These nanoparticles are used in many fields, including medicine (due to their ability to absorb infrared radiation they are applied in antitumor therapy). What is more, such nanoparticles are characterized by antibacterial properties. In consequence, their incorporation into a hydrogel matrix gives it the additional feature that is desirable in the case of the use of the proposed invention for biomedical purposes.

Class 4. Medicine – Health Care – Cosmetics

PL.8.

Title **Innovative polymeric matrices as reinforcements of natural hydroxyapatites**

Authors Agnieszka Sobczak-Kupiec, Bozena Tyliszczak, Katarzyna Bialik-Was, Dagmara Malina, Klaudia Pluta, Wioletta Florkiewicz
MSc Eng. Anna Drabczyk

Institution ***Cracow University of Technology, Department of Chemical Engineering and Technology***

Patent no. -

Description EN

Recently, great attention is devoted towards formation of natural polymeric matrices that improve mechanical properties of inorganic phases. Interestingly, hard inorganic phase possesses low mechanical properties such as fragility, brittleness and lack of flexibility, therefore combination of hydroxyapatites with polymeric matrices that contain natural proteins allows attainment of implant materials that may be further applied in both orthopedy and dentistry. Moreover implants that contain polymeric phases are suitable for tomography and MRI measurements.

The main objective of this invention was formation of polymeric matrices based on poly(aspartic acid), poly(vinyl pyrrolidone), poly(glycol ethylene), gelatin and natural proteins such as collagen that constitutes main component of human bones. The polymeric matrices were formed employing either UV-light or microwave irradiation. Series of syntheses were performed in order to achieve materials of the best flexibility. Alternatively, matrices based on PVP/gelatin/protein were formed employing microwave reactor that enables controlling the temperature and pressure, in order not to lead to denaturation of protein. Innovativeness of this study is combination of biocompatible polymeric matrices with fibrous proteins, that allows formation of flexible tree dimensional structures.

Class 4. Medicine – Health Care - Cosmetics

PL.9.

Title	**A method of treatment of liquid digestate**
Authors	***Agnieszka Makara, Zygmunt Kowalski***
Institution	**Cracow University of Technology**
Patent no.	**Polish patent application P. 416076**
Description EN	The object of invention is a method of treatment of liquid digestate obtained by fermentation of a mixture of pig manure and plant biomass. A method of treatment according to the invenion is characterized in this way that the liquid digestate is first mineralized with mineral acids added to a specific pH value, next alkalization is carried out, followed by the addition of superphosphate and the second alkalization. The prepared slurry is next thermally treated, and filtrated. As a result of the filtration a sediment and filtrate are obtained. The advantage of proposed solution is creation of conditions of precipitation and crystallization of calcium phosphates in the slurry to incorporate into the organic phase of digestate of about 50% of the crystalline phase was almost entirely calcium phosphate (hydroxyapatite), insoluble in water, serving as specific filtration aid. This enables practically quantitative recovery of phosphorus, calcium and magnesium from the liquid phase forming slurry of hydroxyapatite in which some part of calcium ions is also replaced with magnesium ions. The proposed method lowered by approximately 95% and 99% and COD loads P in the filtrate in comparison to their contents in the initial digestate. The filtrate could be used instead of water for the irrigation of fields and lawns. It could be also being treated in biological sewage treatment plants. The filtration sediment containing significant amounts of macronutrient fertilizer such as P, Ca, Mg, is expected to be used, after appropriate processing, as raw material for the production of mineral-organic fertilizers.
Class	3. Agriculture and Food Industry

PL.10.

Title	**Separation of varistor during sintering**
Authors	**Witold Mielcarek, Joanna Warycha, Krystyna Prociów**
Institution	**Electrotechnical Institute Division of Elecytrotechnology and Material Science**
Patent no.	Patent Application No. P390293
Description EN	Ceramic elements, and in particular ZnO varistors are made using typical ceramic technology, The ZnO mixture with a small amount of other metal oxides is pressed in discs of variable size and thickness and then sintered at 1250^{o}C. During the process of sintering the green compacts may glue together and stick to each other so hard that they cannot be separated without damaging the varistor. Varistors stick together due to presence of Bi_2O_3 which partly liquates and penetrates into adjoining varistor causing that they adhere together. Therefore applying suitable separators to prevent the green varistor compacts from sticking to cassette or to each other is essential. While designing such separators it is key to keep in mind that varistor ceramic shrinks by approximate of 20vol% during the sintering. Moreover they should not introduce any chemical impurities to the varistor. To solve the problem of the effective separation of green varistor compacts during sintering material, it was developed separator of ZnO doped with sinter – resisting component like Cr_2O_3 or Co_2O_3 effectively separate sintered varistors during the whole period of time of varistor sintering. What is more, separators and sintered varistors do not stick together. In comparison to currently used solutions this is reliable and economical alternative. Details on the technology i.e. material composition, procedure and the stock of machine tools for their of processing are given in patent "Ceramic separators to place between green compacts during varistor sintering" which is registered 27.01.2010 under Patent Pending No P390293 in Polish Patent Office.
Class	2. Energy and sustainable development

PL.11.

Title	**Cell for automated welding of parts made of thick metal sheet**
Authors	Jacek Dunaj, Kacprzak Stanislaw, Klimasara Wojciech, Pachuta Marek, Pilat Zbigniew, Słowikowski Marcin, Smater Michał, Zielinski Jacek, Zarek Miroslaw
Institution	Industrial Research Institute for Automation and

	Measurements PIAP
Patent no.	P.411871
Description EN	Developed by PIAP an automated hybrid welding cell is used for joining elements of a considerable thickness with deep penetration in single runs at a high speed. The cell consist of an industrial robot equipped with a head which integrates the plasma torch and the MIG / MAG torch. Additional laser sensor system realise the joined elements edges tracking. According to the tracking results the system allows on-line correction of robot movements and at the same time assures the proper weld position. By integrating the MIG/MAG and plasma with a laser sensor system the following benefits are achieved in comparison to conventional MIG / MAG: • increased welding speed, e.g.,. butt welding of steel plates having a thickness of 8mm (no bevel) in one pass at a speed of 0.8 m/min • greater depth of penetration when performing weld, • the possibility of a tools trajectory correction off-line and on-line thanks to the advanced sensory system.
Class	5. Industrial and laboratory equipments

PL.12.

Title	**Tachograph Series TC-XXX**
Authors	Wojciech Winiarski, Stanisław Siwiński, Szymon Dąbrowski, Andrzej Bratek, Aleksander Łopatyński
Institution	Industrial Research Institute for Automation and Measurements PIAP
Patent no.	P.404718
Description EN	Railway Tachograph (recording speedometer) is a device for monitoring and recording of operating parameters of rail vehicles. The principle of its operation is very similar to a working principle of vehicle tachographs. The difference between the devices results from their destination and functionalities. The main task of the railway tachograph is the registration and monitoring of operating parameters of a rail vehicle (mainly speed and distance), while the vehicle tachograph primarily controls the driver's working time. Because the information stored in the railway tachograph are analyzed in detail in the event of serious railway incidents, the railway tachographs are connected - through a variety of interfaces – with Train Protection Systems (TPS). This demonstrates the complexity and multi –functionality of the entire device.
Class	8. Aviation, car industry and transportation

Russia

RU.1.

Title	**DEVICES FOR LIVING SYSTEMS AND ENVIRONMENT HARMONIZATION**
Authors	Vasyl Goch, Vladimir Selishev
Institution	**Centre of Living Systems Reseach of Ukrainian Academy of Sciences: Centre „AYUMEL" (Sevastopol) and „TSEL" LTD (Moscow)**
Patent no.	Russian patent PM No. 36232, the Eurasian patent NO. 007760
Description EN	Basic devices are concentrations of energy are made of formed metal wire design, based on the proportions of the Golden section and the basic principles of the modern theory of space and time. Device for the purpose of increasing the specific capacity equipped with batteries Raich. Work on the principle of antenna arrays, accumulating and transforming energy of its surrounding. Produce zone bioadequate energy for changing the properties of living systems, liquid media of different materials, the quality of consumer production. These devices demonstrate effectively using in agriculture, food industry, transportation, oil refining industry, environment, etc.
Class no.	14. Other

RU.2.

Title	**PICTOGRAPHIC RESONATORS WITH INTERNAL COMPOSITION**
Authors	V. Goch, Yu. Skomorovskyy, A. Sergienko, L. Kruchinin, N. Chornobay, N. Goch
Institution	**Centre „AYUMEL" (Sevastopol)**
Patent no.	Patents of Russian Federation, Ukraine.
Description EN	Conformity Is found between the external form of pictographic resonators New Runes (corresponding to their essence) and internal composition. This form of conformity produce growth the harmonizing effect of New Runes influence on the activities of living systems.
Class no.	14. Other

RU.3.

Title	**THE MODEL FOR CREATING AN ENVIRONMENTALLY POSITIVE FRAME OF BUILDINGS**
Authors	P.G. Potapov
Institution	Sevastopol, Russian Federation
Patent no.	-
Description EN	Construction and development of slope areas, aimed at preserving the useful areas, is an important problem which requires new approaches in the design of buildings. Best existing means of relief organization in the construction is the creation of biopositive constructions that do not harm the environment. Proposed a conceptual model of environmentally positive frame low-rise buildings
Class no.	14. Other

RU.4.

Title	**MULTITUNCTIONAL MODULE MACHINE TOOL WITH NC**
Authors	D.V.Krivich, A.G. Karlov
Institution	Sevastopol State University, Politechnical Institute
Description EN	Multifunctional module machine tool with NC combines together some different types of industrial machine tool: 3D printer, milling, etching, grinding machines. Combination of technology function machine tool within on limits on one base allows increase accuracy of processing at the expense of concentration operation and principle unity of the base. Mode of 3D printing can create models volume-skeleton structure, using waste. The following operations of mill, etch, grind are performed on this machine without changes surfaces of based and fixing. Resource economy of manufacture area in workshop formed automatically at the expense of the idea of combines of function variously machine tools with NC in one. It all as a result directed on the main idea of machine tool – reduction of cost piece, which will production on the machine tool such a class. There is layout with control module and testing program milling/grinding virtual piece on C++.
Class no.	5

Slovenia

represented by
ASI – Association of Slovenian Inventors

SI.1.

Title	**MULTIFUNCTIONAL ATTACHMENT FOR MOBILE MACHINERY**
Authors	Edo Krničnik
Institution	/
Patent	Patent application No. P-201500222
Description EN	Multifunctional attachment for loading goods, clearing snow, etc. Affordable gas spring substitutes much more expensive hydraulic attachments, wherein only minor activity of human hand on the handle is required to lift the supporting frame. The attachment can be attached to the machine from both sides, from the front and from behind. Attached from the front it can be used as a small loading bucket, attached from behind it can be used as a simple trailer.
Class no.	8. Aviation, car industry and transportation

SI.2.

Title	**EASEBELT – belt for relaxing the spine**
Authors	Srečko Pisnik
Institution	**EASEBELT d.o.o.**
patent	Patent application No. 201500156/2015
Description EN	The invention solves the problem of releasing the load of the human spine, and thus of the body in general. It is designed for people that have a lot of sitting work. Its purpose is to support and relieve the burden from the spine during various everyday activities. It can be used alone or attached to the backrest of various seats. Its strong elastic strap transfers the body weight force to the backrest of the seat, forcing the spine to assume an optimum posture in which it is able to efficiently absorb the effects of the static/dynamic gravity of the environment on the body, thus protecting and unburdening your spine.
Class no.	12. Safety, protection and rescue of people

South Africa

ZA.1.	
Title	**Integration platform for remote sensing combined with pattern recognition, and IoT in agriculture**
Authors	Wolfgang von Loeper
Institution	**MySmartFarm and Stellenbosch University**
Patent	n.a.
Description EN	We aggregate data from satellites, drones, laboratories, weather stations, soil moisture probes and then use artificial intelligence, such as pattern recognition and more to generate actionable agricultural metrics

Class no. 3. Agriculture and Food Industry

ZA.2	
Title	**Eco-mc² Compressed Air Energy Storage**
Authors	Warwick Leaper & Magriet Leaper
Institution	**LiGE (Pty) Limited South Africa**
Patent	2012/07661 granted & published 31/3/2014 in South Africa
Description EN	Large energy users require cost effective, stable power and water supply. LiGE's Eco-mc² is a power storage system using CAES that provides the customer with the ability to store energy at low tariff and utilize the energy at high peak times. Unlike batteries we do not use rare earth metals nor suffer from short life-spans, unlike generators we have a zero carbon footprint. Our solution is cost effective with a 30-year lifespan and almost infinite storage life, a zero carbon footprint, producing water as a by-product. The control system is constantly monitored by a CRM system for maximum efficiency and peace of mind. LiGE's Eco-mc² Storage System provides uninterrupted supply of high-demand power through a non-battery storage solution with a long lifespan and zero carbon emissions. The advantage of the Storage System is a 65% saving on the electricity bill through storing the energy in low tariff periods coupled with peak shaving which removes the peak demand charges The by-product of the Storage System is clean usable water. A 30-year life span compared to batteries and generators' 5 year lifespan No rare earth metals are used, at the end of the systems lifespan all the parts are recyclable, nothing to landfill. Generators have a short lifespan and very high running costs.
Class no.	1. Environment - Pollution Control 2. Energy and sustainable development

Taiwan

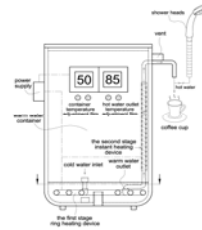
Represented by **WIIPA**

TW.1.

Title	**Thousand-Mile Tracking Band**
Authors	**Rui-Lin Lin, Pin-Lin Liu, Hong-Yi Su**
Institution	Chienkuo Technology University
Patent no.	
Description EN	The infrared wrist band which can detect signs of life contains a built-in water-proof anti-pressure GPS for location detection and an RFID for identity recognition. If those who take aerial, water, or land transport can wear this wrist band, in case of emergency, with the help of this band, rescue teams can find survivors in the shortest time possible to reduce casualties.
Class no.	12. Safety, protection and rescue of people

TW.2.

Title	Two-Stage Instant Heating Energy-Saving Electric Water Heaters
Authors	Hsia, Tai-Chang, Wu, Chang-Chieh, Huang, Yu-Tung Su, Chih-Ching, Joshua C. Chang, Le Mai-Linh
Institution	Chienkuo Technology University
Patent no.	102148210
Description EN	This electric water heater design is two-stage heating, the first stage is preheated cold water inside the container to a warmer temperature for reducing energy consumption. When high temperature water is needed, the second stage of water heating is initiated instantly, so this design have save energy function not only need heavy electric current power but also can provide high temperature water instantly.
Class no.	2. Energy and sustainable development



TW.3.

Title	**Polar Exploration Vehicle**
Authors	**Chou Po, Lu, Ting-Chia, Yang, Rih-Sheng Cheng, Wei-Cheng, Mo, Jian-Cheng, Lu Juan**
Institution	Chienkuo Technology University
Patent no.	-
Description EN	The "exploration vehicle" is capable of making forward or backwards movements, 360-degree turns, and climbing over obstacles in harsh environments. It can also carry out substance sampling and transport materials to designated locations, taking on exploration or rescue operations in dangerous areas in place of people.
Class no.	6. Mechanical Engineering - Metallurgy

TW.4.

Title	**Pipeline Monitor Apparatus**
Authors	**Fa-Shian Chang, Chung-Yi Wu, Jyh-Haw Chen Jieh-Sen Kuo, Shih Hsu**
Institution	Cheng Shiu University
Patent no.	M495905
Description EN	This invention is a device with multiple sets walking waterproof and dustproof design that can overcome a variety of terrain conditions, into the narrow space environment for the conduct of life search, exploration and pipeline inner diameter of the viewing environment clean. It can improve efficiency, simplify complex processes substandard sanitation, industrial safety and reduce accidents to ensure staff safety.
Class no.	1. Environment - Pollution Control

TW.5.

Title	**Homeland Security Applications Robot**
Authors	**Fa-Shian Chang, Jyh-Haw Chen, Shih Hsu Jhu-Wei Ji, Kai-Yi Cho**
Institution	Cheng Shiu University
Patent no.	M478018
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 substance sampling, etc.).
Class no.	12. Safety, protection and rescue of people

TW.6.

Title	**Multi-Role Fire-Fighting Robot**
Authors	**Fa-Shian Chang, Jing-cheng Lu, Shih Hsu, Guan-Xun Liu, Run-De Huang**
Institution	Cheng Shiu University
Patent no.	M504616
Description EN	This invention is a multi-function unmanned vehicle which is combined with fire sprinkler system. Firefighters can keep in a safe distance without fighting in danger by using a wireless remote control sprinkler system, chemical detectors, high-efficiency lighting and thermal image module to execute rescuing and exploring tasks. Otherwise, these unmanned vehicles are equipped with fast integration module which can place all kinds of

compatible systems to deal with emergent situations, such as mine detecting, thermal image searching, radioactivity detecting, chemical pollutants sampling, and mechanical arms installing.

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

TW.7.

Title	**Cloud Smart Strip**
Authors	**Chi-Cheng Chuang, Chun-Yun Ku**
Institution	Institute for Information Industry
Patent no.	US8,346,713B2
Description EN	In the past, user need to have one meter for each appliance to measure power consumption, and it costs a lot. Cloud smart strip adapt Non-intrusive Load Monitoring technology which identifies multiple appliance state on single strip, to reduce the number of smart meter and device cost down by 25%. Moreover, smart strip apply the wireless transmit technology to connect the cloud-based smart home management system-iFamily. It can simultaneously measure the power usage information of individual outlet. User can get visual energy report and recommendations, also remote control home appliances with mobile APP for android and ios.
Class no.	10. Information Technology and Communication

TW.8.

Title	**Adjustable Electronic Heated Welding Torch without Steps**
Authors	**SHIH-YANG-LUNG**
Institution	NEIHU VOCATIONAL HIGH SCHOOL
Description EN	-
Class no.	This invention could freely adjust the welding power you need when you use the electrically heated welding torch. Without replacement and save time. Greatly improve your work efficiency. 6. Mechanical Engineering - Metallurgy

TW.9.

Title	**The Educational Glider**
Authors	**COTES technology Co., Ltd.**
Institution	COTES technology Co., Ltd.
Description EN	1.Learn the principle of aerodynamics while having a lot of fun. 2.During slow speed glider, the wing is stretched out automatically. 3.During high speed climbing, the wing is tilted back.
Class no.	13. Sports, Games and Leisure

Thailand

TH.1.

Title **Innovative Aquaculture System on Hybrid Catfish Production for Community: HCPC system**

Authors Kriangsak Mengumphan, Sudaporn Tongsiri, Doungporn Amornlerdpison

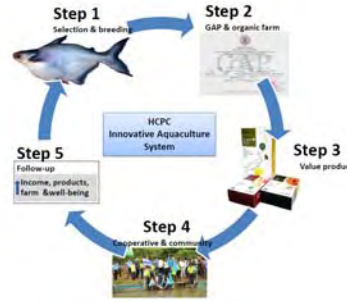
Institution **Faculty of Fisheries Technology and Aquatic Resources, Maejo University, Chiangmai, Thailand**

Patent no. 1403000823/2014

Description EN

Most traditional freshwater aquaculture of catfish cause low quality and quantity of production. Therefore innovative aquaculture system on hybrid catfish production for community (HCPC) has been developed from downstream to upstream protocol. HCPC consists of 5 steps, following by **Step 1**: **Selection and breeding**, the broodstocks of freshwater catfish were selected from male giant catfish and female striped catfish and bred until second generation. The new hybrid catfish was differential identification of the morphology and DNA markers from the parent. Interestingly, the hybrid species have a fast growing rate, large yield of meat, Omega 3, 6 and 9- rich in flesh, and also low investment in aquaculture. **Step 2 : Good Agricultural Practice (GAP) and organic farm**, the hybrid catfish are cultured with standard certification of GAP auditing by Department of Fisheries, Thailand to ensure the quality as well as reassure to consumers. Additionally, the organic aquacuture will be develope for improvement the quality of life for both fish farmers and healthy people. **Step 3** : **Value Creative products**, hybrid catfish has already done to added value product such as fillet, fish sausage, and lipstick. Furthermore, by-product was developed as fish-feed and pet snack. **Step 4**: **Cooperative and community linkage,** the hybrid aquaculture was transferred technology to community enterprise and connect the private partnership to buy the hybrid for food processing. **Step 5: Follow-up and assessment,** the success of the system has been evaluated by income, creative products, certificated farm, consumer satisfaction and well-being of community.

Class no. 3: Agriculture and Food Industry



TH.2.

Title

Enriched Omega-9 Fish Oil From Hybrid Freshwater Catfish By-product

Authors

Doungporn Amornlerdpison, Chutima Srimaroeng, Narissara Lailerd and Kriangsak Mengumphan

Institution

Maejo University and Chiangmai University

Patent no.

1403000816/2014

Description EN

Adipose tissue, by-product from fisheries industry was extracted to obtain freshwater fish oil (FFO) with clear yellow solution, including several fatty acids, acid value, peroxide value and iodine value with standard level of FDA Thailand. Comparative to commercial marine fish oil (MFO), FFO contains similar amount of saturated fatty acid and exhibit 4 times higher quantity of the monounsaturated fatty acid, omega- 9 (oleic acid) than MFO.

FFO was evaluated in animals and liver cells. It can increase both growth performance and omega 3, 6 and 9 in flesh. At the dose of 1g/kg FFO can reduce the plasma glucose, cholesterol and triglyceride in high levels to normal level as well as improve insulin resistance when feed in diabetic rats for 12 weeks. Interestingly, FFO can reduce blood glucose levels lower than MFO in diabetic rats. The antioxidant properties of FFO and its mechanism on a major liver drug transporter were investigated in liver cells. The result showed that FFO can protect reactive oxygen species (ROS) production which is similar to those of vitamin E treatment.

FFO is manufactured as nutraceutical hard gelatin capsule to control stability when is exposed to oxygen, light, high temperature or humidity. The manufacturing of FFO is environmental friendly due to non-solvent extraction process. Therefore product cost of FFO is lower than MFO and also value added of by-product is obtained.

Class no. 4.Medicine - Health Care – Cosmetics

TH.3.

Title	**New Age™ Early Smart Stroke Detection**
Authors	Watchara Kaewmahanin
Institution	**Naresuan University**
Patent no.	1503011515/2015
Description EN	**New Age™** is the novel smart technology of the earliest initial stroke detection in whole brain. The novel smart technology invention is an intelligent and safety performances. It consists of two mains techniques which are the smart Doppler and smart software©. Nowadays **New Age™** is the fastest stroke detection less than 30 seconds. Furthermore, after testing by double blind clinical trial (n=890) in multi-centers for 3 years it was found that accuracy is very high 95.58% and precision 95.12% respectively. Interestingly, the major result found that **New Age™** could decrease significantly the incidence of stroke in mortality and morbidity rate down to 30%. In addition, **New Age™** is a non-invasive technology which is very safe medical device because it is not injury from any tool breaking skin and entering in your body. Moreover, **New Age™** is easy to use and carry due to base design on the personal medical device leading the smallest device only 1 Kg. and long lasting battery up to 10 hours. Big advantages of **New Age™** are the fastest detection, energy saving and long durability. **New Age™** is the best way of earlier stroke screening and prevention.
Class no.	Class 4.Medicine-Health Care-Cosmetics

TH.4.

Title	**VOWDA ™ Coconut compact powder**
Authors	Wilasinee Kositchaiwat
Institution	**Pow-wien co., ltd.**
Patent no.	1501001488/2015
Description EN	Common face powder is a mixture of talcum (from rocks) which plays a role as major component more than 50%. Whereas other components are synthetic chemicals that is often found with skin irritation. Coconut shell is therefore applied instead of talcum in the formulation. It is general waste of coconut industry and mainly utilized as decorative materials and charcoal. From Thai wisdom face powder formula, coconut shell compact powder is developed and manufactured to modern compact powder. It has a property as natural sun protection and alternative for one who is hypersensitive to chemicals. Chemical structure of coconut shell powder and charcoal powder have a lot of porous, it can adsorb excess oil on the face skin. So, it help make up long-lasting and oil control better than normal face powder
Class no.	4 : Medicine - Health Care – Cosmetics

TH.5.

Title	**Monaya ™ Organic Anti-Acne Gel from Mango Leaf Extract**
Authors	Pattanawadee Uttawichai, Doungporn Amornlertpisan
Institution	**MONAYA Co. Ltd/ Maejo University**
Patent no.	1603000514/2016
Description EN	Mango, *Mangifera indica* Linn., is well known as economic fruit in Thailand and South East Asia. However, mango leaves are few utilized compare to fruit, peel and seed. Therefore, mango leaf was extracted and evaluated on pharmacological activity for creative cosmeceutical product. It was found that the mango leaf extract (MLE) exhibited anti-bacterial activities which are major pathogens cause of acne, pimples and abscesses on skin including, *Propionibacterium acnes, Staphylococcus epidermidis* and *Staphylococcus aureus*, Furthermore, the anti-acne gel was formulated to organic product for clinical study. The assessment of acne severity scale was tested in moderate and severe levels of 20 human volunteers. The results obtained 75% of very good satisfaction, the inflammatory lesion caused significantly decrease within 3 days and showed no inflammatory skin within 7 days. In addition, no allergic was found when apply on all volunteers. Additionally, MLE also displayed beneficial effect on skin such as antioxidant, anti-inflammatory and anti-tyrosinase (depigment) activity which can inhibit skin hyper pigmentation. Therefore, the MLE has potential to be an active component in both anti-acne and whitening products. In phytochemical test, MLE contains a potent antioxidant which is phenolic compounds including, catechin, rutin, tannic acid, isoquercetin, quercetin and gallic acid. This innovative extract from mango leaf can add value of waste from mango plantation and enhance trading for mango.
Class no.	4. Medicine- Health Care- Cosmetics

TH.6.

Title	**Plee Preme™ : Maternal Banana blossom powder for breastfeeding**
Authors	Kanittha Jankajonchai
Institution	**Ganwarin Limited Partnership**
Patent no.	1503000156 /2015, 1503000157/2015, 1301008515/2013
Description EN	In ASIA where banana blossom is applied to nurture breastfeeding. Through breastfeeding, children will have strong bound with their mother, balance immune system, better performance of their digestive system and reduction of sickness. However, cooking process of banana blossom is too complicated, resulted in unique taste, and banana blossom is rare to find. Thus, innovative products **-Plee Preme™** : maternal banana blossom powder for breastfeeding is manufactured. With certain high temperature, banana blossom is processed and developed to obtain its' fresh and taste. Whereas *Catechin*, a type of natural phenol and antioxidant *Flavonoid* as major active ingredient is extracted. It can reduce intestinal fat absorption, enhance efficiency of nutrient absorption and promote mothers' breastfeeding. The formulation is easy for customer usage. Just brew it in hot water. In addition, through cooperation with Thailand Research Fund (TRF) in medical testing, it is found *Saponin* as an active ingredient are expected to increase the level of *Prolactin*. Nowadays, those who drink Plee Preme™ can provide breastfeeding to their children over four years and still continue doing !
Class no.	3. Agriculture and Food Industry

TH.7.

Title	**Hillkoff ™ Coffee Cherry Tea**
Authors	Naruemon Taksa-Udom
Institution	**Hillkoff Co., Ltd.**
Patent no.	-

Description EN

Coffee cherry tea is high anti-oxidant infusion drink from by-product of coffee bean processing. Featured with various benefits such as high anti-oxidant content from polyphenol that resists cancer, reduces cholesterol level and stimulates body to generate collagen, coffee cherry tea is tasty and aroma. It can be prepared in the same way as any other sachet teas. Milk, sugar or lemon can be added in.

By using 3 different important processes, coffee cherry tea is produced as follows: **1) Fruit Selection** - only qualified ripe coffee fruit is selected , then kept in air-tight with UV protection bag**. 2) Depulping** – in this step coffee fruit will be depulp under certain conditions to separate coffee beans from pulp**.** The so-call **"**fresh coffee cherry" is hereby obtained. **3) Dehydration** - fresh coffee cherry were dehydrated using infrared oven with specific temperature to fasten the process and keep as much benefit as possible within the same day. As infusion drink coffee cherry tea is finally produced.

Therefore coffee cherry tea manufacturing can contribute in reduction of carbon waste as zero waste coffee industry.

Class no. 3 : Agriculture and Food Industry

Tunisia

TN.1.	
Title	**BIOLIVART**
Authors	Amine EL Gheryeni
Institution	University of Toulouse II Jean Jaures
Patent no.	-
Description EN	We injected our invented dyes in the xylem of the olive tree where dye directly between and among the nutrients of the plant. After what will sprout again in the colors were obtained colored olive fruit we resort to obtaining seeds in boxes kneaded, the aim is to invent four different fruits that grow on this olive bonzai different taste
Class no.	14. Other

Turkey

Represented by
TUMMIAD (Turkish Inventor's Association)

TR.1.

Title Anti-spermatic - Home Edition

Authors Bulent Kavakli, Yusef Rafee

Institution **TUMMIAD**

Patent 72855

Description EN

Implication and advantages:
1-Removing and clearing all substances in man's ejaculation, woman ejaculation, fertilized sperm cell 2- Preventing and treating transmitted sexual infections, STD infections, cleaning vaginal smell, washing and disinfecting vaginal mucus on the basis of vagina self-cleaning stimulation 3- Stabilizing desired PH and vagina fluoro-microorganism and preventing from bacterial and fungous infections 4-Stimulating and accopmlishing G-spot orgasm and semen ejaculation in women followed by desired sensation arising from its pleasure. Willingness to sexual intercourse when using the device and consequently helping treat men's premature ejaculation in aconformity to physical regulations W=MG, f=MA 5-Possibility to have natural sexual intercourse relying on full ejaculation and discharging semen inside the vagina and no need to use any anti-pregnancy devices and methods currently used all over the world including surgical methods, physical items - chemical drugs and periodic abstinence.6-Treating diseased and sexual disorders such as: *Hypoactive sexual disorders (HSDD)-Woman stimulation disorder (FSAD)-Painful or PDs disorder such as*Dyspareunia *Vaginismus *Pain irrelated to intercourse (NSP)Regarding positive physiological and psychological effect arising from using a device by women, by preventing from pain and establishing desired and satisfactory sensation and certainly increasing sexual willingness followed by women stimulation relying on physical characteristics of the device like shape, figure, dimensions, and women's desired color as well as its hotness, softness, slickness, conformity and high flexibility with the vagina and also possibility for women to masturbate and satisfactory and positive physical and psychological effects omen using the device.7- The possibility to do kegel exercise to enhance Pubococcyxious muscle strength and vaginal dilation by device operation and soothing induction while women use the device and patients who need to do mentioned CBT exercises as well as pregnant women.8- The possibility of inject medicinal solutions and medical vaginal wash treatment by the device and also the possibility to providing desired PH ground for vagina to help pregnancy and possibility to determine the gender of son/daughter.9-The possibility for the treatment of constipation resulted from digestive and dyspepsia diseases by stimulating chang- chiang points and pereneal raphe through acupuncture masseur embedded in the device ischium by pressuring towards vagina and massage toward rectum.10- And also possibility to treat dysmenorrheal resistance cases through electrical stimulation of neuron by pereneal skin using inductor of the acupuncture device

Class no. 4. Medicine - Health Care - Cosmetics

TR.2.	
Title	Assistant (Assist Home)
Authors	Bulent Kavakli
Institution	**TUMMIAD**
Patent	-
Description EN	Intelligent control to ensure the site is now made much simpler with assist home, You can stay at home and almost do all your needs. Our project is a multi-purpose adapter at the same time there is update system according to variable configure options Basic options: - To connect to the site management - Instead of paper-invoices transferring all invoices to the system via a digital - Beside normal video intercom plus additional management system to contact the property directly with site management. - Daily and weekly weather indicator - Updated Currency market prices - Orders from negotiated grocery shopping (with just one click ordering easier) - Connection to clean room staff - Connection to service maintenance room - Traffic monitoring the current situation - Emergency SOS connection with closest hospital - Direct connection with negotiated taxi stand - Advertise on the Assists panel - All statements and failure posting on the site and building
Class no.	12. Safety, protection and rescue of people

TR.3.

Title	**Portable Robotic Version**
Authors	Bulent Kavakli, Yusef Rafee
Institution	**TUMMIAD**
Patentn no.	72860
Description EN	Function: Robotic Vasularity Vein Finding Device and Establishing Venous Cannulation for IV TherapyApplication and advantages: 1- Preparing vessels on a completely mechanized method 2-Facilitating and accelerating access to veins and vascularity and performing urgent treatment actions in all patients suffering from poor vein (BAD VEINS) and those afflicted with problems in blood vessels such as cardiac Arrest, 3-No need for treatment personnel to contact with patient's tissue 4-Permanent monitoring of vascularity 5-Smartly locating f the precise anatomic positions of veins by device 6-Manual controllability of device robotics 7-Usability of device as an educational assistance tools in clinical skills of vascularity 8-Preventing and avoiding invasive procedures and surgical techniques 9-Rotationability of robot arm for 210 degrees, rotation of its joint for 130 degrees which leads to enough control of patient's hand and vascularity position. 10-Automatic observance of academic regulations required for intravenous treatment in conformity with international standards of medical sciences and do necessary changes on veins and preparing to run the commands needed to establish intravenous lines by robotic part in patients with poor veins and venous bad.
Class no.	4. Medicine - Health Care - Cosmetics

TR.4.	
Title	**Company Interactions and Rule Based Logistics Platform**
Authors	Ekan Mehmet OYMAN, İlkay YELMEN
Institution	**LTS Software Ltd.**
Patentn no.	
Description EN	A smart logistic company software has been developed by our company. This R & D project has been funded by Turkish Scientific and Technological Research Council. This project is consisting of some dynamic and static rules also company interactions. Metaheuristic algorithms have been used as a software technology. The aim of this software is minimize the time and money. On the other hand, every company and truck owner will be interacted with each other.
Class no.	10. Information Technology and Communication

Turkmenistan

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

Ukraine

UA.1.	
Title	**PROTECTIVE GLOVE**
Authors	A. Bardashevskii, S. Bardashevskii I. Mikulionok
Institution	National Technical University of Ukraine "Kyiv Polytechnic Institute"
Patent no.	Patent application of the Ukraine u2015 11631 (2015).
Description EN	Product concerns to protective sports or working clothes, in particular protective elements for brushes of hands, and can be used during trainings or sports competitions, and also in sports medicine for the organization of optimum control of training process. The glove provides possibility of effective control of the user loading dynamics during user training or sports competitions
Class no.	12

United Kingdom

UK.1.	
Title	**Crystallum Reticulatum**
Authors	Andrei Toma
Institution	**ICDS ARCH LTD** **TEKPOD SRL ROMANIA**
Patent no.	**-**
Description EN	CRYSTALLUM RETICULATUM (CR) is post and beam (P&B) modular technology. CR technology can be used in various configurations to create structures from semi detached 1 bedroom homes to high rise towers. CR is using an angular set of beams which makes it strong like a crystal. Crystallum Reticulatum is a method of manufacturing scalable structure(s) to improve building by multiplication or linking, which involves using a predefined pattern from set points or connections not less than twelve (12)which can be divided into groups not less than two (2) and form into a mould imparting the shape to the structure.
Class no.	7. Buildings and Materials & 9. Chemical and Textile Industry

United Arab Emirates

Represented by

Highly Innovative Unique Foundation (HIUF)

UA.1.

Title	**DenBruFlo Tool**
Authors	Prof. Dr. Najia Al-Zanbagi
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	In Progress
Description EN	It is a tool using for dental cleaning, it contains brush and floss together in one part. It is easy to be applicable and manufactured that it is not expensive. It is distinguished by long time use because it contains two of dental brush top and five parts of tooth floss.
Class no.	4. Medicine – Health Care - Cosmetics

UA.2.

Title	**Garlic Juice as Anti-Head Lice in Jeddah, Saudi Arabia**
Authors	Prof. Dr. Najia Al-Zanbagi & Dina Al-Hashdi
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	In Progress
Description EN	Head lice were checked for garlic juice activity in intervals 30, 60, 90 and 180 minutes in *in vitro* tests. Garlic juice approved high pediculuicidal activity from 30 to 180 minutes. LC_{50} and LC_{90} of garlic juice were as 0.62 ml and 1.02 ml after 30 minutes. Best concentration of garlic juice was tested as ovicidal agent, hatching eggs was 0.33%, while non-hatching eggs was 9.66% on 6^{th} day. In repellent activity and in 1^{st} hour, 7 head lice/10 walked backwards away treated hair.
Class no.	4. Medicine – Health Care - Cosmetics

UA.3.

Title	**Standard needle to take medication**
Authors	Mayadah Hamed Al Jahdali
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	Filling No.: 114350430
Description EN	Standard needle to take medication has small holes on the top surface which allows for entry thin barriers which makes partition for the injection's hand to stop in a specified amount and hold it not to move.
Class no.	4. Medicine – Health Care - Cosmetics

UA.4.

Title	**ZNECOL as Vaginal Trichomonasis Treatment in Saudi Arabia**
Authors	Prof. Dr. Najia Al-Zanbagi & Ebtesam Al-Jehani
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	In Progress
Description EN	Trichomonasis treatment relies on metronidazole. It is carcinogenic in rats and mice which encouraged search for herbal plants. The IC_{50} of ZNECOL aqueous extract were 385, 296 and 258µg/ml, while IC_{90} were 1145, 807 and 632µg/ml after 24, 48 and 72 hours respectively. ZNECOL is comparable to metronidazole as regards potency.
Class no.	4. Medicine – Health Care - Cosmetics

UA.5.

Title	**Saudi Plant Kills Bilharzia Snails**
Authors	Prof. Dr. Najia Al-Zanbagi
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	113350138
Description EN	It is Saudi plant from family Euphorbiaceae kills all the Bilharzias' snails. It kills the snail vectors in low concentrations according to the WHO guidelines. It is safe to all creatures in the environment, including man. It is stable under different storage conditions. Its active component is extracted and identified.
Class no.	4. Medicine – Health Care - Cosmetics

UA.6.

Title	**ZNSAL (Small Apex Locator)**
Authors	Prof. Dr. Najia Al-Zanbagi
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	In Progress
Description EN	It is a tool using for dental nerve removing, this tool composed from three parts, first one is the handle portion, the second is small screen which indicates the tooth nerve in 4 stages, and every stage will be recognized by different color with a ringing voice, the third one is a needle which is pressed in the screen bottom.
Class no.	4. Medicine – Health Care - Cosmetics

UA.7.	
Title	**Saudi Plant as an Antipentranat Agent for *Schistosoma mansoni* Cercariae**
Authors	Dr. Dalia Abuljadayel & Prof. Dr. Najia Al-Zanbagi
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	In Progress
Description EN	It is Saudi plant from family Euphorbiaceae that can reduce Bilharzias'worms establishment by exposing cercariae to very low concentrations. It stops the adult worms development after a period of seven weeks either the experimental mice are painted for two hours or 24 hours preinfection by infective cercariae.
Class no.	4. Medicine – Health Care – Cosmetics

UA.8.	
Title	**Grill Skewers in Tube**
Authors	Prof. Dr. Najia Al-Zanbagi
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	In Progress
Description EN	It is a tube with tight transparent cover, the tube is divided into two chambers, the first one is for minced meat and it has a squeeze handle, the second chamber has middle cavity that the barbecue skewer is inserted in. The squeeze handle of first chamber make separate skewers one by one which is kept in a specific tray with transparent lid until the whole meat is finished that to be ready for the barbecue process.
Class no.	3. Agriculture and Food Industry

UA.9.	
Title	***In vivo* Trials of Potential Antimalarial from *Beta vulgaris* Juice in Jeddah, Saudi Arabia**
Authors	Prof. Dr. Najia Al-Zanbagi & Haleema Albohiri
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	In Progress
Description EN	Effectiveness of *Beta vulgaris* fresh juice to attenuate rodent malaria, *Plasmodium berghei* was evaluated *in vivo*. The EDs were estimated for the best concentration of *B. vulgaris* fresh juice. It gave %inhibition in parasitemia level as 71.4% compared by the Chloroquine 5mg/Kg which gave %inhibition in parasitemia level as 96.6%. In curative test and after 5 days of treatment and by using 20% *B. vulgaris* fresh juice, the parasitemia inhibition level was 27.5%.
Class no.	4. Medicine – Health Care – Cosmetics

UA.10.	
Title	**PBH Tool (Poster Bag with Holder)**
Authors	Prof. Dr. Najia Al-Zanbagi
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	In Progress
Description EN	It is a tube shaped bag with wheels and lid for poster. It is provided with two stand-up holding pieces, it has also a poster track and two holding pieces with hanger for presenting the poster. The poster bag wheels have a specific cover. It can be moved and used easily in everywhere.
Class no.	14. Other

UA.11.	
Title	**Modern Zipper (MZ-ZN)**
Authors	Prof. Dr. Najia Al-Zanbagi
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	In Progress
Description EN	It is a modern zipper that a single person can use it without help from others. It modified to have a small hole in the puller piece, and a specific rode with curved head is provided with this zipper. This rode will hanging in the hole of puller piece, so it can be moved up for closing the zipper or down to open it. It is easy and useful for everybody.
Class no.	14. Other

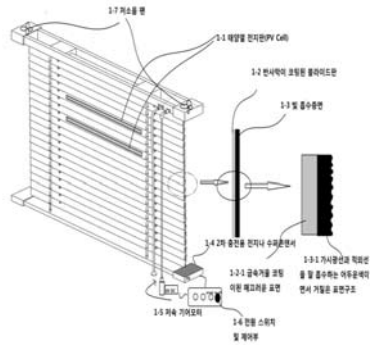
UA.12.	
Title	**Saudi Plant as Schistosomacidal Agent for *Schistosoma mansoni***
Authors	Dr. Dalia Abuljadayel & Prof. Dr. Najia Al-Zanbagi
Institution	**Highly Innovative Unique Foundation (HIUF)**
Patent no.	In Progress
Description EN	It is Saudi plant from family Euphorbiaceae that can kill all Bilharzias' male and female worms by using it in different doses. It decreases the *Schistosoma* worm burden as well as it makes changes in the oogram factor and it makes a reduction of worm eggs in the host tissue.
Class no.	

United States of America

US.1.

Title	**CandyLipz Xtreme Lip-Shaper® Design: Hands-Free Lip Enhancement Home-Use Beauty Tool**
Authors	Dr. Thienna Ho, Ph.D.
Institution	**CandyLipz LLC.**
Patent no.	US Patent D739,083
Description EN	The CandyLipz lip plumper uses a suction element adapted from a 3,500-year-old Chinese 'cupping' method to enlarge the lips. To give the lips a smooth plumping effect and beautiful lip shape, the lip plumper contains a BUILT-IN advanced lip-shaper technology which allows users to shape, contour, and enhance the appearance of lips instantly and beautifully. CandyLipz is designed to work on 15 anatomical zones of the lips and it can produce 2 lip styles: the POUTY LIPZ look of youth and the double-lobed lower lip. Users may work on the upper or lower lip together or separately. The lip-shaper has been engineered to raise the arches of the Cupid's bow in order to create the pouty lips look and lift the corners of the mouth. It takes just two minutes to apply to the lips and the look lasts for 2 hours. The suction lip plumper is used hands-free so multi-tasking is a breeze. The device is made of eco-friendly, non-toxic, ultra-hypoallergenic, and proprietary 100% food grade silicone material, designed to be small, cute and portable – disguised as an apple so users look like they are eating an apple while using the lip pump. Users get to control their own lip size from subtle to extreme. CandyLipz has been clinically proven to increase lip volume for shorter and long-term use and it is safe for lip enlargement at home.
Class no.	4. Medicine - Health Care - Cosmetics

US.2.	
Title	Solar power convection blind with both layers of absorbent or reflect
Authors	Si Young Choi
Institution	Brook School, USA
Patent no.	-
Description EN	I was studying science and exploration group in school have a lot of interest in the topic of absorption and reflection of light in the physical sector. In the study to avoid the reflection of the light reflection film was a study of the glasses, an optical lens with a light measuring device for this was carried out in detail. My research when looking to take advantage of this principle that can be applied in real life where light blinds the idea is going to be able to adjust the indoor temperature was envisioned by the present invention.
Class no.	2. Energy and sustainable development



Vietnam

VN.1.

Title	**PHOTOBIOREATOR SYSTEM OF SPIRULINA PLATENSIS GROWTH FOR FOOD SUPPLEMENT**
Authors	Nguyen Thi Nguyen Anh , Nguyen Hai Anh , Nguyen Ha Thu
Institution	High School Dao Duy Tu-Hanoi
Patent no.	Patent application No. 1-2016-01427
Description EN	Our invention mentions the Photobioreator (PBR) System to grow the micro algae *Spirulina Platensis* for food supplement. Our invention also mentions the food supplement for people and animals which is made from the system. *Spirulina* is one very good kind of functional nutrient and need to be cultivated. The design and set-up of good PBR system for *Spirulina* growth in household scale helps resolve the problem of increasing scarcity of food sources, global warming. Simple design of PBR system is easy to assemble and utilize the residual area to produce and harvest *Spirulina Platensis.*
Class no.	3. Agriculture and Food Industry

VN.2.	
Title	**SYSTEM OF ENVIRONMENTAL MONITOR AND POLLUTION ALARM**
Authors	Nguyen Ba Hai , Nguyen Minh Nam , Do Thi Phuong Thao
Institution	High School Dao Duy Tu-Hanoi
Patent no.	Patent application No. 2-2016-00132
Description EN	Our invention mentions on the system for monitoring the environment (wind speed, noise degree, dust rate, CO_2, temperature, humidity rate) and alarming the environmental pollution. Our design is simple and easy to assemble. The signal alarm and interaction are shown by LED, the data transmission and treatment via network, and the signal is connected to the center via wifi card.
Class no.	1. Environment - Pollution Control


EURO
INVENT

NATIONAL EXHIBITORS

Universities

Research Institutes

Companies

Individuals

University POLITEHNICA of Bucharest

RO.1.

Title EN

LASER WELDING METHOD OF THE CAPSULE WITH RADIOACTIVE MATERIAL

Authors

VOICULESCU, I., GEANTĂ, V., ŞTEFĂNOIU, R., IACOBESCU, G., GRIGORIU, C., NICOLAE, I., DRĂGULINESCU, D, VIESPE, C., SIMA, C., FUGARU, V., MANEA, S.E., DAISA, D.D.

Institution **University Politehnica of Bucharest**

Patent no. RO 128983/29.01.2016

Description EN

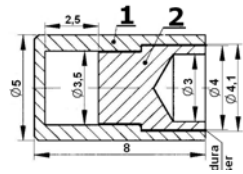
The patent relates to a method of laser welding of an mini-capsule filled with radioactive material, carried out by introducing the capsule into the special room (protected against X radiations), having a special positioning and welding system, connected to a computerized control unit. Laser welding of components filled with radioactive material (capsule) is made by automated moving of the assembly (realized between its body and lid), exposing successively the joining area under the action of the laser beam.

The welding process is performed by laser radiation pulse having energy E = 1.66 ... 2 J / pulse, the peak power Pv = 1 ... 1.2 kW, pulse duration t = 2.5 msec, average power Pm = 33.1 ... 40 W, frequency f = 20 kHz laser pulses, total laser pulse sequence Np = 104 at a speed of rotation of the capsule Vr = 0.2 rev / sec.

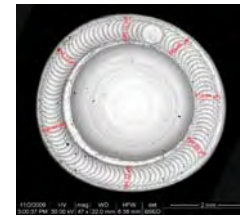
The invention may be applied in the cabinets of radiotherapy units of nuclear medicine for the treatment of malignant tumors using radioactive sources of Co-60, Ir-192, I-125 or Y-90 and for industrial applications in units Gammagraphy industrial control NDT and monitoring of industrial processes that use gamma-emitting radioactive sources Ir-192, Co-60, Ser-75 and Cs-137.

APPLICABILITY DOMAIN: Medicine, Mechanical Engineering – Metallurgy, Buildings and Materials

Class no. 4 & 6 & 7



Mini-Capsule ready to be welded.



Welding seam.

RO.2.

Title EN **HAMMER FOR MILLS GRINDING THROUGH IMPACT AND ITS OBTAINING PROCESSES**

Authors Horia BINCHICIU, Daniel TIHANOV-TĂNĂSACHE, Victor GEANTĂ, Emilia BINCHICIU, Ionelia VOICULESCU, Aurelia BINCHICIU, Radu ŞTEFĂNOIU

Institution **SUDOTIM AS Timişoara**

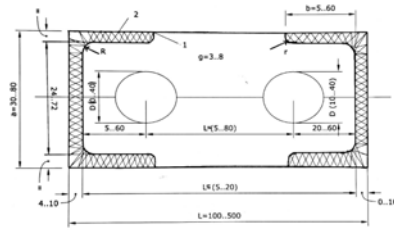
Patent no. A/00031/18.01.2016

Description EN

The patent presents a family of hammers used for mills for grinding through impact and their production processes. These hammers are used in different industries for crushing of raw materials, minerals, pulverulent ferroalloys, grain mixed with legumes and/or zeolites for food, mixtures of materials with high cellulose content and wood particles. In order to increase resistance to wear by abrasion with impact, they are made of a soft and tough steel support, possibly low alloyed with manganese, with high tensile strength, configured to ensure an easy mounting in the hammer rotation axis of the mill. The hammers must ensure a good compatibility at welding by electric arc melting or CIF processes. The filler materials for hardfacing are used for obtaining of the wear self-protection system, made by welding on the mild steel support as composite layers, is composed of nano-structured matrices of alloys, as follows: Fe-14%Mn-3%Ni; Fe-14%Mn-12%Cr-3%Ni; Fe-6%Mn-18%Cr-8%Ni-3%W; Ni-(16-50)%Cr-(4-20)%W, or/and Fe-(20-35)%Cr-(4-20)%W-Ti-Nb-V-Mo; Fe-(30-55)%WC-Mn-Si-Ti; Ni-(50-75)%WC. These alloys have high resistance to wear by abrasion and erosion, combined with thermo-mechanical fatigue, nanostructured and reinforced with complex carbides of W, V, Ti (diameter of 0.025…0.030 mm) and with of 15 ... 30% total participation in the deposited mass. The obtaining process of the hammers is sequential type, consisting of: obtaining of the hammer body by mechanical and/or thermal processes, obtaining of the ceramic support for the melted metal, deposition by welding of the wear self-protection system, cooling in controlled conditions of the coatings and balancing of the coated hammers.

APPLICABILITY DOMAIN: Mining, Agriculture, Metalurgy

Class no. 6 & 7



RO.3.

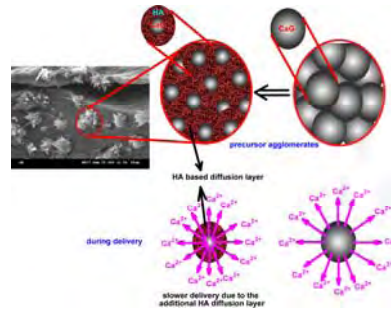
Title EN	**COATED RODS FOR BRAZING AND OBTAINING PROCESS**
Authors	Emilia BINCHICIU, Ionelia VOICULESCU, Victor GEANTA, Aurelia BINCHICIU, Radu STEFĂNOIU, Tihanov-Tănăsache Daniel, Horia BINCHICIU
Institution	**SUDOTIM AS Timișoara**
Patent no.	A/00032/18.01.2016
Description EN	The patent provides solutions for obtaining of three types of coated rods with high efficiency, for oxigas brazing, simultaneously coated with two layers in a single pass. First one is "buffer" layer, for chemical activating and allowing interaction with the base material during melting of the coating, and the second is a filling layer, with the melting range delayed with approx. 50 °C, with low and optimized content of expensive alloying elements, resulting in a reduced price in comparison with other similar products. The coated rods from the new generation consist of 60-65% nude rods, in accordance with EN ISO 17672:2010 and 35-40% composite coating, made by heat extrusion of the mechanical mixture. The coating mass contains approx. 80% deoxidation fluxes, in accordance with EN 1045: 1999, approx. 10% addition of nano-powders chemically activated and approx. 10% binders/plasticizers, wet homogenized in a snail mixer at 45-65 °C. **APPLICABILITY DOMAIN:** Brazing & Welding, Mechanical Engineering – Metallurgy, Buildings and Materials, Utilaje terasiere.
Class no.	6 & 7

Dissimilar joint: Steel pipe and copper pipe.

Teeth for asphalt milling having tungsten carbide parts brazed on steel body .

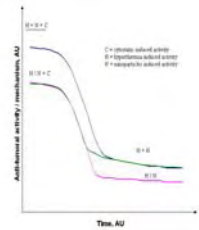
RO.4.

Title EN	**Osteoconductive and osteoinductive bone grafts and process for their manufacturing**
Authors	Anton FICAI, Ecaterina ANDRONESCU, Madalina Georgiana ALBU, Denisa FICAI, Maria SONMEZ
Institution	**University POLITEHNICA of Bucharest**
Patent no.	RO129823-A2 / Patent application A 00240/20.03.2013
Description EN	The invention refers to bone grafts especially developed for dentistry and implantology. Based on the invention, the bone grafts are composed by collagen and hydroxyapatite as well as calcium precursor (especially calcium lactate or gluconate) and collagen hydrolysate. These materials are designed especially for the cases when large bone loss occurs. The presence of the calcium precursor is important because its higher solubility assure a higher ionic calcium level at the desired site and thus induce a faster healing of the bone defect. The slow delivery is important for the treatment of the fracture of osteoporotic bones because the long delivery of the calcium assures a higher level of calcium at the bone level and thus assures a higher mineralization rate comparing with the case of using normal/standard bone grafts. The control of the Ca^{2+} delivery is dependent on composition and morphology. The mineral phase is obtained starting from calcium gluconate or lactate pellets, by immersing them in phosphate solution, at adequate pH. The formation of the hydroxyapatite is thus the essential step in controlling the delivery rate of the calcium. The continuous, thick HA layer assures a slow delivery of the calcium while the thin layer of HA assures a fast delivery.
Class no.	4



RO.5.

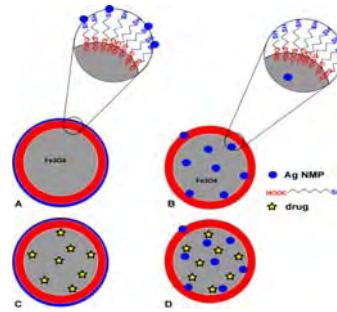
Title EN	**Synthesis procedure of some multifunctional composite materials with potential applications in bone cancer treatment**
Authors	Anton FICAI, Ecaterina ANDRONESCU, Cristina Daniela GHITULICA, Denisa FICAI, Georgeta VOICU, Georgiana Madalina ALBU
Institution	**University POLITEHNICA of Bucharest**
Patent no.	RO127725-A2 / Patent application A 01171/24.11.2010
Description EN	The invention refers to the procedure of obtaining multifunctional, composite materials designed for the treatment of bone cancer. Based on the invention, the multifunctional material is obtained starting from the collagen / hydroxyapatite gel, 3 – 10% magnetite nanoparticles, 10 – 500ppm silver or gold nanoparticles and 0,1 – 10mg/g antitumoral, analgesic or anti-inflammatory agent. The composite antitumoral material is cross-linked with maximum 1% of glutaraldehyde, reported to collagen. Some advantages of the most important advantages of the multifunctional system are: -the loco-regional delivery of the cytostatic agent assures limited side effects; - the use of non-conventional antitumoral agents improves the antitumoral activity of the system and thus lower amount of cytostatic can be used; - the release of the cytostatic can be intensified by applying externally alternative electromagnetic fields because due to the produced hyperthermia the diffusion of the drugs is also improved; - the presence of the nanoparticles assure a long-term antitumoral activity and thus reduce the risks of the recurrences. The multifunctional systems can be designed for assuring high, medium or low (preventive) antitumoral activity, depending on the nature and content of the components and their mechanisms of action. The as obtained multifunctional systems can be also efficient for pain management (by loading with adequate analgesics).
Class no.	4



RO.6.

Title EN	**Multifunctional systems based on magnetite, thioacids and Ag/Au nanoparticles used for the targeted diagnosis and treatment of cancer**
Authors	Denisa FICAI, Ecaterina ANDRONESCU, Maria SONMEZ, Anton FICAI, Ovidiu OPREA, Bogdan Stefan VASILE
Institution	University POLITEHNICA of Bucharest
Description EN	RO129824-A2 / Patent application A/00238/ 20.03.2013
Class no.	The invention refers to a process for the preparation of functionalized magnetic systems. The as obtained systems are composed by three components, structured in a magnetite core and a thioacid shell. Due to the high affinity of the thiol groups for silver or gold surfaces, the as obtained core@shell structures can be can be easily decorated with Ag or Au nanoparticles. Depending on the absorption conditions, these nanoparticles can lead to a secondary, continuous or discontinuous shell. The magnetite core and the Ag/Au shell can be exploited for both diagnosis or targeted treatment of cancer. The targeting ability can be also improved by absorbing specific molecules onto the surface. The antitumoral activity of these systems is assured by the hyperthermia and photothermia but, if desired, also specific drugs (cytostatics) can be absorbed into these suprastructures. The presence of nanoparticles (magnetite as well as silver or gold nanoparticles) is promising candidate as contrast agent in imaging. Also, by changing the synthesis route, composite materials can be also obtained instead of the core-shell structure. Some of the most characteristic multifunctional systems are represented schematically in the forthcoming image.

4



RO.7.

Title EN

Synthesis procedure of some functionalized magnetic systems

Authors

Denisa FICAI, Ecaterina ANDRONESCU, Cornelia GURAN, Anton FICAI

Institution

University POLITEHNICA of Bucharest

Description

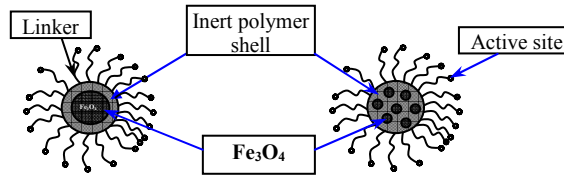
RO127889-A2 / Patent application A 00164/21.02.2011

EN

The invention refers to the synthesis of functionalized magnetic systems for environmental application. The procedure consists in dispersing magnetite nanoparticles in a polysulfone gel of 3 – 25%, in dimethylsulfone or any other adequate solvent followed by phase inversion. This procedure allows the obtaining of micro and nanobeads, films or fibers/wires of heterogeneous Fe_3O_4/polysulfone. The presence of the magnetite allows a facile magnetic removal of these multifunctional magnetic systems while the polysulfone acts as a protective shell of the magnetite as well as a support for immobilizing active agents able to remove or to destroy hazardous agents from water. Cations can be removed from the water by immobilizing special aminoacids, aminoalcohols, polyols, hydroxyacids, aminothiols, etc. or by chemically modifying the polysulfone structure with any of the following groups: –COOH, $-SO_3H$, $-NH_2$, -OH, -SH. Organic pollutants can be also removed from aqueous solutions by enzymatic degradation assured by the immobilized enzyme onto the surface of polysulfone. The use of the linking agent is not mandatory, in some cases the immobilization of the active agents can be realized directly, via some functional groups not involved in the removal of the ions.

Class no.

1



RO.8.

Title EN	**Some Analysis of Major Impact of Geothermal Fluid Components in Power Plant Equipment**
Authors	**Aurelian Buzăianu, Ioana Csaki**
Institution	**Politehnica University Bucharest** **METAV – R&D**
Description EN	This paper presents the results from a some analysis and major impact of geothermal fluid composition on the equipment in use in geothermal power plant. The structural analysis of material deposition improve the direct influenced of chemical composition of steam and waters included CaO, MgO, Al_2O_3 and SiO_2 incorporated in the molten phase and the deposits in the scales formed due to equipment. The steam turbine corrosion damage, particularly of blades, discs and pumps, has long been recognized as leading causes of reduced availability in the geothermal power plant. The corrosion process depends on temperature, pressure, chemisty and vaporous carryover by diversity of impurity. The experimental analysis procedure involves characterization of the fluid geothermal composition and detailed information about surfaces morphological modification of the geothermal power plant components.
Class no.	Innovative Research

University of Agronomic Science and Veterinary Medicine Bucharest

RO.9.

Title EN	**GIS3 – *In vitro* semiautomatic system for testing the viability of microbial strains**
Authors	Emanuel Vamanu
Institution	**University of Agronomic Science and Veterinary Medicine - Faculty of Biotechnology**
Patent no.	Patent application No. A/00407/17.06.2015
Description EN	The present invention consists of a system for *in vitro* testing the effect of transit through the gastrointestinal tract (stomach and intestine) on the viability of microbial strains, in order to obtain functional products for human and veterinary use. The system provides automatic temperature and pH control, by using an Arduino Yun module automatisation, that can send data in real time via a Wi-Fi connection in ThingSpeak Cloud server. The system consists of a Duran vessel from borosilicate glass, capacity 250 mL, a screw cap fitting GL 28 with four entries GL 18 (T, pH sensors, silicone hose from the peristaltic pump, modified biopsy needle), an Arduino Yun module, a Behrotest peristaltic pump, Type PLP 33, a magnetic stirrer with heating and ceramic heating plate IKA C-MAG HS 7 and a temperature sensor.
Class no.	14

Technical University of Civil Engineering Bucharest

RO.10.

Title EN	**SEISMOCODE: Lifelong e-learning platform for the active implementation of the new Romanian seismic regulations harmonized with European standards**
Authors	Radu Pascu, Iolanda-Gabriela Craifaleanu, Ovidiu Anicăi, Livia Ştefan, Viorel Popa, Vasile Virgil Oprişoreanu, Ionuţ Damian, Andrei Papurcu, Cristian Ruşanu
Institution	– Technical University of Civil Engineering Bucharest, UTCB, Romania – National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development, "URBAN-INCERC", Romania – Institute for Computers, ITC S.A., Bucharest, Romania
Description EN	The SEISMOCODE lifelong e-learning platform is conceived to support civil engineering professionals in applying the new European harmonized regulations for the seismic design of reinforced concrete structures. These regulations are of paramount importance for Romania, a country affected periodically by catastrophic earthquakes. With the accession to the European Union, the entire regulatory framework, including that concerning seismic design, underwent major changes. This affected significantly the over 50,000 civil engineers in Romania, and in particular the structural design engineers, by the need of assimilating on the fly a large amount of new concepts, rules and methods. Taking into account that 89% of the population holding a university degree in Romania is currently using the Internet, the SEISMOCODE platform represents an efficient and affordable solution for the upgrading of the professional community. Developed in the framework of a complex collaborative research project, the SEISMOCODE platform will consist of: a body of knowledge (BK), containing the basic hypertext and illustrative material; a Wiki system, interlinked with the contents of BK and allowing a flexible and progressive development; a collection of interactive e-learning modules for (self)-evaluation; a multimedia repository, adapted for display on PCs / smartphones / tablets, with videos, webinars and presentations provided by reputed professionals and a section dedicated to the social interaction with and between professionals. The platform will support professional lifelong learning programs, providing, as well, a valuable teaching resource for graduate and post-graduate university programs.
Class no.	14

Technical University of Cluj-Napoca, România

RO.11.	
Title EN	Method for generating kinematical structures of a reconfigurable parallel robot with vertical actuators and its comprising system
Authors	Cornel Brisan, Manfred Hiller
Institution	**Technical University of Cluj-Napoca**
Patent no.	EPO EP2444209 / 22.04.2015
Description EN	This invention refers to a method for generating kinematical structures of a reconfigurable parallel robot and offers the possibility of establishing different structure varieties of parallel robots with different degrees of freedom. Interchangeable connection elements have been designed in order to be able to apply the method and generate the system. This invention solves the problem of building a reconfigurable parallel robotic system with vertical actuators by providing a method of generating the kinematical structure of these robots.
Class no.	5

RO.12.	
Title EN	**Self-compacting concrete (C50/60) without mineral additions, meant for precast element manufacturing**
Authors	Adrian Mircea IOANI, Henriette SZILAGYI**,** Călin Radu Grigore MIRCEA
Institution	**Technical University of Cluj-Napoca**
Patent no.	OSIM 128500 / 30.01.2015
Description EN	The invention concerns self-compacting concrete (SCC) composition with C50/60 strength class, made only with commonly used materials in the production of precast concrete elements: cement, aggregates, admixtures and water, without any additions. Self-compacting concrete has the following advantages: no compacting operation, faster construction, good looking surface and edge finishes; improved durability; reduced noise level, the use of local materials etc.
Class no.	7

RO.13.	
Title EN	**Separation process of feldspar from quartz in the pegmatite minerals**
Authors	Dumitru Vădan, Roman Morar, Ioan Vădan, Ilie Suărăşan, Maria Gorea, Maria Vădan
Institution	**Technical University of Cluj-Napoca**
Patent no.	OSIM 127825 / 27.02.2015
Description EN	The invention reffers to the separation process of feldspar from quartz in the pegmatite minerals. The advantages of invention application are: -The elimination of the technological process for the flotation phase; -The reduction of electrical energy and water consumption; -Efficiency increase with 16% in comparison to the known process; - The superior quality of the obtained materials: sort quartz $SiO_2 > 98\%$ content of $F_2O_3 < 0.08$ % - The possibility of electrostatic separation of feldspar from quartz.
Class no.	7

RO.14.	
Title EN	**Aggregate concrete with waste glass**
Authors	Ofelia-Cornelia CORBU; Cornelia MĂGUREANU
Institution	**Technical University of Cluj-Napoca**
Patent no.	OSIM 127339 / 30.03.2015
Description EN	This invention will present a green concrete mix developed as part of a PhD research programme, aiming at finding uses for waste glass. After crushing in standard grain sizes, ranging from 0/16 mm down to glass powder and completely or partially replacing traditional types of aggregates (coarse and sand) and even part of the cement. Were investigated in fresh and hardened of concrete.
Class no.	7

RO.15.	
Title EN	**Method for obtaining composite reinforced polymeric plates**
Authors	Petru Paul Bere; Petru Berce; Ovidiu Nemeş; Nicolae Bâlc
Institution	**Technical University of Cluj-Napoca**
Patent no.	OSIM 128093 / 29.05.2015
Description EN	The process for obtaining fiber-reinforced composite plates is filing the fibers with the un-polymerized matrix on a flat covered mold and pressed them in a machine. The innovative idea is to mold pressing the composite material with an external force applied to the foil covering the composite material.
Class no.	7

RO.16.	
Title EN	Sound absorbent composite material and obtaining process
Authors	Ancuţa Elena Tiuc; Tiberiu Rusu; Ovidiu Nemeş
Institution	**Technical University of Cluj-Napoca**
Patent no.	OSIM 129228 / 28.08.2015
Description EN	The patent relates to a sound-absorbent composite material used, both in the exterior and in the interior spaces, to reduce the overall noise, to reduce the structural noise transmission and to obtain appropriate acoustic spaces, and to a manufacturing process to obtain it. Sound-absorbent composite material according to the invention consists of 70 ... 80% of softwood sawdust or 70 ... 75% beech wood fibers and 20 ... 30% of flexible two-component polyurethane foam (PUF) as a binder. According to the invention the process consists in introducing into a mixing container the two components of the polyurethane foam, then followed by vigorous mixing at room temperature for 5 ... 8 seconds, and then insert the sawdust of spruce / beech and mix for 12 seconds, the mixture was poured quickly into the mold, due to the high reaction speed, the mold was covered with a cap and left for 30 ... 45 minutes for completion of the chemical reaction and to achieve dimensional stability as the material is extracted from the mold.
Class no.	7

RO.17.	
Title EN	**Device for preventively lining the interior of hollow pieces of large sizes**
Authors	Gheorghe Ioan VUŞCAN, Vlad CIGAN
Institution	**Technical University of Cluj-Napoca**
Patent no.	OSIM 128980 / 30.09.2015
Description EN	The patent relates to a device used for preventive painting or covering of the interior of a large tubular piece. The technical problem that patent solves is to provide a mechanism to coordinate the advance movement inside tubular pieces with the sprayer rotation movement, in order to obtain quality coatings. By applying the patent, the following benefits are obtained: preventive painting or coating inside large non-removable tubular pieces, the possibility of continuous advance speed regulation, eliminating the human operator, avoid pieces assembly/disassembly and transport costs in specialized workshops.
Class no.	5

RO.18.	
Title EN	**Device for sharpening tools with helical surfaces, placed on the table of a sharpener with abrasive discs**
Authors	Gheorghe Ioan VUŞCAN, Alexandru Cătălin MICACIU
Institution	**Technical University of Cluj-Napoca**
Patent no.	OSIM 129538 / 30.09.2016
Description EN	The patent refers to a device used to measure or sharpen helical surfaces tools. The technical problem that patent solves is to provide a mechanism to allow helicoidally pitch adjustment and adaptation of the tool to be sharpened so that the grinding wheel is in continuous contact with the tools helical surface. By applying the patent, the following benefits are obtained: simple construction, the device can be used simultaneously to control or sharpening different pitch tools, comfortable and precise pitch adjustment can measure or sharpen non-standard parameters surfaces.
Class no.	5

RO.19.	
Title EN	**Compliant minigripper with piezoactuator**
Authors	Simona NOVEANU, CSIBI Vencel-Iosif, Silviu Dan MÂNDRU, Dan Cristian NOVEANU, Ion LUNGU
Institution	**Technical University of Cluj-Napoca**
Patent no.	OSIM 127385 / 30.10.2015
Description EN	The invention proposes a compliant minigripper with monobloc structure, having flexure hinges, obtained by thinning the section of the elements in the structure, symmetrically arranged. The compliant minigripper body contains ten flexure hinges which transmit the movement and the force from the piezoactuator by elastical deformation of the material they are made of to the gripping elements which performes handling.
Class no.	5

RO.20.	
Title EN	**Family of parallel robots for transperineal prostate biopsy**
Authors	Nicolae Plitea, Doina Liana Pisla, Liviu Calin Vaida, Bogdan George Gherman, Paul George-Mihai Tucan, Calin Adrian Govor, Florin Covaciu
Institution	**Technical University of Cluj-Napoca**
Patent no.	Patent application OSIM A 2015 00191
Description EN	The subject of the invention is a family of parallel robots for transperineal prostate biopsy. Each structure consists of two robotic modules, one module for the guidance of the ultrasound endorectal probe and the other one for the guidance of the biopsy gun. The robotic structures composing the guidance modules are parallel mechanisms with 5 (five) degrees of mobility divided into parallel modules of 3 (three) degrees of mobility.
Class no.	4

RO.21.	
Title EN	**Electronic device for facilitating interaction with the environment for visually impaired individuals**
Authors	Valentin Dan Zaharia, Septimiu Crişan, Radu Adrian Munteanu, Titus Eduard Crişan, Bogdan Ţebrean, Dan Mircea Iudean, Călin Mureşan, Vadim Tudor Popa**,** Radu Ioan Munteanu
Institution	**Technical University of Cluj-Napoca**

Patent no.	Patent application OSIM a 2014 00405
Description EN	The invention relates to an electronic device for facilitating interaction between people with visual impairments and the environment by detecting obstacles, signaling the user's presence and intentions visually, and to methods of interfacing the device with the user. Electronic device attaches classic cane for the blind.
Class no.	4

RO.22.

Title EN	**Wheel with electric motor for electric vehicles**
Authors	Nicolae Florin Jurca, Mircea Ruba
Institution	**Technical University of Cluj-Napoca**
Patent no.	Patent application OSIM A/00665 2015
Description EN	The patent refers to a modular wheel with an integrated modular electrical motor dedicated for electrical vehicles. Using this wheel with an inner motor having modular magnetic and electrical circuit, facilitates maintenance operations for such systems making them more reliable and simple. Therefore is not mandatory to be a trained person for the maintenance, thus the operations can be executed by the driver with a special key that can be introduced as standard on the electric vehicles.
Class no.	8

RO.23.

Title EN	Internal combustion rotary engine
Authors	Cornel CIUPAN, Mihai CIUPAN, Emilia CIUPAN
Institution	**Technical University of Cluj-Napoca**
Patent no.	Patent application EPO EP13153780/2013
Description EN	The invention describes an internal combustion rotary engine designed for the operation of vehicles or certain machinery. The authors have developed a simple and efficient internal combustion rotary engine, with low vibration levels, that can operate efficiently at speeds over 10,000 rpm, providing a power-to-weight ratio higher than that of all known engines and that can be designed and manufactured for a wide range of power and applications. The rotary engine consists of a volumetric rotary compressor (1), a volumetric rotary engine (2) consisting of a housing (12), which holds rotor (13) equipped with some slots (13a), on which blades (14) are mounted.
Class no.	8

RO.24.	
Title EN	**Actuator with telescopic sliders**
Authors	Vasile NĂSUI
Institution	**Technical University of Cluj-Napoca**
Patent no.	Patent application OSIM A/00099/07.02.2014
Description EN	The actuator is equipped with telescopic sliders to reduce the gauge and increased stroke work with a gear motor that drives the transmission cable attached to a sliders support which sliders another ruler, with another cable transmission, which has a branch connected to the fixed support and the other to slider two. Is obtained simultaneous translational movement of the two slide rules, thus achieving the extension of the the sled mechanism, a speed added.
Class no.	5

RO.25.	
Title EN	**Carbon dioxide removal system from flue gases**
Authors	Vasile Hotea, Gabriel Badescu, Juhasz Jozsef
Institution	**Technical University of Cluj-Napoca**
Patent no.	OSIM 127080 / 2016
Description EN	The patent relates to a process for the removal of carbon dioxide from flue gases. Installation according to the invention consists mainly of a centrifugal scrubber, a storage tank and preparing a solution of sodium carbonate and potassium sprayed through the nozzle of special design, a condenser for the vapor stream rich in CO_2, desorption column with the role of the solvent regenerator and a condenser where the vapor stream rich in CO_2 desorption column is condensed, dried in the steam turbine, and stored.
Class no.	6

RO.26.	
Title EN	**Process for obtaining a pellet from concentrated cuprous oxide**
Authors	JUHASZ Jozsef
Institution	**Technical University of Cluj-Napoca**
Patent no.	OSIM 125453 / 30.09.2011
Description EN	The patent refers to a process for preparing concentrated cuprous oxide pellet by pelleting operation on a type peletizor pad. Technical problem, solved by the invention is

	to achieve a process that will produce cuprous oxide concentrates of pellets through the pelleting process, applicable at industrial level. It started from the premise of establishing a formula for the preparation of raw material as easy to work further in the blast furnace melting, respectively to minimize the possible use of additional aids.
Class no.	6

RO.27.	
Title EN	**THE ECOMATERIALS SYNTHESIS BY ALKALINE ACTIVATED OF INDUSTRIAL WASTES**
Authors	Vasile Hotea, Badescu Gabriel, Juhasz Jozsef
Institution	UTCN Cluj Napoca, Centrul Universitar Nord din Baia Mare
Patent no.	Patent Applications: A 2011 01080 / BOPI 10 / 2 0 1 2
Description EN	The invention relates to a process for the immobilization of toxic heavy metals (Pb, Cd, Zn, Cu , etc) in a geopolymeric matrix based on metallurgical slag and natural zeolite tuff by alkaline activation, and being an alternative to conventional Portland Cement, and can be used in hazardous waste management, transport infrastructure and construction. Applications: Hazardous Waste Management, Transport infrastructure and Construction.
Class no.	1. Environment - Pollution Control

RO.28.	
Title EN	**THE PLANT OF A CONTINUOUSLY SUPPLY OF COLD MATERIALS PROCESSED THROUGH MELTING**
Authors	Vasile Hotea
Institution	UTCN Cluj Napoca, Centrul Universitar Nord din Baia Mare
Patent no.	Patent application No. 122230 B1 / 2008
Description EN	The patent reffers to an installation of a continuously supply of cold materials (coke, slag, funds), in the melting process in cylindrical rotary furnaces. Applications: Materials Engineering, Chemical, Environmental Pollution Control
Class no.	6. Mechanical Engineering - Metallurgy

RO.29.	
Title EN	SULFUR DIOXIDE AND CARBON DIOXIDE CAPTURE SYSTEM FROM FLUE GASES
Authors	Vasile Hotea
Institution	UTCN Cluj Napoca, Centrul Universitar Nord din Baia Mare
Patent no.	Patent application No. RO 125756 B1/2012
Description EN	The patent relates to a process for capture of sulfur dioxide and carbon dioxide in the flue gas. According to the invention that gases is are treated in a first step with sodium carbonate solution for SO_2 absorption with chemical reaction followed by CO_2 adsorption zeolitic tuff. Applications:The Cement industry, Metallurgy, Petrochemical and Chemical, Power Plants Burning Fossil Fuels.
Class no.	1. Environment - Pollution Control

RO.30.	
Title EN	**Group of inventions of sustainable concrete mixes with glass and concrete waste**
Authors	Attila PUSKAS, Ofelia CORBU
Institution	**TECHNICAL UNIVERSITY OF CLUJ-NAPOCA** **Faculty of Civil Engineering**
Patent no.	Patent application No. PCT/IB2015/053043 Patent application No. PCT/IB2016/052432
Description EN	The inventions are providing energy efficient concrete mixes, produced by use of waste concrete and waste glass. The waste concrete is uses as recycled aggregate, which partially substitutes the natural aggregates, while the waste glass is used as partial substitutor for the cement (reducing the cement ratio in the mix, and, as consequence, the embedded energy), but also as partial substitutor for the natural aggregates. The used recycled waste materials are not only increasing the recycling rate, but also improve the concrete characteristics (abrasion, increase freeze-thaw and cyclic heat resistance, fatique, etc.). Applications: The application field covers all the possible uses of the regular concrete in road infrastructure, civil works and same, especially where the improved characteristics might represent advantage in use.
Class no.	1. Environment - Pollution Control

RO.31.

Title EN **Hybrid joint configuration for steel-concrete composite structures**

Authors Pop Maria, Campian Cristina, Kiss Zoltan
Institution **Technical University of Cluj-Napoca**

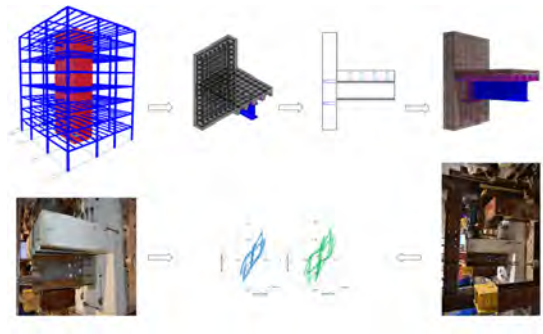
Description EN

The overpopulation of the planet has led to the expansion of the structures vertically, people needed to adapt to a new structural environment. Most common structural solution of the multistory buildings represent reinforced concrete structural walls from which a steel-concrete composite system is developed. The global behavior of a composite steel-concrete structure depends greatly on the composite behavior of the joints, mostly in case of an earthquake.

The new hybrid joint has the main advantage of a very easy erection combined with an appropriate strength and ductility of the structure.

The study aims to an experimental and a numerical study, to reproduce the behavior of a joint configuration between a composite beams to a reinforced concrete wall.

Class no. Innovative Research



RO.32.

Title EN	**Seismic mitigation of tall structures through structural resilience**
Authors	*Miklos Bartha, Daniel Cornea, Szidonia Haba, Ioana Cristina Iordache, Horia Marian, Cătălin Ioan Popa, Marius Rareş Monda, Bogdan Gabriel Stroia, Gergely Vass, Andrei Cosmin Caraza, Alina Alexandra Pop, Bianca Alexandra Raţiu*
Institution	**Technical University of Cluj-Napoca**
Description EN	The research involved designing and constructing a solid model of a tall building in order to mitigate the seismic action and optimize the structural behavior by means of both structural analysis software and laboratory shake table testing. The software model has been calibrated using numerous experimental tests in order to obtain the best correlation possible. The first stage of the research consisted in the development of several 3D computer models using SAP2000 and running time-history analyses. Starting from a robust structure, which had an increased weight, after an optimization process that involved four more experimental models, the structural weight was reduced with 25%. The tests showed that the structural response was not negatively affected by the optimization process. In the contrary, the final structural response recorded during shake table testing was better, compared to the first model. The result of the research consists mainly in obtaining an economical, yet resilient structural system. After developing a structure characterized by an efficient use of materials, the immediate effect is reduced own weight, consequently reducing the dead load and the initial building costs. Another improved aspect is the behavior under seismic loads. This is due to an optimized structural conformation with decreased own weight, meaning smaller inertia loads during dynamic actions. The outcome of designing based on the principle of seismic mitigation through structural resilience can be concentrated mainly in three aspects: reduced building costs, protection of goods and equipment inside buildings and, the most important one, life safety.
Class no.	

RO.33.

Title EN	**PSIPLAN – Heat-Transfer Modeling and Simulation Program**
Authors	Moga Ligia
Institution	**Technical University of Cluj-Napoca**

Description EN

The „PSIPLAN" software used to determine the plane temperature field in a building component was developed based on the „CIMPLAN" software, its first version dating from 1980. The program enables a graphic description of a plane section of a thermal bridge and also an automatic discretization of the section on both axes, in accordance with the stipulations of the EN ISO 10211:2007 and SR EN ISO 10211:2009 standards.

For determining the linear thermal transmittance coefficients ψ and the temperature factors f_{Rsi} for each constructive detail section, it is necessary to know the plane temperature field. Thus the heat transfer differential equation in stationary thermal regime will be solved. The system of equations is generated and solved automatically by the program, until the heat flows are in equilibrium in the mesh nodes and on the two surfaces of the section. The results are given in a tabular format and in a graphical manner. The library of the program has a wide variety of thermal bridges.

The program uses the high accuracy numerical method of the heat balance equilibrium written in the nodes of the calculation mesh in accordance with the stipulation of the EN ISO 10211:2007 standard, A Annex, point A.2. The error estimator generates the extension of the subdivision degree of the mesh. This is done automatically by the program until the convergence conditions for the obtained results are satisfied, conditions stipulated in SR EN ISO 10211:2009 standard, point 12.2.5- Error estimation.

For simplifying the data input and for processing the obtained results, the program „PSIPLAN" has dozens of calculation modules specific for types of thermal bridges met in the design activity of new buildings, and in the energy expertise activity of existing buildings. The program library contains catalogues with the necessary elements for defining the building envelope, arranged by constructive and dimensional types. The program also contains a library with climatic data in accordance with the SR EN ISO 13790 standard and other specific standards: the exterior air temperature, direct and diffuse solar radiation, speed and direction values for dominant winds, exterior air humidity values and atmospheric pressure values.

Class no. Innovative Research - 7. Buildings and Materials

RO.34.

Title EN	**Design systems for residential buildings with low energy consumption in exploitation**
Authors	Moga Ligia
Institution	**Technical University of Cluj-Napoca**

Description EN

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

An important step for implementing energy and CO_2 emissions savings at a European level was introduced by the EPBD recast Directive 2010/31/EU that requires for all new buildings to be built nearly zero energy buildings (nZEB) beginning with 31 December 2020, respectively 31 December 2018 for public buildings. The Directive's definition of NZEB is that of a building using 0 kWh/(m^2·yr) primary energy. The nearly zero or very low amount of energy should be covered to a large extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby.

The present study represented an approach in trying to meet the desired goal of a net-zero energy building by assessing assessment of several green technologies used for building services and principles of green design of a building and their impact in the energy management of buildings. Based on all design decisions implemented for the studied building it was determine that the overall energy consumption of the upgraded house was 6359 kWh, which amounts to over a 50% reduction in electricity consumption obtained through design changes implemented for the building. When the annual electricity generation of 6576 kWh from the 5 kW PV array is factored in, the house is predicted to be just over 200 kWh net positive on an annual basis. Figure 1 shows the monthly electricity consumption by end use and the electrical generation. Further upgrades could be made to improve the energy performance, i.e. use of natural ventilation, use of thermal energy from a combined PVT system, use of passive thermal storage system and other solutions.

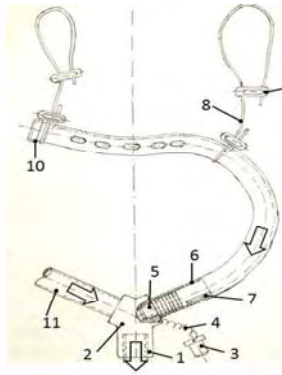
The postdoc project was funded by the European Social Fund Program POSDRU, DMI 1.5, ID 137516-PARTING.

Class no. Innovative Research - 7. Buildings and Materials

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

RO.35.

Title EN	**PERINASAL DEVICE FOR DUST AND AEROSOLS REMOVAL**
Authors	[1]Meda-Romana SIMU, [2]Teodora Maria RADU
Institution	**Your Company/Institute/University** **[1]Universitatea de Medicină şi Farmacie "Iuliu Haţieganu" Cluj-Napoca** **[2]INCDTIM Cluj-Napoca**
Patent no.	A2014 00885/18.11.2014
Description EN	The invention relates to a perinasal device attached to the patient, used in dental offices for vacuuming perinasal dust and aerosols during dental maneuvers, to reduce the amount of particles that penetrate the bronchial tree. The device consists of an assembly attached to patient's protection glasses in the subnasal zone, has an adapter attached to the central axis of the vacuum system of the dental unit that allows attachment of both a saliva ejector and a disposable perinasal ejector. The adaptor has an autoclavable silicone stopper for closing the perinasal ejector hole when the vacuum system is not attached. Applications: Dentistry, Health Care, Dusty Environments to improve breathable air quality, Safety &Protection.
Class no.	4



Legend

1. Central suction tube (vacuum of dental unit) 2. Central suction block 3. Autoclavable silicon plug 4. Anchorage cord 5. spigot connection 6. Suction tube for perinasal aspiration 7. Copper wire integrated into the pernasal thickness of the suction tube to allow plastic deformation thereof with a view to optimum positioning of the suction device 8. Cord anchorage for goggles (2 pieces) 9. Adjuster and cord lock (plastic) 10. Cover lock 11. Flexible tube for suction mouth (saliva classic vacuum cleaner).

RO.36.

Title EN	**CREAM AND GEL WITH PHOTOCHEMOPROTECTIVE EFFECTS AND THE PROCEDURE FOR THEIR OBTAINING**
Authors	**Gabriela Adriana Filip, Postescu Ion Dan, Maria Perde-Schrepler, Marcela Achim, Simona Clichici**
Institution	**University of Medicine and Pharmacy „Iuliu Hatieganu" Cluj-Napoca; Oncologic Institute "Prof. Dr. Ion Chiricuţă" Cluj-Napoca**
Patent no.	**3/155/30.12.2015 and 3/154/30.12.2015**
Description EN	The inventions refer to the content of a cream, oil-in water emulsion, and a gel, for topical application with photochemoprotective properties, in the cosmetic field, designed to protect the skin against the noxious effects of ultraviolet radiation and also to two procedures of their obtaining. The inventions combine a natural extract obtained from *Vitis Vinifera* grape seeds, the Burgund Mare variety, and simple and cheap ingredients for the cream and gel respectively, which assure a good penetration of the extract in the skin and also improve the texture of dry/normal and oily skin, are noncomedogenic and maintain their moisturisation.
Class no.	4 – Medicine – Health Care - Cosmetics

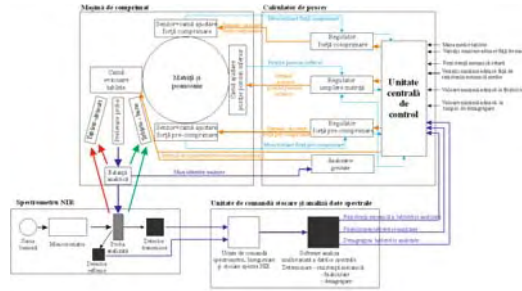
RO.37.

Title EN	**Process for Determining Physical Properties of Pharmaceutical Tablets by Nir-Chemometric Methods**
Authors	Ioan TOMUTA, Rareş IOVANOV, Sorin.E. LEUCUTA
Institution	**University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca**
Patent no.	RO129675-A2/2014 / Patent application RO000080/2013
Description EN	The invention relates to a process for developing and validating near-infrared spectroscopy and multivariate analysis methods for determining the physical properties of pharmaceutical compressed tablets. According to the invention, the process consists, in a first stage, in developing

a method using calibration samples prepared according to an experimental programme, with a variable consisting of the compression force and 5...9 variation levels consisting of various values of the compression force, within the range of 5...50 kN, which are the forces at which the compressed tablets of the calibration samples are prepared, the method development being finished by achieving a multivariate calibration model able to quantisize correlations between the physical properties of compressed tables within the calibration samples and the NIR spectra thereof, followed by a second stage consisting in validating the method, using validation samples prepared according to an experimental programme with one variable and three levels, where the variable is the compression force and the levels are the various values of the compression force within the range of 5...50 kN, corresponding to 1/4, 1/ 2 and 3/4, respectively, from the values of the level scale employed upon calibration, the method being validated by comparing the values obtained through the method developed during the first stage with the values obtained through the European Pharmacopoeia methodology, while calculating the following statistic parameters: linearity, linearity range, exactness, precision and accuracy.

Applications: pharmaceutical industry

Class no. 4. Medicine - Health Care - Cosmetics



RO.38.

Title EN	**Innovative new products made by rapid prototyping 3D useful in tissue engineering in regenerative dentistry**
Authors	Ilea Aranka[1], Soriţău Olga[2], Virág Piroska[2], Fischer Eva[2], Boşca Bianca[3], Barabas Reka[4], Buhăţel Dan[1], Petrescu Nausica[1], Câmpian Radu Septimiu[1]
Institution	[1] UMF Cluj-Napoca, Faculty of Dentistry, Department of Oral Rehabilitation, Oral Health and Dental Office Management [2] IOCN, Laboratory of Radiotherapy, Radiobiology and Tumor biology [3] UMF Cluj-Napoca, Faculty of Medicine, Department of Histology [4] UBB Cluj-Napoca, Faculty of Chemistry and Chemical Engineering
Description EN	Regenerative dentistry is a vast field that is constantly changing. Regeneration of damaged or lost stomatognat apparatus structures using autologous stem cells (harvested from the mouth), a biodegradable scaffold and osteoinductive factors will allow local and general integration of new tissue created. A new alternative in bone regeneration is represented by patient's autologous stem cells that can be printed on 3D scaffolds. Thus we can created functional organs and tissues which will be used in custom therapies. The new generation of 3D bioprinters allow to print three-dimensional structures containing osteoconductive/osteoinductive factors and osteoprogenitor stem cells. **The aim** of this *in vitro* study is to evaluate the usefulness of 3D printed scaffolds concurrently with 3D printed mesenchymal stem cells derived from dental structures and growth factors (required for bone differentiation and neovascularization) with sequential release. **Applications. Advantages**. Positive results would be to create by tissue engineering a new viable bone, which will fit to the defect, with vascularization, using stem cells derived from dental structures, printed 3D on biodegradable scaffolds (nanohydroxyapatite). Another success will be represented by sequential release of growth factors to induce firstly neovascularization and then bone differentiation. Enrichment of medium culture with antioxidant extracts (anthocyanins) may reduce cell apoptosis and necrosis in the central areas of the matrix that is the most vulnerable to the hypoxic effects. The results of this *in vitro* study will be premises for future *in vivo* studies.
Class no.	Innovative Research

University of Craiova

RO.39.	
Title EN	**New Knee Endoprosthesis**
Authors	Daniela Tarnita, Dan Tarnita, Calafeteanu Dan
Institution	**University of Craiova**
Patent no.	
Description EN	The main objective of this research is to develop a three-dimensional solid finite element model of the healthy knee joint and of a modular knee endoprosthesis, to predict stresses in its individual components and to study the effects of the frontal plane tibio-femoral angle on the stress distribution in the knee cartilages and menisci. It was developed the geometric models of the joint which shows different tilt in varus and valgus with 5^{o}, the joint being affected by osteoarthritis in the medial and lateral compartment. For geometric modeling of the human knee joint was used the embedded applications: DesignModeler, SpaceClaim under AnsysWorkbench 14.5 software package. For each model a non-linear analysis was performed. The applied force was equal with 800 N. Finally the results obtained for normal knee and for OA knee joint and for prosthetic knee are compared.
Class no.	4

„Alexandru Ioan Cuza" University of Iasi

RO.40.

Title EN	**Hybrid imidazole / pyridine (quinoline) derivatives with anticancer and antimycobacterial activity**
Authors	Gheorghita Zbancioc, Costel Moldoveanu, Maria-Mirabela Grigore, Ionel. I. Mangalagiu*
Institution	"Alexandru Ioan Cuza" **University of Iasi, Faculty of Chemistry, Romania**
Description EN	The design, synthesis, structure and in vitro anticancer and antimycobacterial activity of new hybrid 1,3-azole / pyridine (quinoline) derivatives is described. The strategy adopted for synthesis is straight and efficient, involving three steps: N-acylation, N-alkylation and quaternization of nitrogen heterocycle. The hybrids have an excellent solubility in microbiological medium and, one of the hybrids compounds with a benzimidazole and 8-aminoquinoline skeleton, exhibit a very good and selective antitumor activity against Renal Cancer A498 and Breast Cancer MDA-MB-468. ***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	Innovative Research

RO.41.

Title EN	**Higly sensitive chemosensors for Zn^{2+} and its coordination complexes based on podants with azaheterocycles skeleton**
Authors	Vasilichia Antoci, Dorina Mantu, Violeta Vasilache, Bogdan Ionel Bratanovici, Ionel. I. Mangalagiu*
Institution	"Alexandru Ioan Cuza" **University of Iasi, Faculty of Chemistry; CERNESIM Research Center; Romania**
Description EN	The design, synthesis and characterisation of Zn^{2+} chemosensors and its coordination complexes based on podants with azaheterocycles skeleton is presented. The podants are hybrid azaheterocycles, with a π–deficient heterocycles (pyridine) and a π–reach heterocycles (imidazole/benzimidazole) in molecule. The complexation ability of our podants with Zn^{2+} was studied. The chemosensor in highly sensitive for Zn^{2+} in the limit of nanomolar. ***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	Innovative Research

RO.42.

Title EN **Environmental fraud risk assessment matrix**

Authors Ioan-Bogdan Robu[1], Ionut Viorel Herghiligiu[2]

Institution
[1]**„Alexandru Ioan Cuza" University of Iasi**
[2]**„Gheorghe Asachi" Technical University of Iasi**

Description EN

Sustainable development requires a balance between the main dimensions (economic and financial, social and environmental) on which a company must report information required by the stakeholders in decision making process. For economic and financial dimension, the company must report certain information regarding the financial position and performance; for social dimension, the company must report a number of indicators of its involvement in society and in supporting community activities in which it operates; for environment dimension, the company must report certain information regarding compliance with environmental rules, as well as information on the work done that may have significant impact on the environment. In many cases, maximizing the results for a given dimension can be achieved, but at the expense of other dimensions: high environmental performance is based on a series of costs incurred by the company, which may affect its financial performance. Wishing reporting of a high environmental performance and also a high financial performance, those that are responsible with governance of the company - managers can use the manipulation of information in the reported financial statements. The purpose of this research project is to propose a methodology to obtain a risk matrix used to assess the environmental fraud risk for the listed firms that report or nor environmental information. To obtain a risk matrix we started from a number of financial indicators that can be used in detecting manipulation of information in the financial statements (those proposed by Jones, 1991 and Beneish, 1999). These indicators were calculated (using logistic regression analysis, it was estimated a score associated for financial manipulations) for a sample of firms, divided into four distinct groups: **1.** firms that report environmental information and without manipulation of financial statements; **2.** firms that report environmental information and present manipulation of financial statements; **3.** firms that do not report environmental information and do not present manipulation of financial statements; **4.** firms that do not report environmental information and present manipulation of financial statements. Using ANOVA under SPSS 20.0 it was estimated, for the four groups of companies, a number of significant differences regarding the existence of environmental fraud risk. The results obtained and the equations for estimating the environmental fraud risk can be shown in a matrix of environmental fraud risk assessment, useful to the main users of statements reported by firms in decision making process.

Class Innovative Research

Environmental fraud risk assessment matrix

Without financial manipulation	Group 1	FFR = X1 EFR = Y1	Group 3	FFR = X1 EFR = Y2
With financial manipulation	Group 2	FFR = X2 EFR = Y1	Group 4	FFR = X2 EFR = Y2
	With environmet reporting		Without environmet reporting	

FFR - Financial Fraud Risk Y1 < Y2 X1 < X2
EFR - Environmental Fraud Risk

RO.43.

Title EN	**Examination of the paper from the counterfeited documents**
Authors	Daniel POTOLINCA[1], Ioan Cristinel NEGRU[2], Marius PADUARU[1], Daniel POTOLINCA[1], Ovidiu TANASA, Ion SANDU[1], Tudor IURCOVSCHI [1], Cristina MANEA (AMARIEI)
Institution	**[1]"Al. I. Cuza" University of Iasi, 22 Blvd. Carol I, 700506, Iasi, Romania;** **[2] Iasi Border Police Territorial Inspectorate, 3-5 George Cojbuc str. Iași, Romania;**
Description EN	Forensic science is used to determine different forms of forgery or counterfeiting of the authentic documents. The role and preservation of these documents have a close connection with the evolution of society. Forensic documents examination differs from other types of forensic examinations by its purpose: identification of the author document; technical expertise of the documents (technical state, structural and functional characteristics, placement conditions – techniques and manufacturing processes) and physicochemical expertise of the documents (chemical nature of materials, archaeometry, artofactometry and chemometrics characteristics etc.). Therefore this study presents the evaluation of the physico-chemical properties of the support of different documents suspected to be forged or counterfeit, using microscopic techniques (Zeiss electron microscope) and spectrophotometric measurements such as micro FTIR (HYPERION FT-IR microscope, Bruker Optics Courtey) in order to determine the nature of the material between the substrate of the genuine document and the forged one. In order to determine the composition of the fibrous material from which the substrate which supports documents are made, it was used small portions of the documents and it was prepared as a suspension of fibre which was treated with colour reagents. These suspensions of fibre have been analysed using the microscope and stereomicroscope, both in natural and different length of artificial light. Infrared spectrometry absorption using micro FTIR device was used to analysed filler material.
Class	Innovative Research

RO.44	
Title EN	**Modern methods used for smuggling cultural goods at the border**
Authors	Marius PADUARU[1], Daniel POTOLINCA[1], Ovidiu TANASA, Ion SANDU[1], Tudor IURCOVSCHI [1], Cristina MANEA (AMARIEI)
Institution	[1]**"Al. I. Cuza" University of Iasi**
Description EN	Illicit traffic with cultural goods is a phenomenon that is continuously growing in our country and generates substantial incomes, that are most often used in other criminal activities. Methods used for smuggling cultural goods at the border are the most diversified and their analysis helps to identify the most efficient measures needed to combat this phenomenon, as well as the main vulnerabilities of authorities responsible with the border control. The research paper aims to show the latest trends in hiding cultural goods at the border in order to establish adapted methods to reduce and combat this phenomenon. Concealment methods are illustrated with cultural goods found in airports, ports and border crossings points.
Class	Innovative Research

RO.45	
Title EN	**Research of New Systems and Processes for Cleaning Old Paintings**
Authors	Cosmin Tudor IURCOVSCHI[3], Ion SANDU
Institution	**„Al. I. Cuza" University of Iasi, ARHEOINVEST Platform,** **Faculty of Geography and Geology, Iași, România**
Description EN	This research presents the study of new materials and processes for cleaning old paintings with minimal impact on the work environment and curator. In this regard, we took into consideration on one hand the detailed knowledge of the behavior of easel painting during the display of, storage or use in various cultural or religious (if applicable) under the influence of endogenous and the exogenous through time analysis real progress their conservation status and clarify the mechanism of evolutionary effects of deterioration of physical and degrading nature of component materials, to stop the destructive processes and alteration, on the other hand the effect of interventions or unwanted deposits on the

integrity paintings. Another aspect very important, is related to the analysis / study to remove their deposits without affecting the patina of ancient, degraded varnish, washed drawingd and layers films partially damaged or degraded. Knowing the time behavior of various types of deposits, but also accidental splashes, repainting and unwanted interventions or operations revernishing preservation and restoration of unprofessional will develop an effective protocol to remove them. The study will involve investigation techniques (optical microscopy and scanning electron microscopy coupled with spectroscopy Dispersive X-ray) of the state of conservation paintings and efficient cleaning deposits with new materials using colorimetry CIE L * a * b * .

Class Innovative Research

RO.46

Title EN "**Substrate influence on fingerprints**"

Authors David Andrea, Vasile Sirbu

Institution „Al.I.CUZA" UNIVERSITY from Iasi, Romania

Description EN

Fingerprints are traces of fingers on a surface and used to identify the author of a crime. This publication demonstrates the influence of substrate and the clarity of keeping this footprint. We used fingerprints taken from live substrates (different plant organs) or breathless (various everyday objects). From the observations fingerprints are taken easy over the usual objects of different textures (glass, pottery, textiles, wood), than from vegetable materials. This can be explained by a stronger and more uniform texture of various objects. Looking at keeping fingerprints on some breathless substrates, they resisted even after the application of hygienic protection.

Class

On the live substrates, structure and metabolism of the substrate, influence on keeping fingerprints in a short period of exposure.

RO.47

Title EN **Anthropology of Salt – a new discipline**

Authors Marius-Tiberiu Alexianu

Institution **"Alexandru Ioan Cuza" University of Iaşi**

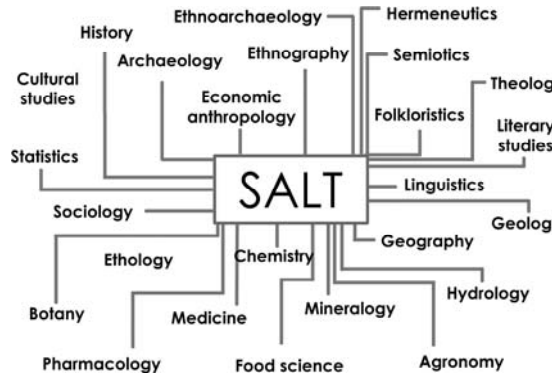
Description EN

The archaeology, the ancient texts, the history, the ethnography and our everyday life confirm that both Man and Animal cannot live without common salt (sodium chloride). From the diatopic and diachronic perspective, this universal "fifth element"—with all its natural or artificial metamorphoses—has influenced humanity in the most diverse aspects. This is why, the salt-related research themes are intriguingly various.

All these themes already constitute a study object for an impressive number of sciences, disciplines, or sub-disciplines, such as archaeology, heritage studies, history, ethnography, ethnoarchaeology, economic anthropology, food sciences, statistics, sociology, geology, mineralogy, geography, hydrology, botany, chemistry, medicine, pharmacology, ethology, theology, agronomy, symbology, linguistics, folklore studies, cultural studies, literary studies, hermeneutics, legal sciences, etc.

Our innovating idea is that of putting together, under the sign of anthropology, the so diverse approaches on this essential reference of human life. I propose that this discipline will study the spiritual, economic, scientific, etc. reactions of humans towards common salt. But now, the anthropology of salt is rather a discipline of the future than then of the present. This new discipline cannot be conceived as a simple mechanical listing of all the sciences/disciplines (with their specific principles and methods) that have NaCl as study object. Many stages must be completed until a genuine anthropological discourse on salt can emerge, one that will surpass the encyclopedic level, and in which the interdisciplinary and particularly, the transdisciplinary character will prevail.

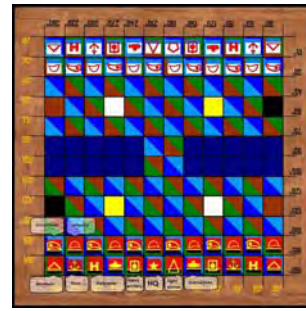
Class Innovative Research



"Gheorghe Asachi" Technical University of Iasi

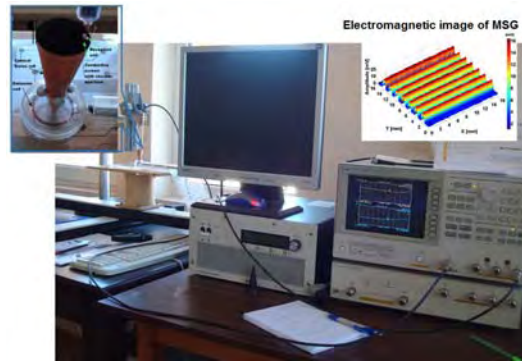
RO.48.

Title EN	**MILITARY AND GEOPOLITICAL STRATEGY GAME**
Authors	Arcire Alexandru
Institution	**"Gheorghe Asachi" Technical University of Iasi, Faculty of Electrical Engineering, Energetics and Applied Informatics**
Patent No.	Patent application No. RO123414-B1 /2012
Description EN	The game called "Surrender Now!" represents a strategy and military war game of the 21th century, based on the tactics and logistics from the battlefield. It's an international dispute, a battle between two armies, a representation of a real life situation, according to a set of rules. You, an experienced general, have under your command a 24 army divisions covering the most known types of army units a 21th century modern army would have: infantry, commando special forces units, highly maneuverable helicopters, navy fleet, mobile heavy artillery battalions, stealth bombers, stealth hunting planes, nuclear subs and the military headquarter where all the tactics, logistics and planning are carried out, where all the commanding generals are located. Its function is to ensure the logistical support to front line troops. The game aims to capture the whole possible scenario of a modern warfare, to maintain the ratio between different types of land form areas, between different types of army division and their fire power range, their velocity, their relationship with the land form, the impact of different geographic land formation and climate on their movement capacity and speed. Basically the game makes a purpose of simulating the scenarios of world's famous modern battles and where they took place. The goal it's to annihilate your opponent by capturing the headquarters of commanding general and forcing him to surrender, to capitulate. There are no casualties in this war, only capturing the enemy's forces due to their commander's lack of knowledge of modern warfare.
Class no.	13



RO.49.

Title EN	**ELECTROMAGNETIC TRANSDUCER FOR ASSESSING INTEGRITY OF BRAIDS OF SINGLE-LAYER PRINTED WIRING ON FLEXIBLE SUPPORT AND OF LAYERED MESO-STRUCTURES**
Authors	Savin Adriana, Steigmann Rozina
Institution	**National Institute of R&D for Technical Physics, Iasi, Romania**
Patent No.	RO129801-A0/2014
Description EN	The transducer is based on a metamaterial conical Swiss roll type that collect the evanescent waves arising in the space between conductive traces when they are excited by a magnetic field polarized in sub-wavelength regime, focusing them to the coil reception in order to evaluate their quality and integrity.
Class no.	5. Industrial and laboratory equipment

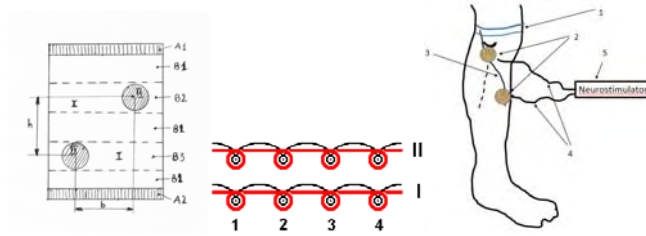


RO.50.

Title EN	**KNITTED PRODUCT WITH EMBEDDED KNITTED ELECTRODES AS NEUROPROSTHESIS TO REHABILITATE THE DISABLED PEOPLE DUE TO A NEUROMOTOR HANDICAP**
Authors	Antonela Curteza, Creţu Viorica, Nicoleta-Laura Macovei, Marian-Silviu Poboroniuc Maria Buzdugan, Marcela Radu, Sabin Tudor Radu, *Gabriela Mirea, Tania Cernea*
Institution	**„Gheorghe Asachi" Technical University of Iasi** **SC MAGNUM SX SRL - Bucharest** **SC RO GALU PROD SRL - Bucharest**
Patent No.	Patent application OSIM no. A 00673 /21.09.2015
Description EN	The invention relates to a knitted product with embedded knitted electrodes which facilitates the FES-based rehabilitation of

disabled people due to a neuromotor handicap.
The technical problem solved by the invention consists in combining the efficiency of traditional classical surface stimulation electrodes with the advantages of a knitted product which will easier place the electrodes over the skin for functional electrical stimulation based rehabilitation, reduces the donning and doffing and provides a better adaptability.

Class no. 4. Medicine - Health Care - Cosmetics



RO.51.

Title EN **CAR FOR DISABLED DRIVER**

Authors Ababei Ion, Vlas Adrian

Institution **„Gheorghe Asachi" Technical University of Iasi**

Description EN Car for people with mobility problems. This car has an automated wheelchair lift, automatized control mechanisms, safety and comfort systems, designed for people with special needs. It also has an electric wheelchair and a modern design.

Class no. 8

RO.52.

Title EN **Process for producing of nanostructured biomaterials based on bismuth substituted hydroxyapatite for medical applications**

Authors Ciobanu Margareta Gabriela, Mateiuc Ana Maria, Luca Constantin

Institution **„Gheorghe Asachi" Technical University of Iasi, Romania**

	The invention relates to a process for the preparation of biomaterials based on bismuth substituted hydroxyapatite in varying degrees, in the form of nanostructured powder, capable of being used as bone substitutes in medical treatments of bone defects in orthopedics and dentistry.
Description EN	The obtaining process of the material based on bismuth-substituted hydroxyapatite in the form of nanostructured powder, according to the invention, is based on the precipitation reaction in an aqueous solution containing sources of calcium, phosphorus, and bismuth. These materials are biocompatible, have a good antimicrobial activity and a higher radiopacity, as compared to unsubstituted hydroxyapatite.
Class no.	Innovative Research

RO.53.

Title EN	**Electromagnetic shielding properties of woven fabrics with different types of metallic yarns**
Authors	Alina-Lăcrămioara Apreutesei, Antonela Curteza, Octavian Baltag
Institution	**„Gheorghe Asachi" Technical University of Iaşi, Romania, Faculty of Textiles - Leather Engineering and Industrial Management**
Description EN	To reduce an electromagnetic field can be used electromagnetic shielding materials and also to reduce the impact of the radiations. Nowadays the electromagnetic shielding technology suddenly becomes a necessity. The effect of using different types of metallic yarns for the electromagnetic shielding properties in the woven fabric with different weave structures has been studied. Three types of yarns (metallic yarns) were used for this purpose and five types of weave structures. This served to prove the electrical conductivity and the electromagnetic shielding properties of woven materials. The electromagnetic shielding effectiveness was analyzed in the 8.7GHz frequency domain. According to experimental results a shielding effectiveness around 58 dB were found.
Class no.	Innovative Research

RO.54.

Title EN	**Molecular motors driven stem cell differentiation**
Authors	Cristina Păiuș (Herghiligiu)[a], Bogdan C. Donose[b], Victor Teboul[c], Simona Ciobotarescu[a], Andreea Caluian[a], Dan

Scutaru[a], Constanta Ibanescu[a], Nicolae Hurduc[a]
[a]"Gheorghe Asachi" Technical University of Iaşi, Faculty of Chemical Engineering and Environmental Protection, Romania
[b]The University of Queensland, School of Chemical Engineering, St Lucia, 4072, QLD, Australia
[c]University of Angers, Laboratoire de Photonique d'Angers, Physics Department, France

Institution

Description EN

Azo-polymers are extensively studied these days because of an exotic and unique behavior: the surface nanostructuring upon interaction with light. By using an interference pattern of two coherent laser beams a surface relief grating (SRG) can be obtained. The interest for this nanostructuring method is continuously increasing thanks to the wide range of applications in data storage, holography, display technology, or solar energy. One of the most recent application of the nanostructured surfaces is as support for cell cultures. The great interest is justified by recent reports showing the differentiation of stem cells exclusively driven by mechanical signals induced only by the extracellular matrix. But the azobenzene SRGs present another unique opportunity: the possibility to generate dynamic surfaces using only light stimuli [1]. In turn, this induces the change of the relief profile and the mechanical characteristics while cells are seeded on the film surface. This is a unique opportunity to separate the influence of the mechanical signals transmitted by the extracellular matrix to the cells cytoskeleton, from chemical signals. It also represents a great prospect to understand the stem cells differentiation mechanisms. The key of this phenomenon is a special state of matter, emulated by the azobenzene groups that act as molecular motors [2, 3] that make possible the polymer flow, even at viscosity values characteristic to the solid state. The fluid like behavior below Tg was also confirmed through molecular dynamic simulations. Also, simulations concluded that the size of the motor has a great influence on the mass transport capacity.

Class no. Innovative Research

RO.55.

Title EN **Controlled cell growth on functionalized azo-polysiloxane substrates**

Authors Cristina Păiuş (Herghiligiu)[a], Roxana Constantinel[a] , Bogdan Donose[b], Norica Branza-Nichita[c], Dan Scutaru[a], Constanța

Institution	Ibănescu[a], Luiza Epure[a], Tomina Bran[a], Nicolae Hurduc[a] [a]"Gheorghe Asachi" Technical University of Iaşi, Faculty of Chemical Engineering and Environmental Protection, Romania [b]The University of Queensland, School of Chemical Engineering, St Lucia, 4072, QLD, Australia [c]Institute of Biochemistry of the Romanian Academy, Department of Viral Glycoproteins, Bucharest, Romania
Description EN	Interactions between cells and the extracellular matrix has drawn the attention of a great number of scientist worldwide in recent years. Cell adhesion to surfaces is mediated by a complex system, based on different ligands which assures transduction, transforming the surface mechanical signals into chemical ones. As a consequence, the extracellular matrix surface relief, elasticity and chemical structure influence in a crucial manner cells' fate. Our group developed a large class of azo-polysiloxanes containing different azo-group structures suitable for nanostructuring by laser irradiation. In this way we can control the relief type (gratings, pillars), the relief amplitude or the periodicity. In addition, we succeeded to connect to the side-chain of the azo-polysiloxanes different groups (nucleobases, biotin) capable to generate hydrogen bonds, promoting therefore the immobilization of different proteins responsible for cell adhesion or fate. We present here different azo-polysiloxanes modified with donor-acceptor groups [1], nucleobases [2] or biotin, capable to generate surface relief gratings [3] which can control the cell growth, can accelerate cells division, or can induce apoptosis. An interesting behavior of this class of azo-polysiloxanes is the interaction with water, leading to significant changes of the relief (for example, from gratings to islands). This is another type of external stimulus which triggers dynamic surfaces in a simpler manner compared to laser irradiation
Class no.	Innovative Research

RO.56.	
Title EN	**Differential Evolution algorithm developed for determining neural network topology**
Authors	Elena Niculina Dragoi, Silvia Curteanu
Institution	**"Gheorghe Asachi" Technical University, Iasi**
Description EN	The proposed application (SADE-NN) uses Differential Evolution (DE) algorithm to simultaneously determine the topology and the internal structure of artificial neural networks.

The optimal network obtained in this way models or predicts different properties of the chemical engineering processes.
The proposed methodology is flexible from different points of view: type of network, type of process modeled, type of DE version. Two ways of determining the DE control parameters were applied in the approach: i) trial and error (the user sets different values for the parameters and choses the ones leading to the best results); and ii) self-adaptation (the algorithm incorporates the control variables, which undergo an evolutive process, the individuals with the best fitness containing the optimal values for these variables).
The algorithm was tested using different case studies. Depending on the process properties, the number of decision variables and the desired characteristics, multiple networks with different topologies and internal parameters were determined. In the majority of cases, the models had a great accuracy. In the same time, the computational effort was lower compared to other approaches used for topology development. The use of the self-adaptive method eliminated the need for the manual determination of the optimal values of the control parameters, thus increasing the probability of obtaining the optimal results.

Class no. Innovative Research

RO.57.

Title EN **Optimization methodology based on an improved version of a self-adaptive Differential Evolution algorithm**

Authors Elena Niculina Dragoi, Silvia Curteanu
Institution **"Gheorghe Asachi" technical University, Iasi**

Description EN

The proposed algorithm (SADE-NN-1) represents an improvement of the previous SADE-NN. The improvements are organized on different levels (neural network and evolutive algorithm) and on different sub-modules (simultaneous topology and internal parameters determination, process optimization, user interface). Consequently, the algorithm was used to optimize neural networks and processes. In the second case, the methodology includes the optimized neural network, which represents the mathematical description of the process. The application can be easily used due to the associated user interface Windows compatible. The novelty elements of the methodology consists in: the introduction of a supplementary

number of transfer functions at the neural network level, the use of new initialization and mutation types at DE level and the addition of a process optimization module. The algorithm, applied to different chemical engineering processes, proved to be a useful tool because: i) there are difficulties related to the modelling of complex chemical engineering processes, for the majority of which the chemical and physical laws governing the system are not totally known and, consequently, the phenomenological modelling is not always possible; ii) there is the necessity of efficient optimization procedures (conditioned by the use of precise mathematical models and by the availability of adequate methods of solving); iii) the user interface has a great advantage because it does not require extensive knowledge about the approach.

Class no. Innovative Research

RO.58.

Title EN **System identification methodology based on Differential Evolution algorithm and BackPropagation (SADE-NN-2)**

Authors Elena Niculina Dragoi, Silvia Curteanu
Institution **"Gheorghe Asachi" Technical University, Iasi**

Patent no.

Description EN

Determining new powerful optimization algorithms able to provide optimal results for different problems is an essential aspect in case of system identification. This is imposed by the fact that relatively good models and optimizers determined for monitoring can introduce high errors when they are used for determining the dynamic of a system. An approach to improve the performance of optimizers consists in using hybridization, which combines the advantages of all participant algorithms. The current application proposed a hybridization of DE with BackPropagation. The resulting algorithms (SADE-NN-2) is included into a general framework, especially created for modelling and optimization of chemical engineering processes. The principle of all the algorithms included in the framework consists in combining bio-inspired optimizers with feed forward multilayer perceptron in order to determine optimal neural models. Although they have commons elements, all the developed algorithms have their own distinct particularities which ensures a different behavior and performance. The original elements of SADE-NN-2 consists in: i) introduction of

	BackPropagation as a local search procedure; and ii) including different elements specific to the chemical engineering process, which would be otherwise difficult to approach with classical methods. Another specific element of SADE-NN-2 is represented by the work methodology developed for determining the dynamic of a system, respectively determining: i) pattern structure (type of information contained in the training data); ii) designing of experiments; iii) application settings and iv) network characteristics. These steps are repeated until an optimal neural model is obtained.
Class no.	Innovative Research

RO.59.	
Title EN	**Modelling and optimizing chemical engineering processing using a hybrid Differential Evolution Algorithm (hSADE-NN)**
Authors	Elena Niculina Dragoi, Silvia Curteanu
Institution	**"Gheorghe Asachi" Technical University, Iasi**
Description EN	The original element of the hSADE-NN algorithm consists in the use a local search procedure based on two algorithms: BackPropagation (BK) and Random Search (RS). This hybridization was performed in order to improve the algorithm performance and to determine models with the lowest error. The combination BK-RS is applied only to the best solution obtained at the end of each DE generation. BK or RS are randomly applied for raising the probability of performance improvement with minimum of resources of the best so far found solution. This algorithm was applied on two case studies represented by the depollution process of some gaseous streams and by the polycondensation reaction for obtaining polyazomethine. In both cases, the comparison with other DE based variants proved the superiority of hSADE-NN, fact that indicates the modifications performed are translated into performance improvement.
Class no.	Innovative Research

RO.60.

Title EN

A New Concept for Determining Social Perception of Ethical and Recycled Fashion Materials

Authors Melissa Wagner, Antonela Curteza

Institution **Faculty of Textiles, Leather and Industrial Management, Gheorghe Asachi Technical University of Iasi**

Description EN

This research invention aims to gain reliable insights on consumer perceptions of ethical and recycled materials. The work addresses the problem of reliability in consumer behaviour research on ethics, focusing on ethical or sustainable fashion products. Ethics are linked to moral and pro-social behaviour, leading to sensitive questions in surveys. Therefore, respondents are likely to give socially desirable answers, called the social desirability bias. Trustworthiness of research results on consumer behaviour referring to ethics is questioned to be reliable. Research mentions an attitude-behaviour gap.

The work presents a new concept for determining social perception of ethical and recycled fashion materials by applying analysis of existing consumer behaviour research methods and adaptions. Qualitative methods are regarded as useful for complex subjects such as ethicality, involving social behavior. Comparing methods such as focus group discussions, on- and offline questionnaires, product testings, feedback forms, website data tracking and metaphor elicitation techniques, an adaption of the Zaltman Metaphor Elicitation Technique (ZMET) and online questionnaires is chosen. It has been seen that users are more free in sharing content when using the internet. Also, design features and pleasurable interface are most important to attract users and enhance communications. An improved human-system interface achieves better data results. The system uses educational and training features, including images and descriptions, presented on the open online platform.

The platform is used, besides exploring how to alternatively collect consumer data, to create self-awareness, asking users to explore their purchase decision funnel by analyzing the clothes they wear and the buying process accordingly. The questions are separated into four sections: purchasing place, fashion production knowledge, reason for purchase, and level of satisfaction. The main output are expectation criteria given by the consumer and their perception of product characteristics analyzed through image ratings.

The new approach ensures more interaction of the consumer while data can be treated as more trustable. Consequently, the proposed model is able to close the attitude-behaviour gap. Finally, findings from standard survey and the new concept are compared to further enhance data collection on ethics.

Class no.

RO.61.

Title EN

Customized garment design system for elderly people or persons with physical disabilities from body scan data

Authors Yan HONG, Pascal Bruniaux, Xianyi ZENG, Antonela CURTEZA

Institution **Gheorghe Asachi Technical University of Iasi**

Description EN

The research project aims at developing a new personalised garment design system for persons with physical disabilities. A virtual reality-based design process is also proposed for the garment production. The proposed research is expected to establish a model for assessing user needs including functional, expressive, and aesthetic (FEA) considerations. The researches starts with the identification of the disability to constitute the basis of the requirements related to the development of advanced textile materials and of personalized functional garments. These new products should meet the specific demands and functions imposed by the needs of the persons with physical disabilities (from ergonomic, biophysical, psychic, aesthetical, comfort/convenient point of view, and from other necessities related to illness or other conditions).
New digital 3D technologies are used to customize the garment to specific morphologies even with physical disabilities. This project will study a sustainable method of garment design by extending the modularization under the process control of minimized cost. The 2D patterns and 3D garments will be provided according to the personal requirements. The constraint components in the modularization of personal garment design will be defined on the basis of customer requirement investigation. The design factors for personalised garment will be identified and analysed. The criteria of commercialization feasible evaluation for garment design in personalised garment market will also considered. It is expected to offer more personalised designs in low-cost level for highly customised garment market.

Class no.

RO.62.

Title EN **CINDERELLA SHOE**

Authors Seul Arina, Manolache Ioana Andreea, Balaban Dragos Bogdan

Institution **"Gheorghe Asachi" Technical University of Iasi, Faculty of Textiles, Leather and Industrial Management**

Description EN

Cinderella Shoe is an advanced, multipurpose and innovative footwear product. It is addressed to modern women that want to be trendy as well as comfortable. One of the most important advantage is that it can be used in cold and warm seasons. The innovative concept consists in detaching and reattaching a different boot quarter and a different heel, in order to adapt to the entire outfit. The boot quarter is attached using a zipper and the heel, by a bolt introduced inside of it. By removing the quarter, the product it is modified from a boot into a court shoe. Due to these removable elements, we get a variety of colors and materials adapted to each new fashion trend.

Class no. Innovative Research

RO.63.

Title EN	**Wireless Controlled Automated Electrospinning Prototype System**
Authors	Valentin Buliga, Antonela Curteza
Institution	**Gheorghe Asachi Technical University of Iasi**
Description EN	We present a prototype system controlled by wireless aimed to automate the electrospinning process. The proposed system implies software and hardware equipment developed to work together for improving the electrospinning process. Hardware system components: server; syringe pump; high voltage power source; electrospinning booth; ventilation system; nozzle motor; collector motor; sensors; webcam; development boards with microcontrollers and motor drivers. Software system components: web application - monitor the process, get the system status, read ambient parameters and control the process parameters and ventilation; web server - store, process and deliver the web application to clients; database – store default settings, users, projects and parameters. Connecting the software and hardware components we obtain an automated electrospinning system with controllable parameters. Threw the system we can read the ambient parameters (temperature and humidity) and control the process parameters (applied voltage, solution flow rate, distance between the nozzle tip and the collector), ventilation. The spinning booth ventilation starts automatically after the electrospinning process is over and it can be controlled threw the client interface. The process can be monitored in real time threw the connected webcam. The system is controlled wirelessly threw the web application installed on the hardware server which connects by wireless with the controllers of the other hardware components. This way, the user can keep a distance for his own protection in case of any process errors and potential hazards, and he can monitor and control the process from distance and start/stop the ventilation to keep a clean working environment.
Class no.	Innovative Research

RO.64.

Title EN	**STEP to SUSTAINABILITY. How to Implement Sustainable Manufacturing in Footwear - new occupational profile and training opportunities**
Authors	Aura Mihai
Institution	**“Gheorghe Asachi” Technical University of Iasi, Faculty of Textiles, Leather and Industrial Management**
Description EN	STEP to SUSTAINABILITY Project (539823-LLP-1-2013-1-PT-LEONARDO-LMP) has been funded with support from the

European Commission.
The Project aims at creating, designing, developing and piloting a new occupation and qualification profile and correspondent training course on the subject of "How to implement sustainable manufacturing in Footwear" able to cope with the visible shortage of skills in this field, targeted to Footwear and Leather Goods sector. Products include, among others, a b-learning course combining e-learning and work based training workshops, and will be delivered in 9 European languages (En, Pt, Sp, It, Ro, Sl, Cz, Fr & De).
The project's specific objectives are the following:
- To develop a deep knowledge on occupation and training needs to implement sustainable manufacturing in Footwear and possible already existing learning opportunities;
- To develop a new occupation/qualification profile of the expert in sustainability, capable to deal with all the frameworks around sustainability;
- To develop a learning programme able to cope with the identified training needs, according to European Common Framework on Vocation, Educational Training (ECVET);
- To develop innovative training units;
- To development the b-learning course, including e-learning component and work based learning workshops;
- To pilot the results;
- To create awareness for the need of a sustainable manufacturing strategy;
- To exploit results through European, national and local networks and platforms, enterprises, business organisations, guidance organisations, as well as other relevant media, inside and outside Europe.
- To enlarge the networking between the partners.

Class no. Innovative Research

RO.65.

Title EN **Knowledge Platform for Transferring Research and Innovation in Footwear Manufacturing (K4F)**

Authors Aura Mihai

Institution **“Gheorghe Asachi” Technical University of Iasi, Faculty of Textiles, Leather and Industrial Management**

Description EN
Knowledge Platform for Transferring Research and Innovation in Footwear Manufacturing Project (2015-1-RO01-KA203-015198) has been funded with support from the European Commission, through

ANPCDEFP Romania, within the framework of ERASMUS+.
The project aims to foster the excellence in tertiary level of training and education for design, product development, engineering and management by connecting the three areas of the knowledge triangle: Education, Research and Business.
Specific objectives of the project are:

- to develop active collaboration among universities, business communities and research centres to assess the needs of skills for innovation and technological transfer;
- to design, test and implement a common curriculum for virtual internships and the related e-learning content, which incorporates a creative thinking and problem-solving approach;
- to set-up a Knowledge Platform that facilitates the transfer of innovation in footwear manufacturing by simulating the developing stages of the research projects.

Target Groups:

- Students enrolled in Higher Education
- Professionals involved in top and middle management in footwear companies: managers, designers, engineers and technicians

The **Knowledge4Foot** project contributes to promoting European excellence and high quality in higher education. It introduces innovative tools to adapt and update the learning and training curricula of higher education providers for managers, designers, and engineers, in order to achieve greater creativity, innovation and high performance in European footwear manufacturing and related sectors.

Class no. Innovative Research

RO.66.

Title EN **Move-in houses**

Authors Alexandru Stanila, Oana Neculai, Ana-Maria Toma, Alexandru Vlad, Ionut Buduleci, Maria-Adela Tatar, Raluca Fecioru, Florina Malina Nemut

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

Description EN

These houses can present an area of 20 m^2, 36 m^2 and 72 m^2. Multifamily houses can have an area even higher than 72 m^2. They are made of expandable modules, forming houses with a ground floor level and up to ground floor + 2 levels.
The move-in houses have costs of about 300 Euro/m^2.
Technical characteristics:

- Spatial modules are transported at the site in the permanent or seasonal location;
- The structure is metallic, with multilayered walls;

- The modules are mounted and expand in the final desired shape;
- Guaranteed for 50 years!

Class no. Innovative Research

RO.67.

Title EN **Help-yourself houses**

Authors Alexandru Stanila, Oana Neculai, Ana-Maria Toma, Alexandru Vlad, Victoria Rosca, Teodor Fadur

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

Description EN

"How can me, the customer, built my own house?"

They are individual housings, built by the owner, from prefab standard modules. The owner will receive the complete technical project, with the structural mounting steps.

Technical characteristics:

- The modules have a transport classical volume (of length 3.022 m – 6.05 m, width 2.44 m and height 2.95 m);
- The modules can expand 2 to 5 times;
- The customer can buy the structural modules, with all the structural components, building services and thermo-system elements;
- The customer receives the execution technical project within 15 days after placing the order;
- Technical help will be provided for the execution of the foundations and mounting the modules on site;
- Their price is only of 120 Euro/m^2.

Great for any age, any life style, any place!

Class no. Innovative Research

RO.68.

Title EN **Prefab expandable modules flats**

Authors Alexandru Stanila, Oana Neculai, Ionut-Ovidiu Toma, Cerasela Olariu, Vlad Munteanu, Teodor Fadur, Adrian-Georgian Neculai

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

Description EN

The prefab expandable modules flats are higher than GF+2 levels, GF+8 levels. Their price is between 290 Euro/m^2 up to 400 Euro/m^2, considering the foundation soil and the customer demands.

The evaluated speed for rising one level is of 2 days.

The used special execution technology helps rise the buildings very fast, with the following technological steps:

a. producing the modules in the factory, made of expandable structural framework, with a rigid reinforcement structure;
b. transporting the modules on the site, including the building services, walls, slabs, thermo-system, internal and external carpentry;
c. executing the foundations, according to the project;
d. mounting the modules on the horizontal and vertical position, anchoring them to the foundation (using a crane with a minimum hook load of 5tf);
e. manually expanding the structural framework (4 workers needed) and the reinforcements;
f. pouring the concrete in the structure, level by level, at the same time with the walls mechanized plastering.

Class no. Innovative Research

RO.69.

Title EN **Prefab utilitarian dome**

Authors Alexandru Stanila, Oana Neculai, Ciprian Vorovei, Cerasela Olariu, Ioana Olteanu, Ana-Maria Toma

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

Description EN

The prefab utilitarian dome is a spatial module, easily disassembled, made of composite materials on a structural framework system.
Technical characteristics:

- The load-bearing structure is light-weight, made of composite materials, using low-density expandable polyurethane foam, applied on structural metallic frameworks;
- Internal plastering varies, according to the customer demands;
- Hydro insulation made of hybrid polyurea;
- Fire resistance of minimum 30 minutes;
- Easy mounting, LEGO style;
- The price is of about 6000 Euro.

The purposes for the dome are multiple: garden pavilion, touristic refuge, holyday house etc.

Class no. Innovative Research

RO.70.

Title EN **Intelligent thermo-system**

Authors Alexandru Stanila, Oana Neculai, Ion Hosu, Catalina Mihaiela Helepciuc, Ana Maria Miron, Liliana Andrei, Ionut-Ovidiu

Toma

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

Description EN

The thermo-system is made of expandable polyurethane, automatically adapted using modern equipments. It has the shape of finned prefab bands, with air-draining channels.

The channels are automatically closing and opening for intelligent ventilation, based on humidity and temperature sensors.

The intelligent thermo-system, paired with fresh air, is used for several functions:

- Thermal insulation during winter time;
- Thermal insulation during summer time;
- Discharging water vapours during summer time (which were amassed during winter);
- Heat recuperation during winter time
- Cool recuperation during summer nights

The approximate cost for the intelligent thermo-system is between 17-23 Euro/m^2, depending on the project.

Class no. Innovative Research

RO.71.

Title EN **Hybrid "MACON" lintels**

Authors Dorina-Nicolina Isopescu, Oana Neculai, Ionut-Ovidiu Toma, Iulian Zapodeanu

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

Description EN

"MACON" hybrid lintels are elements consisting of several modules made from part ACC and part reinforced concrete or prestressed concrete. These prefabricated modules are precast. The combination of modules can be used for closing any opening of windows or doors, and for any wall thickness, for any wall width, and of different lengths for openings between 75 cm and 325 cm.

Class no. Innovative Research

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

RO.72.

Title EN

COMPOSITION AND DEVELOPING METHOD OF NEW MODIFIED RELEASE AMIODARONE HYDROCHLORIDE COMPLEXED WITH HYDROXYPROPYL-β-CYCLODEXTRIN MATRIX TABLETS WITH PROLONGED ACTION

Authors Andreea Creţeanu[1], Lăcrămioara Ochiuz[1], Cristina Ghiciuc[1], Cornelia Vasile[2], Oana Maria Păduraru[2], Gladiola Ţântaru[1]

Institution **[1] University of Medicine and Pharmacy "Grigore T. Popa" Iaşi, Romania, Faculty of Pharmacy**
[2] Institute of Macromolecular Chemistry "Petru Poni", Iași, Romania

Patent A/00139/2016

Description EN

The present invention reports the composition, development, characterization and pharmacokinetic evaluation of hydroxypropyl-β-cyclodextrin inclusion complex of amiodarone hydrochloride (HP-β-CD/AMD) tablets equivalent to 100 mg AMD incorporated in a Kollidon®SR and Chitosan hydrophilic matrix. The formulation resulted in tablets obtained through direct compression in which the effective AMD concentration is half of the dose commonly used for the treatment of severe arrhythmias.

The optimization of pharmacokinetic properties of AMD was achieved by its inclusion into HP-β-CD and the inclusion complex was incorporated into Kollidon®SR and Chitosan matrix tablets. Both *in vitro* and *in vivo* results confirmed that complexed AMD could be orally administered once a day, as tablets with modified and sustained release over 24 hours, as loading therapy of severe arrhythmias.

Class Innovative Research - 4

RO.73.

Title EN

COMPOSITION AND DEVELOPING METHOD OF NEW MODIFIED RELEASE AMIODARONE HYDROCHLORIDE MATRIX TABLETS WITH PROLONGED ACTION

Authors

Andreea Creţeanu[1], Lăcrămioara Ochiuz[1], Cristina Ghiciuc[1], Cornelia Vasile[2], Cristina Maria Popescu[2], Gladiola Tantaru[1]

Institution

[1] University of Medicine and Pharmacy "Grigore T. Popa" Iaşi, Romania, Faculty of Pharmacy

[2] Institute of Macromolecular Chemistry "Petru Poni", Iași, Romania

Patent

A/00138/2016

Description EN

The present invention reports the composition, development, characterization and pharmacokinetic evaluation of modified (improved) release amiodarone hydrochloride (AMD) tablets with prolonged action that release the active ingredient over a period of 24 hours at a therapeutically effective plasma concentration and increase patient compliance with AMD therapy. The formulation resulted in tablets obtained through direct compression, as an alternative to parenteral administration of AMD.

The optimization of pharmacokinetic properties of AMD was achieved by its inclusion into Kollidon®SR (40-60%) and Chitosan (3-7%) based tablets. The studied compositions resulted in AMD tablets with pharmacological and technical parameters that comply with legal quality standards. The proposed objective was achieved by obtaining AMD tablets that released the active ingredient over 24 hours and that may be used for the treatment of severe arrhythmias, as loading therapy.

Class

Innovative Research - 4

RO.74.

Title EN	**Diagnosis, therapeutic techniques, forensic and malpraxis issues at patients with complexe aerodigestive cervical trauma**
Authors	Florentina Severin
Institution	**University of Medicine and Pharmacy „Gr.T.Popa" Iași, Romania**
Description EN	The complex aerodigestive neck trauma represents nowadays one of the major emergencies due to the increase of physical violence (homicidal or self-inflicted), road traffic and sportive accidents, involving a higher cause of morbidity and mortality among the population which leads to a true public health issue with higher social and low cost. In this research we want to realize a combined retrospective and prospective study of neck trauma patients who were managed at ENT Clinic of Saint Spiridon Hospital from Iasi between 2012 - 2016. We estimate that through this study we will propose a new approach to this multidisciplinary pathology, an efficient management in early diagnosis, the establishment of first aid measures, new and complex therapeutic techniques with the purpose of improving the survival rate, decreasing the time and the costs necessary to heal these patients as well as an effective social reinsertion. Additionally we wish to conceive a protocol that will include the most important aspects concerning forensic and malpraxis issues with the purpose of protecting the doctors and also the patients. Until now, these objectives have not been addressed in Romanian literature, thus representing a challenge and a purpose of the paper, along with a principles guide for diagnosis and therapy in complex cervical trauma.
Class	Innovative Research - 4

RO.75.

Title EN	**Abrasive effect of toothpaste and toothbrush on adhesive restorative materials**
Authors	Simona Stoleriu, Sorin Andrian, Gianina Iovan, Irina Nica, Galina Pancu
Institution	**University of Medicine and Pharmacy „Gr.T.Popa" Iași, Romania**
Description EN	The aim of this study was to evaluate the effect of toothpastes having different abrasiveness and toothbrushes having different hardness on surface roughness of different adhesive materials. A microhybrid composite resins (Filtek Z250, 3M ESPE), a flowable composite resin (Flow, Latelux), a compomer (Dyract, Denstsply Detrey), a traditional glassionomer cement (Ketak Molar Easymix, 3M ESPE), two toothpastes: one having low relative dentine abrasivity (RDA) (Maximum cavity protection, Colgate), one having high RDA (Max White, Colgate) and two toothbrushes having different bristles hardness: medium (Classic Deep Clean, Colgate) and hard (Interdental Reach, Johnson and Johnson) were chosen for this study. Twenty cervical cavities were filled with each restorative material chosen for this study. Five samples of each material were kept in distilled water, five samples were subjected to toothbrushing using medium toothbrush and low abrasiveness toothpaste, five samples to toothbrushing using hard toothbrush and low abrasiveness toothpaste and five samples to toothbrushing using hard toothbrush and high abrasiveness toothpaste To simulate the movements during toothbrusing a machine created by the authors was used. All the samples were evaluated regarding the surface roughness using roughness checker (Taylor Hobson-Surtronic 25) and the average roughness values (Ra) were recorded. In the conditions of this study all the tested materials were abraded by the toothpastes and toothbrushes. Hard bristles tootbrush associated with high RDA tootpaste abraded higher all the materials for filling when compared to hard bristles tootbrush associated with low RDA tootpaste and medium bristles tootbrush associated with low RDA tootpaste. Traditional glassionomer cement was the most affected by abrasion, followed by microhybrid composite resin, flowable composite and compomer.
Class	Innovative Research - 4

RO.76.

Title EN	**The Importance of an Integrated Approach of a Chronic Diseases: Obesity**
Authors	Laura Mihaela Trandafir, Doina Azoicăi, Mihaela Moscalu
Institution	**University of Medicine and Pharmacy „Gr.T.Popa" Iași, Romania**
Description EN	Obesity is a chronic disorder and a significant public health problem because of a dramatic increase in the number of obese and overweight children worldwide in the last years. The causes of obesity are numerous and are repesented by genetic predispositions, food eating habits and sedentary lifestyle. Obesity in children and adolescents is a significant adult obesity predictor and a risk factor for many complications such as: cardiovascular diseases, type 2 diabetes mellitus, metabolic syndrome, sleeping apnea, psychosocial and some forms of cancer. The complete evaluation of obesity and its comorbidities requires a multidisciplinary team which is formed of a pediatrician, cardiologist, endocrinologist, nutrisionist, psychologist and kinetotherapist. This represents the main reason why we have created the "Regional Centre of Diagnosis, Counselling and Monitoring for Obese Children", which belongs to the "Grigore T. Popa" University of Medicine and Pharmacy, Iasi. It is an advanced research centre but at the same time, it ensures medical care to child population from Moldova region. This centre has the following objectives: evaluate the nutritional status of the child population, the clinical, paraclinical and psychological status of obese children. At the very same time, our center has as one of its major goals to nutritionally counsell the obese children by implementing a low calorie diet, a low carbohydrate diet, physical exercise programes and medical treatment in case of complications in the obese condition, offer psychological support for the children as well as their families. Moreover, we intend to create a registry book in a data base with the medical data which will later be sent to the adult medical network, when the children turn eighteen years old. We also plan to undertake research activities in the field of child obesity, create and strengthen partnerships, on a national and international level in the field of medical care and research on child obesity and create optimum conditions in order to include this centre in the European network of advanced research as well as in other networks. We wish to implement a multidisciplinary program of nutrition and physiotherapy, backed up by psychological counselling which could ensure an optimum nutritional control and a superior life quality of child obesity. Key words: obesity, child.
Class	Innovative Research - 4

RO.77.

Title EN	**EVALUATION OF ANTIOXIDANT ENZYMES IN PATIENTS WITH KERATOCONUS**
Authors	Alina Cantemir, Anisia-Iuliana Alexa
Institution	**University of Medicine and Pharmacy "Gr. T. Popa"**
Description EN	Studies performed in keratoconus patients have generally suggested the presence of a compromised antioxidant system, but this is not always consistent with specific observed parameters, which on the whole showed clear evidences of dysregulation. The aim of the present report is to evaluate the serum specific activity of some peripheral antioxidant defenses like superoxide dismutase (SOD) and glutathione peroxidase (GPX) in keratoconus patients, when compared with age and sex-matched healthy subjects. We found a very significant decrease in both antioxidant enzymes (superoxide dismutase and glutathione peroxidase) in keratoconus patients, as compared to the controls. However, further research is necessary in order to elucidate the effects of this disorder on antioxidant enzymes or the possible interventions at the oxidative stress level in keratoconus patients.
Class	Innovative Research

"Lucian Blaga" University of Sibiu

RO.78.

Title EN	**Decontamination reactor of aflatoxin M in milk**
Authors	Ketney Otto, Ţîţu Mihail Aurel
Institution	**„Lucian Blaga" University of Sibiu**
Patent no.	Patent application No. A 00544 / 27.07.2015
Description EN	Reactor for the decontamination of aflatoxin M milk is characterized in that the whole system consists essentially of two cylinders with spiral channels, the outer cylinder, between the two cylinders move in spiral milk. The invention is characterized in that it has the advantage of reducing aflatoxin M milk continues to flow large volumes of milk can be applied in industry and guaranteeing food safety.
Class no.	3

RO.79.

Title EN	**Method for ecological restoration of coal ash and/or sterile dumps**
Authors	Alexandru Coman, Ioan Sabău, Lucian Constantin Dincă, Constantin Horia Barbu
Institution	**„Lucian Blaga" University of Sibiu**
Patent no.	Patent application No. A 00605 /15.12.2014
Description EN	The invention refers to a method for ecological reconstruction of ash and/or sterile dumps (landfills), resulted by coal processing and combustion, by revegetation, characterized by the use of a perennial plant with high market value, i.e. *Miscanthus sinensis x giganteus* (Graef et Deu.), able to grow even on less fertile soils. Thus, it results a vegetal cover of the soil, that prevents erosion, blocks the rain and snow water – therefore the possible toxic substances from sterile and/or ash will not be dissolved – in the same time obtaining a product with market value, which could be used, for instance but not limiting to, by combustion with the coal. The plant is already cultivated in Romania, even on soils polluted with heavy metals, in Copsa Mica. Besides big yields, starting with the third year of vegetation (15-25 tons dry weight per hectare) this plant has 20-25 years of viability and requires a minimum of maintenance.
Class no.	1

RO.80.

Title EN	**Procedure of obtaining a composition of acacia honey and anthocyanin extract from bilberry**
Authors	Oancea Rodica Simona, Banu Ilie, Ketney Otto
Institution	**„Lucian Blaga" University of Sibiu**
Patent no.	Patent application No. A/00001/05.01.2015
Description EN	The invention refers to a procedure for obtaining a composition based on acacia honey and bilberry anthocyanin crude extract, added in proportion of 1%, 5% and 10%, composition characterized by improved sensory, nutritional and antioxidant properties, by a significant increase in new biologically active compounds. The invention has practical significance through the quality enhancement of local bee products, and by exploitation of plants rich in antioxidant compounds, to obtain extracts with multifunctional properties with applications in nutraceutical food industry using sustainable technologies.
Class no.	3

RO.81.

Title EN	**Ribbed C-frame**
Authors	Cioară Gheorghe Romeo, Dan Ioan, Ţîţu Aurel Mihail, Oprean Constantin
Institution	**„Lucian Blaga" University of Sibiu**
Patent no.	Patent application No. A 2013 00014 / 04.01.2013
Description EN	Ribbed C-frame, with high rigidity, open label, made in one piece by molding. The C-frame is provided on the inside faces of the two walls with ribs different disposed in relation to the horizontal plane of the press table: horizontally; vertically; tilted on the left; tilted on the right; intersected in the network; curved, the ribs being oriented along of the isoclines of the tension state that manifest in the side walls of the frame. The ribs may be equidistant or not. They were designed dozens of variants.
Class no.	6

RO.82.

Title EN	**Equatorial Spherical Hypocycloid Pressing Automaton**
Authors	Răceu Răzvan Alexandru, Cioară Gheorghe Romeo, Ţîţu Aurel Mihail, Oprean Constantin
Institution	**„Lucian Blaga" University of Sibiu**
Patent no.	Patent application No. A 2013 00015 / 04.01.2013
Description EN	Pressing automaton, hypocyclodal spherical, equatorial, for processing by forming various parts, preferably small size. The automaton contains in a main kinematic chain a planetary gear with conical sun gear and flat fixed central wheel. Hundreds of variants are possible. The invention relates only to automatons with two or more sun gears, each having a single point hypocycloid generator. A functional model is developed.
Class no.	6

RO.83.

Title EN	**Aspirator and method for liquefying the content of a cyst**
Authors	Sabău Dan, Sabău Alexandru Dan, Dumitra Anca Maria, Sabău Mariana
Institution	**„Lucian Blaga" University of Sibiu**
Patent no.	Patent application No. A 00010 2013
Description EN	The invention referes to a device for penetrating hidatid cyst of the liver, ovarian cyst or false pancreatic cyst, in laparoscopic or open surgery. The device consists from a tubular body, connected at one end to a powerful aspirator with a clamshell, by a flexible tube, and at the other end is placed a sharp tip with three working chanels. The possibility of instillation or the air intake to avoid warping is realise laterally with a tap.
Class no.	4

RO.84.

Title EN	**Stent and laparogastroscopic stenting procedure**
Authors	Sabău Dan, Sabău Alexandru Dan, Dumitra Anca Maria
Institution	**„Lucian Blaga" University of Sibiu**
Patent no.	Patent application No. A 00009 2013
Description EN	The invention referes to a surgical minimal invasive method and a stent, specific for the proximal, middle and distal , esophageal regions necessery an used for the incapacity of alimentary ingestion because of esophageal stenosis. The

method consist in insertion and securing of a stent in the stenotic region (drilling, bore, dilatation) through traction, not propulsion. The method uses for the first time the transparietal gastric approach with oral, esophageal and gastric view of a guide wire, inserted oral or retrograde through stomach, that passes 2 mm or less stenosis. The stents are adapted to the stenotic region, with three standards, for proximal, medium or lower esophagus.

Class no. 4

RO.85.

Title EN **The effect of the wine components on the color modifications in composite materials**

Authors **Mona Ionaș**

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

This is a postdoctoral research 7137/57 performed through the Sector Operational Program Human Resources during the project TRANSCENT

Description EN

The most frequent cause for the change of fillings from composite materials in direct restauration is their color modifications in time. Wine is considered liquid dye that causes the greatest changes in color on composite materials. It is known that the acid substances and alcohol trigger morphological changes and the color stability is influenced by the degree of abrasion of the surfaces of the examined materials.

The aim of this study is to observe the color modifications of the wine components on the composite materials. In this regard the composite materials were immersed in water, acid and wine and the reading of the color modifications was performed by means of spectrophotometer.

The results indicate significant differences between the materials at different moments in time no matter of the solution of immersion or of the composite material used. Statistical results indicate that the studied materials respond differently to the solution of immersion. In our study the effect of the co-factors from wine (tartaric acid , ethanol, anthocyanin pigment) on the surface of the composite material in the study depends on the material studied.

This knowledge is important for the clinician who has to select a restoration material for the management of patients who use to drink wine or other colored drinks.

It is the first study which aims the evaluation of color changes produced by the wine components anthocyanins , alcohol, ph.

Class no. Innovative Research

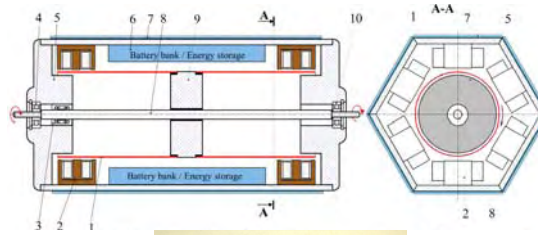
Stefan cel Mare University of Suceava

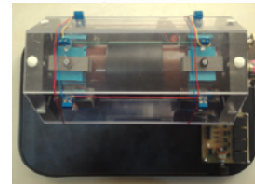
RO.86	
Title EN	**Configurable digital level detector**
Authors	Dan Laurențiu MILICI, Mariana MILICI, Ilie NIȚAN, Mihai RAȚĂ, Cristina PRODAN
Institution	**Ștefan cel Mare University of Suceava**
Patent no.	RO126712/2012
Description EN	The invention relates to a configurable digital capacitive level detector meant to measure the liquid level in various containers, ponds, lakes and storage reservoirs. According to the invention, the detector comprises two distinct systems of contacts which individually measure the liquid level, placed at a certain distance (L) from each other, a decoder and a digital computing equipment which compares the signals received from the two systems and provides for the display of the values, each of said systems comprising a number (n) of contact pairs (k_{01} ... k_{0n}, k_{11} ... k_{1n}) that are vertically arranged at a certain distance (H) from one another, which can differ between two successive pairs of contacts, and completely cover a maximal measurable liquid height (H_{max}) while, between the contacts of the same rank i (k_{oi}, k_{1i}) placed on different columns, there is a level difference equal with a half of the distance (H).
Class no.	1. Environment - Pollution Control

RO.87.	
Title EN	**Electric motor with flexible wave rotor**
Authors	Constantin UNGUREANU, Dumitru-Radu PENTIUC, Ilie NIȚAN, Elena-Daniela OLARIU, Daniela IRIMIA, Elena-Crenguța BOBRIC
Institution	**Ștefan cel Mare University of Suceava**
Patent no.	Patent application No. A/00207/2016
Description EN	The motor comprises a double stator and a flexible wave rotor (FWR) (1). The rotor is made of ferromagnetic material and is rigidly fixed with a shaft (8) suspended in two rolling bearings (4, 10). The rotor is fixed to the shaft by means of a cylindrical element (9). The dual stator consists of twelve poles (2). At one end of the flexible wave rotor there are positioned by a circular path, three pairs of poles, which forms the right stator and at the other end are arranged other three pairs of poles that form the left stator.

Magnetic attraction forces deforms the FWR which has two contact points (areas) (C-C') with the cylindrical guide (5). The elliptical displacement of the FWR under the action of electromagnetic forces (F_e) developed by stator pairs of poles, successively powered, it is emphasized through the point "A". Thus, we can speak about an rotating magnetic field created by the three zones of the dual stator. The presence of the magnetic field with its maximum rotating value, leads to the successive attraction of the FWR to stator, deforming it. The motor can be powered by the solar cells (7).

Class no. 2: Energy and sustainable development





RO.88.

Title EN **Double-acting electromechanical shaker**

Authors GRAUR, Adrian; MILICI, Mariana; MILICI, Dan; RAȚĂ, Mihai; ȚANȚA, Ovidiu; NIȚAN, Ilie; ROMANIUC, Ilie; NEGRU, Mihaela; CERNOMAZU, Dorel

Institution **Ștefan cel Mare University of Suceava**

Patent no. Patent application No. A/00330/29.04.2013

Description EN

The invention relates to a double-acting electromechanical shaker with the possibility of simultaneous printing of two different rotation directions. The electromechanical agitator with double action according to the invention comprises a container of insulating (1) fixed in a insulating support (2) in which the support is placed an assembly rotating consists of a container ferromagnetic in the form of glass (3) which has two permanent magnets arranged on the interior (4) fixed in diametrically opposite positions. The ferromagnetic vessel driven in rotation by means of a shaft (5), a DC motor (6) powered by an autotransformer with the slider. Inside the insulating vessel (1) are introduced two ferromagnetic balls (7)

and (8), one of which is placed on the bottom and the other on the chute ring of insulating material (9) glued on the inside of the vessel under the fluid level.

Class no. 5- Industrial and laboratory equipments

RO.89.

Title EN **Installation for rotor cage defectoscopy**

Authors CERNOMAZU Dorel, ȚANȚA Ovidiu Magdin, MANDICI Leon, POIENAR Mihaela, ROMANESCU Adrian, NIȚAN Ilie, OLARIU Elena, UNGUREANU Constantin

Institution **Ștefan cel Mare University of Suceava**

Patent no. Patent Application No: A/00570/28.07.2014

Description EN

The system consists essentially of a horizontal supporting surface (1) on which is placed a fixing device (2) in which is placed a rotor with a cage winding (3), under diagnostic analysis. On the outer cylindrical surface of the rotor is fixed to an electrically insulating plate (4) provided with an annular channel ("c"), which is in contact with the surface of the rotor, the channel is made an amount of ferrofluid (5). Electrically insulating plate fixed by means of tie-rods is sealed in relation to the rotor (3) by means of an adhesive lacquer film (7). The cage rotor is connected to a power kit (8) by means of flexible connection attached to the short-circuit rings of the cage. The kit current is supplied from an AC power source via an adjustable autotransformer (11), the current provided by the source being measured by means of a current transformer (9) associated with an ammeter (10).

Class no. 5- Industrial and laboratory equipments

RO.90.	
Title EN	**Biflow axial compressor**
Authors	Ioan MIHAI, Elena-Daniela OLARIU
Institution	**Ștefan cel Mare University of Suceava**
Patent no.	Patent application RO128769A2/2016
Description EN	The invention relates to a double-rotor biflow axial compressor which provides two air flows, one of them for external cooling and the other one for the supercharging of internal combustion engines, as well as, in aviation, for double-flow turbo jet engines with the function of turbo fan and axial turbo compressor. According to the invention, the compressor comprises a stator and a power take-off supporting two rotors which rotate in opposite directions, this way generating two air flows, one of them intended for external cooling and transmitted through a discharge conduit and the other one for supercharging, transmitted through another conduit.
Class no.	8. Aviation, car industry and transportation

RO.91.	
Title EN	**Device for determining the space factor**
Authors	IRIMIA Daniela, OLARIU Elena Daniela, NIȚAN Ilie, FILOTE Constantin
Institution	**“Ştefan cel Mare”University Suceava.**
Patent no.	RO126712B1
Description EN	The invention relates to a device for determining the space factor in case of insulated electrotechnical sheet metal used for making the magnetic system in transformers and electrical machines. According to the invention, the device consists of a support plate (1) on which a stack of sheets (2) is placed and clamped by means of a clamping plate (3), the clamping force being exerted by a hydraulic jack (4), the extremity of which acts upon a resilient bar (5) whose deformation is outlined by means of a strain gauge (10), the resilient bar (5) being fixed by some support plates (6, 6') attached to a clamping framework consisting of two vertical bars (7a, 7b) and a cross bar (7c), provided with a lead screw (8) employed for acting upon the mobile extremity of the hydraulic jack (4) with an actuating rod (9).
Class no.	5. Industrial and laboratory equipments

RO.92.	
Title EN	**Counterterrorism image processing system**
Authors	Călin CIUFUDEAN, Corneliu BUZDUGA, Lucian CUCOŞ
Institution	**"Ştefan cel Mare"University Suceava.**
Patent no.	Patent application No. A/00363/2010
Description EN	This invention refers to a counterterrorism image processing system, to prevent explosions and terrorist attacks on automobile. Our system avoids the drawbacks of classical: the car checked off in traffic, use mirrors to check the bottom of the car, the engagement of qualified personnel: police, anti-terrorism, sensing the terrorists about an imminent police control, etc. Our system is made from two webcams that capture images when the car, the two pressure sensors that are activated when passing vehicle wheels, an RFID reader that reads the tag implemented on the vehicle body and a control panel and control which identifies and analyses uploads by web cameras to detect irregularities, they are asked authorities to stop the vehicle. The system can be mounted in the road, or in small bumps in the road or rubber used to reduce the speed of movement of vehicles. Due to our software support the system is immune to environmental lightning conditions. Advantages: constructive simplicity, real time alert, cost-effectiveness.
Class no.	12. Safety, protection and rescue of people

RO.93.	
Title EN	**Electromechanical converter with disk-shaped rolling rotor**
Authors	Constantin UNGUREANU, Adrian Graur
Institution	**Ştefan cel Mare University of Suceava**
Patent no.	RO 125573B1
Description EN	The invention relates to an electromechanical converter with rolling rotor and axial air gap, with the fixed position of the axis of rotation in the plane of the stator and which may have various applications, one of which is related by the sun tracking of the photovoltaic cell panels. The stator consists

	of 12 magnetic poles and fed successively through a pulse distributor. The rotating magnetic field acting on the disc type rotor and due to the rolling path contact is obtained on the central axis a low rotational speed and high torque.
Class no.	2: Energy and sustainable development

RO.94.	
Title EN	**System for avoiding traffic blocking of special appliance vehicles**
Authors	Călin CIUFUDEAN, Corneliu BUZDUGA, Bogdan DRELCIUC, Casian IGNĂTESCU
Institution	**Ştefan cel Mare University of Suceava**
Patent no.	Patent Application No. A/00447/2014
Description EN	This invention refers to an automatic system which ensures free and safe way for special appliance vehicles (ambulances, fire engines, police cars, s.a.) in urban traffic, especially in cross roads. This automated system also ensures the safety of all vehicles in traffic, and the safety of pedestrians. Our system has a friendly user interface, has a low electric energy consumption and low volume and that makes it a safe and proper guiding instrument for all special appliance vehicles. Basically, it is a synchronization of traffic lights at an intersection when it is crossed by one or more intervention vehicles: cars when the ambulance, fire or police approaching an intersection, it provides these green cars traffic lights, while others walk way traffic lights will be red color. The traffic lights will change color all the intersection before the car to reach the intersection intervention from a set distance. In order to achieve the system were used two devices: a transmitter controlled by the digital compass, which is mounted on the dashboard of action and a receptor which is located in the intersection, the traffic light box. The interconnection of the two modules is made using two microcontrollers. Advantages: constructive simplicity, real time alert, cost-effectiveness.
Class no.	12. Safety, protection and rescue of people

Banat University of Agricultural Science and Veterinary Medicine, Timisoara

RO.95.	
Title EN	INORGANIC SALT MINERAL PREMIX MEANT FOR THE POULTRY YOUTH RAISED ECOLOGICALLY
Authors	Drinceanu Dan-Emil, Ştef Lavinia, Luca Ioan, Julean Călin, Simiz Eliza
Institution	**Banat's University of Agricultural Sciences and Veterinary Medicine "Regele Mihai I al Romaniei" Timisoara**
Patent no.	**RO 126806 B1/28.02.2013**
Description EN	The invention refers to a mineral premix, made of inorganic salts, meant for the poultry-youth raised ecologically, applicable in the zoo-veterinary field. In order to comply with the mineral requirements, it is necessary to use some microelements sources agreed by the specific legislation. According to the invention, it represents a homogenous mixture having the following composition: iron sulfate heptahydrate, manganese sulfate monohydrate, zinc sulfate heptahydrate, copper sulfate pentahydrate cobalt sulfate heptahydrate, sodium iodide and sodium selenite. It provides an optimum source of microelements preventing the deficiency states and the improvement of the bioproductive performances.
Class no.	**4**

RO.96.	
Title EN	PROCESS FOR OBTAINING A TOPICAL ANTIBACTERIAL OINTMENT ENRICHED WITH MARJORAM (ORIGANUM MAJORANA) AND BIRCH BARK (BETULA PENDULA)
Authors	Pop Georgeta, Alexa Ersilia Calina, Imbrea Ilinca Merima, Palicica Radu, Cristina Adriana Dehelean, Danciu Corina, Andrica Florina – Maria
Institution	**Banat's University of Agricultural Sciences and Veterinary Medicine "Regele Mihai I al Romaniei" Timisoara**
Patent no	**Patent Application No. A 01015/17.12.2015**
Description EN	This invention refers to a process for preparing a topical antibacterial ointment enriched with marjoram (*Origanum*

	majorana) and birch bark (*Betula pendula*) extracts. *In vitro* studies have shown an antibacterial activity of the majoram extract with 16.67% higher than that of chloramphenicol, a broad-spectrum antibiotic. The increased antibacterial activity of this ointment is due to marjoram, which is riched in ursolic acid, thymol and carvacrol and provides antiviral, bactericidal, antiseptic and antifungal effects and also due to birch bark extract which contains betulin recognized for its anti-inflammatory, antibacterial and antifungal properties.
Class no.	**4**

RO.97.	
Title EN	GEL FOR TREATMENT OF DRY LESIONS IN CANINE DEMODICOSIS
Authors	Mederle Narcisa, Mederle Ovidiu, Morariu Sorin, Morariu Florica, Dărăbuş Gheorghe, Oprescu Ion, Ilie Marius, Negrescu Adina
Institution	**Banat's University of Agricultural Sciences and Veterinary Medicine "Regele Mihai I al Romaniei" Timisoara**
Patent no.	**Patent Application No. A / 00075 din 1.02.2016**
Description EN	The invention is a gel composed of natural ingredients and can be applied topically, on a daily basis to the dry lesions in canine demodicosis. According to the invention, the gel contains 25% honey, propolis, vinegar and hydro-glycero-alcoholic extract from black currant buds, walnut buds, shoots wilde rose, cedar branches and radice rye. Following topical administration, dermal absorption is rapid and does not have any irritating effect on parasitic skin.
Class no.	

RO.98.	
Title EN	**CAROTELA OILS**
Authors	Dumbravă Delia-Gabriela, Botău Dorica, Raba Diana-Nicoleta, Borozan Aurica Breica, Drugă Mărioara, Popa Viorica-Mirela, Moldovan Camelia
Institution	**Banat's University of Agricultural Science and Veterinary Medicine "King Michael I of Romania", from Timişoara**
	Mark registration no: CAROTELA OILS M2016/02525

Description EN	A natural cosmetic product, obtained from a mixture of vegetable oils with the addition of carotenoid extract from *Hippophae rhamnoides* fruits, for face and body. The oil restores skin elasticity, is moisturizing, photoprotective, healing, epithelisant with effective action against wrinkles. It is recommended for all skin types
Class no.	**4**

RO.99.	
Title EN	**BIO FUNCTIONAL CHICORY LAVANDER PRODUCT**
Authors	**Ionela Mârzu**, Ersilia Alexa, Adrian Riviş, Dorica Botău
Institution	Banat`s University of Agricultural Science and Veterinary Medicine „King Michael I of Romania'' from Timisoara
Description EN	The aim of this project is to obtain and characterize a bio, functional, dietary hypoglycemic product, desert type, called BIO FUNCTIONAL CHICORY LAVANDER PRODUCT based on lavender flower and chicory root with high nutritional properties, low glycemic index, high biological potential and economically efficient, whose manufacturing technology can be implemented in bakery units. The aim of fortification is to increase the nutritional value of product by supplying with nutrients or biological active compounds. In obtaining of a functional and dietary product an important role play the biologically active compounds in its composition. The fortification of bakery products with lavender and chicory is relatively unusual. Combining the effect of whole wheat flour with chicory root and lavender flower is an opportunity to obtain a novel dietary food with nutraceutical high potential. The product obtained shows a **novelty** character with triple function: **ecological, functional and dietary.** The product represents a **novel food** because similar products were not identified on market.

	The **ecological** character is due by the use of BIO ingredients, including lavender obtained in BUASMV experimental fields. The **functionality** of product is due by use of chicory and lavender in fabrication recipe. The functional characterization of product by determining the total polyphenolic content and macro and micronutrients provide important information to consumers. The **dietary** aspect and health benefits of the product are due by low carbohydrates content. Also, the product was fortified with chicory recognized as having hypoglycemic role.
Class no.	Innovative Research

RO.100	
Title EN	**Bitter melon (*Momordica charantia* L.) tissue lines selected *in vitro* – source of secondary metabolits**
Authors	Botau Dorica, **Simina Alina Georgiana**, Popescu Sorina
Institution	Banat's University of Agricultural Science and Veterinary Medicine "King Michael I of Romania", from Timişoara
Description EN	*Momordica charantia* L. (bitter melon) is a well known medicinal species for his biological activity (antioxidant and antimicrobial) and contains a complex of beneficial compounds like: alkaloids, vitamins, minerals and antioxidants that can be used for treating various diseases, diabetes specially. Plant tissue culture has an important and facile method for the somatic variability induction and tissue lines selection in order to obtain valuable secondary metabolites. Using of substances that controls growth and synthesis capacity of tissues allow producing significant quantities of plant metabolites in aseptic conditions. Using different hormonal balances in our experiments, we selected tissue lines of bitter melon that present a high antioxidant capacity and an important content of protein fractions identified by polyacrilamide gel electrophoresis. More, our results of molecular analysis, using different RAPD primers, indicated that the tissue lines cultured under controlled conditions *in vitro* exhibit some somatic variability. We used our bitter melon tissue lines selected *in vitro* in

	some application such as: obtaining of functional foods BIOGERMPASTA and MOMGERMBISC (registered as trademarks) destined to diabetes patients and a drug composition for treatment of non-insulin diabetes.
Class no.	Innovative Research
RO.101	
Title EN	**Studies on the use of molecular markers to assess the variability of species of the *Orchidaceae* family of the Anina Mountains**
Authors	Madoşă E., **Bîtea Nicoleta Daniela**, Ciulca S., Velicevici Giancarla, Ciulca Adriana, Sasu Lavinia, Avadanei C.
Institution	Banat's University of Agricultural Science and Veterinary Medicine "King Michael I of Romania", from Timişoara
Description EN	The study aimed to determine the effectiveness of using of markers in assessing of genetic variability in some species of the family Orchidaceae. The biological material was represented by populations of different locations of some species of wild orchids from Mountains Anine: *Orchis mascula* (L.) L., *Cephalanthera damasonium* (Mill.) Druce., *Epipactis helleborine* (L.) Cr. Stirp., *Anacamptis pyramidalis* (L.) Rich., *Gymnadenia conopsea* (L.) R. Br., *Dactylorhiza maculata* (L.) Soó. were used 7 RAPD primers and 7 ISSR primers. Were performed the dendrograms for the two types of markers. Between the dendrograms were found similarities:both of dendrograms include the species *Epipactis helleborine* and *Cephalanthera damasonium* in the same cluster, both of dendrogram include the 2 populations of the species *Anacamptis pyramidalis* in the same cluster, both of dendrogram include the species *Orchis mascula* în a separated cluster. Were differences between dendrograms for the species *Gymnadenia conopsea*, to which, using ISSR primeres was observed a great similarity between the two populations. RAPD primers showed a great similarity between Theresa population of the species *Gymnadenia conopsea*, and Socolari population of the species *Anacamptis pyramidalis*. Similarity exists between the population Carasova of the species *Gymnadenia conopsea* and Buhui population of the species *Dactylorhiza maculata*. The characteristics of the two types of primers shown that ISSR primers are more efficient in assessing of genetic variability to this species. But, the high rate of polymorphism and proxies index of discrimination shows that the RAPID primers can be efficients. *Applications*. Identification of local population in genetically

studies *Advantages*. Rapidity of results.

Class no. Innovative Research

RO.102

Title EN **THE DEVELOPMENT OF MOLECULAR METHODS FOR FOOD COMPONENTS IDENTIFICATION**

Authors Popescu Sorina, Boldura Oana-Maria, Botău Dorica

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

Description EN

The increased awareness of consumers regarding the composition of foods has resulted in the need to check the accuracy of labeling. The incorrect labeling of foods represents a commercial fraud, considering the consumer acquisition. Therefore, it is of great importance to establish that species of high commercial value declared on the labels are not substitute, partial or entirely. The aim of the current study was to develop a time and cost effective strategy for the detection of the animal species present in different food products, based on their DNA, which is a stable molecule both in raw and in processed food. The selected analysis method was polymerase chain reaction (PCR), due to of its high sensitivity, its specificity and rapidity.

Primers specific for different species were used to determine the meat product composition: ruminant, pork, fish and poultry, horse; and for dairy products composition: cow, goat, sheep and buffalo, in simplex and multiplex PCR amplifications. We analyzed commercially labeled processed meat products designated for human and pets consume and dairy products acquired from local market.

The advantage of this technique is that PCR can be reliable for the incorrect labeling of foods detection but, also by multiplexing various primers, simultaneous detection in a single step reaction is possible. This generates fast, reliable and cost efficient results.

Testing by described method also revealed multiple errors in labeling the analyzed samples, demonstrating the need to develop detection techniques adapted to diversity of food products.

Class no. Innovative Research

RO.103

Title EN **SORADA - A TOMATO FROM GRANDMA'S GARDEN**

Authors Radu Şumălan, Sorin Ciulca, **Florin Bodnărescu**, Renata Şumălan, Adriana Ciulca

Institution	Banat's University of Agricultural Science and Veterinary Medicine "King Michael I of Romania", from Timişoara
Description EN	SORADA is a tomato hybrid between two local landraces from Timis County, created in order to combine their valuable traits, namely large, tasty and flavorful fruits, with a good tolerance to unfavorable conditions. The plant is very vigorous, with indeterminate growth, wealthy foliage, large sized fruits and medium firmness, uniform ripening, flavored, tasty and relevant nutritional qualities (vit. C, lycopen, Ca, Mg, Fe). The plants being tolerant to major diseases attacks provide the possibility to obtain reasonable yields without applying chemical treatments. The hybrid is suitable for cultivation both in the greenhouse as well as in the field, on supportive systems, using traditional crop techniques based on organic fertilization. As such, the hybrid is intended especially for traditional vegetable growers, organic and ecological farms. *Advantages*. Being a hybrid adapted to the traditional organic and ecological farming, it contributes to environmental protection, by removing from the crop technology the chemical products such as fertilizers and pesticides. Also, the cultivation of this hybrid contributes to the increasing of the population health, being a traditional and organic product. *Applications*. Thereby the consumer as the end user would benefit of healthy and high quality tomatoes "from grandma's garden", for both fresh consumption and processing.
Class no.	Innovative Research

RO.104	
Title EN	**GENETIC FIDELITY OF IN VITRO PROPAGATION *PAULOWNIA GENOTYPES***
Authors	Petolescu Cerasela, Velicevici Giancarla, **Simina Alina**, Danci Marcel, **Luca Roxana**
Institution	Banat's University of Agricultural Science and Veterinary Medicine "King Michael I of Romania", from Timişoara
Description EN	Paulownia, a deciduous tree in the family Paulowniaceae, is native to central and western China. It is an extremely fast-growing tree, up to 20 feet in one year when young. Some species of plantation Paulownia can be harvested for saw

	timber in as little as five years. Once the trees are harvested, they regenerate from their existing root systems, earning them the name of the "Phoenix tree". Paulownia wood is very light, fine-grained, soft, and warp-resistant and is used for chests, boxes, and clogs, its flowers are rich in nectar, its leaves make good fodder for farm animals. Applications of *in vitro* culture techniques have a great potential for cloning propagation of this important forest species. The present study describes *in vitro* clonal propagation of *P. elongata and tomentosa* from axillary meristems and assesment the genetic stability of the micropropagated plants by RAPD markers. We realized a very good multiple shoots without phytohormons in our cultural conditions, which allowed the preservation of genetic stability of clones obtained as shown by molecular analyzes. Number of bands generated by different pairs of used primers was scored. Amplified fragments ranged from 350 to 1420 bp in size. For all varieties, RAPD fingerprints of the mother and the regenerated plants were identically. *Application and advantages*. Our cloning method is rapid and has un increased multiplier efficiency. It can be recommended for different forms of *Paullownia* hibrids.
Class no.	Innovative Research

RO.105	
Title EN	**Genetic analysis of Narcisus sp. using inter-simple sequence repeat (ISSR) markers**
Authors	Velicevici Giancarla, Madosa Emilian, Petolescu Cerasela, Danci Marcel, Camen Dorin
Institution	Banat's University of Agricultural Sciences and Veterinary Medicine "Regele Mihai I al Romaniei", Timişoara – România
Description EN	*Narcisus* is spring-flowering bulb which belongs to the family Amaryllidaceae. These plants were well known for their ornamental value and for their alkaloids, some of which exhibit various pharmacological properties. This work aimed to analyze the genetic diversity within a population of *Narcisus sp*. from the western Romania. This population is located near Retezat National Park, the area is considered a "prehistoric island" in which grow plants that have survived since the glacial period. This population is

	investigated using ISSR markers. *Advantages*. Given the restriction populations, genetic diversity is very important for the survival of the species. Five ISSR primers that produced clear and reproducible bands were selected for amplification of all the *Narcisus* DNA samples. *Application.* The information may be useful to define conservation management program.
Class no.	Innovative Research
RO.106	
Title EN	**The tolerance of the SRC (short rotation coppice) willows to abiotic and biotic stress in field conditions - PN II 111/2014** ***Evaluation of the productive potential, the capacity of phytoremediation and adaptability to the hydric stress of some Salix genotypes, in improper stations for agricultural crops***
Authors	**Corneanu Mihaela[1], Hernea Cornelia[1], Hollerbach William[2], Soare Marin[3], Neţoiu Constantin[4]**
Institution	**[1]Banat's University of Agricultural Sciences and Veterinary Medicine " King Mihai Ist of Romania" from Timişoara, [2]REBINA Agrar S.A., [3]University of Craiova, [4]National Institute for Research and Development in Forestry "Marin Drăcea"**
Description EN	The early stages development and further evolution of the plants during the first year are determinant for a successful SRC willow culture. The Swedish hybrids used in this study recorded very good results in the North-West of Europe (cool and moist climate), but in Romania (dry and hot summer) they did not obtain the expected results. The characterization of the *Salix* sp hybrids and clones in order to highlights the productive potential, under specific environmental conditions, is one of the project objectives. Seven comparative willow plantations were established in March 2015 in two different counties, Dolj (4 plantations) and Timis (3 plantations). In each plantation, 7 Swedish genotype and 7 Romanian ones were established in agricultural marginal land: closed ash pits (2), sandy soil (2), salty soil (1) and control(2). At the same time, with the productive feature evaluation, injurious insects and diseases were also a monitoring subject. In the absence of irrigation,

	dry and hot weather in 2015 summer produced significant losses of plants, both on ash and sandy soils. Best survival percent and crop production were registered by RO892, followed by Inger. In the conditions of salinity stress best results were obtained by RO892, RO1077, RO1082, with 77 -92% survival percent and a good production, with significant positive differences in comparison with the average of the experiment. Swedish genotypes are sensitive to *Uncinula salicis* (40-65%) and mites (15-40%). Romanian genotypes are more sensitive to *Cercospora* sp. and *Melasoma* sp. (5-45%). The researches were financially supported by UEFISCDI Bucureşti.
Class no.	Innovative Research

Babes-Bolyai University of Cluj-Napoca

RO.107	
Title EN	**Devices and method for sealing Nuclear Magnetic Resonance rotor sample-holders**
Authors	Flaviu Turcu, Simion Simon, Vasile Muresan
Institution	**Babes-Bolyai University**
Patent no.	Patent application No. A01015/22.12.2014
Description EN	The present disclosure relates to a method and associated devices for sealing the NMR rotor sample holders when the last are spinned at the Magic Angle (54.74°) and not just, relative to the direction of applied magnetic field. Magic Angle Spinning (MAS) Nuclear Magnetic Resonance is the most widespread solid-state technique. The tool employment allows obtaining detailed structure, dynamics and interaction information at atomic level, regardless the system is solid, semi-solid, liquid, gaseous or mixed phase. For all non-solid samples the present commercial available instrumentation present limitation in respect to the holding inside the rotor sample holder capability. When sample-containing rotors are spun at kHz range the centrifugal force induced pressure pushout the liquid phases. The sealing inefficiency leads to RF probehead damage. The present technology refers to the tools and associated methods, which successfully seal the active volume of the MAS NMR rotors.
Class no.	5

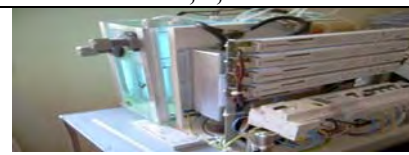
Petrol-Gaze University of Ploieşti

RO.108	
Title EN	**PROCESS FOR PROPYLENE OXIDE SEPARATION USING A DIVIDING WALL COLUMN**
Authors	Oprea Florin, Fendu Elena Mirela, Nicolae Marilena, Dragomir Alexandru
Institution	**Petrol-Gaze University of Ploiesti**
Patent no.	Patent application No.: RO 130851 A2/2014
Description EN	Invention relates to energy consumption reduction by a new propylene oxide (PO) separation process from the propylene oxide plant, applicable in the propylene oxide plants based on propylene chlorination. The process uses a dividing-wall column for separation of the reaction mixture, which can lead to significant operation cost reduction up to 1,5 mil. $/year. Currently, the manufacturing process of PO by propylene chlorination takes place in three steps: propylene chlorination reaction, saponification, and purification of crude PO in a distillation column – PO being obtained as side product. Our invention is related to the purification column of PO. The proposal consists in the utilization of a dividing wall column instead of a simple distillation column. The volatile components will be obtained as vapor in the top of the column, the final product – PO - will be obtained as side product from the section placed on the right side of the dividing wall, while the residue is obtained in the bottom of the column. Placing the raw material on a tray from the feeding section of the dividing wall column (in the left side of the dividing wall of the column) will optimize the distribution of the vapor and liquid streams in the column avoiding the remixing effect of the streams in the feeding area. The effect of the stream separation in the two sections consists in significant decrease of the separation effort; the global effect is a substantial reduction in the steam consumption in the bottom of the column up to 25%.
Class no.	9 Chemical and Textile Industry

RO.109	
Title EN	**PROCESS FOR SEPARATION OF PROPYLENE GLYCOLS FROM THE MIXTURE RESULTED BY PROPYLENE OXIDE HYDROLYSIS**
Authors	Oprea Florin, Fendu Elena Mirela, Nicolae Marilena
Institution	**Petrol-Gaze University of Ploiesti**
Patent no.	Patent application No.: RO 129719 A2/2013
Description EN	The invention refers to a separation process of propylene glycols from their mixture resulted from the propylene oxide hydrolysis reaction. The process consists in successive separations of the water and propylene glycols mixture (monopropylene glycol, isomers of di-, tri-, tetra-, penta- and hexapropylene glycols- and other superior isomers) by distillation at operating pressure of 3…1000 mbar and temperatures between 40 and 220ºC according to the invention. The first separation column is fed in the reboiler to take advantage of the effect similar to inert gas effect exercised by the presence of water and inferior glycols in the mixture. A mixture of penta- and hexa- propylene glycol and others superior glycols isomers is obtained as bottom product from the first column, while in the top of the column a mixture of water, mono-, di-, tri- and tetrapropylene glycol is separated. The distillation product is then separated in four successive distillation steps: in the first step tetrapropylene glycol is obtained as final product in the bottom of the second column, while in the top a mixture of water, mono-, di-, and tripropylene glycol is obtained. In the next three steps water, monopropylene glycol dipropylene glycol are successively separated in order of their volatility as overhead product. The main advantage of the proposed process consists in decreasing of the temperature in the bottoms of the distillation columns, with approximately 15˚C compared with the direct variant. This fact allows the distillation to be performed in temperature ranges under the decomposition temperatures of the superior propylene glycols.
Class no.	9 Chemical and Textile Industry

Polytechnic University of Timisoara

RO.110	
Title EN	**WASTE WATER DECONTAMINATION SYSTEM IN THE DENTAL UNIT**
Authors	Pavel Ştefan, Borza Ioan
Institution	Polytechnic University of Timisoara Research Institute for Renewable Energy
Patent no.	**RO 129343 A8**
Description EN	Applications : The invention concerns a system for the decontamination and treatment of waste water in the dental unit, water that is to be purged in the sewers. The technical problems to be solved regard the creation of a system that could, once attached to the dental unit, the collection of the contaminated waste water, its treatment and sterilization, and, finally, the evacuation of the water under hygienic and safety conditions. The system must perform the tasks simultaneously and efficiently. The newly invented system to perform the decontamination of waste water from the dental unit, is composed of an assembly of closed and segmented (divided) recipients that are equipped with baffles that allow the injection of a air and ozone mix into a first set of decontamination activation cells, to be followed by further decontamination by UV germ-killing lamps (C class) in the next activation cells; and finally, evacuated into the sewer system when the physical, chemical and microbiological parameters are reached.The newly invented system for the decontamination of waste water from the dental unit presents the following advantages: - Uses decontamination agents produces into the installation (ozone) and long term use devices (germ-killing UV lamps); - The decontamination is efficient as it uses just approx. 1kW/hour electrical energy for 16 hours of functioning; - The maintenance operations are very simple and require just the replacement of germ-killing UV lamps after 10,000-15,000 hours of functioning; - The system can be easily monitored while working; - Safety during functioning; 1. Allows for the avoidance of environmental pollution resulting from the use of chlorine as disinfectant.
Class no.	**1, 4, 12**



RO.111	
Title EN	**Invention Title:** ***LIGHTING SYSTEM FOR THE „CERAMIC ROOM" COMPARTMENT OF THE DENTAL LABORATORIES***
Authors	***Pavel Ştefan, Borza Ioan***
Institution	***Polytechnic University of Timisoara*** ***Research Institute for Renewable Energy***
Patent no.	**RO 2013 00033**
Description EN	The invention consists of a lighting system to be used in dental laboratories, in the compartment known as „ceramic room", where the dental ceramic works are processed. The technical problem the new system solves is how to obtain an E [lx] lighting and colour temperature in the „ceramic room" that can be adapted to dental works realized in dental laboratories The new system consists of 7 lighting units with mirror disperser, highly efficient electronic ballast and fluorescent lamps with a color rendering index (Ra) of 94 and a temperature of color rendering of 5200°K. The control of the „ceramic room's" lighting system is in three steps, in order to provide variable light according to technological needs. The new system has the following advantages: - Provides optimal light on the work surface, according to the technological process mastered by the dental technician; - Simple electrical control over the lighting; - Safe functioning; - High energy efficiency; 2. Simple maintenance requirements.
Class no.	**4;5**

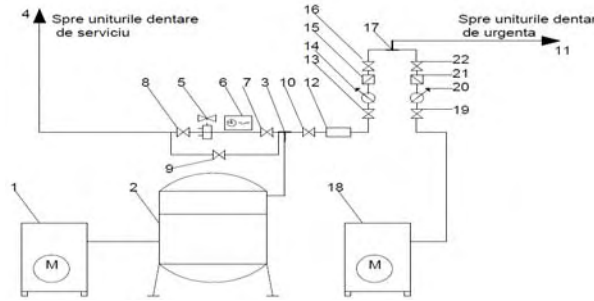
RO.112	
Title EN	Invention Title: COMPRESSED AIR SYSTEM FOR DENTAL UNITS
Authors	Pavel Ştefan, Borza Ioan
Institution	Polytechnic University of Timisoara Research Institute for Renewable Energy
Patent no.	RO 2013 00050
Description EN	The invention concerns a compressed air system to be used in dental settings that serve multiple dental units. The technical problem the new system intents to solve is how to automatically manage the distribution of compressed air

from the compressed air system between 20.00 and8 a.m. hours, so that the real needs of the permanent dental emergency compartment are met.

The new system consists of an assembly of devices for compressed air: valves, pressure regulators, manometers, one-way valves, „T" crossings and an automation with hourly and weekly programmer that controls an electric valve. The new system has the following advantages:

- Increased energy efficiency, through lower energy consumption;
- Lower compressor stress;
- Reduces losses of compressed air in the main compressor unit;
- A safety measure to avoid the accumulation of bacteria (Legionella pneumophila), micro-organisms, air-transmitted viruses, that can appear when the air in the main reservoir is not used for a long period;
- Increased safety in functioning.

Class no. **2**



RO.113

Title EN Electric Instalation for dental medical units air disinfection

Authors Pavel Ştefan, Borza Ioan

Institution Polytechnic University of Timisoara
Research Institute for Renewable Energy

Patent no. RO 2014 00031

Description EN

The invention refers to an instalation for air desinfection for dental medical units like a way for completion the cleaning and chemical desinfection measured in 10 minutes time of functioning.

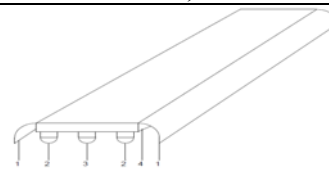
The technical problem which the invention resolvs, is the realisation obtaining a fixed electric instalation for air disinfection in dental medical units and it's incorporated in the general lighting instalation, the comanding of the instalation is made by a return press button, a general programing watch and a programing relee from the distance, which uses a

telephone network (wired/GSM).
Electric Instalation for dental medical units air desinfection is made from a light bulb with a mirror lens, performance electronic ballasts and fluorescent lights with a colour rendering index Ra= 94 and colour temperature of 5200K, between this is positioned a germicidal lamp UV-C with wavelength of 253.7mm and UV-C radiation of 15.0W. The fluorescent lights ar used for general lighting and the germicidal lamp is used for air desinfectioning the space destined for dental medical unit. The instalation's command made optionally by a return press button, a general programing watch and a programing relee from distance which uses a telephone network (wired/GSM).
The invention's advantages are:

- *Lower costs for production because the desinfection lamp is incorporated in the general lighting lamp*
- *The instalation desinfects the air in 10 minutes time with the condition that the general lighting system has to be designed and built as required in terms of the lighting regulations.*
- *Each hour monitoring germicidal lamp operating time required for instalation's efficient maintenance*
- *The instalation's possibility of scheduling the operation*
- *The possibility to connect the desinfected air and the remote ordering system through GSM network and telephone*
- *The energy efficiency through lower power consumption;*
- *The safe operation of air disinfection facility;*
- *The electrical control's simplicity;*

The simple maintenance by cleaning or replacing the lamps dust when the number of operating hours expires.

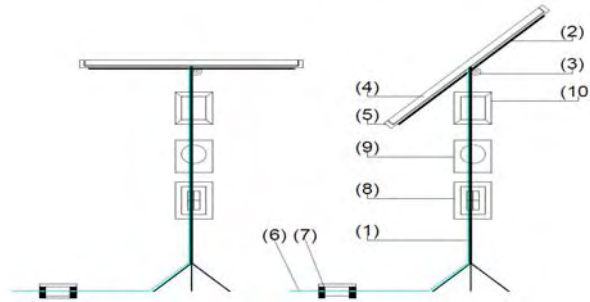
Class no. **4;12**



RO.114

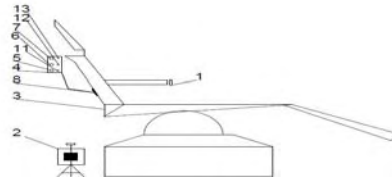
Title EN	Invention Title: SURFACES IN ENCLOSED ENVIRONMENTS
Authors	Pavel Ştefan, Suciu Silviu Cristian
Institution	Polytechnic University of Timisoara Research Institute for Renewable Energy
Patent no.	**U/00045/16.07.2015**
Description EN	*The invention refers to an electrical portable device for the disinfection of the air and of surfaces in enclosed environments such as attics,basements,storerooms,polluted hospital rooms and*

	other spaces without sufficient ventilation or insufficient disinfection by usual means. The portable device for the disinfection of theair and of surfaces in enclosed environments,according to the invention,is composed of a metalical frame(trepied) which has an adjustable peg which provies a range of 0^0-90^0. A fixture designed with a germicidal UV-C lamp with a wavelength of 253.7 nm and UV-C radiation of 15.0 W and performant electronical balast and which is protected by a rustproof metalical housing with the purpose of protection during transport and reflection during use when mounted vertically on the trepied. The commisioning of the device for the disinfection of the air and of surfaces is done manually,by way of an electrical switch with a key and by way of an electrical clock with programmable commands.
Class no.	**1, 12**



RO.115	
Title EN	***PORTABLE DEVICE FOR SIGNALING PAIN,SENSITIVITY OR DISCOMFORT DURING THE COURSE OF MEDICAL DENTAR ACTIVITY***
Authors	***Pavel Ştefan, Suciu Silviu-Cristian***
Institution	***Polytechnic University of Timisoara*** ***Research Institute for Renewable Energy***
Patent no.	**U/00055/17.09.2015**
Description EN	*The invention refers to a portable electronical device for signaling pain,sensitivity or discomfort during the course of medical dentar activity. The electical portable device for signaling pain,sensitivity or discomfort during the course of medical dentar activity atachable to the dentar unit(armchair) is composed out of an interlocking microcontact piece and(/or) optionally out of a glove attached to the patient's arm which contains an interlocking piece whihc is activated manually by the patient in case they feel pain or discomfort during the course of medical dentar activity. The manual activation of the automatically restoring microswitch or of*

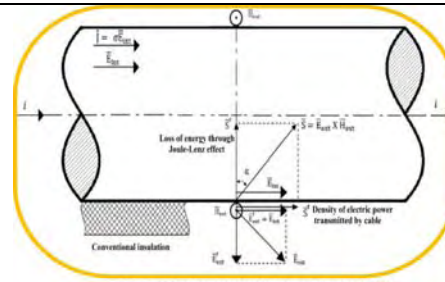
	the contacts inside the glove interlocks a relay powered with a tension of 12 V which will command the activation of two independent transformers of 4.5V and 12V which,in turn, will power with electricity,optionally, the operation of a LED lamp,of a buzzer and of a microdifuzor with with pre-recorded voice signals installed inside a flexible piece of equipment and attached via a suction cup to the armchair. This equipment is also designed with microswitches which permit the simultaneous or independent activation of the light signal via the LED lamp,the accoustic signal via the buzzer and the voice signal via the microdifuzor.
Class no.	**4, 12**



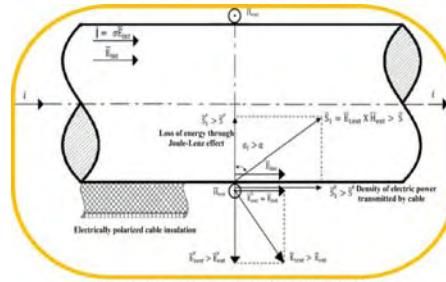
"Mircea cel Bătrân" Naval Academy of Constanța

RO.116

Title EN	**RELATIVE TO THE INCREASE OF ELECTRICITY TRANSPORTATION EFFICIENCY BY CABLES**
Authors	Alexandru SOTIR, Vasile DOBREF, Petrică POPOV
Institution	**Naval Academy "Mircea cel Bătrân"**
Description EN	The proposal of the invention concerns a new method for increasing the efficiency in transportation of electricity by cables, consisting in increased of transported electricity, and reduced losses by changing Poynting Vector. For this purpose it is used special insulation, electrically polarized under the action of electric currents in cables. Concretely, this proposal is about increasing the radial component of the electric field in cables and, consequently, the tangential component of Poynting Vector - power density, responsible with the amount of transported electricity
Class no.	2. Energy and sustanaible development



Conventional insulated cable (normal Poynting Vector)

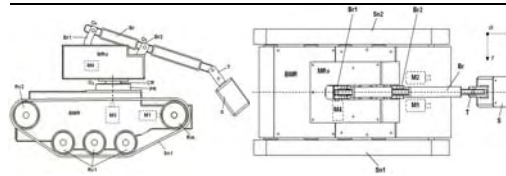


Electrically polarized cable insulation (modified Poynting Vector)

„Nicolae Bălcescu" Land Forces Academy Sibiu, Romania

RO.117.

Title EN	**Tracked Mini Robot Destined for Special Applications in Theatres of Operations**
Authors	Silviu-Mihai PETRIŞOR, Ghiţă BÂRSAN, Diana-Andreea IOAN
Institution	**"Nicolae Bălcescu" Land Forces Academy Sibiu, Romania**
Patent	A 01051/20.12.2012
Description EN	The technological product refers to a tracked mini-robot with electric actioning and autonomous movement, having four degrees of mobility, a simple mechanical structure, fully modularized and compact, the joining of the constituent modules being performed by means of a rotation joint screwed onto, the reduction the function being achieved by transmission mechanisms within the reducers with dual electric actioning, using in its structure materials and components resistant to hazardous environments. The functional product is characterized as an innovative idea by the production and assembly on the mechanical structure of the mini-robot of a modular robotic articulated rotating equipment performing an almost complete rotation movement (355^0), which allows the human operator real-time operational field research, removing the inconvenience of the robot's turning in order to have a full view of the terrain, reducing the risk of detection by the enemy in the event of conflict, or increasing capacity to provide timely comprehensive information about the existing risks on terrain harmful to the human operator in peacetime. The designed mini-robot has a color video camera attached in its structure which broadcasts real-time images and information necessary for the processing by the human operator by means of an electronic computer and LEDs in order to have precise framing. The technological product has applications both in the applicative-military area (by improving the ability to obtain and collect remote video information in order to observe and detect UXO unexploded ordnance and improvised IED devices in places that are dangerous or inaccessible for human operators in theatres of operations) and in the educational field (by improving professional skills of bachelor and master students on the design and assembly of those robotic components designed to contribute to the optimization of the method of obtaining information from areas with harmful effects on humans).
Class no.	12



RO.118.

Title EN	**Energy Method of Constructive Optimization Applied to Industrial Serial - Modular Construction Robots**
Authors	Silviu Mihai PETRIŞOR
Institution	**„Nicolae Bălcescu" Land Forces Academy Sibiu, Romania**
Description EN	The method consists in a brief highlighting of the specific elements of the dynamic calculation, conception, design, optimal assembling and practical realization of some modules of translation which later will be part of a serial-modular industrial robot, type *TTT Sil*. The structural optimization method can be extended to the construction of some varied architectures of serial modular robots, with industrial applicability and which possess, in the kinematic chain structure, from two to six degrees of freedom. The stages of implementation of the above mentioned method consists in: carrying out a dynamic, rigorous study on the mechanical structure of the industrial robot type *TTT Sil*; conception, calculation, design and implementation of modules, components of the above mentioned robot (module attached to the robot's base - *MTB Sil*, module from the component robot arm vertically - *MTV Sil* and the module from the mechanical structure of the robot arm horizontally – *MT Sil*); the equivalence of the dynamic calculation with organological calculation corresponding to each translation module of the robot and their optimal arrangement in a modular mechanical architecture namely a serial-modular type *TTT Sil*. The advantage of this method lies in the fact that the translation modules can be arranged in succession, applying the principle of interchanging, so that energy consumption be minimum, not to intervene over the organology of the modules and, the robot, thus built, be apt for the destination and operation for which it is implemented. The constructive optimization method has as result the highlighting of the calculations of motor-moments using the dynamic-organological algorithm proposed, this leading to the choice of those servo-motors of continuous energy appropriate in regards to the consumption necessary to start moving the translation mobile crews related to this type of robot.
Class no.	12

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

RO.119.	
Title EN	**Lipstick balm**
Authors	Roxana Alexandrina CLINCIU-RADU, Elena PATROLEA, Teodor ROBU (coordinator)
Institution	**University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iaşi**
Patent	-
Description EN	This lipstick balm is made from 100% natural ingredients, no preservatives and no parabens, and as flavoring we used volatile oil extracted from *Foeniculum vulgare.* This product has the ability to soothe and heal inflammation and cracks, ideal for use in cold season.
Class no.	4

RO.120.	
Title EN	**Cream marigold**
Authors	Roxana Alexandrina CLINCIU-RADU, Elena PATROLEA, Teodor ROBU (coordinator)
Institution	**University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iaşi**
Patent	-
Description EN	This cream is made from 100% natural ingredients, no preservatives and no parabens , and as flavoring we used volatile oil extracted from *Monarda citriodora.* This cosmetic product is useful in dermatitis and eczema, helping the skin to heal without permanent scarring.
Class no.	4

RO.121.	
Title EN	**Natural soap with *Lavandula angustifolia***
Authors	Elena PATROLEA, Roxana Alexandrina CLINCIU-RADU, Teodor ROBU (coordinator)
Institution	**University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iaşi**
Patent	-
Description EN	This soap is made from 100% natural ingredients, no preservatives and no parabens, and as flavoring we used volatile oil extracted from *Lavandula angustifolia.*
Class no.	4

RO.122.	
Title EN	**Natural soap with chlorophyll**
Authors	Elena PATROLEA, Roxana Alexandrina CLINCIU-RADU, Teodor ROBU (coordinator)
Institution	**University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iaşi**
Patent	-
Description EN	This soap is made from 100% natural ingredients, no preservatives and no parabens, and as flavoring we used volatile oil extracted from *Hyssopus officinalis,* and as natural dye we used chlorophyll extracted from *Urtica dioica.*
Class no.	4

RO.123.	
Title EN	DIA - BELLA
Authors	Teodor ROBU, Alexandru Dragos ROBU
Institution	**University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iaşi**
Description EN	This tea was made from herbs: *Vaccinium myrtillus L, Cichorium intybus, Achilea millefolim, Morus, Phaseolus vulgaris, Juglans regia, Taraxacum officinale, Stigmata Maydis, Daucus carota, Lytrum salicaria, Tilia, Polyugonum aviculare* Direction for use: Infusion Utilization: diabetes This tea is consumed without sugar or sweetened
Class no.	4

RO.124.	
Title EN	**INTE-STIM**
Authors	Teodor ROBU, Creola BREZEANU
Institution	**University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iaşi**
Patent	Proposed for IBA notification
Description EN	This tea was made from the herbs, fruits and is used in diseases of the intestines: *Vaccinium myrtillus L, Ocimum basilicum, Achilea millefolium, Cichorium intybus,Cydonia oblonga, Daucus carota flores, Echium vulgare, Mentha piperita, Althaea officinalis, Juglans regia, Lithrum salicaria, Hypericum perforatum* Direction for use: Infusion Utilization: flatulence (bloating), abdominal pains, enterocolitis, cramps, diarrhea s.o.
Class no.	4

RO.125.	
Title EN	**NORMODIGEST**
Authors	Teodor ROBU, Alexandru Dragos ROBU, Vasilica ONOFREI
Institution	**University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iaşi**
Description EN	This tea was made from the herbs, fruits and is used in diseases of stomach : *Equisetum arvense, Tymus vulgaris, Achilea millefolium, Calendula officinalis, Cydonia oblonga, Mentha piperita, Taraxacum officinale, Plantago lanceolata, Hypericum perforatum, Tussilago farfara, Robinia pseudoacacia, Origanum vulgare, Melilotus officinalis, Polygonum aviculare, Convolvulus arvensis* Direction for use: Infusion Utilization: hyperacidity, gastric ulcer, vomiting, gastritis
Class no.	4

Romanian Inventors Forum

RO.126.

Title EN	**Procedure for obtaining a oily nanodispersion with regenerative capacity**
Authors	Hagiu Bogdan-Alexandru, Vasilache Violeta, Țura Vasile, Mangalagiu Ionel, Mungiu Ostin-Costel, Filote Constantin, Sandu Andrei-Victor
Institution	**Alexandru Ioan Cuza University of Iasi** **Romanian Inventors Forum**
Patent no.	RO/127723
Description EN	The invention relates to a nano-based oily dispersion of colloidal silver that can be applied topically or administered by injection. Applications are preoperative tissue preparation, regenerate muscle injuries and treating skin lesions covered with hair.
Class no.	4

RO.127.

Title EN	**ECOLOGICAL TOOTHPASTE with multiple implications**
Authors	Kamel EARAR, Luoana- Florentina PASCU, Andrei Victor SANDU, Mădălina Nicoleta MATEI, Ion SANDU, Ioan Gabriel SANDU
Institution	**Romanian Inventors Forum**
Patent no.	Pending RO/2015
Description EN	The invention refers to an ecological toothpaste with multiple implications in cleaning the oral cavity. This is a creamy paste, made from concentrated aqueous dispersions based on extracts of herbs (basil / lavender, rosemary), fruit (pineapple) and seeds of buckthorn, flax, hay, jasmine, blended in proportions technological defined with very fine crumb of rice, egg shell, spirulina, sodium bicarbonate and NaCl. The paste is applied with a toothbrush and is used to clean and improve the health and aesthetic appearance of teeth. The application brings a number of advantages, among which: • Protecting and strengthening teeth • Protection of gums; • Teeth Whitening • Prevent bacterial • Reduce plaque plate; • Reducing dental stains • Stabilization of pH in the mouth • Maintaining a fresh breath
Class no.	4

RO.128.

Title EN	Method for determining normal range of variation of equilibrium moisture content
Authors	I. SANDU, C. LUCA, I.C.A. SANDU, M. HAYASHI, I.G. SANDU, V. VASILACHE, A.V. SANDU
Institution	**Romanian Inventors Forum**
Patent no.	RO123644 (B1) — 2015-08-28
Description EN	The invention relates to a method for determining the normal range of variation of equilibrium moisture content in wooden samples, in order to determine some archaeometric characteristics involved in the authentication and in compatibility or compatibilization studies referring to certain treatments, in the new wood placement or in interventions in active presentation and restoration of old wood. According to the invention, the method consists in performing the gravimetric analysis of a sample exsiccated in exsiccators, at a moisture content of over 99%, up to a constant mass, corresponding to the saturation point of the material hygroscopicity, being then dehydrated again, at a residual atmospheric humidity of less than 10%, up to a constant mass corresponding to the separation limit between the reversible and irreversible material hygroscopicity, the values comprised between the two hydration and dehydration curves representing the normal range of variation of the equilibrium moisture content in terms of reversible hygroscopicity
Class no.	14

National Institute of Materials Physics
Magurele, Romania

RO.129.

Title EN	**Superconducting material, machined by cutting tools, and a magnetic field concentrator / storage device**
Authors	Gheorghe Virgil ALDICA, Mihail BURDUŞEL, Petre BĂDICĂ
Institution	**National Institute of Materials Physics**
Patent no.	Patent application No. A/00748/2015
Description EN	The present invention relates to fabrication of a superconducting material based on MgB_2 that is machinable by using cutting tools, and to a magnetic fields concentrator / storage device (Fig.1). The invention solves the problem of limitations in obtaining the desired shape of the material and offers new advantages in the construction of a magnetic fields concentrator / storage device according to the specific requirements of different applications that use these devices. Along with the typical integration requirements of different components in a system / device, for the operation of the system / device it is necessary to control the shape of the superconducting parts that trap the magnetic field to avoid unwanted magnetic flux jumps due to thermo magnetic effects: for characteristic sizes and shapes, thermo magnetic effects can be stabilized. Application are in the fields: nuclear resonance tomography, current limiters, transformers, adiabatic demagnetization refrigerators, magnetic separators, magnetic shielding systems, magnetic levitation systems e.g. for high speed trains, magnetic energy storage devices, frictionless bearings and electric motors, for medical and space applications and for construction of advanced scientific instruments.
Class no.	2 (5, 8, 13)

RO.130.

Title EN	**Layered multi-metals-multi-ceramics composites**
Authors	M. Galatanu, G. Ruiu, S. Cretu, M. Enculescu, A. Galatanu
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Patent no.	Patent pending
Description EN	Based on electrical current assisted sintering, the proposed technology allows the production of metallic-ceramic layered composites in a single processing step, starting with various ceramic powders and metal powders and/or foils. The produced materials can benefit from dense corrosion protective layers and also sandwich –like materials with improved mechanical properties can be realized using such a technology.
Class no.	

RO.131.

Title EN	**Hybrid solar cell**
Authors	I. Pintilie, C. Besleaga-Stan, V. Stancu, A. Tomulescu, M. Sima, M. Mihalcea, L. Pintilie
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Patent	Patent pending
Description EN	The hybrid solar cell functions similar to a dye sensitized solar cell, being composed of a transparent electrode, an electron transporter, the absorber, a whole transporter and a collecting electrode. It can be prepared by low cost methods and can achieve conversion efficiencies up to 15 %.
Class no.	

RO.132.

Title EN	**Pyroelectric detector with optical amplification, for operating at high temperature**
Authors	L. Pintilie, G. Stan, I. Pintilie, M. Botea, A. Iuga, A. Gavrila, G. Dobrescu, M. Cioca, L. Culea, P. Soare
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Patent no.	Pending
Description EN	An AlN layer deposited on a highly conductive Si substrate can operate as pyroelectric detector up to very high temperatures (experimentally verified up to 300 C, theoretically predicted 1200 C). The magnitude of the pyroelectric signal can be optically amplified by controlling the resistivity of the Si substrate.
Class no.	

RO.133.

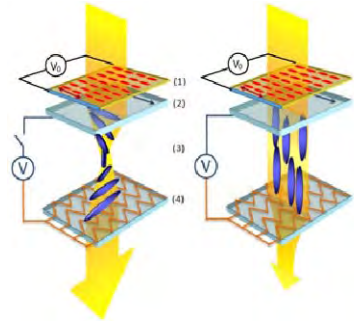
Title EN	**Pyroelectric detector from bulk ceramic with concentration gradient**
Authors	L. Pintilie, I. Pintilie, M. Botea, A. Iuga, M. Cioca, L. Culea, P. Soare, G. Dobrescu, A. Gavrila
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Patent no.	Patent application: A/00284
Description EN	The pyroelectric detector from bulk ceramics is composed of the active detection element (the ceramic), the metallic mounting and the impedance adapter. When exposed to a pulse of electromagnetic radiation (especially IR) it will generate a current or voltage pulse. The pulse amplitude can be manipulated through the concentration gradient in the ceramic. The analysis of this pulse can provide information on the energy, power, and even temperature of the source that has generated the radiation beam.
Class no.	

RO.134.

Title EN	**Optoelectronic device with electrically configurable metasurface for controlling the polarization of light and getting the optical resolution below the classic diffraction limit**
Authors	Costel Cotirlan-Simioniuc, Adrian Rizea, Danut Vasile Ursu
Institution	National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest
Patent no.	A/00186/2016
Description EN	This invention relates to an optoelectronic device with electrically configurable metasurface for getting the optical resolution below the classical diffraction limit, when it is placed with the metasurface in the near field of the object to be studied. Also, the device increases the visibility in difficult conditions of detection by controlling of light polarization, control achieved by overlapping two liquid crystal cells: a surface cell (1) containing a liquid crystal in nematic phase with functions of linear polarizer with controlled spin for the plane of polarization and superlens due of the surface layer of spindle molecules with metallic

doping, and respectively a volume cell that constitutes a waveplate with adjustable retardance, containing a medium of liquid crystals (3) in cholesteric phase, placed between two plates (2) and (4) made by coating the glass with a layer of conductive oxide and a polymer, the both beeing transparent in the visible and near-infrared range. Applications: microscopy and imaging polarimetry.

Class no. 5



RO.135.

Title EN

Method of obtaining one-dimensional nanostructures of zinc oxide by in air thermal oxidation of zinc sheets

Authors Camelia Florica, Nicoleta Preda, Andreea Costas, Alexandru Evanghelidis, Mihaela Oancea, Monica Enculescu, Elena Matei, Ionut Enculescu

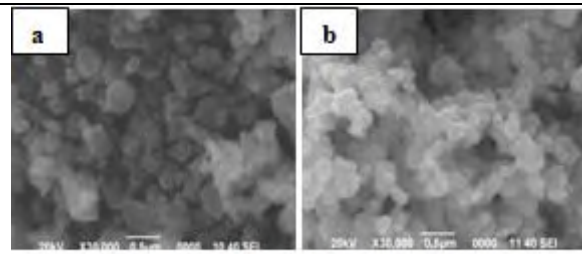
Institution National Institute of Materials Physics, P.O.Box MG-7, Magurele, Bucharest

Patent no. Patent application:A/00302

Description EN The invention describes a method of obtaining one-dimensional nanostructures of zinc oxide by in air thermal oxidation of zinc sheets for applications in the field of superhydrophobic and self-cleaning properties.

Class no.

National Institute of Research & Development for Technical Physics, Iasi

RO.136.	
Title EN	**Magnetite nanoparticles and procedure for preparing the same**
Authors	Horia CHIRIAC, Nicoleta LUPU, Maria GABURICI
Institution	National Institute of Research and Development for Technical Physics
Patent no.	No.A 2010 00296 /2010
Description EN	The patent refers to the procedure for preparation of magnetite nanoparticles in microwaves field in programmed temperature regime, with the aim to achieve nanoparticles with smaller dimensions and enhanced magnetic properties for biomedical applications. According to patent, a ferrous salt (i.e. ferrous oxalate or ferrous sulphate) is put in contact with a concentrate solution of sodium hydroxide or urea in the presence of a microwave field. The synthesising process is temperature controlled, as a function of the reactants nature. Three examples for nanoparticles preparation are given: ✓ ***Procedure 1:*** ferrous oxalate and sodium hydroxide as reagents - 4 successive cycles (***sample 1***); ✓ ***Procedure 2:*** ferrous sulphate and sodium hydroxide as reagents -1 cycle (***sample 2***); • ***Procedure 3:*** ferrous oxalate and urea as reagents - 3 successive cycles (***sample 3***).
Class no.	4. Medicine - Health Care
Image/ Photo	 SEM images of samples 1 (a) and 3 (b)

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

RO.137.

Title	**COMPOSITION OF CONSERVATION / RESTORATION FOR SURFACES OF CHALK MONUMENTS AND ITS IMPLEMENTATION PROCESS.**
Authors	**ION RODICA MARIANA, FIERASCU RADU-CLAUDIU, FIERASCU IRINA, ION NELU, BUNGHEZ IOANA- RALUCA**
Institution	**ICECHIM-Bucharest**
Patent no.	A 00071/02.02.2015
Description	The invention relates to a composition consisting of calcium trioxalates (COT) in water and hydroxyapatite, and process for its preparing for preserving and restoring the surface of matrix lime (chalk) monuments. The composition is chemically compatible, aesthetic and mechanical material calcite type of natural chalk monuments. The new composition provides protection to the action of air pollutants (light, humidity, temperature). The composition of this invention has the following advantages: **- to put into practice**: 1. has a good lucrativitate and adaptability; 2. an be adapted to the layer to which it relates; 3. led to compaction of the treated area by increasing the bulk density by doubling; **- after putting into operation**: 1. makes an effective consolidation of the area of intervention; 2. does not generate efluorescence; 3. does not cause discoloration or other chromatic distortions; 4. the porosity of the treated surface is only slightly diminished and this is limited to the outer portion of the grain of calcite; 5. the chalk superfficial micro-structure becomes more compact because the composite is denser than calcite; 6. the mean time of droplet absorption increased significantly for the treated samples over the treated areas. Applications: to conservation/restoration of chalk surface monuments.
Class	**7**

RO.138.

Title	**Antibacterial and antifungal composition for antibiotics resistant species and method for obtaining**
Authors	Mihai Cosmin Corobea, Zina Vuluga, Dorel Florea, Michaela Iorga, Denis Mihaela Panaitescu, Madalina Georgiana Albu
Institution	**The National Institute for Research & Development in Chemistry and Petrochemistry ICECHIM**
Patent no.	Patent application No. A/00179/2015
Description	The invention presents a composition based on different clay particles and essential oils able to be assembled in different ratios in order to increase the antibacterial and antifungal effect compared with initial essential oils. The clay particles alone did not showed any antibacterial or antifungal effect, but they are able (in certain compositional domain) to offer a synergic effect for essential oils, when are used in an emulsion formulation. The invention application describes the optimal composition, the method for obtaining it and highlights the application for bacterial or fungal species known for their antibiotic resistance (like Aspergillus spp., C. Albicans, Enterobacter, Enterococcus faecalis, E. Coli, P. Aeruginosa and S. Aureus). The applications involve an eco-friendly concrete solution against multidrug-resistant bacteria (MDRB), nosocomial infections and human or veterinary diseases involved by the described pathogens. The benefits of both composition and the process involved, consist in easiness of the obtaining process, high efficiency, decreasing the necessary amount of essential oils for the application (important reducing of the solution overall costs), availability of the components and reducing the consumption of synthetic antibiotics (especially the ones involved in antimicrobial resistance)
Class	4

RO.139.

Title	**ECOLOGICAL PRODUCT FOR THE STORED GRAIN PROTECTION AND PROCESS FOR OBTAINING THE SAME**
Authors	POPESCU MARIANA, OANCEA FLORIN, DEȘLIU-AVRAM MĂLINA

Institution **National Research & Development Institute for Chemistry & Petrochemistry – ICECHIM, Bucharest, Romania**

Patent Patent application No. 00817/2015 (OSIM)

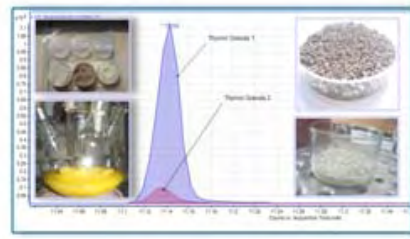
Description

The invention relates to a novel ecological product based on essential oils and diatomaceous earth for stored grain protection against pests and diseases, and process for obtaining by microencapsulation of bioactive oils in organic-mineral structures. The innovative product consists of potassium salts of fatty acids from vegetable oils, potassium acetate, glycerin, essential oils extracted from aromatic herbs from spontaneous or cultivated flora with attested insecticidal and fungicidal properties, a natural insect attractant recovered after hydrodistillation of wine lees, the selected bioactive mineral vehicle, a biopolymer as the adhesive, unsaponifiable substances, and the process for preparing by cold saponification of vegetable oils, coacervation and granulation. The final product represents an eco-effective alternative to conventional chemical means (insecticidal fungicidal products and storage fumigants) for risk management programs implemented in agricultural practice to reduce storage insect populations and mycotoxin transfer from storage to animal and human diet, the most dangerous risk factors of the food chain which destroy the crop plants in the field and post harvested yield in storage, generating huge economical losses for farmers and seriously affecting the consumer health.

Applications: Contribution to bioeconomy sustainable development with organic conservative agricultural systems; diminution of residues and contaminants from the whole food chain; good practices for integrated management of contamination risk in storehouses; stored grain protection in organic farms; modern eco-effective formulation for agrochemical manufacture.

Acknowledgement: This work was accomplished through the PNII Program Partnerships in Priority Areas, Project PNII-PT-PCCA-2013-4-0425, Contract 156/2014, financially supported by UEFISCDI, Romanian Ministry of National Education.

Class 3



RO.140.

Title

MICROENCAPSULATION OF PLANT PROTECTION BIOPRODUCTS IN SAPONIFIABLE VEGETABLE MATRIX

Authors

Mariana POPESCU[1,2],Florin OANCEA[1,2], Elena RADU[1], Mălina DEȘLIU-AVRAM[1]

Institution

[1]National Research & Development Institute for Chemistry & Petrochemistry – ICECHIM, Bucharest, Romania
[2]University of Agronomic Sciences and Veterinary Medicine, Bucharest, Romania

Description

Present research work describes an experimental model for converting the conventional technology of soap making into a cold saponification process of vegetable oils for microencapsulation of bioproducts for cultivated plant protection against pests and diseases. Glycerol by-product from the solid soap manufacture, usually separated and decanted from the reaction mixture, could be retained within the soft soap if cold process was involved, promoting the opportunity for microencapsulation of bioactive essential oils with agronomic utility. Several types of eco-friendly bioproducts have been obtained by cold saponification of cold pressed rapeseed oil and essential oils extracted from thyme, thuja and oregano, and expected to reduce the phytotoxicity of copper based horticultural treatments or to protect stored grains from biological contamination. The most important advantages of using cold process for oil saponification are the immobilization in the soap texture of glycerin, a marvelous biosolvent for plant protection bioproducts, and the possibility of avoiding losses of essential oils by vaporization. Slow-release formulations were obtained from natural renewable sources estimated as accessible, abundant and cheap. Very suitable for applications in organic farms, such bioproducts could contribute to the reduction of the negative impact of conventional agrochemicals against agroecosystems, and the toxic effects against users or beneficial organisms, such as the phytotoxicity of copper based horticultural treatments.

Acknowledgement: This work was accomplished through the PNII Program Partnerships in Priority Areas, Project PNII-PT-PCCA-2013-4-0425, Contract 156/2014, financially supported by UEFISCDI, Romanian Ministry of National Education.

Class

NATIONAL

RO.141.

Title **Polymeric material with antifouling properties, the process of his obtaining and antifouling coating**

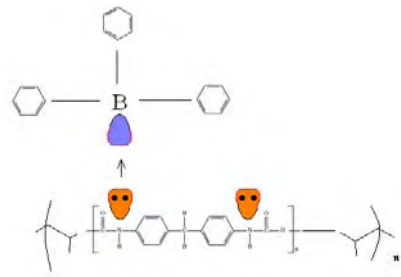
Authors **Marin Laurentiu, Marin Catalina**

Institution **NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN CHEMISTRY AND PETRO-**

Patent Patent application No. A00972/29.09.2011

Description The paper outlines the results of research that led getting a functionalized polyurethane composite with intrinsic antifouling properties. The material has applicability in the protecting against corrosion and fouling, for all types of stationary and mobile structures submerged in the sea and ocean waters (port facilities, signaling balises, underwater cables, ship hulls). Functionalized polyurethane shall be two component type and can be applied on a wide range of surfaces - steel, wood, reinforced polyester, plastics. The material provide protection for at least two years of operation.
On the active centers of chain macro polyurethane – N atoms - organoboron compounds - boron triphenyl type are grafted.
Thereby, functionalized polyurethane macrochain, acquires intrinsic antifouling properties, without having need for another modification of the composition by adding active elements antifouling.

Class Class 9 – Chemical and Textile Industry



RO.142.

Title **HEXAVALENT CHROMIUM RETENTION FROM WASTEWATER WITH POLIMER MEMBRANE SYSTEMS**

Authors Sofia Teodorescu[1], Rodica-Mariana Ion[2,4], Gheorghe Nechifor[3], Ioana-Raluca Şuică-Bunghez[2], Raluca Maria Ştirbescu[1], Ioana Daniela Dulamă[1]

Institution [1] Valahia University of Targoviste, Multidisciplinary Scientific and Technologic Research Institute, 130004 Targoviste, Romania

[2] National Institute of Research and Development for Chemistry and Petrochemistry – ICECHIM, Bucharest, Romania
[3] University "POLITEHNICA" Bucharest, Faculty of Applied Chemistry and Materials Science, Department Analytical Chemistry and Environmental Engineering, Bucharest, Romania
[4] Valahia University of Targoviste, Materials Engineering Department, 130082 Targoviste, Romania

Description

In the last years the levels of several toxic metals in the superficial waters have increased gradually due to pollution caused by the discharges of industrial and municipal wastewaters. Chromium species exist mainly in two different oxidation states in environmental water: Cr(VI) and Cr(III). The hexavalent form of chromium is considered to be a group "A" human carcinogen because of its mutagenic and carcinogenic properties.

The nanoparticles used up to now (chitosan, ion exchange resins (CS 34 and AS 14), perlite, zeolite), did not show significant efficiencies. Except these, magnetite due to its capacity to be entrapped into different substrates with pores, voids and galleries, is able to irreversible retain different pollutants. Under such circumstances, some new ultrafiltration membranes have been prepared with polysulfone polymer (Psf), N-methyl-2-pyrrolidone (NMP) and magnetite by phase inversion technique for Cr(VI) retention from wastewater.

The use of magnetite was found to be very effective in recovering of hexavalent chromium in a short time and low costs. The morphology and surface characteristics of the new systems together with the efficiency have been proved with the following types of analysis: FT-IR, Raman, SEM, MO and colorimetric determination of chromium.

In conclusion, magnetite incorporated in the polysulfone/NMP/Fe_3O_4 membrane is one new solutions used with success in retention of Cr (VI) from wastewater (85%).

Class Innovative Research

RO.143.

Title **QUARTZ CRYSTAL MICROBALANCE USED AS SENSOR FOR PESTICIDES DETECTION**

Authors Ioana - Daniela DULAMA[1], Sofia TEODORESCU[1], Raluca STIRBESCU[1], Ioan Alin BUCURICA[1], Cristiana RADULESCU[2], Rodica Mariana ION[3,4]

Institution *[1]Valahia University of Targoviste, Multidisciplinary Scientific and Technologic Research Institute, 130004 Targoviste, Romania*
[2] Valahia University of Targoviste, Faculty of Sciences and Arts, 130082 Targoviste, Romania
[3] National Institute of Research and Development for Chemistry

and Petrochemistry – ICECHIM, Bucharest, Romania
[4] *Valahia University of Targoviste, Materials Engineering Department, 130082 Targoviste, Romania*

QCM was be successfully used in diverse applications such as the detection of toxic gases (aromatic hydrocarbons, ammonia, SO_2 etc.), toxic substances (cyanide), thin film deposition to determine viscosity and viscoelasticity etc.

QCM is an extremely sensitive device able to determine in real time the variation of the adsorbed mass at the sensor surface, in field of ng/cm^2. The mass is reverse proportional to the frequency variation of the crystal resonator, accordingly to Sauerbrey's equation: $\Delta F = -Cf \cdot \Delta m$ where ΔF = frequency shift [Hz]; Δm = mass shift per area unit

[g /cm^2]; Cf = sensitivity factor of the crystal (it is specific to each type of crystal). QCM can be applied for the determination of pesticides in drinking water, fruit and vegetables juice and even in soil.

Description

Quartz crystal microbalance represents a sensitive technique for a quickly determination of pesticides. For this study were used chrome-gold electrodes (CrAu) covered with self-assembled monolayers (SAM) to increase the LOD (18 ng/cm^2 for ΔF=1 Hz) and three pesticides frequently used in agricultural activity from Dambovita County (fungicide with active substance: mancozeb, insecticide with active substance: alpha-cypermethrin, molluscicide with active substance: metaldehyde). The obtained sensor show high sensitivities at low concentration values (10 ng/L).

The proposed solution for pesticides determination using quartz crystal microbalance is advantageous in terms of the time needed for sample preparation (few minutes) and for analyzes (150 seconds).

Thus, QCM based sensor arrays are considered a promising method for the direct analysis of aqueous samples.

Class Innovative Research

National Research and Development Institute for Soil Science, Agro-chemistry and Environment ICPA Bucharest

RO.144.

Title EN	**Complex liquid fertilizer with anti-chlorosis properties, for preventing and treating nutritional deficiencies, process for obtaining and method for applying the same**
Authors	Cioroianu Traian Mihai, Dumitru Mihail, Sîrbu Carmen Eugenia
Institution	**National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest**
Patent	RO 128921 B1 / 30.03.2015
Description EN	The invention relates to a liquid fertilizer with anti-chlorosis properties, for preventing and treating nutritional deficiencies, to a process for obtaining and a method for applying the same. According to the invention, the fertilizer consists of: total nitrogen 25.72...101.3 g/l, phosphorus 20.56...60.82 g/l expressed as P_2O_5, potassium 24.51...53.46 g/l expressed as K_2O, iron 10.12...24.22 g/l, zinc 0.16...0.95 g/l, copper 0.04...0.56 g/l, magnesium 0.66...4.96 g/l, manganese 0.03...0.50 g/l, boron 0.25...0.73 g/l, sulphur 13.04...31.63 g/l, organic substances 125.45...258.42 g/l. As claimed by the invention, the method for applying the liquid fertilizer consists in using the product in viticulture and fruit farming by spraying it as aqueous solution of 1...2.5% concentration in a quantity of 1000...1500 liters/ha, depending on the vegetation stage.
Class	3

RO.145.

Title EN	**NPK type extraradicular fertilizer with humic substances, process, for obtaining and method for applying the same**
Authors	Dumitru Mihail, Sîrbu Carmen Eugenia, Cioroianu Traian Mihai
Institution	**National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest**
Patent	RO 127894 B1 / 30.04.2014
Description	According to the invention, the fertilizer comprises

EN	55.6...165.69 g/l total nitrogen, 32.41...70.2 g/l phosphorus pentoxide, 30.92...58.4 g/l potassium oxide and microelements consisting of copper, zinc, iron, manganese and magnesium, completely chelated with disodium salt EDTA, boron, sulphur and 23.65...35.89 g/l of organic substances of which 8.04...20.09 g/l of humic substances. The method for the application of the fertilizer consists in administering an aqueous fertilizer solution with a concentration of 0.01...25%, in an amount of 200...10000 l/ha, depending on the fertilizer type, crop and vegetation stage.
Class	3

RO.146.

Title EN	**Extraradicular fertilizer, process for preparing it and method for applying the same**
Authors	Soare Maria, Cioroianu Traian Mihai, Dumitru Mihail, Sîrbu Carmen Eugenia, Mărin Nicoleta
Institution	**National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest**
Patent	RO 127400 B1 / 28.12.2012
Description EN	According to the invention, the fertilizer consists of 100.8...130.8 g/l of total nitrogen, of which 80.4...120.6 g/l of amidic nature, 5.1...10.2 g/l of nitric nature, 5.1...10.2 g/l of ammonia nature, 40.6...60.3 g/l of phosphoric anhydride, 35.2...51.4 g/l of potassium oxide, 7.5...20 g/l of protein organic substances, 0.2...0.3 g/l of iron, 0.04...0.1 g/l of zinc, 0.05...0.1 g/l of copper, 0.1...0.2 g/l of boron, 0.05...0.2 g/l of magnesium, 0.05...0.15 g/l of manganese, 0.57...0.73 g/l of sulphur, as an aqueous solution having a pH of 5.8...6.8. The claimed method consists in spraying the fertilizer on the plants as a 0.5...2% aqueous solution, in an amount of 250...1500 l/ha, depending on the crop and the vegetation stages of plants.
Class	3

RO.147.

Title EN	**Fertilizer with humic substances, process for preparing the same, and method of application**
Authors	Cioroianu Traian Mihai, Dumitru Mihail, Sîrbu Carmen Eugenia

Institution	**National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest**
Patent	RO 127192 B1 / 29.03.2013
Description EN	According to the invention, the fertilizer comprises 0.9...47.2 g/l of total nitrogen, 1.0...66.6 g/l of phosphorus, 6.9...57 g/l of potassium, 9.0...19.8 g/l of humic organic substances, 0.20...0.62 g/l of iron, 0.19...0.3 g/l of zinc, 0.19...0.36 g/l of copper, 0.12...0.25 g/l of boron, 0.26...0.32 g/l of magnesium, 0.15...0.37 g/l of manganese, 1.8...3.3 g/l SO_3, having a pH of 6.8...8.4. The claimed method consists in spraying the fertilizer on the plants as a 0.5...2% aqueous solution, in an amount of 250...1500 l/ha, depending on the crop and the vegetation stages of plants.
Class	3

RO.148.

Title EN	**Extra-root fertilizer with protein hydrolysates, process of preparation and method of application**
Authors	Cioroianu Traian Mihai, Dumitru Mihail, Sîrbu Carmen Eugenia
Institution	**National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest**
Patent	RO 126939 B1 / 29.03.2013
Description EN	The claimed fertilizer comprises 4.42...17.76 g/l total nitrogen, of which 0.04...0.18 g/l ammonia nitrogen, 0.001...0.01 g/l phosphorus pentoxide as organic phosphorus, 0.01...8.57 g/l potassium oxide, 22.19...98.12 g/l collagen hydrolysate, 0.32...3.01 g/l iron, 0.12...1.02 g/l zinc, 0.14...1.02 g/l copper, 0.24...0.51 g/l boron, 0.17...2.31 g/l magnesium, 0.14...0.667 g/l manganese, 4.08...29.59 g/l SO_3 having a pH between 5.4...6.8. The claimed method consists in spraying the fertilizer on the plants as a 0.25...2% aqueous solution, in an amount of 250...1500 l/ha, depending on the crop and the vegetation stages of plants.
Class	3

RO.149.

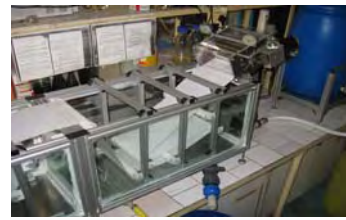
Title EN	**Procedure for obtaining an aromatic-aliphatic copolyester biodegradable, water dispersible and the aqueous dispersion thereof**

Authors	Iancu Stela, Duldner Monica-Mirela, Lăcătuşu Anca-Rovena, Bartha Emeric, Anghel Dan-Florin
Institution	**National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest**
Patent	127648 / 30.07.2014
Description EN	The invention relates to a procedure for obtaining an aromatic-aliphatic copolyester, so that the polymeric material resulted to possess certain properties that are designed: biodegradability, very good dispersibility in water and thermal properties, using as raw material waste of polietilentereftalat (PET) and a diol derived from biomass (isosorbide), as well as an aqueous dispersion of this copolyester, which may form copolyester film, as a result of the water removal by evaporation. Copolyester films obtained are intended mainly for the use of mineral fertilizer granules encapsulation, in order to achieve controlled release of nutrients, or as an adhesive or impregnating agent for paper and non-woven materials.
Class	3

National Research & Development Institute for Industrial Ecology - ECOIND

RO.150.

Title	**INSTALLATION FOR PRODUCING FUNCTIONALIZED NANOCOMPOSITE PERMSELECTIVE MATERIALS**
Authors	**Batrinescu Gheorghe, Cuciureanu Adriana, Lehr Blaziu Carol**
Institution	**National Research And Development Institute For Industrial Ecology**
Patent no.	Patent no. 126195/30.09.2014
Description	The technical problem solved by the invention consists in development of an installation for producing functionalized nanocomposite permselective materials with overlapped polymeric structures. The materials are resulting from the chemical reaction forming of one polymer into the training process network through a physical process of another chemically inert polymer by phase inversion. Electrically hydrodynamic and structural characteristics are reproducible and usable both for baromembrane processes as well as in electrochemical processes for bioseparation and bioassay. The invented installation eliminates the disadvantages of known systems in which the composite material is obtained by physical deposition of two or more successive layers of polymers. The installation comprises a subassembly for converting the polymer solution into film and a subassembly for conducting the polycondensation reaction of a monomer (e.g. aniline) from the pores of preform material. The installation of the invention has the following advantages: - is producing the functionalized nanocomposite permselective materials with reproducible electrically hydrodynamic and structural characteristics - modular construction, simple, easy to operate and serviced - is allowing productione of functionalized nanocomposite permselective materials, with various characteristics, in the same cycle of operation The obtained materials are dedicated for the wastewater treatment (retention/elimination some dangerous pollutants which have low concentrations).
Class	**1: Environment – Pollution Control**



RO.151.

Title	**Process for recovering copper from spent catalysts**
Authors	**Nitoi Ines, Cosma Cristiana**
Institution	**National Research & Development Institute for Industrial Ecology-ECOIND**
Patent no.	**RO 122643-B1/30.10.2009**
Description	The present invention relates to a process for recovering copper from spent catalysts, resulting from various processes of organic synthesis. According to the invention, the process consists in solubilizing coppere as tetraamine cupric complex by percolation at environmental temperature for 4 hours with an ammonia solution containing ammonia and ammonia chloride, the ratio between the volume of the complexing solution and the quantity of spent catalyst being 10÷40/1, separating the phases by filtation, alkalinizing the resulting copper ammonic complex with a solution of sodium hydroxide, stripping the ammonia air/vapour steam at 60 degrees C, simultaneously with the precipitation of black cupric oxide, filtering the solid phase, washing with distilled water and drying the resulting cupric oxide at a temperature of about 150 degrees C. The process allows the selective recovering of copper from spent catalysts/solid wastes having also other metallic components (aluminium, chrome, manganese, iron) that are not solubilizing by ammonia. The yields of main phases (solubilizing, stripping/precipitation) are over 95% and the purity of recovered cupric oxide (CuO) is high, over 99%. In order to capitalize cupric oxide, the following directions are mentioned: specific catalysts fabrication, ceramics and enamels industry
Class	**1**

RO.152.

Title	**Combined chemical and biological method for the remediation of soils polluted with organochlorinated pesticides**
Authors	Mihai STEFANESCU, Costel BUMBAC
Institution	**National Research and Development Institute for Industrial Ecology - ECOIND**
Patent no.	RO 129627A2

Description

Persistent organic pollutants (POPs) constitute a diverse group of organic substances, which are toxic, persistent, bioaccumulative and prone to long-range transport. They have different intrinsic physical-chemical properties, which dictate their environmental behavior. Organochlorinated pesticides and their derivatives compounds are included in this category.

Many countries have environmental problems because of ex industrial production of HCH and DDT.

This invention proposes a combined technology based on chemical oxidation with hydrogen peroxide or calcium peroxide. Oxidant doses can be up to 100 times higher then stoichiometric necessary. Iron (II) is the catalyst and specific doses are calculated taking into account specific pollution matrix of the soil.

The second treatment phase is biologic based on successive aerobic (max. 10 days) and anaerobic(max. 20 days) phases with addition of organic support (molasses). The entire biological treatment can last few months according with pollutants concentrations in soil.

Final removal efficiency of pesticides are over 90%.

Class 1-Environment-Pollution Control

RO.153.

Title ***WASTEWATER TREATMENT USING AEROBIC GRANULAR SLUDGE – Ph.D. thesis***

Authors **Ionescu Ioana Alexandra**

Institution **University of Agronomic Sciences and Veterinary Medicine Bucharest**

Description

"Wastewater treatment using aerobic granular sludge" Ph.D. thesis brings new contributions in the field of wastewater treatment biotechnologies through the development of

efficient and low operating cost biological process, based on aerobic granular activated sludge, an alternative to the conventional wastewater treatment plants.
The addressed topic falls within current international concerns regarding environmental biotechnology research - municipal/industrial wastewater treatment, and the identification, development and evaluation of cost-effective biological treatment processes.
"Wastewater treatment using aerobic granular sludge" Ph.D. thesis presents original contributions regarding:
the obtaining of aerobic granular sludge in a sequencing batch reactor; granules formation and biocenosis dynamic evaluation; phenol wastewater treatment using aerobic granular sludge; aerobic granular sludge technology adaptation in a continuous flow bioreactor**. The novelty** of this thesis is represented by the fact that there are no nationally known wastewater treatment applications of aerobic granular sludge in sequencing batch reactor, nor in a continuous system. On national level only wastewater treatment processes based on conventional activated sludge, in different configurations, are applied.
The optimization of aerobic granular sludge technology to continuous flow operation can open new opportunities for the existing wastewater treatment plants adaptation, without high investment costs

Class	Innovative Research

RO.154.	
Title	**TiO_2 heterogeneous photocatalyse in advanced treatment of wastewater containing organic pollutants – *Ph.D. thesis***
Authors	**Lucian Alexandru Constantin**
Institution	**University "Politehnica" Bucharest**
Description	The PhD thesis is presenting experimental original results regarding: Kinetics of photocatalytic degradation of chlorinated aniline, nitrobenzene and triclosan, Degradation mechanisms for chlorinated aniline and triclosan via TiO_2 assisted photocatalyse, Use of photocatalytic membrane reactor with suspended photocatalyst for degradation of triclosan from real aqueous systems. The theme is related to present scientific concerns and researches in the field of wastewater treatment, identification, development and

assessment of pollution removal techniques.
TiO_2 assisted photocatalytic system proved to be a suitable technique for the degradation of recalcitrant organic pollutants both due to its high oxidative power and economic and environmental friendly characteristics compared to other classic oxidants. In conclusion it can be stressed that the performed studies confirmed the fact that heterogeneous photocatalyse using un-doped or heavy metal doped TiO_2 represents a promising method for efficient treatment of wastewater with organic pollutants content.

Class Innovative Research

RO.155.

Title **Process for obtaining mixed microalgae – bacteria granules for wastewater treatment**

Authors Olga Tricolici, Bumbac Costel

Institution **National Research and Development Institute for Industrial Ecology – ECOIND**

Patent no. Patent application No. RO130247-A0 / 2014

Description Invention consists in granulation of the microalgae-bacteria system for promoting the sustainability of the wastewater treatment processes by elimination of the aeration costs, mitigation of the greenhouse gas emissions, and waste management improvement (microalgae biomass being an important source of high value-added bioproducts). At the same time, invention is addressed for sustaining low-cost microalgae biomass production and solving microalgae harvesting issue by fast microalgae recovering with no costs or energy inputs. Granulation proces occures in a photobioreactor, operated in sequential batch operation mode, and involves the use of wastewater as a culturing

medium and filamentous microalgae as a key taxa for the development of the granular structure. Developed granules comprise bacterial biomass and species of microalgae commonly used for wastewater treatment (with a cell size lower than 30 μm) whose harvesting usually requires high costs and energy consumption. Due to the symbiotic relationship induced between bacteria and microalgae species, aerobic wastewater treatment processes are sustained without any aeration means, oxygen required by bacteria being provided exclusively through photosynthesis processes (oxygen saturation in liquor exceeding 100%). Simultaneously, photoautotrophic microalgae act as an efficient tool for CO_2 sequestration. Developed granules are characterized by a compact structure, high biological density, and high settling rate (18±7.2 m/s) being comparable to that of aerobic granular sludge. Biomass separation/ harvesting can be ensured by settling only, almost complete removal of the microalgae (with an efficiency higher than 99%) being achieved after few minutes.

Class 1. Environment – Pollution Control

National R&D Institute for Cryogenic and Isotope Technologies - Ramnicu Valcea

RO.156.

Title **Capacitive level meter for cryogenic liquids**

Authors Ionete Eusebiu Ilarian, Monea Bogdan Florian, Spiridon Stefan Ionut, Vacaru Marian, Costeanu Claudiu Gheorghe

Institution **National R&D Institute for Cryogenic and Isotope Technologies - Ramnicu Valcea, VL, RO**

Patent no. Patent application No. **A/00321/07.05.2015**

Description

The present invention relates to a level meter for cryogenic liquids, in particular nitrogen and hydrogen, liquids which may be encountered in storage vessels, known as Dewar's type vessels, and also in various types of cryogenic plants.

Taking into account the specific working conditions of those types of liquids, especially those related to very low temperatures, the level meter consist of a number of capacitors with flat and interleaved armatures, mounted in a rigid structure, having a shape that determine and allows liquid penetration into and from the interior of capacitor armatures.

The principle is based on measuring the specific dielectric constant differences in cryogenic liquid fluids and gaseous or vapor.

Using a data acquisition system , during operation mode , each capacity value is measured and recorded continuously based on a mathematical algorithm block that process and compares the measured values of capacities for the capacitors structure, during their filling with cryogenic fluid with the capacity values of the same capacitor structure measured during the calibration process, determining in this way the level of the cryogenic liquid within the vessel.

Class 5: Industrial and laboratory equipment

RO.157.

Title **Ultrathin Nb-NbO_x humidity sensor with regenerative detection characteristic**

Authors Enache Stanica, Ion-Ebrasu Daniela, Rizoiu Alexandru,

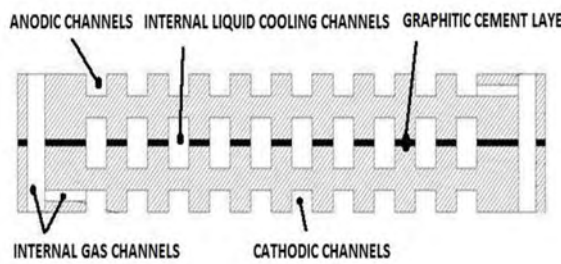
	Varlam Mihai, Stanciu Vasile, Stefanescu Ioan
Institution	**National R&D Institute for Cryogenic and Isotope Technologies - Ramnicu Valcea, VL, RO**
Patent no.	Patent application No. A/00813/2015
Description	Typical humidity sensors consist of thin metal-oxide films (of few microns thick) deposited on conducting substrates and operate at high temperatures (i.e., above 200^0C) in order to avoid water condensation below the dew point. The detection technique is purely resistive as the electrical resistance of the sensor varies by one order of magnitude upon exposure to wet environments. Different from what is known so far, we propose a new type of humidity sensor based on ultrathin core-shell like Nb-NbO films (with thickness not large than 30nm) grown on commercial glass, which can be easily obtained by *dc*-magnetron sputtering in Ar atmosphere, from a metallic Nb target (i.e., >99.95% purity). The resulted films consist of nano-sized metallic Nb domains (i.e., ~15nm wide) short-circuited by an insulating NbO_x layer (i.e., with thickness between 2nm and 5nm), which exhibits a high activity towards the catalytic hydrogenation of the metallic Nb domains from adsorbed water, resulting in the formation of niobium hydrides (i.e., NbH - NbH_2). The metal-hydride formation (i.e., hydrogen absorption) is a reversible process and can be repeated many times by simply applying an over-potential of +1.0V at room temperature, in order to cure the sensor to its initial state. *Applications:* The catalytic hydrogenation of Nb-NbO_x films is not restricted to moisture sensing alone but it can be extended to various hydrogen containing environments, from gaseous hydrogen to saturated hydrocarbons (i.e., alkenes).
Class	5: Industrial and laboratory equipment

RO.158.	
Title	**Processs for bipolar plates production with liquid cooling system type included for PEM Fuel Cell stack**
Authors	Patularu Laurentiu Gabriel, Schitea Dorin Marius, Varlam Mihai, Stefanescu Ioan, Marinoiu Teodora Adriana
Institution	**National Research and Development Institute for Cryogenics and Isotopic Technologies - ICSI Rm Valcea**

Patent no. OSIM No. A 00684/26.09.2012

Description The invention can be applied to realize medium and high power PEM fuel cell stack working at high current densities with graphitic material bipolar plates, with integrated liquid cooling system that is maximized in terms of electric and thermal bridge and also volumetric disposal.
The technical solution consist in two graphite plates bonded with a proprietary graphitic cement disposed in controlled layer, located at the upper faces of the plates, with superior thermal and electrical properties compared to unbonded plates, that meets a double role: adhesive and sealant.
Applications: Offers the possibility to produce complex, efficient and economical PEM fuel cells stacks for electrical power generation.

Class 2. Energy and sustainable development



RO.159.

Title **Process for mechanical reinforcing of PEM polymer membranes used in electrochemical generators**

Authors Patularu Laurentiu Gabriel, Enache Stanica, Schitea Dorin Marius, Ion-Ebrasu Daniela, Varlam Mihai, Stefanescu Ioan,

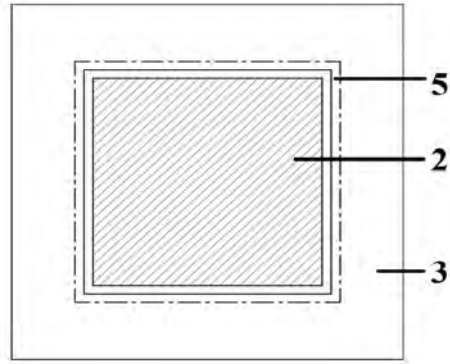
Institution **National Research and Development Institute for Cryogenics and Isotopic Technologies - ICSI Rm Valcea**

Patent no. OSIM No. A 00960/08.12.2014

Description The invention can be applied to fuel cell stacks and PEM type hydrogen generators based on mechanically reinforced polymer membranes.
The process of mechanical reinforcing of the polymer membranes consists of bonding, in a temperature range of 25º-80ºC, under a compression force between 500-5000N, during 1-30 minutes, using a customized device, of two

adhesive plastic foils (3) with superior mechanical properties than the polymer, on the adjacent surface of the electrodes active area (5) by overlapping the free sides of the polymer membrane. In this way can achieve a membrane electrode assembly with available sealing edges, rigid, able to sustain in safe, durability and enhanced performance conditions, higher loads than not reinforced membranes.

Class 6. Mechanical Engineering - Metallurgy



Research-Development Institute for Plant Protection Bucharest

RO.160.

Title	Ecological treatment method for protecting stored grain against insects and toxigenic fungi
Authors	Carmen Lupu, Viorel Fătu, Traian Manole
Institution	RESEARCH-DEVELOPMENT INSTITUTE FOR PLANT PROTECTION BUCHAREST
Patent no.	Patent application No. A00918/2015
Description	The patent application relates to an ecological, combined treatment method designed to protect cereals from insects and toxigenic fungi attack; application field is the storage of cereals and other food products. This method involves the use of diatomaceous earth powder having insecticidal properties, together with the essential oil of thyme having both fungi-static properties and repellent action against storage insects. The ecological method originality of the combined treatment is that the administration of diatomite and thyme essential oil makes two incompatible products in terms of effectiveness to give synergistic results. Volatile oil contained in pellets directs the insects from floor to ceiling of storehouse, based on its repellent feature, simultaneously protecting cereals against mycotoxigenic fungi action. Under the action of volatile oil vapors, insects migrate to the surface of the stored grain mass - where it meets diatomaceous powder which is a contact insecticide. The main novelty is that products for cereals protection based on diatomaceous earth and volatile oil of thyme can be removed from the grain mass by sieving (pellets are larger than grains) and aspiration (diatomaceous dust is deposited only on the surface of grain lot). Another novelty is that the diatomaceous earth-administered as a powder layer prevents the transfer of water vapor between the grain mass and the atmosphere in the storehouse. Acknowledgments The study is founded by UEFISCDI, PCCA2013, Contract no. 156/2014, “Ecological products based on diatomaceous earth and essential oils for the residues and contaminants reduction from the food chain” – PEDIOL.
Class	3

National Institute for Research and Development in Environmental Protection - INCDPM

RO.161.

Title **DKTB ichtyofauna monitoring station, especially sturgeons, through remote sensing, with ultrasonic tags in different hydromorphological conditions**

Authors Gyorgy Deak, Badilita Alin, Raischi Marius, Tanase Bogdan, Tanase Georgiana

Institution **National Institute for Research and Development in Environmental Protection - INCDPM**

Patent no. Patent application No. A 2012 0073/2012

Description

The invention is applied for research in the fields of biodiversity and dynamics of aquatic ecosystems, by monitoring and understanding the migration of aquatic species, making possible for the decision makers to establish conservation measures.

The monitoring station has the following components: (1) Bright red warning light system; (2) Metal protective cover ø 15-20 cm with special locking system; (3) Protective pipe ø 10-15 cm provided with slots; (4) Multiparameter used for the monitoring water level and water quality parameters; (5) Ultrasonic signals receptor; (6) Anchoring cable: (7) Pole anchor.

The DKTB monitoring station is applied for research in the fields of biodiversity and dynamics of aquatic ecosystems, by monitoring and thus understanding the migration of aquatic species, making possible for the decision makers to establish conservation measures.

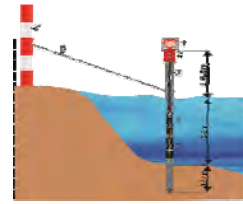
The invention has the main advantage of reducing the risk of loss of the receiver stations that are used for detecting the ultrasonic signals emitted from the tags implanted in the captured fish. Hence, this invention leads to an increase of the informational volume regarding the migratory fish species. The system also allows the water quality parameters monitoring.

For each DKTB monitoring station a diagram of the ultrasonic signal reception is designed, depending on turbidity, given that this parameter influences the reception efficiency of the signal emitted by the ultrasonic tag.

The proposed system, within the invention, corresponds to the need of adapting to the hydrological conditions of the surface water flow.

Class

1



RO.162.

Title

DKMR-01T mobile station to monitor through remote sensing, the ichtyofauna, especially sturgeons with ultrasonic tags in difficult hydromorphological conditions

Authors

Gyorgy Deak, Raischi Natalia Simona, Badilita Alin Marius, Raischi Constantin Marius, Silion Marius Madalin, Tudor Marian

Institution

National Institute for Research and Development in Environmental Protection - INCDPM

Patent no.

Patent application No. A 2014 00256/2014

Description

The technical problem solved by this invention refers to the possibility of monitoring the ultrasonic tagged sturgeon and also, the water quality. This monitoring process is carried out continuously and independently of the geomorphological conditions of banks, meteorological factors and water level variations.

With the help of the DKMR-01T monitoring station there will be available new and important data from areas inaccessible so far, due to the immobility of the previously used monitoring equipment. This data is significant to produce GIS (Geographic Information System) maps of the sturgeons' migration routes, on the Danube.

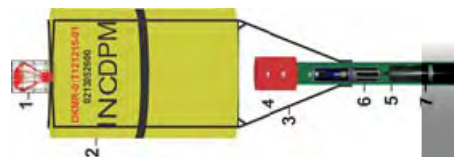
The invention can be successfully applied to any aquatic ecosystem studies and research aimed mainly on the biodiversity, nature protection and conservation.

The mobile monitoring station has the following components: (1) Bright red light warning system; (2) Floating sheet tank; (3) Connecting system between tank and protection pipe, (4) Protective cover, (5) Protective tube provided with slots, (6) Multiparameter used for the quality parameters monitoring; (8) Automatic ultrasonic receiver for ichtyofauna monitoring (7).

DKMR-01T monitoring equipment meets the need to adapt to the specific hydrological conditions of surface rivers with inaccessible areas, with discharges that exhibit daily/hourly high variation. At the same time, it provides the opportunity of positioning the station independent of the water level variation and the banks' morphology.

Class

1



National Institute for Research-Development and Testing in Electrical Engineering – ICMET Craiova

RO.163.

Title

APPARATUS IN METAL HOUSING OF MEDIUM VOLTAGE WITH VACUUM COMMUTATION, WITH MAGNETIC INTERLOCKING, MEANT FOR THE PRIMARY DISTRIBUTION OF ELECTRIC ENERGY

Authors

VLASE SERGHIE, DUTA MARIAN, SALCEANU CRISTIAN

Institution

National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA

Patent no.

RO129809 (A2) - 30.09.2014

Description

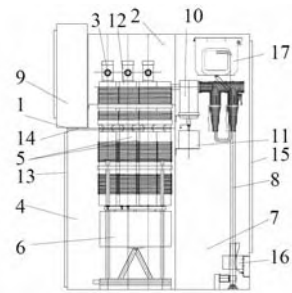
The invention relates to medium voltage cells for the primary distribution of electric power used for the construction of the distribution stations for the purpose of ensuring the functions thereof. According to the invention, the medium voltage cells use a multifunctional apparatus with two vacuum commutation chambers, driven by a mechanism with electromagnets with permanent magnets with magnetic interlocking, which ensures the functions of closing or interrupting the nominal current, over-voltage or short-circuit current, while also performing the function of coupling or separating against some general insulated bars and in relation to some medium voltage cables, and another apparatus with electromagnets with permanent magnets with magnetic interlocking for the function of connecting and disconnecting the medium voltage primary circuit from the ground.

Applications

Industrial users of medium voltage switchgear

Class

2



RO.164.

Title **ECOLOGICAL MICRO-HYDROELECTRIC POWER PLANT WITHOUT WATER FALL FOR THE PLAIN AREAS OF RIVERS**

Authors VLASE SERGHIE, DUTA MARIAN, POPESCU SEBASTIAN, ANDREESCU SILVIU, SALCEANU CRISTIAN, DOBREA CATALIN

Institution **National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA**

Patent no. RO128407 (A2) - 30.05.2013

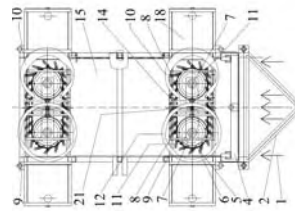
Description

The invention relates to an ecological micro-hydroelectric power plant without water fall for the plain areas of rivers which uses the energy of water and natural and artificial water vortices, in order to increase the efficiency thereof in relation to the extant micro-hydroelectric power plants. According to the invention, the micro-hydroelectric power plant comprises a support (17) equipped with two hydro turbines (9), a weir (4) for starting and stopping the hydro turbines (9) and for regulating the speed of some generators (10), a guard fence (19) for service operations, a confuser (2, 3) for protecting the hydro turbines (9) or for protecting and increasing the speed of the water flow, some floats (20), some guidings (21) for fixing the support (17) in the river bed, and also some generators (10), the hydro turbines (9) having two shafts (17) each, with some blades (5); arranged in two rows at 45 DEG , the blades of the first row being arranged at 90 DEG in relation to the blades of the other row, allowing the water (1) to flow as naturally as possible and taking over, at the same time, the mechanical energy of the water, and the blades (5) of the hydro turbines (9) are fixed only by some transmission chains (6), using the force of the water flow (1), the stoppers (11) and the guide rollers (13) both for locking the blades in the 45 DEG position and for rotating the same, the two shafts (7) of the hydro turbines (9) being independent and thereby allowing the chains (6) to be mounted and tightened by means of left-hand and right-hand bolts (23), respectively.

Applications

Domestic users in the hilly areas

Class 2



RO.165.

Title **REPLACEMENT ELEMENTS FOR HIGH-VOLTAGE CURRENT-LIMITING SAFETY FUSES**

Authors VLASE SERGHIE, DUTA MARIAN, ANOAICA NICOLAE, SALCEANU CRISTIAN

Institution **National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA**

Patent no. RO 129749 (A2) - 29.08.2014

Description The invention refers to the replacement elements for "back-up fuse-links" class high-voltage current limiting safety fuses, used for the protection of medium voltage electricity distribution networks against the short-circuit currents. The replacement elements for the "back-up fuse-links" class high voltage current safety fuses, achieved in standard gauges are composed of multi-stage supports which allow for achieving both aluminum live paths of current and aluminum multiple connected fusible elements which are sustained by them.
Applications: Replacement elements for high voltage fuses

Class 2

RO.166.

Title **METHOD AND EQUIPMENT WITH PELTIER ELEMENTS FOR AIR-CONDITIONING OF AN ENCLOSURE WITH WEB-PAGE AND INTERNET SERVER**

Authors DUTA MARIAN, IOVAN DANIELA, CUZNEAC STELIAN

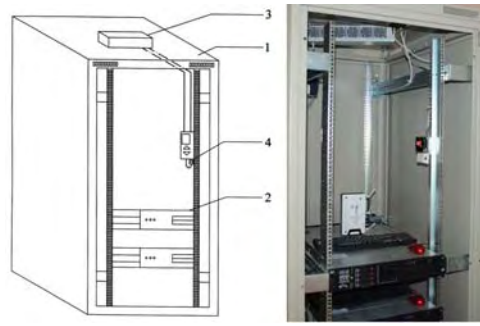
Institution **National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA**

Patent no. RO128545 (A2) - 28.06.2013

Description The invention refers to a method and equipment with Peltier elements for the air/conditioning of an enclosure with Internet server hosting and webpage. The method according to the invention is characterized by the fact that the temperature inside the enclosure with Internet server hosting is maintained within normal operating limits, both at high ambient temperatures and low ambient temperatures by controlling the operation of the equipment with Peltier elements with a temperature sensor.
Applications

Web server and web page enclosures

Class 2



RO.167.

Title **DEVICE FOR MEASURING AND MONITORING THE AXIAL WINDING TIGHTENING FORCE IN POWER TRANSFORMERS DURING OPERATION**

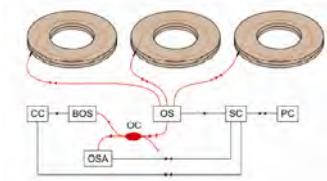
Authors MARINESCU ANDREI

Institution **National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA**

Patent no. RO126339 (B1) - 29.06.2012

Description The invention relates to a device for measuring and monitoring the axial force of tightening the windings of a power transformer, during operation. According to the invention, the device uses as sensitive element an optical intrinsic deformation sensor consisting of an active fibre optic with transverse sensitivity to deformation, embedded in a ring for pressing some windings on each column of a transformer, a succession of Bragg gratings (FBG – Fiber Bragg Grating) being distributed on the active length of the fibre optic, the resulting structure permitting the profile of the compression effort on the surface of the pressing ring to be determined by means of an interrogation / demultiplexing system, irrespective of the pressing system employed in the transformer construction.
Applications Industry, manufacturing power transformers

Class 2



Principle diagram of the axial forces measuring system at a power transformer with smart pressing rings. OS-optical switch 1x3, OC-optical coupler 2x2, OSA - optical spectrum analyzer, SC - system controller, CC - current controller, BOS - broadband optical source, PC - computer, ------ FO link, ------ electrical link

RO.168.

Title **METHOD AND SYSTEM FOR THE AUTOMATIC CONTROL OF COMPOSITE INSULATOR CRIMPING PRESSURE**

Authors VINTILA ADRIAN, PURCARU ION

Institution **National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA**

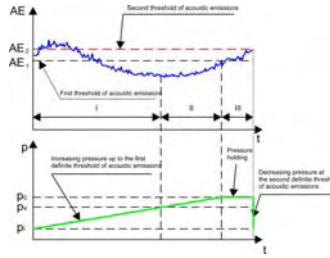
Patent no. RO123322 (B1) - 29.07.2011

Description The invention relates to a method and an equipment for the control of a metal fitting crimping on a glass reinforced polymer rod. The method consists in setting the crimping pressure and the period for maintaining its value, depending on the value of the acoustic emissions. The method uses an equipment which comprises an acoustic sensor mounted on a die of a crimping press, a pre-amplifying-filtering-amplifying equipment, from which the signal is sent to an equipment for monitoring the acoustic emissions and controlling the crimping pressure. This equipment is in connection with a computer running a program which limits the crimping pressure achieved in the hydraulic installation, according to the predetermined thresholds of the acoustic emissions.

Applications

Industry, manufacturing companies of composite insulators

Class 2



RO.169.

Title **METHOD AND SYSTEM FOR THE AUTOMATIC CONTROL OF THE COIL DIMENSION STABILIZING PROCESS IN POWER TRANSFORMERS**

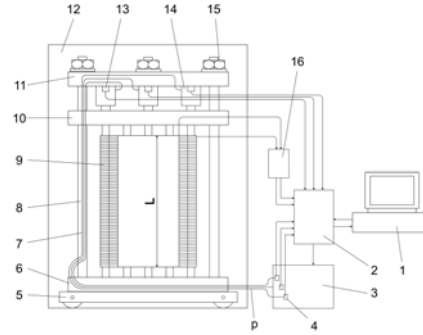
Authors VINTILA ADRIAN, POPA DORIN

Institution **National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA**

Patent no. RO128340 (A2) - 30.04.2013

Description The invention relates to a system and a method for the automatic control of the process of stabilizing the coil dimensions in power transformers. The method consists in pressing a coil in a furnace, where the stabilization pressure, the coil length, the synchronous movement of the hydraulic cylinders, the stabilization time and the humidity of coil insulation are automatically controlled. The system consists of a press located in a furnace, with monitoring and control equipment that monitors the height of the coil, by means of three position sensors, the pressure on each hydraulic cylinder, using pressure transducers and which communicate with a computer where a software is installed to control the stabilization of the operating pressure, by means of a hydraulic equipment which also controls humidity. Applications
Industry, manufacturing companies of power transformers

Class 2



RO.170.

Title **EQUIPMENT FOR VIBRATORY STRESS RELIEF**

Authors VINTILA ADRIAN, MATEI NICOLAE

Institution **National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA**

Patent no. RO128313 (A2) – 30.04.2013

Description The invention relates to an equipment for metal parts stress relieving by means of vibrations, intended to be employed to reduce internal stress generated within the structure of said parts during forging, casting, welding or machining, where the claimed equipment may be placed at a distance of up to 15 m from the metal part to be subjected to stress relieving,

resulting in a high reliability of the electric motor. According to the invention, the equipment comprises an electric or pneumatic motor of a power of 10 kW, at the most, and a rotation speed of up to 10000 rpm, which is able to remove stress at accelerations of more than 10...15 g and transmits the mechanical rotation power from the shaft of the electric or pneumatic motor to a vibrator with eccentric by means of a flexible shaft.
Applications
Industry, manufacturing companies of large metal structures

Class 2

RO.171.

Title **MULTIFUNCTION MEDIUM-VOLTAGE VACUUM SWITCHING APPARATUS FOR SECONDARY DISTRIBUTION OF ELECTRIC POWER**

Authors VLASE SERGHIE, DUTA MARIAN, POPESCU SEBASTIAN, SALCEANU CRISTIAN

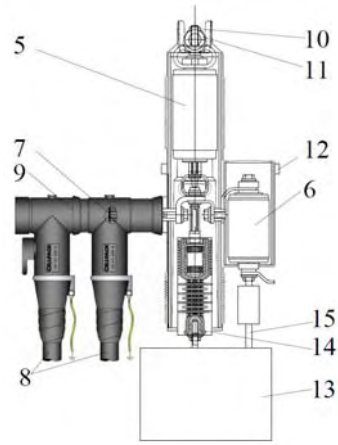
Institution **National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA**

Patent no. RO129616 (A2) - 30.06.2014

Description The invention refers to a multipurpose medium-voltage vacuum switchgear for secondary distribution of electricity, fitted with vacuum interrupter, which provides for the separation and interruption functions (of ampere rating, overload and short-circuit currents) and a vacuum interrupter which provides for the earthing function, giving the possibility of remote operation of the above functions in order to minimize the periods of lack of power supply for consumers.

Applications
Electrical engineering industry - medium voltage switchgear for secondary distribution

Class 2



RO.172.

Title **Wireless Battery Charging Infrastructure for EV/HEV**

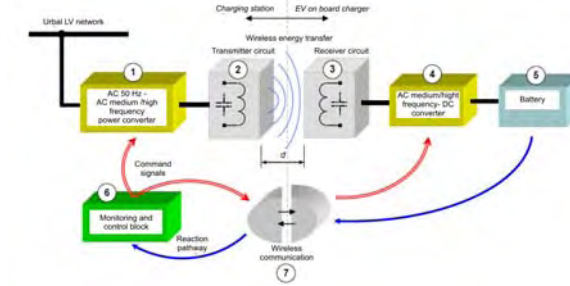
Authors MARINESCU ANDREI, VINTILA ADRIAN

Institution **National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA**

Description

The research was conducted on different topologies of energy transfer in near magnetic field, with emphasis on the efficiency of the process, for systems used for medium or high power, required for battery charging in electric/hybrid vehicles (EV/HEV).
The proposed technical solution, with a modular feature is applicable for transferred power from 1 to 100 kW. Besides AC/AC conversion in the range 20–100 kHz and AC/DC conversion, the novelties are the inductive coupler with separable windings and magnetic flux concentrators with low electromagnetic radiation and the vehicle positioning system with wireless data transmission.
The results of the research are as follows: wireless batteries charging equipment for actual EV/HEV fitting and a test bench for research-development and testing in the domain. The prototype, able to transfer a power of approximately 2 kW to a distance of 200 mm, will be used to carry out the first wireless charging station in collaboration with Automotive Engineering Research Centre of the University of Pitesti.
Applications. Advantages.

Wireless energy transmission is currently an important pursuit, considering its multiple applications in modern engineering techniques due to the absence of electrical contacts, easy operation in harsh or potentially explosive environments, application to the objects in translational or rotational motion, high performance etc.



Block diagram of data and energy transfer system for charging electric vehicle batteries

Ready to use wireless receiver Rx (340 x 260 x 40 mm) and transmitter Tx (380 x 270 x 40 mm)

RO.173.

Title **Condition monitoring equipment in power transformer units - MONITRA IMT02SE**

Authors SACERDOTIANU DUMITRU, HUREZEANU IULIAN, NICOLA MARCEL, LAZARESCU FLORI, CHELAN CONSTANTIN

Institution **National Institute for Research-Development and Testing in Electrical Engineering– ICMET CRAIOVA**

Description

Transformer failure is known to be sometimes sudden and almost always include irreversible internal damage.
Condition monitoring in power transformers enables maximum

practicable operating efficiency and optimal operating life in power transformers, thus minimizing the risk of early failure and providing the possibility for maintenance strategies change.
MONITRA - IMT 02SE equipment is designed for protection and on-line monitoring of functional parameters in transformer units. It enables the analysis of parameters influencing the condition of:
- oil - solid insulation - bushings - windings
- core - on-load tap changer - cooling system
Applications. Advantages.
The monitoring equipment is required by representative companies for electricity generation, transmission and distribution: TRANSELECTRICA S.A., ELECTRICA S.A., TERMOELECTRICA S.A., HIDROELECTRICA S.A., E.ON, CEZ.
The equipment enables:
- to provide the operative and conclusive data necessary for proper integration of the transformer units in the Smart Grid;
- to provide useful information necessary for the optimization of the transformer unit maintenance;
- to increase safe operation of transformer units;
- to extend the life of transformer units;
- to increase the visibility of ICMET CRAIOVA's research – development activity in the Power field.

Due to its modularity, the equipment can easily be customized for customers' needs and transformer unit requirements, with any configuration available upon request.
The system designed and developed by ICMET is open distributed and can be fitted with acquisition modules according to the most complex requirements.

Class Innovative Research

Agricultural Research – Development Station Secuieni-Neamt

RO.174.

Title	**The monoecious hemp cultivation through „SECUIENI" method**
Authors	Constantin Găucă, Lorena Diana Popa
Institution	**A.R.D.S. Secuieni**
Patent no.	115211 c/2002

Description

The „Secuieni" method consists in cutting the stems in the intensive growth, when the plants reach a height of 50 – 60 cm and have 5 – 6 nodes with leaves.

The first cutback is above the third node, at a height of 25 – 30 cm. From the remaining nodes on the stems, in short term (15 – 20 days) the shoots grow to reach the size of 50 – 60 cm, at which time the second shearing is applied, to 15 – 20 cm above the first shearing.

By using the method, the amount of seed is reduced to 4 – 5 kg/ha, the plant height is stagnating at 1.2 to 2.0 m and, at the same time, there is provided a production increase of 30-80% compared to the conventional technology, the fruits are forming over the whole length of the shoots, even from their base.

The cutting is performed with the feed windrower with the working width of 4 - 5 m, the forward speed is adjusted in order to ensure the cutting off all the shoots at the established height. The broken plants from wheel are not a loss, since most of them will rise and form productive shoots.

The harvesting with grain classic combines takes place in good conditions, having the header raised to the insertion height of the ramifications with fruits.

It is applicable to all monoecious genotypes, creation of A.R.D.S. Secuieni or foreign, for strain and fiber, for seed or mixed purpose. It can be used in the case of sowing epochs between April 1st and June 1st and even in successive crop, after cereals or rapeseed, at the hemp for seed.

Class 3

RO.175.

Title	**Ratza – the new energy variety of monoecious hemp**
Authors	Constantin Găucă
Institution	**A.R.D.S. Secuieni**
Patent no.	Patent pending 2016

Description

Ratza is a monoecious hemp variety for stalks and fiber, approved in March of 2016, which was obtained from a natural mutation. The works involved, subsequently, isolation and repeated selection, aiming to reduce the content in THC (tetrahydrocannabinol) below 0.2% and the enhancement of quality production.

The plant height in fiber crop can reach 3.0 - 3.5 m, the strains being heavily developed, dark green, with 9-12 grooves. The leaf is palmate - fidate, composed of 5-7 leaflets joined up in the upper third. The inflorescence is a compact scorpioid cyme, with the male flowers arranged at the base.

It is a variety with a very long growing season and can reach 170-180 days in seed crop. The vegetative mass accumulated in such a long period it recommended that as a variety with high energy value. The flowering period is of 20 days, being a cultivar resistant to low temperatures in the spring, to fall, broomrape and Fusarium.

The variety yield capacity reveals in 14-16 t/ha strains, 29-30% fiber obtained by chemical melting and 700-800 kg/ha seed.

Since the increased leaf area negative influence the resistance to the soil drought and the lack of rainfall, and the exposure to extended sunstroke, it is recommended to cultivate the new variety in regions suited to the requirements, especially in central and northern Moldavia and Transylvania, which are considered cooler climate areas.

Class 3

NATIONAL

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

RO.176.

Title	**Synchronization and phase-shift control system for a tandem Pulsed Laser and pulsed TIG welding process**
Authors	Birdeanu Aurel-Valentin, Verbitchi Victor
Institution	National Research & Development Institute for Welding and Material Testing - ISIM Timisoara
Patent no.	Patent application No. OSIM A / 01291/ 08th.12.2010.
Description	The invention relates to a system for synchronization and control of the phase shift for a joining process by tandem Laser-TIG welding, so that each pulse of the TIG welding current triggers a laser welding pulse, synchronized or delayed by an adjustable phase shift. Application. The process is applied in welding and cladding tests for injection moulds.
Class	5

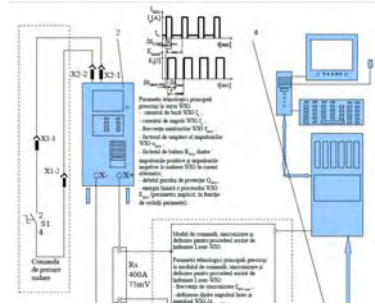


Figure 1. Synchronization and phase-shift control system for a tandem Pulsed Laser and pulsed TIG welding process

RO.177.

Title **Method and system for real-time monitoring of the friction stir welding process - FSW**

Authors Cojocaru Radu, Verbitchi Victor, Ciucă Cristian, Dascau Horia Florin, Sirbu Nicusor Alin

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

Patent no. Patent application No. OSIM A/00531/ 07.2012.

Description The invention relates to a system and method for monitoring the friction stir welding process - FSW, using the energy consumption control of the process, which allows a real-time analysis of the welding process, in order to improve the parameter values.
Application. The process is applied in welding tests for micro-joining of cases for appliances.

Class 5

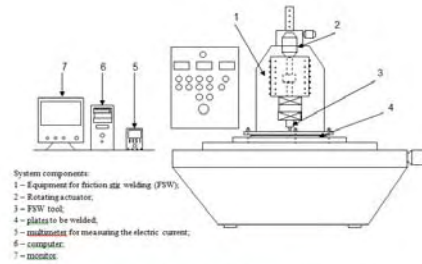


Figure 1. System for real-time monitoring of the friction stir welding process - FSW

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

RO.178.	
Title EN	**Spatial planning implications in reducing the social vulnerability of risk-prone areas**
Authors	Alina CHICOȘ, Alina HUZUI-STOICULESCU, Georgiana TOTH, Constantin CHIFELEA
Institution	**NIRD Urban-Incerc**
Description EN	Spatial planning could provide an integrated approach to disaster risk reduction if it relates to research and studies in the fields of seismology, floods, landslides and climate change. The role of spatial planning in areas affected by natural hazards is to foster coherent spatial development, so that it would lead to greater territorial resilience to these risks. Planning is therefore a first step in preparing the system against uncertainty. The concept of resilience is useful for understanding and analysing the contemporary urban systems, to define new approaches and to establish new urban planning principles. From this perspective, the paper highlights the issue of territorial development of human settlements in the context of exposure to earthquakes, floods and landslides. Resistance to risk requires an assessment of the main features of vulnerable communities. Spatial development plans having an interdisciplinary character make it possible to overlay several types of variables, observing how they interrelate and what consequences stand out, in order to make the best decisions for a desirable development on short, medium and long terms. Exploring the attitudes of social actors towards prevention policies and protection against certain disasters shows that the partnership between community and institutional structures is the solution for a sustainable development of these risk-prone territories. Consequently, a community-based "culture of safety" is expected to emerge based on an increased involvement of local people in prevention activities.
Class no.	Innovative Research

RO.179.	
Title EN	**Community level assessment of ecosystem services for participatory land use planning**
Authors	Alina HUZUI-STOICULESCU, Georgiana TOTH, Alina CHICOȘ, Cristina IVANA
Institution	**NIRD Urban-Incerc**
Description EN	A growing body of mainstream literature focuses on a community oriented view of land use planning, bringing forward the opportunity of using the ecosystem services concept in enhancing awareness of relevant actors. A clear example is that of changes in the quality of ecosystem services and migration, which are interrelated if we consider the threats on farming systems and livelihoods. The purpose of this study is to improve understanding of the link between ecosystem services and well-being patters of communities which are especially dependent on these services for their livelihood. This new approach is called ecological planning or applied human ecology and may be defined as the use of biophysical and socio-cultural knowledge to suggest opportunities and constraints for informed decision making. The ecological planning method turns to the unexplored reality of community conflict in rural resource planning and the need of survey in revealing the most fit land uses. On that account, the use of local knowledge is no longer confined to urban planning but to various fields of public policies, thus laying emphasis on decision-supporting information that is related to the local use of both material and immaterial benefits provided by ecosystems which are otherwise difficult to monitor by policymakers.
Class no.	Innovative Research

RO.180.	
Title EN	Analysis of polycentricity of South-East Region of Romania
Authors	Tache Antonio Valentin, Manole Sorin Daniel, Tache Maria Monica, Petrisor Alexandru Ionut
Institution	**NIRD Urban-Incerc**
Description EN	Although its content is not clear enough, "polycentricity" has become, since the 1990s, an important concept that was at the core of discussions on territorial and economic development of Europe. This paper includes the presentation of a

	methodology for estimating the polycentricity degree of regions. Thus, first must be identified the functional urban areas, which are the basic elements in the analysis of polycentricity. Next, is assessed the three dimensions of polycentricity: size, location and connectivity, based on sub-indicators. By aggregating Size Index, Location Index and Connectivity Index is obtained the Index of Polycentricity. Finally, the methodology presented is used to assess the polycentricity of South-East Region of Romania. Comparing the four indices of the South-East Region with the corresponding indices of ESPON Space show significant differences both in favor of one as for the other.
Class no.	Innovative Research

RO.181.	
Title EN	**Rammed Earth House**
Authors	Aurelian Gruin, Alina Tîrtea, Raluca Paută, Mihai Silvestru
Institution	**National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development URBAN-INCERC SucursalaTimişoara** **SC ARHIGEST SRL**
Description EN	The finalized project consist of building a house ground (Lelese village, Hunedoara) using techniques as simple and natural as possible, and non-industrial materials, based on the achievement of compacted clay load-bearing walls. In the spirit of sustainable construction, the project has several features designed to minimize environmental impact, while being attentive to the quality of living: • Local, simple, small dimensions architecture, addapted to user's needs; • Use of technology Low Embodied Energy – rammed earth, wood, allows execution under its own with local labor; • Alternative sources of electricity and heat; • Conformation building is optimized to maximize passive heating; Constructive techniques are limited to the use of natural materials in the state as "rough ", primary, technological unprocessed and purchased from the vicinity of the site: rammed earth for walls, wood floors, wood framing and roof-shingle. Reinforced concrete is used strictly for the foundations. Energy requirements is provided from alternative sources: photovoltaic panels, vertical axis wind

	turbine. The operation of this building is covered from renewable sources. In order to compensate differences in the performance depending on the season, namely the day/night, are chosen two energy sources that complement each other - photovoltaic panels and vertical axis wind turbine - with maximum yield curves in the summer months (photovoltaic panels) and in the autumn-winter wind turbine when the average wind speed increases
Class no.	Innovative Research

RO.182.	
Title EN	**Development of advanced fiber reinforced cementitious composites as beam to column interface material for antiseismic hybrid joint**
Authors	Baeră Cornelia, Păstrav Mircea, Szilagyi Henriette
Institution	**National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development "URBAN-INCERC", Cluj-Napoca Branch, Romania**
Description EN	The objective of this study was the development of fiber reinforced cement based composites with improved physical and mechanical characteristics, in order to be used as beam-column interface material. Engineered Cementitious Composites (ECCs) developed by in Michigan, USA, represent the basis of the concept. Using local raw materials similar composites were developed at INCD URBAN-INCERC Cluj-Napoca Branch. Dynamical behavior of the material was evaluated by the means of experimental bending tests performed at different loading rates, ranging from quasi-static to dynamic (seismic) characteristic strain rates. The Self-Healing capacity of the mixes was also evaluated. The advanced cementitious composites (SH-FECM) were used as monolithic cement-based materials at the contact zone of structural precast elements (beams and column) of the spatial antiseismic hybrid joint, proving superior performance under seismic cyclic loading of the structural testing of the large scale element.
Class no.	Innovative Research

RO.183.	
Title EN	**PASSIVE SOLAR ROOFING FOR BUILDINGS**
Authors	Constantin Miron, Livia Miron,
Institution	**National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development "URBAN-INCERC", Iasi Branch**
Description EN	Covering system for buildings, with solar thermal energy capture through recirculated air, without liquid heat exchanger. The system is designed for low-cost solar energy recovery, obviating the need for tight circuits, excluding operation and maintenance costs and eliminating the risk of frost in winter
Class no.	Innovative Research

RO.184.	
Title EN	**Grid water inside of a ventilated façade for domestic hot water preheating**
Authors	[1)]Monica CHERECHEŞ [2)]Nelu-Cristian CHERECHEŞ [1)]Livia MIRON
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**
Patent	Patent application No. A/00262/12.04.2016
Description EN	The invention relates to a grid water system composed of grids of glass (1) and placed inside the channel (C) of a double skin ventilated façade, between the outer glazing (2) and the solar protection (P), which together with the interior glazing (3) separates the exterior environment (EXT) from an interior environment (INT). Each horizontal and/or vertical grid (1), independent or connected, is composed of two or more modules and each module (4) is composed of two sheets of glass (5), provided with water circulation (6) and a space for window (7). Water can be collected at each level, multilevel or for the entire façade, from one module, from a grid or several vertical and/or horizontal grids. The aim of the system is to preheat domestic hot water

(DHW) from solar radiation and the greenhouse effect of glazed façade in summer and intermediate seasons.
The invention has the following advantages:
- heating the water inside the grid system in order to preheat DHW;
- grid system can replace the solar protection inside the channel, avoiding the transmission of solar radiation to the interior environment in summer;
- reducing the overheating of the channel on the upper part of the façade;
- improving the efficiency of thermal insulation façade in summer, by reducing the air temperature in the channel;
- adaptability of the system to the power consumption requirements of DHW, through modular construction.

Class no. 7. Buildings and Materials

RO.185.

Title EN **COMPARISON BETWEEN LABORATORY AND IN-SITU METHODS FOR THE DETERMINATION OF CONCRETE COMPRESSIVE STRENGTH BY MEANS OF EXPERIMENTAL TESTS**

Authors Constantinescu Horia, Cojocaru Ionut Gabriel

Institution **National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development "URBAN-INCERC", Cluj-Napoca Branch, Romania**

Description EN

The compressive strength achieved by the concrete in a structure needs to be accurately determined in order to asses if the assumptions made during the design stage are true at the construction stage.
Recent changes of test standards for the determination of concrete strength in-situ prompted the presented experimental program which is meant to identify if the methods recommended for the determination of concrete strength are easily applied and accurate.
Various methods are available to the engineer each offering different levels of accuracy, the current study showed that for everyday use the combined method is most useful due to the accuracy of the results and its advantage of leaving the tested concrete elements undamaged.

Class no. Innovative Research

RO.186.

Title EN	**Advanced processing of seismic waveforms: the SM ROM-GL (Strong Motion Romania-Ground Level) database**
Authors	Iolanda-Gabriela Craifaleanu, Ioan Sorin Borcia, Emil-Sever Georgescu, Claudiu-Sorin Dragomir, Daniela Dobre, Adelin Cişmelaru
Institution	**National Research and Development Institute "URBAN-INCERC"**
Description EN	The seismic network of URBAN-INCERC has recorded hundreds of ground motions since its establishment in 1967. The obtained data provided, over the years, the basis for all studies dedicated to the seismogenic sources located on the territory of Romania. These studies were used for the development of the modern seismic regulations of the country, enforced in the past half a century. In recent years, a large re-digitization of older records, obtained from analog accelerometers, was performed. With the accumulation of data, the issue of the systematic management of seismic records and of ground motion parameters became more and more stringent. A large database was compiled within the BIGSEES collaborative project, gathering all strong-motion information available from Romanian strong-motion networks (URBAN-INCERC, INFP, CNRRS). To this, tables with recorded parameters, photos and graphs were added. The architecture of the database allows a simple and intuitive access and maintenance, using a four-level hierarchical structuring, i.e. according to seismic events, stations, records and components. The SM ROM-GL (Strong Motion Romania - Ground Level) database stores computed parameters of seismic motions, i.e. peak and effective values for ground acceleration, velocity and displacement, control periods: T_B, T_C, T_D, spectral values of absolute acceleration, relative velocity and relative displacement, as well as values of instrumental intensity. The information in the database has already been used in recent research studies, revealing new insights into the complex correlations between the characteristic parameters of ground motions, with application to a more resilient design of building structures.
Class no.	Innovative Research

RO.187.

Title EN

Monitoring and Evaluation of Natural Hazard Preparedness at School Environment: the E-PreS Project

Authors

Stathes Hadjiefthymiades, Sarantis Paskalis, Michail Loukeris, Michail Chatzidakis, Asimina Kourou, Anastasia Ioakimidou, Vasiliki Abramea, Charalampos Fassoulas, Klairi Georgila, Kardaki Lioubitsa, Stathi Iasmi, Iolanda-Gabriela Craifaleanu, Emil-Sever Georgescu, Claudiu-Sorin Dragomir, Daniela Dobre, Vasile Meiță, Adelin Cişmelaru, Fabio Sansivero, Rosella Nave, Tzvetan Tzvetanski, Petar Tzvetkov, Yassen Tsvetkov, Biliana Mihailova

Institution

- National and Kapodistrian University of Athens (UoA), Greece
- Earthquake Planning and Protection Organization (EPPO), Greece
- University of Crete-National History Museum of Crete (UoC-NHMC), Greece
- National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development, "URBAN-INCERC", Romania
- Istituto Nazionale di Geofisica e Vulcanologia sezione di Napoli, INGV, Osservatorio Vesuviano (Vesuvius Observatory), Italy
- Center for Educational Initiatives Association (CEI), Bulgaria

The E-PreS project (*Monitoring and Evaluation of Natural Hazard Preparedness at School Environment*) is funded by the European Commission, Directorate-General "Humanitarian Aid and Civil Protection", being addressed to the prevention phase against natural hazards. The project is lead by the National and Kapodistrian University of Athens, Greece, having as partners five organizations from Greece, Romania, Italy and Bulgaria.

Description EN

The main goal of E-PreS is the design and evaluation of drills and exercises that are an extremely important part of emergencies mitigation. The project will help school staff and students to understand any hazard effect and be prepared to react appropriately. The main objectives of the project are: (1) to identify, share and implement best practices and methodologies gained from previous EU projects and partners activities, (2) to create smart tools which define, simulate and evaluate all hazards emergency steps and be customized to the unique district, school, and campus, (3) to involve the collaboration of interested parties and (4) to include pupils with disabilities and special needs.

The sensor infrastructure of E-PreS consists of proximity sensors distinguished in two parts: (a) lightweight wearable sensors (RFID wristbands) that are carried by the users and allow for constant, almost not perceivable, interaction between the user and the system

and wall-mounted sensors (RFID readers) deployed in the respective monitored area of interest and allowing for the localization of the people participating in the experiment. The system is structured in a way that facilitates the setup, monitoring and assessment of earthquake-related drills in buildings and open, confined areas.

Class no. Innovative Research

RO.188.

Title EN **AN INTEGRATED CONCEPT OF SEISMIC INSTRUMENTATION AND MONITORING**

Authors Claudiu-Sorin DRAGOMIR, Vasile MEITA, Daniela DOBRE, Iolanda-Gabriela CRAIFALEANU, Emil-Sever GEORGESCU

Institution **National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development "URBAN-INCERC"**

Description EN

The paper deals with modern methods to assess the dynamic patterns and a modern strengthening technique for RC buildings. The concept of building performance assessment is based on validation of calculations with a program dedicated to structural analysis, assisted by instrumental data processing techniques.

The method of strengthening consists in applying the carbon fiber reinforcement on the lateral faces of the infill frame masonry panels. To emphasize the efficiency of the modern technique, the full-scale tests in the INCERC Bucharest laboratories were made. The masonry panels tested were made of ceramic blocks with vertical hollows.

The tests confirmed the usefulness of using composite materials and that it is possible a successive strengthening of blocks, thus avoiding demolition of cladding when structure is not damaged. Application to existing buildings is feasible, although some cost-benefit analysis must be done.

It is worth to mention that the masonry panels are non-structural elements of RC building but their behavior are conditional upon the seismic response of the entire building by stiffening and life safety. These techniques ensure the preservation of masonry for several seismic events, with relatively easy reparability and without total evacuation.

Based on the results obtained on site with temporary seismic

instrumentation, a structural model with identical dynamic characteristics can be modeled and thus the behavior of the existing structure to strong earthquakes in Romania can be studied.

In this way one can predict how certain structures that have experienced earthquakes in the last century will respond to future earthquakes.

Class no. Innovative Research

RO.189.

Title EN **ENHANCING THE BEHAVIOR OF REINFORCED CONCRETE BUILDINGS THROUGH USING SOME MODERN MATERIALS AND METHODS**

Authors Claudiu-Sorin DRAGOMIR, Daniela DOBRE, Claudiu Lucian MATEI, Emil-Sever GEORGESCU

Institution **National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development "URBAN-INCERC"**

Description EN

A new and integrative concept of assessment the performance of a building proposes the calibration and validation of experimental and analytical studies with some instrumental data processing techniques.

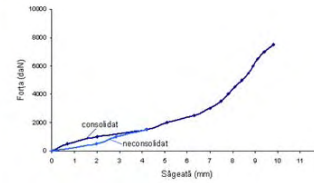
In terms of experimental analysis, there are alternative strengthening methods in order to obtain the degree of safety required by the seismic design code (and two of them will be exemplified below): coating of the masonry infill walls with polymer grids; reinforced concrete shear walls; coating of the reinforced concrete columns; seismic dampers at the ground floor level etc.

In terms of analytical and instrumental data processing study, buildings modelled with structural and non-structural elements confined with carbon fiber reinforcement (simple and reinforced masonry**)** are presented. Their dynamic characteristics, normal stresses, structural deformations etc. are obtained.

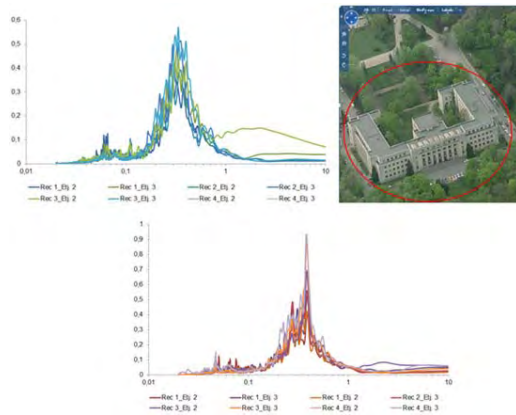
The tests made in the INCD URBAN-INCERC have proved that it is possible a successive strengthening of masonry panels/walls with composite materials, avoiding thus the demolition when the structural system is not damaged. It is mentioned that the masonry panels are non-structural elements of reinforced concrete building, but their behavior influences the seismic response of the entire building. These techniques ensure the preservation of masonry for several cycles and the possibility of relatively easy repair and without total evacuation.

On the other hand, experimentally or analytically investigation

methods, as well as the seismic data processing, contribute in a defining way to the understanding of structural response. Seismic monitoring is also required in an annex of P100 -1/2013 Code.
In this manner, one can predict how certain buildings, or parts of them, that have experienced with earthquakes in the last century, will respond to future earthquakes.



Tests made in NIRD URBAN-INCERC. A masonry panel, with 30 cm thickness, was coated with two layers of fabric overlapping, image after failure. Force-displacement diagram, for unconsolidated and consolidated situation.



Instrumental data processing study. Fourier Spectra obtained for values recorded after two orthogonal directions of the building, after strengthening works, $T_{dir.\ 1} = 0.38s$; $T_{dir.2} = 0.34$ s.

Class no. Innovative Research

RO.190.

Title EN	**Housing quality conditions in Romania, in the context of EU member state**
Authors	Daniel-Gabriel Vâlceanu, Georgiana Toth, Cristina Ivana, Diana-Georgiana Tămîrjan
Institution	**National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development URBAN-INCERC, Urbanproiect Branch**
Description EN	The quality of housing is the basic component for quality of life and it is an integrated concept, the result of a complex analysis of the characteristics and dimensions of its base component – home and neighborhood – in order to meet their needs and user requirements. This study contains an analysis of Romanian housing conditions, in the context of EU member state. Statistics provided by the Eurostat (European Union Statistics Network), highlight the precariousness of housing quality, the main element of quality of life. Statistical analysis of main housing indicators in the post-adhering period when our country gained the status of EU member indicate major differences between highly developed states and new member states of this European structure, with particular problems in terms of standards development and thus quality of housing. The last positions occupied by our country indicate a series of major housing malfunctions generated mainly by the poverty.
Class no.	Innovative Research

RO.191.

Title EN	**Concepts regarding rheological modeling of bioactive stabilized soils during dynamic compaction process**
Authors	Cornelia-Florentina Dobrescu, Elena-Andreea Călăraşu
Institution	**National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development "URBAN-INCERC"**
Description EN	The research studies are focused on the assessment of soil rheological behavior according to evolution of physical and mechanical conditions in various rheological stages, which lead to different dynamic responses during compaction process by forced vibrations. Rheological models integrated

	in the analysis are structured in viscous and elastic stages, with discrete variable parameters correlated to soil compaction degree and number of passes on the same layer. The methodology will contribute to development of technical applications in compaction of bioactive stabilized soils used in road systems by ensuring durability and greening of performed works.
Class no.	Innovative Research

RO.192.

Title EN	**Behavior of restrained high strength fiber reinforced micro-slabs**
Authors	Gherman Oana Eugenia
Institution	**National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development "URBAN-INCERC", Cluj-Napoca Branch, Romania**
Description EN	This research assesses the effect of various percentages of steel and polypropylene fibers on micro slabs specimens subjected to concentrated loads in terms of ultimate load and energy absorption. To evaluate the behavior of high performance micro slab elements, twelve specimens (two elements/concrete composition) with dimensions of 600 x 600 x 60 mm (length x width x height) were cast and tested. The high performance concrete was prepared with admixtures of silica fume and a low water/cement ratio. A square metal frame was used to support the specimens. To ensure fixed edges, a grip was placed between the metal frame that supported the slab and another metal frame positioned at the top of the slab, using M10 screws along the entire perimeter of the specimen. The load was applied by means of a metallic piece of 100x100x150 mm at the center of the top face of the slab specimen. The vertical deflections were measured at the center of the slab specimens using a 50 mm LVDT. Using the area under the force displacement diagram, the value of the energy absorption was determined for each slab.
Class no.	Innovative Research

RO.193.

Title EN	**USING KAOLIN IN ACRYLIC PRODUCTS WITH**

	CERAMIC MICROSPHERES AND SILICONE
Authors	Irina Popa, Alexandrina Mureşanu
Institution	**INCD ″URBAN-INCERC″ Sucursala INCERC Bucureşti**
Description EN	There are presented several stages from a laboratory research on studying the possibility of introducing kaolin, in different proportions, in an aqueous suspension acrylic film-forming product with ceramic microspheres and silicone.The aim of this research was to obtain an innovative product, having an improved resistance to air pollution impact in climatic conditions characterized by an increased average annual temperature and high relative humidity of the air. 7 recipes were designed for the new product type and then applied in bilayered systems on steel surfaces. Depending on the content of kaolin mixed with the main component, it was studied the behavior of the coatings in high heat and humidity conditions, and also in a weak acid environment. In this research, the latter environment was considered as simulating the acid rain aggression. Based on the coatings adhesion to the steel substrate during the exposure in the mentioned environments, the advantages and strengths of the new type of product were presented. By combining nanotechnology with the benefits of a natural resource - kaolin - resulted an innovative and sustainable coating, advantageous not only by price but also by the protective properties for the steel surfaces on wich they were applied. During exposure, protections were studied as: appearance (visual examination), film thickness and adhesion to steel support (resistance to tearing).
Class no.	Innovative Research

RO.194.	
Title EN	**Romanian Athenaeum - Acoustical restoration of the Great Concert Hall**
Authors	Marta Cristina ZAHARIA PhD.Dipl.Eng.
Institution	**NIRD URBAN-INCERC, Branch INCERC Bucharest, Building Acoustics Laboratory**
Description EN	Specific acoustic studies for acoustic restoration of the Great Concert Hall of the Romanian Athenaeum, were conducted in 2003 in the Building Acoustics Laboratory of INCD URBAN-INCERC Bucharest, Bucharest Branch INCERC. It took into account the requirement on the beneficiary to achieve restoration so be kept acoustic characteristics of the original Great Concert Hall of the Romanian Athenaeum.

Acoustic studies were conducted on: initial measurements of noise in the Great Concert Hall of the Romanian Athenaeum during the ventilation equipments of the air conditioning were functioning; sound absorption coefficients determining for the existing finishing materials samples and for those newly proposed, for: chair, wallpaper (vinyl), acoustic treatment (pads) of ventilation ducts under the floor of the hall; determination of solution for floor stage of the Great Concert Hall of the Romanian Athenaeum and other situations to provide the level allowable noise in the Great Hall during the ventilation equipments were functioning: determine the constructive solution in terms of acoustic structure of the dome (roof) of the Great Hall, with a view considering the reducing noise from rain on the tin roof of the hall; final measurements of noise during the ventilation equipments of the air conditioning were functioning in the Great Concert Hall, after new finishing were been worked.

Class no. Innovative Research

RO.195.

Title EN **Experimental research on validation and implementation of a new evaluation method of fire performance for exterior cladding systems**

Authors Octavian Lalu

Institution **INCD „URBAN-INCERC”**

Description EN

Short description of research project:

International design trends led to the construction of high rise buildings, with a great visual impact in terms of architecture. Given these trends a number of new materials and composite systems for realization of facades have emerged, which gives greater flexibility to architects. So many types of combustible materials are used for construction facades.

These exterior cladding systems are very complex involving various elements or combustible materials that contribute in a fire situation. Due the complexity of exterior cladding systems the fire assessment tests must be carried out for complete systems, equipped with related accessories.

Most European countries their own fire testing methods in order to evaluate the performance of façade.

A series of theoretical studies on the fire performance assessment parameters and tests have conducted, in order to validate the test method.

Several full scale experiments were conducted to evaluate the fire performance of external cladding systems.
Applications:
The test method is unique in Romania and is applicable to all exterior cladding systems considering assessing the behavior in case of a real fire (for external cladding systems), in scope of end use. With this test method we can investigate different designs ensuring a high level of fire safety.
Advantages:
Experimental data obtained from full scale experiments are unique and provides a series of information on fire development stages.
Based on fire exposure experimental results the external cladding systems can be design and optimized so as to limit the vertical fire spread considerably reducing casualties and material losses.

Class no. Innovative Research

RO.196.

Title EN **Experimental research concerning the optimal position of barriers system with role of limiting the vertical fire spread at thermal rehabilitated buildings**

Authors Octavian Lalu[1], Ion Anghel[2], Daniela Stoica[1]

Institution **[1]INCD „URBAN-INCERC", [2]Police Academy „Al. I. Cuza", Faculty of Firefighters**

Description EN

Short description of research project:
In current practice in Romania the external cladding systems with polystyrene insulation (ETICS) represent the most common thermal rehabilitation solution of buildings.
Most users use this thermal rehabilitation solution due to its low cost compared to non-combustible insulation systems for external cladding or ventilated façade systems.
At all stages of installation may occur several execution mistakes that endanger the ETICS system in case of fire.
In Romania there are no large scale test methods for fire behavior analysis of external cladding systems used in thermal rehabilitation of buildings.
Given the possible fire exposure situations for multi-storey buildings, it was considered that the worst fire exposure situation, with the highest probability of occurrence, is from inside the building.

Based on a comprehensive experimental program a series of large scale test were conducted in order to establish the behavior in case of fire for external cladding systems with polystyrene insulation.

Applications:
The result obtained from these experimental studies highlight interruption need for façade insulation with barrier systems. By placing inefficiently the barriers on façades increases the risk of vertical fire propagation and damaged façade areas.

Advantages:
Based on the results a diagram of positioning the barriers and the equations describing the temperature rise in height were achieved. The diagram can easily be used in fire design of façades and to optimize the size and position of the barrier systems

Class no. Innovative Research

RO.197.

Title EN **Geospatial method for the integrated planning of human habitats within protected wetlands**

Authors ***Alexandru-Ionuţ PETRIŞOR, Vasile MEIŢĂ***

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

Patent Patent application No. A/00720/2010

Description EN

The invention consists of a geospatial method for the integrated planning of large protected wetlands including within their perimeter human habitats. There are several methods included in the spatial planning guidelines; all these produce a narrative output, often compiled from different sources, reflecting a past state, and often similar regardless of the region. Their main disadvantage is that none of them accounts for the state of the art of ecology or rely on data; consequently results are not specific to the analyzed area and lack any spatial planning relevance. The geospatial method for the integrated planning of human habitats within protected wetlands does not have any of these disadvantages, but has the advantages of a scientific approach, namely the possibility of automatically analyze data using geospatial techniques, particularized for each area. From an economic

standpoint, the advantage is that no additional costs are needed, since data is freely available from specialized agencies. The method consists of a succession of spatial analyses: (1) collection of economic, environmental and social data, (2) data ordered by quintiles for all spatial units, (3) compute economic, environmental and social development indices by aggregating previous data, (4) data ordered by quintiles for all spatial units, (5) compute an aggregated development index by aggregating previous values, (6) data ordered by quintiles for all spatial units. The application of the method is in line with the principles of sustainability by integrating economy, society and environment, reflecting the state of the art in ecology compared to the existing methods.

Class no. Innovative Research

RO.198.

Title EN **Cost analyze of buildings and special constructions based on price developments in the construction activity**

Authors Silviu LAMBRACHE

Institution **NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN CONSTRUCTIONS, URBANISM AND SUSTAINABLE SPATIAL DEVELOPMENT URBAN INCERC**

Description EN

Cost evolution study in the construction sector is achieved by determining the average indices of cost update based on a collection of construction subgroups comprising buildings and special constructions, created under execution projects and technological solutions considered.

Building subgroups correspondence is presented as a structure of the main costs of constructions works considerate.Periodically, the constructions works weights on the structure has changed as a result of market price developments of materials, labor and various categories of benefits (rental machinery, transport).

Input price index quantifies the changes occurring on prices and tariffs paid by the contractor for input elements (materials, labor, equipment and transportation).On the basis of this index we can identify the elements of the construction activity influencing the cost of the execution by price developments to suppliers and services rates.

The study of price trends in construction sector for member states in the European Union is an old and constant concern, in most of the reports presented by Eurostat, the UN Economic Commission for Europe and Euroconstruct Conferences.

Class no. Innovative Research

RO.199.

Title EN **Volcanic tuff aggregates for lightweight concrete masonry blocks production**

Authors Szilagyi Henriette, Baeră Cornelia

Institution **National Institute for Research and Development in Constructions, Urbanism and Sustainable Spatial Development "URBAN-INCERC", Cluj-Napoca Branch, Romania**

Description EN

The research program establishes preparation, use and advantages of lightweight aggregate concrete, while the possibility of using crushed volcanic tuff as concrete aggregates in a high degree was successfully demonstrated by technology transfer from laboratory to concrete masonry blocks producers.

Class no. Innovative Research

RO.200.

Title EN **Children exposure to volatile organic compounds in indoor air of Bucharest educational spaces**

Authors Vasilica Vasile, Alina Dima, Mihaela Ion

Institution **NIRD URBAN-INCERC, INCERC Bucharest Branch**

Description EN

A healthy environment in the educational spaces (kindergartens, schools, high schools) is an important premise to guarantee raising kids, education and performance opportunities, as well as their social and cultural development. Air quality in these types of areas present a particular interest given that the time spent in kindergarten or school is increased and children are a particularly sensitive

category of the population. International studies constitute substantial evidences on the negative impact on health of a variety of pollutants that can be found in the indoor environment, including schools and kindergartens. Volatile Organic Compounds (VOCs) are regarded as crucial parameters for air quality assessment both indoors and outdoors, thanks to their ubiquitous nature. The chemical diversity of the group of VOCs is due to harmful effects on the respiratory system, causing also cardiovascular disease and cancer. The purpose of this study was to monitor the main volatile organic pollutants present in indoor air of educational spaces, formaldehyde and benzene, and total volatile organic compounds (TVOC). The selection of spaces to compose the investigated segment was based on the need to obtain useful information regarding indoor air quality in areas where children and teenagers, whose ages range from three years to seventeen years, carry out their daily activities. The applications of this study aims to achieve the regulatory framework regarding indoor air quality, the advantages being to develop constructive solutions to improve the quality of education, to meet this societal need, at a level as high as possible.

Class no. Innovative Research

HONEYWELL ROMANIA SRL

RO.201

Title	Dye –sensitized solar cell and method of making same
Authors	Bogdan-Catalin Serban, Cristian Diaconu, Mihai Mihaila, Octavian Buiu
Institution	Honeywell Romania
Patent no.	EP 2,838,128 B1, Issued 06 01 2016
Description	Dye-sensitized solar cells (DSSC) provide a technically and economically appropriate alternative concept to present day p-n junction photovoltaic cells. In contrast to the traditional systems where the semiconductor assumes both the task of light absorption and charge carrier transport, the two functions are separated in the case of DSSCs. Light is absorbed by a sensitizer, which is anchored to the surface of a semiconductor. Charge separation takes place at the interface via photo-induced electron injection from the dye into the conduction band of the solid. Carriers are transported in the conduction band of the semiconductor to the charge collector. The use of sensitizers having a broad absorption band in conjunction with oxide films of nanocrystalline morphology permits the harvesting of a large fraction of sunlight, with nearly quantitative conversion of incident photon into electric current over a large spectral range extending from the UV to the near IR region. The present invention relates synthesis, design and application to the DSSC of new 10H- phenoxazine- or triphenylamine-based dyes. The dye design, based on the push–pull concept, consists of substituted phenoxazine or triphenylamine as an electron donor and a cyanoacrylic acid as an anchoring group and electron acceptor connected through a p-conjugated spacer.
Class	1. Environment - Pollution Control

RO.202.

Title	**Carbon dioxide sensor**
Authors	Bogdan-Catalin Serban, Mihai Mihaila, Cornel Cobianu, Viorel-Georgel Dumitru, Octavian Buiu
Institution	Honeywell Romania, Automatic and Control Solutions
Patent no.	US 8,826,724 B2, Issued, September 2014 EP2469275B1, Issued 23.12 2015
Description	Most of the CO_2 sensors employing polymers with amino groups experience cross-sensitivity at water, which is as major drawback. Based on the HSAB (Hard Soft Acid Base) approach, a novel

carbon dioxide differential sensing scheme using a SAW sensor is proposed. Unlike the traditional differential sensing systems, which are based on an appropriately functionalized sensing layer in the sensing loop and on an uncoated surface in the reference loop, the new "all-differential" CO_2 sensing concept provides a better response subtraction between the two paths. The polymeric sensing layer includes an amino group-based polymer such as N-substituted polyallylamine, polydiallylamine, polytriallylamine, polyvinlylamine, poly(y-aminoproplyethoxy/propylethoxysilones) (PAPP), poly(y-aminopropylethody octadecylethoxysiloxane) (PAPO), or combinations thereof, amino functionalized carbon nanotubes, carbon nanotubes with aliphatic amino groups situated at the end of an alkyl chain, or combinations thereof, amino functionalized ionic liquid and an amino functionalized carbon nanotube composite. At least part of the reference layer may be poisoned by reaction with hydrochloric acid so that it will be substantially non-sensitive to CO_2. In some cases, poisoning the reference layer may include applying an acid to the reference layer. In some cases, the acid may be applied to the reference layer using a direct printing process.

Class 1. Environment - Pollution Control

RO.203.

Title **Fluorescent Polymers for oxygen sensing**

Authors Bogdan-Catalin Serban, Mihai Mihaila, Octavian Buiu

Institution Honeywell Romania

Patent no. US8,778,501 B2, Issued July 15,2014
EP 2 461 155 B1,Issued 17.10.2012

Description

Recently, a lot of sensors based on the fluorescence quenching of organic molecules were developed in order to determine the concentration of oxygen. Molecular oxygen (O2) is an efficient quencher of fluorescence because of its unusual triplet ground state. Among the fluorophores used for oxygen sensing, one can enumerate: pyrene and its derivatives, quinoline, phenantrene, decacyclene and its derivatives, etc.

However, such fluorophores have reduced adhesion to the substrate (e.g. glass), thus leading to low stability and low reliability sensors. In order to overcome these issues, supporting materials such as silicones, Al2O3 are required.

The fluorescent molecule could crystallize in the polymer matrix due to its poor solubility. In order to prevent aggregation and crystallization, the fluorescent molecule is immobilized by the polymeric substrate through covalent bonding. However, covalent immobilization alters the fluorescence properties of the fluorophore

In this invention, we propose a different pathway for the immobilization of fluorescent pyrene derivatives, by employing

doping of polyanilines (PANIs) which avoids crystallization of the fluorophore in the polymer matrix and preserve the whole fluorescence.
The proposed pyrene derivatives–based fluorophores are: 1-pyrene butyric acid, 1-pyrene acetic acid, 1-pyrene decanoic acid, 1 pyrene dodecanoic acid. The O2 sensing capability of the synthesized layer is proven by fluorescence spectroscopy performed at different air pressure values.
The results of the present invention can be applied in various fields such as automotive applications, medical applications such as anesthesia monitors, and environmental monitoring.

Class 1. Environment - Pollution Control

RO.204.

Title **Experimental evaluation of a Li ion battery parameters and their behavior during charge-discharge cycling**

Authors Matei Serbanescu, Octavian Ionescu, Ion Georgescu, Viorel Dumitru, Octavian Buiu.

Institution **Polytechnica University, Bucharest / Honeywell Romania**

Description

Lithium ion rechargeable batteries represent one of the promising alternative energy solutions and currently are the main source of energy for most audio-video equipment, portable electronics and even electric vehicles. The battery is a critical element in HEV as in EV because it has several advantages, such as high power density and high energy density. In the same context of electric vehicles, due to its frequent charge and discharge processes, a battery management system (BMS) becomes very important. Due to the high interest for this type of batteries there have been many studies investigating various internal competing mechanisms that occur in lithium-ion batteries such as SEI growth, electrode material loss, and separator pore closure.

The development of a reliable mathematical model that describes their behaviour and that is eventually embedded in BMS requires a thorough study which includes mechanichal tests corellated to charge-discharge cycling. The mechanical point of view becomes very important when the cells are assembled into packs. Consequently we have conducted tests by using a load cell to measure the pressure created inside a cell when charging and discharging. There has been created a stack for the battery to be placed and the mechanical stress resulted during cycling has been assesed. The cells are cycled using a CC/CV scheme between 4.2 V and 3 V with a C/50 cutoff for different C-rates. The purpose of this technique is to get knowledge about optimal functioning when it comes for battery packs. The battery used is Cellevia LP7035138 pouch cell and the hardware and software resources included BK Precision DC Load & Power Supply, Labview and Matlab

Class Innovative Research - 2

SC HOFIGAL EXPORT -IMPORT SA

RO.205.

Title	**Phytotherapeutic preparation rich in ω3 and ω6 polyunsaturated fatty acids and method for obtaining it.**
Authors	Manea Stefan
Institution	**SC HOFIGAL EXPORT IMPORT SA**
Patent no.	126918/2014/ Patent application No. a.201000494/8062010
Description	The invention is a dietary supplement with a well balanced combination of polyunsaturated fatty acids ω3 and ω6 of vegetable origin, making a better ratio between them in comparison with fish oil. These oils are from organically grown plants and they are processed in GMP conditions.
Class	4

RO.206.

Title	**Natural herbal product for optimizing liver and biliary tract function**
Authors	Ionescu Daniela, Mihele Elisabeta Denisa, Manea Stefan
Institution	**SC HOFIGAL EXPORT IMPORT SA**
Patent no.	Patent application No. a 2011 00479 /2011
Description	Natural product, biocompatible, which can be used in all liver disease, while improving digestion. The product is made with extracts of red Seabucktorn, Thistle and Rosemary - herbs from the "bio" culture. Mentioned properties of the product are remarkable synergistic effect of the complex phytochemical compounds used.
Class	4

RO.207.

Title	**Anti-burns gel and it obtaining obtaining process**
Authors	Manea Stefan., Viorica Tamas, Catalin Iordachel
Institution	**SC HOFIGAL EXPORT IMPORT SA**
Patent no.	125505/2011/ Patent application No A.00210
Description	Product ,,Arsutrat " -gel is indicated for the relief and treatment of various forms of dermal burns and wounds with disinfectant, decongestants, painkillers properties and also being a good dermorestitutiv and regenerativ of damage tissue.
Class	4

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

RO.208.

Title	**iSENTINEL®**, the intelligent safety system
Authors	Dr. Ing. Mircea MANOLESCU
Institution	**Arexman Construct SRL**
Patent no.	Pending
Description	**iSENTINEL®** is an intelligent integrative panel which receives information from several detectors (earthquake, fire, smoke, water linkage, gas linkage or personalized) and triggers safety procedures related to the detected danger : - cuts off the gas supply of a building from the outside, - alerts gas leakages and cuts off the gas supply, - cuts off the power supply of a building or of equipment/machinery, - closes water circuits (water supply, heating) - instant launch of the alarm signal (both visual and sound) and voice safety instructions ■ operates any other personalized protection for building or industrial plant protection
Class	**12**

RO.209.	
Title	**iNteligent domestic energy waste recovery**
Authors	Damian Philip Huiduc, Mircea Manolescu
Institution	**Arexman Construct SRL**
Patent no.	-
Description	"During a common day in any house people waste approx. 45% of the energy they use for desired actions. E.g.: in order to enter or exit a room they open and close a door, wasting this way mechanic energy. Another example: in order to adjust the water flow while washing the hands they turn partially a valve thus introducing a variable hydraulic resistance and wasting kinetic energy. Actions where the "normal" functioning includes wasting energy are multiple and recovering this energy means economy, ecology, sustainable life and a green planet. This is what my research is about, and what my future inventions will do!"
Class	Innovative Research

S.C. BIOTEHNOS S.A.

RO.210.

Title

Original romanian product involved in cellular chondro - modulatory mechanisms

Authors

Laura Olariu[1,3], Andrei Vacaru[1], Natalya Pyatigorskaya[2], Ana Maria Vacaru[1], Alexey Pavlov[2], Brindusa Dumitriu[1], Diana Manuela Ene[1], Luiza Mariana Craciun[1]

Institution

1. S.C. Biotehnos S.A., Otopeni, Ilfov, Romania
2. I.M. Sechenov First Moscow State Medical University,Moscow, Russia
3. Academy of Romanian Scientists - associate member, Bucharest, Romania

Description

One of the main strategies for treatment of cartilage degenerative pathologies is the stimulatory chondrogenic therapy, which modulates the cellular responses and the secretory activity of chondrocytes.

We focus our study on an original pharmaceutical product based on a small marine fish extract, and its effects on new discovered cellular and molecular mechanisms regarding chondro-protection: **the Sox9 expression** (a transcription factor expressed in all differentiated chondrocytes, its decline being correlated with the decrease of collagen 2, and aggrecan from the extracellular matrix); the **hyaluronan synthase / hyaluronidase balance** (hyaluronan is a glicosaminoglican from synovial joint fluids which physically acts as a viscous lubricant and as an elastic shock absorber in joints**) and homeostasis of aggrecan** / **aggrecanase** (Aggrecan is the another structural macromolecule of articular cartilage; ADAMTS4- the principal degradative enzyme involved in osteoarthritis progression).

The analyses were done at gene expression level, using quantitative real time PCR and Sybr Green technique.

Through its complex of complementary biological components, the product inhibits the expression of proteases responsible for the degradation cascade of the core-protein of aggrecan, improves cellular response in catabolic processes by increasing aggrecan and hyaluronan synthesis, and inhibiting the action of hyaluronidase. As well as, the product maintain the activation of SOX 9, for a normal status of differentiated chondrocytes, in order to prevent the hypertrophy and extracellular matrix decline.

All these effects explain the product involvement in the architectural matrix restoration and the recovery of the functional pathways.

Class

4. Medicine - Health Care - Cosmetics

SC DFR Systems SRL

RO.211.

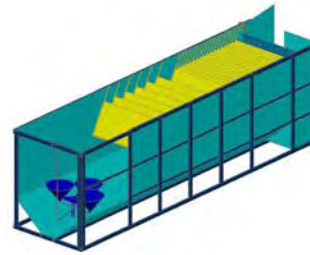
Title	**Final Settler for a Dissolved Air Flotation Unit**
Institution	Bogdan Dumitru NĂSĂRÎMBĂ GRECESCU Gabriel PETRESCU, Ioana Corina MOGA
Authors	**SC DFR SYSTEMS SRL**
Patent no.	126399//30.07.2014

Description

The settling is made of two functional compartments arranged in series: a lamellar settler and a technical room. At the usual clarifiers, the settling plates can clog. In order to overcome this anticipated difficulty a flotation system is used. The two-phase mixture air-water enters the clarifier through a transport system that consists of pipes and three funnels. Funnels are diffusers (relaxation area for the compressed fluid). In this way, the mixture bubbles - water does not "wash" the slab foundation. Air bubbles rise to the free surface and become stuck in "light" suspended solids and are led to the surface, where they are directed to skimmer and discharged from the system.

Sludge is deposited at the bottom of settler and treated water is discharged through a pipe into the emissary. Well designed plates systems, mounted obliquely (60^0) provide an efficient settling for the entire clarifier length. The rectangular cross section of the settling and interior construction ensures stability of the liquid and sludge retention. The settled sludge from the bottom of each bioreactor and settlement stage is collected through a system of connected suction pipes. This sludge is pumped through the hydrociclone by the sludge pump from the technical chamber. Dense mineralized sludge is downloaded periodically into the drying system in bags where it is manually removed after deshidratation

Class 1



RO.212.

Title **A Pressurized Capsule for a Dissolved Air Flotation Unit**

Authors Bogdan Dumitru NĂSĂRÎMBĂ GRECESCU
Gabriel PETRESCU
Ioana Corina MOGA

Institution **SC DFR SYSTEMS SRL**

Patent 126369/30.12.2013

Description

The dissolved air flotation unit consists of two separate devices: pressurized capsule and lamellar settling.
The pressurized capsule is a cylindrical chamber provided at the ends with 2 caps. Inside the capsule there are inserted water and air under pressure. Water circuit is located at the top of the capsule and water is introduced with the help of 4 sprinklers. In this way, water is introduced as fine droplets dispersed and not as jet. The air supply is located at the bottom of the capsule. To obtain a longer time contact between air bubbles introduced through the circular pipe and the water, we have found the solution to introduce moving plastic elements inside the capsule.
The innovative aspects and the advantages of the dissolved air flotation unit are:

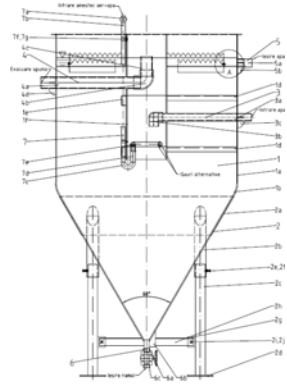
- Process gives greater efficiency due to moving parts inside the capsule that "tease" trail of bubbles to the surface;
- Through the use of sprinklers, water is sprayed in very fine droplets and is dispersed within the capsule, thus creating a large air-water contact surface;
- Quick and easy installation even in existing clarifiers;

1. The treatment method provides greater efficiency without using any bio-products or consumables that enhance the biological degradation processes - completely organic process;

Class 1

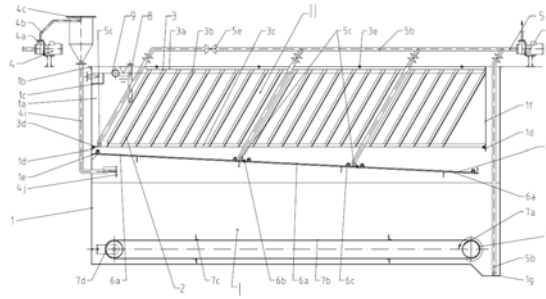
RO.213.

Title	**Vertical settler**
Authors	Gabriel PETRESCU Bogdan Dumitru NĂSĂRÎMBĂ-GRECESCU Ioana Corina MOGA
Institution	**SC DFR SYSTEMS SRL**
Patent	Patent application No. 00107/10.02.2014
Description	A settler is designed to remove suspended solids by sedimentation. The low flow velocity in a settler allows settleable particles to sink to the bottom, while constituents lighter than water float to the surface. The proposed vertical clarifier is used in the final stage of wastewater treatment, for the final separation of solids from the water. Settling is attached to a DAF unit. Efficient removal of the suspended solids can be done in two ways: heavy suspensions settle to the bottom of the vertical settling, and the "light" suspensions are stuck to the air micro-bubbles and are ascended to the free surface. Vertical decanter gives an efficiency of removal of suspended solids without using chemicals that help form the floc sludge and without the use of electricity-consuming equipment. Final settlers in wastewater treatment plants operate under continuous flow and load conditions. Mixed liquor flows from the aeration tank to the settler and return sludge, containing the concentrated sludge, is pumped back to the aeration tank, while a clarified effluent flow (equal to the wastewater influent flow) is discharged from the system.
Class	1



RO.214.

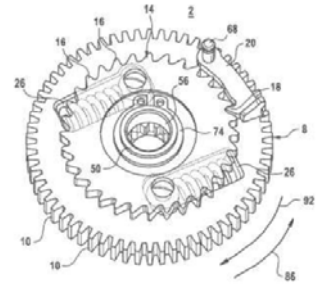
Title	**Lamellar settler**
Authors	Ioana Corina MOGA
Institution	**SC DFR SYSTEMS SRL**
Patent	Patent application No. 00726/07.10.2013
Description	The clarifier consists of two superposed compartments. The lower one is mainly designed for the coagulation-flocculation process and for the majority removal of the suspended solids, while the upper compartment is a lamellar one and was designed to finish the removal process of the suspended solids, which have a close-to-water specific mass. The reagent used for coagulation is introduced in the settler with the help of a mixing device, in which reagent and waste water are pumped. Membranes are inserted inside the mixing chambers and they create a turbulent flow inside the device. The waste water-reagent mixture is introduced in the lower compartment of the settler.
Class	1



CONTINENTAL AUTOMOTIVE ROMANIA SRL

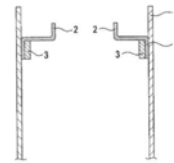
RO.215.

Title	Wheel arrangement for electromechanical parking brake
Authors	Apetrei Cristian
Institution	CONTINENTAL AUTOMOTIVE ROMANIA SRL
Patent no.	DE102012214415 (A1)
Description	The wheel arrangement (2) has a gear wheel (8) and a ratchet wheel (14). A latch (20) is engaged between the gear wheel and ratchet wheel for blocking rotation of gear wheel. A resilient damping element (38) is equipped with ends (40,42) such that the gear wheel and ratchet wheel are contacted with respective ends of damping element for absorbing energy generated during sudden rotating movement of the gear wheel.
Class	8



RO.216.

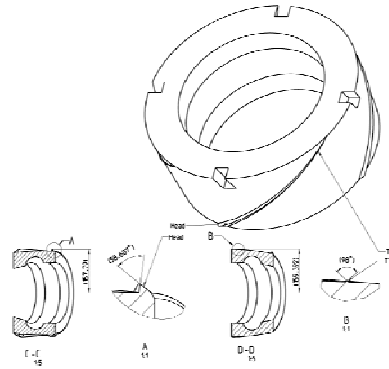
Title	**Assembly for fastening components, having inner annular component in region of press fit provided with portion of less rigidity, where outer annular component is made of material with thermal expansion coefficient higher than inner component**
Authors	George Gavrilă
Institution	**Continental Automotive Romania S.R.L.**
Patent no.	DE20111077309 20110609
Description	The assembly has an inner annular component (2) in a region of the press fit provided with a portion of less rigidity. An outer annular component (1) is made of a material with a thermal expansion coefficient higher than the thermal expansion coefficient of the material of the inner annular component. The inner component is formed in contact with the inside of a ring (3), which is made of a material with a thermal expansion coefficient same or higher than the former material. The portion with lower rigidity is extended around the periphery of the inner or outer component.



Class 5, 6, 7, 8

RO.217.

Title	**Serviceable Bearing with Fastening by Self Threading Shaft**
Authors	Adrian Homutescu, Iulian Oancea, Cristian Apetrei, Ionuț Vârlan
Institution	**S.C. CONTINENTAL AUTOMOTIVE ROMANIA S.R.L.**
Patent no.	DE 10 2013 218 119 A1 2015.03.12
Description	The invention relates to a bearing that is assembled by self threading. The outer bearing ring of the bearing is featuring with a specific male thread that creates the mother thread upon the very operation of mounting the bearing to functional position. Once the bearing reaches final position, no additional axial fixation is required (as in the prior art). The outer bearing ring can be manufactured by cost effective, conventional technology. The mother hole can be manufactured by cost effective, conventional technology. A specific male thread profile is described, that evolves as shape along the helix. The specific male geometry ensures small thrust and small torque at the start of mother thread creation, the thrust being increasingly self-reinforced in order to cope with increase of technological forming force all along the first mounting. A specific mounting tool is described, ensuring the needed thrust and turn. Moreover, the mounting tool has a second function, allowing the demounting of the bearing as needed (as for maintenance for instance). Mounting back after demounting is possible. Moreover, unlike classical press fit bearings, the invention relates to a bearing that can be mounted and demounted from the same side.
Class	**6, 8**, 5



RO.218.

Title **Universal Centering Pin**

Authors Adrian Homutescu

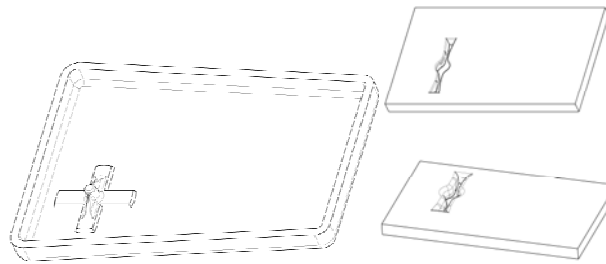
Institution **S.C. CONTINENTAL AUTOMOTIVE ROMANIA S.R.L.**

Patent no. EP000003002466A1

Description

The invention relates to a centering together of at least two mechanical parts. The proposed Universal Centering Pin Solution (UCPS) ensures an industrial mounting solution allowing for precise X-Y, α and Z positioning between two mechanical parts. This is thanks to the specific geometry of the Universal Centering Pin and the Universal Centering Pin Hole geometry.
Generally, the goal of centering pins is to have a precise final mounted position without requiring a very precise pre-guiding.
With previous art centering requires:
- one simple centering pin (allowing free rotation about its axis) and a precise hole, ensuring precise X-Y positioning of the part to be mounted, and
- one simple precise centering pin and a precise oblong hole, ensuring the α alignment of the part to be mounted.
These four features, two in the base part and two in the part to be mounted, usually allow for a small positioning deviation in the premounted phase and require precise optical equipment so that pre-guiding exist on the assembly line.
A single pair of features (pin and hole) is needed however for a full precise mounting with UCPS.
The solution is easily scalable, thus allowing for increased precision of the α mounting by adapting the geometry of the UCPS.
The proposed geometries for UCPS centering pin and centering hole are manufacturable by cost effective, conventional technology as metal casting or plastic molding.
No undercuts are required.
From tolerance chain point of view, final positioning is influenced by two dimensions less.

Class **6, 8**, 5



RO.219.

Title **Moisture Protection Circuit**

Authors Alexandru Ipatiov

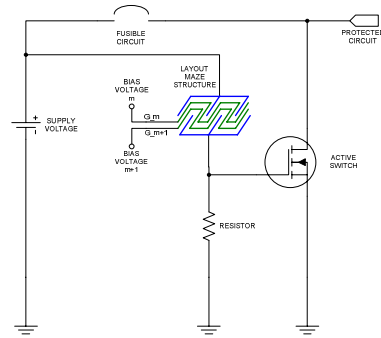
Institution **Continental Automotive Romania**

Patent no. 2117095B1

Description

The invention refers to a safeguarding circuit comprising a liquid sensitive element and a voltage controllable switching component, the liquid sensitive element comprising a first terminal being connected to an electrical potential (and a second terminal being connected to a control terminal of the voltage controllable switching component, and the liquid sensitive element being adapted to change the resistance between the first terminal and the second terminal upon being in contact with a liquid or a humid atmosphere. The liquid sensitive element may thereby comprise a first electrically conductive trace and a second electrically conductive trace located alongside the first conductive trace, with the first and the second conductive trace being separated by an intermediate electrically nonconductive surface.

Class



RO.220.

Title **Holder assembly for electric motors**

Authors Oancea Iulian, Murgoci Dragoș

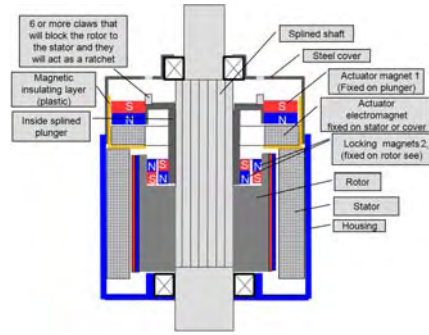
Institution **S.C. CONTINENTAL AUTOMOTIVE ROMANIA S.R.L.**

Patent no. DE102011086149A1/2013

Description

Holder assembly for electric motors describes a new type of bi-stable solenoid to be used mainly (but not limited to) in electric motors, or in any application where locking (in one or both) is required after motor action. The assembly comprises an arrangement of three permanent magnets and one electromagnet enclosed into motor compartiment or a housing. Two permanent magnets are fixed onto an axially movable shaft called plunger or latch, and the third one is fixed onto rotor or housing. Typical application in automotive relates to parking brake functionality in an electromechanical brake where after force application on the brake pads, the motor should be blocked against rotation. In order to prevent the release of brake after cooling of the brake system, the motor should rotate again and readjust the applied force. From obvious reasons the system should work with less power consumption and therefore the latch should act as a ratchet without any power consumption. Conventional solenoids are presenting a parabolic force travel characteristic, so the force is maximum at the ends of the travel and zero at the middle of the travel. Such behavior is unwanted because at readjustment the plunger might move in disengaged position. The described plunger has reversed characteristic: the maximum force is at the middle of the travel and at the end the force is lower but still higher than maximum of conventional bi-stable solenoids. This system might be used anywhere a linear actuator or a latch with two stable positions is required.

Class **8**, 12, 5



RO.221.

Title **Method and apparatus for transmitting an ESP or ABS braking signal to a following vehicle**

Authors Cătălin Pădurariu

Institution **Continental Automotive Romania**

Patent no. DE102013222406 A1 / 2014

Description

1. Method for outputting a warning signal to a following vehicle, **characterized** in that a warning signal is outputted to a following vehicle or the driver of a following vehicle when a ESP or ABS system is active in a host vehicle.

2. A method according to claim 1, **characterized in that** if a warning signal is transmitted to a following vehicle, a warning is issued in the following vehicle to the driver of the following vehicle.

3. A method according to claim 1, **characterized in that** if a warning signal is transmitted to a following vehicle, an automatic braking of the following vehicle is initiated or the braking of the following vehicle can be prefilled.

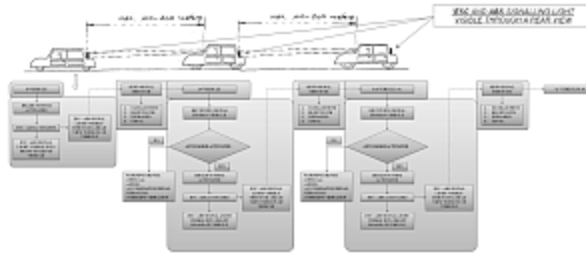
4. The method of claim 2 or 3, **characterized in that** the following vehicle outputs a warning signal to a following vehicle to the following vehicle.

5. Means for outputting a warning signal to a subsequent Knitting vehicle according to claim 1, **characterized** in **that** the warning signal is output through a warning light which is arranged in the lower region of the rear window or adjacent to the brake lamps on a host vehicle.

6. Means for outputting a warning signal to a subsequent Knitting vehicle according to one of claims 1 to 4, **characterized in** that the warning signal on one of the following transmission and reception systems transmitted to the following vehicle and is received by the following vehicle: radio, ultrasound, Bluetooth or infrared system.

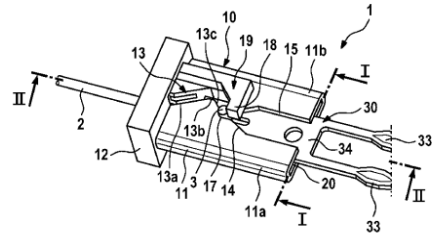
7. Device for outputting a warning signal in accordance with claim 2, **characterized in that** the warning device is configured such that an acoustic, haptic, or optical signal is output to the driver.

Class 12



RO.222.

Title	**Contact carrier for contacting electric components**
Authors	Adrian Sirbu, Dragos Murgoci, Adrian Homutescu
Institution	**Continental Automotive Romania**
Patent no.	DE102012204102 (A1)
Description	The carrier (1) has a conductor accommodating part (10) comprising a plate-shaped base element (11) in which a guiding channel as a guide slot (13) for guiding a bent conductor portion (3) of a conductor (2) in its contact position.
Class	8



WEICON ROMANIA

RO.223.

Title **Research Project regarding solutions for unconventional reinforcement of concrete structures**

Authors ***Ovidiu RADU,*** **Alexandru VLAICU, Ofelia CORBU, Attila PUSKAS**

Institution Weicon Romania/Technical University of Cluj-Napoca

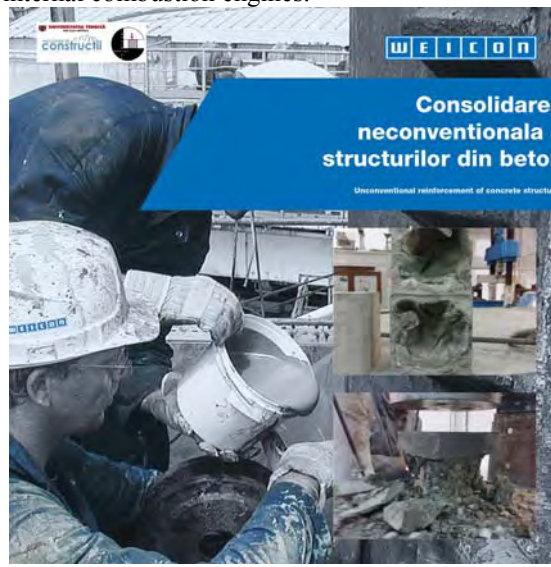
Description

Scope of the research project: find a solution for eliminating the consequences of various cavities, cracks or erosions.

Project carry out: tests made in order to determine the compatibility between special WEICON products and various elements of constructions such as concrete or metal structures.

Conclusion: carried out tests recommend the WEICON product as an effective solution for the reinforcement of concrete structures.

The integrated deflector addresses this technical problem by protecting the admission collector and air filter from the thermal radiations generated by the cooling radiator of internal combustion engines.

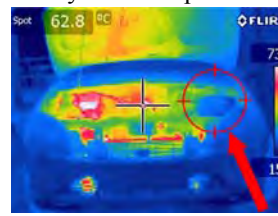


Class Innovative Research

CORNELIU GROUP
Association for Research&innovation

RO.224.

Title	Integrated heat deflector
Authors	Corneliu Birtok Baneasa
Institution	Asociatia CORNELIUGROUP cercetare - inovare
Patent no.	Patent – *RO 201000026*
Description	The integrated deflector addresses this technical problem by protecting the admission collector and air filter from the thermal radiations generated by the cooling radiator of internal combustion engines.
Class	8. Aviation, car industry and transportation



RO.225.

Title	ArKase on -THE- go
Authors	Marcus Razvan
Institution	**Asociatia CORNELIUGROUP cercetare - inovare**
Patent no.	**Patent demand - A 00336/05.11.2015**
Description	ArKase it's a smartphone case that actively charges your battery on the go by transforming the energy released by light, temperature, motion, sound, phone signal, Wi-Fi, GSP, GPS signal and electromagnetic induction into electricity, thus completely eliminating the need for chargers or plugs.
Class	10. Information Technology and Communication

Ryder Garage

RO.226.

Title	**Bandit**
Authors	Zotescu Rares-Nicolae, Zotescu Beniamin-Nicolae
Institution	**Family projects**
Description	An termic engine 110cm, VNE : 100km/h, G=120 kg, autonomy 200km, consumption 2 l/100km

RO.227.

Title	**Blue Arrow**
Authors	Zotescu Rares-Nicolae, Zotescu Beniamin-Nicolae
Institution	**Family projects**
Description	An termic engine 110cm, VNE : 80km/h, G=130 kg, autonomy 200km, consumption 1.8 l/100km

RO.228.

Title	**GALAXY**
Authors	Zotescu Rares-Nicolae, Zotescu Beniamin-Nicolae
Institution	**Family projects**
Description	An Termic engine 2.25 kw, VNE : 50km/h, G=116 kg, autonomy 250km, consumption 1.5 l/100km

RO.229.

Title	**Scorpion**
Authors	Zotescu Rares-Nicolae, Zotescu Beniamin-Nicolae
Institution	**Family projects**
Description	An Yamaha engine 2.25 kw, VNE : 80km/h, G=84 kg, autonomy 250km, consumption 1.5 l/100km

EUROPLASTIC SRL

RO.230.

Title	**High resistance polyurea compositions**
Authors	Marcel Ionescu
Institution	**EUROPLASTIC SRL**
Patent no.	Patent - pending
Description	Waterproofing – ready in seconds The only continuous, seamless waterproofing system (no vulnerable joining parts), perfect sealing, covering any type of geometrical structure. Protects against corrosion, adherence to almost any surface Wide range of applications: roofs, reservoirs, pipelines, barrels, ducts, bridges, roads, railroads, tunnels etc Applications: by airless gun
Class	**7**

RO.231.

Title	**Ceramic thermal coatings paints**
Authors	Marcel Ionescu
Institution	**EUROPLASTIC SRL**
Patent no.	Patent - pending
Description	Ceramic paint for thermal insulation Ecologic coating based on ceramic nanotechnology, which exhibits excellent thermal insulation properties in a very thin layer: 0.5-3mm Applications: by airless gun, by brush or roller
Class	**7**

RO.232.	
Title	**Fire protection paint**
Authors	Eng. Marcel Ionescu
Institution	**EUROPLASTIC SRL**
Patent	Patent - pending
Description	Water based intumescent paint which provides fire protection even after 4 hours. Suitable for: wood, metal, spray polyurethane foam thermal insulation, soundproofing polyurethane boards Applications: by airless gun, by brush or roller
Class	**7 or 12**

ECOHORNET

RO.233.

Title ***MULTI-SYSTEM BURNER AND PROCEDURE FOR ECOLOGICALY BURNING OF PELLETIZED BIOMASS***

Authors Iuliean Hornet

Institution *www.ecohornet.ro*

Patent no. RO*128229*

Description

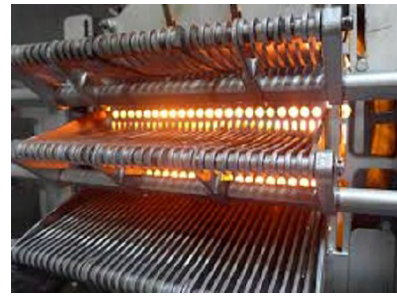
The procedure to ecologicaly burn the pelletezid biomass comprises of introducing the air needed for burning the biomass layer and also the byproducts of the burning and gasification.

The ecological burning procedure of pelletized biomass functionally combines burning on the grill, with the formation of gases from incomplete burning above the biomass layer, with inverse burning, with gasification (which implies the flow of incomplete burning gasses downward through the grill, mixed with gasification and thermolysis products).

The introduction of air under the grill, through some holes in front and sides of the burner, assure the extra air intake for the gasification and thermolysis byproducts. The introduction of air through the holes on the upper side of the grill, ensure the burning air for the byproducts of the incomplete burning of pellets on the grill. The air is aspirated through the openings of the burner and after through the burning system, by a fan mounted on the exhaust of the boilers, radiant tubes, hot air generators, bread ovens, cereal driers etc.

The shape and dimensions of the aspiration openings, the path the air circulates, as well as the air distributing systems are designed so the ensure the right proportions, between the different areas. For auto-balancing the circuits, only one source is needed, and that is the fan from the exhaust of the burned gasses.

Class **2**



RO.234.

Title **Installation and procedure to distribute thermic energy simultaneously, from a single pellet burner, through three sources, to multiple destinations.**

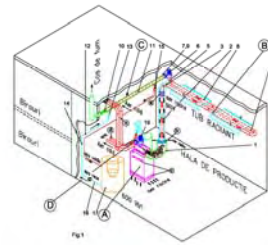
Authors Iulian Hornet
Institution *www.ecohornet.ro*

Patent no. A/00443/29.06.2015

Description

The invention refers to an installation and a procedure for distributing thermic energy from a single pellet burner, through three different sources: radiation of burning gasses, hot air from cooling the exterior of the burner room and hot water from a heat exchanger, to multiple destinations.
This installation and procedure can be used in different domains: industrial, agricultural, expo centers, hangars, showrooms, cinemas, churches, tents, greenhouses etc.
The Installation uses a pellet burner "patent nr. 128229/2014", by I. Hornet, which burns biomass at temperatures over 1250˚C.
1. Heating through radiation
Burning gasses enter the radiant tubes (4) having a temperature between 650°C and 800°C, adjustable through the cooling system which uses fan (19).
Radiant tubes heat the served area through radiation and maintain a temperature between 14-22°C.
This is an efficient and economic solution for heating spaces over 4.5m high.
2. Water heating
Burning gasses have around 120 -150°C when they exit the radiant tubes (4). The gasses are directed by the fan (6) through the heat exchanger (C) where the gasses heat the water while it is circulated to the puffer (tank in tank) (17).
The water temperature reaches around 65-70°C and finally the burning gasses are exhausted at a temperature around 40-60°C.
3. Hot air heating
The hot air obtained through the cooling of the burning room has got a temperature around 120-160°C and is directed by fan (19) through pipes (D) to different areas that need heating. When those areas are don't need heating anymore, the hot air is directed automatically in the area heated by radiation.

Class **2**



RO.235

Title **AHP Injector type pellet burner**

Authors Iuliean Hornet

Institution **SC ECOHORNET SRL**

Patent no. -

Description

The AHP Injector type pellet burner, "premiere":
- incinerates through direct burning at very high temperatures (+1250°C) of solid fuel in the form of pellets produced from any combustible waste;
- it is equipped with an ash recovery tray, and a mechanism for auto-cleaning and accelerating the burning process.

The feeding system consists of a screw that transports biomass pellets from the bunker and onto the grill and in the deposit on top of the grill, up to the fuel level sensor. The ignition is achieved in 60-90 seconds by means of glow plugs that develop a temperature of around 800°C.

The burning technology integrates simultaneously processes like: gasification, direct burning, incineration, post burning.

The pellets fuel the burning process gravitationally, the ember layers fluidise through the dynamic of the burning but also with the help of the mechanism for accelerating, which is adjustable, depending on the pellet burning speed. Burning at a temperature over 1250°C contributes greatly to the global efficiency of the equipment and the neutralization of organic waste.

The Injector type pellet burner is manufactured in a wide range of powers between 20-600 kW, as an alternative for replacing fossil fuels like: gas, diesel, oil, CLU, GPL, black oil, coal, wood etc.

The AHP can be easily mounted on new or old equipment: boilers, hot air generators, steam generators, cereal driers, diathermic oil boilers, bread ovens, radiant tubes etc.

The AHP makes possible the production of many thermic fluxes like: hot water, superheated water, steam, diathermic oil, hot air, superheated air, thermic radiation, and integrates cogeneration and trigeneration systems.

Through the use of the ecoHORNET injector type pellet burner, cheap and clean energy can be obtained, with high efficiency and a reduction of polluting emission of 50-80%.

Class **2.**

RO.236

Title **AHP-2. Burner – incinerator on pellets with dual feeding**

Authors Iuliean Hornet

Institution **SC ECOHORNET SRL**

Patent no. -

Description

The AHP-2 Burner-incinerator on pellets, with dual feeding constitutes a novelty through the fact that the device "dual feeding" allows the feeding of the burner, simultaneously, with 2 types of fuel: pellets-pellets, pellets-granules in pre-established quantities

The pellets for burning are introduced through the main feeding entrance. The burning process takes place integrating: gasification, direct burning, incineration, post burning.

The pellets fuel the burning process gravitationally, the ember layers fluidise through the dynamic of the burning but also with the help of the mechanism for accelerating, which is adjustable, depending on the pellet burning speed.

On the ember layers, where the temperature exceeds **1250°C**, pre-established quantities of granules or pellets made from organic waste with low energy output (dried sewage sludge etc.

Burning this waste at very high temperatures (incinerating) makes possible the neutralization of this waste and recovery of the heat for other applications.

The AHP-2 pellet burner-incinerator is manufactured in a wide range of powers between **20-600 kW**, as an alternative for replacing fossil fuels like: **gas, diesel, oil, CLU, GPL, black oil, coal, wood etc.**

The AHP can be easily mounted on new or old equipment: **boilers, hot air generators, steam generators, cereal driers, diathermic oil boilers, bread ovens, radiant tubes etc.**

The AHP makes possible the production of many thermic fluxes like: **hot water, superheated water, steam, diathermic oil, hot air, superheated air, thermic radiation**, and integrates **cogeneration and trigeneration** systems.

Through the use of the ecoHORNET injector type pellet burner, cheap and clean energy can be obtained, with high efficiency and a reduction of polluting emission of **50-80%**.

Class **2.**

RO.237

Title **Pellet boilers for saturated steam or hot water in the range of 100 kW – 600 kW.**

Authors Iulian Hornet

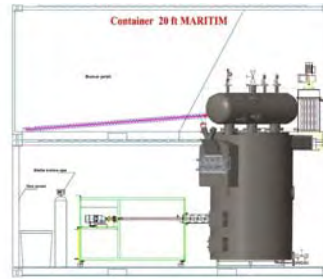
Institution **SC ECOHORNET SRL**

Patent no. -

Description

This solution represents a range of steam generators/boilers or hot water boilers, using biomass pellets (selected garbage, agricultural and forestry waste, zootechnical waste etc) as fuel, working without surveillance. The equipment produced by ecoHornet are completely automatized and facilitate access to industrial users, especially those in the food industry, to cheap, clean thermic energy from renewable sources of energy.
The high performance of the steam generators and superheated water boilers is given by the patented pellet burner and ecoHORNET technology, which guarantees a highly performant equipment, with low maintenance time and costs.
Characteristics:
• Capacity: 600-1000 kg steam/hour • Pressure : 0,7 - 8 bar
• Hydraulic test pressure:14 bar • Steam temperature: 115 -175°C
• Net weight: 2850 kg • Power supply: 400V
• Consumption: 120 -130 kg pellets/h
Applications
• food industry, textile industry, bakeries, distilleries, pharmaceutic industry, chemical industry, district heating, leather industry, industrial technological processes, cogeneration.
The advantages of using this equipment:
- equipment working without surveillance
• production cost reduction • save on the energy bills
• working with pellets from any biomass • control over the internet
• compact design, reduced installation area
• short time until it enters in normal working state
• automatic pellet feeding and ash cleaning
• collecting ash separately from the heat exchanger • emission reduction
Solutions for integration:
The equipment is delivered with various mounting depending on the installations, and also in sea transport containers, which can offer a very high versatility in a varied area of applications.

Class **2.**



RO.238

Title **Hot air generators based on pellets in the range of 20 – 600 kW.**

Authors Iulian Hornet

Institution **SC ECOHORNET SRL**

Patent no. -

Description

The systems are designed to work under any weather conditions with pelletized biomass (degradable waste from agriculture, forestry and zootechnical industry, as well as the biodegradable selected urban and industrial waste), clean, odorless, non-toxic, non-alterable granules, produced in a wide range of dimensions, diameter between 6-12mm and length from 5mm to 35mm, with humidity below 10%, and a density betwenn 650 and 750 kg/m^3. The burning temperature of pellets in this equipment is over **1250 ºC**, which ensures the transformation of biomass in the cheapest and cleanest energy source.

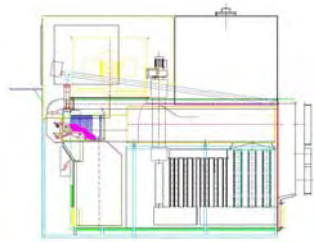
The equipment is mobile and can be used in heating up different areas, depending on the current needs of the user. They can work either inside or outside of a building, in harsh weather conditions: blizzard, storm, rain, frost, down to temperatures of -45°C.

Applications:

- heating in industrial halls, warehouses;
- heating greenhouses;
- heating chicken, pig farms;
- heating tents;
- drying seeds and cereals;
- drying straw and grass;
- heating buildings in construction during winter enabling working inside;
- bread ovens;

The equipment can be used even in harsh weather conditions areas like the northern areas: Antarctica, Alaska, Siberia, Greenland, Canada etc.

Class **2**



Worldwide Independent Inventors Association (WIIA)
&
Independent Inventors Association (AII)

RO.239.

Title **ANTI DIABETIC STIMULATOR (ADS)**

Authors **Iordan Stavar**
Worldwide Independent Inventors Association (WIIA)
Washington D.C ;
Independent Inventors Association (AII) Romania

Patent no. Patent application No. **RO A/00322/2015**

Description

Diabetic stimulator is an electronic device that works on the principle of acupuncture. Basically the device is a mini-generator of low value and low amplitude electromagnetic signals called subliminal anti-diabetes signals.

Artificial signals with precise values are transmitted via acupuncture points through conductors and electrodes in direct contact with skin. Thus, very weak electrical stimuli, set below a certain threshold of just a few milivolts, get to pass along the energy axis of the body, close to cell membranes of the patients pancreas, through acupuncture points. This signals are stimulating the pancreas to produce enough insulin to metabolize blood sugar.

Class **4. Medicine - Health Care - Cosmetics**

Individual Inventors

RO.240.

Title

A. **Monocular optical device – didactic model of human eye (Aparat optic monocular - model didactic de ochi uman);**

B. "Apparatus for Human Vision Study mechanism" (Aparat pentru studiul mecanismului vederii umane)

Authors **Manu Mariana Daniela, Pleșu Gheorghe**

Patent no. ***Oberon* Cabinet & *Gheorghe Asachi* University**

Description

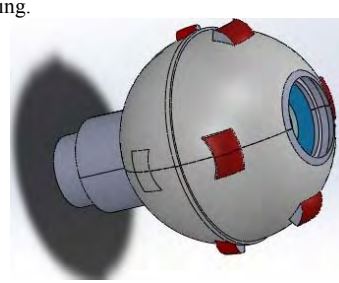
A. **Patent no. 126977 B1 / G08B 23/30 a 2011 00293/ 04.04.2011/ OSIM București**

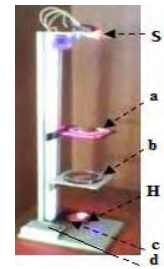
B. **Patent no. Nr. A / 001414/ 19.12.2011/ OSIM București**

Abstract. The aim is to study the biophysical mechanism of human vision, using bionic applications of the new model of the human eye - bifocal laser system with included holographic system. We used as **methods**, **multidisciplinary** studies as medicine, biochemistry, lasers, nonlinear optics, holography, liquid crystals and electronics and biophotonics; we concluded that: 1. the normal human eye structure and parameters indicated a real combination between a confocal (eye globe), bifocal laser system (cornea and macula as divergent meniscus) and holographic system (crystalline lens); 2. the **bionic eye** reproduced technically the eye structure, for direct observation of the images formed on the macula of retina, to study the light that crossed the eye as bioluminescence properties, and nervous system. **The results and conclusions** are amazing and contradict the theory of photographic vision: the images are upright, in color, dynamic, three-dimensional, and the organic medium of phosphate-water-molecular oxygen and eye and cell foci and their temperature are amplifying about 100000 times the power of 1 photon at eye level.

Class

Applications. "Monocular optical device – didactic model of human eye" and **"Apparatus for Human Vision Study mechanism"** (patented) are bionic eyes - to study human holographic vision, according to the holographic model of the human eye and has multiple applications. 1. To correct the errors of *photographic theory of vision* and replace it with the *holographic theory of eye and vision* in medicine and physics; 2. we published our studies (Manu MD, 2007; Manu MD, Pleșu Gh., 2013); 3. to study holographic brain; 4. to study light and bioluminescence; 5. artificial eyes for blind; 6. bionic eye for humanoid robots; 7. Laser Power Station (LPS) for electric power obtaining.





RO.241.

Title **Laser Power Station**

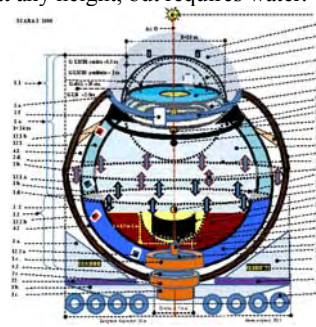
Authors Manu Mariana Daniela, Pleşu Gheorghe, Năcioiu Nicolae
Institution *Oberon* Cabinet & *Gheorghe Asachi* University

Patent no. Patent no. Nr. A / 00335 din 13.05.2015 OSIM Bucureşti

Description

Abstract. The aim of laser power station (patented 2015) is intended to obtain electricity by converting the sunlight as laser (polarized, coherent, monochromatic, directed and amplified), according to ophthalmology where it is known that the photon power is amplified about 100000 times at eye level and to the new model of the human eye, **the holographic models of the eye,** of *the Holographic Theory of Eye and Vision,* established after multidisciplinary studies of medicine and physics (lasers, nonlinear optics, holography, liquid crystals, electronics and biophotonics) – a real combination between a *confocal laser system* (eye globe), *bifocal laser system* (cornea and macula as divergent meniscus) and *holographic system* (crystalline lens). We used the **bionic method step by step**, as successive phases: 1. *biophotonic tests* of the nonlinear medium properties, eye and nervous bioluminescence (properties); 2. two models of ***bionic eye*** **(patented 2011)** to verify how is the image formed on the retina as macular observation; 3. *bionic muscle (patented 2012)* to verify the light control direct on the eye muscle, movement and direction; 4. *retina bionică (patented 2016*) to amplify optical and electric power. **The results and conclusions** of the first and second steps were amazing and contradict the theory of photo-graphic vision: the images are upright, in color, dynamic, three-dimensional, and take place optical amplification (due to organic medium of phosphate-water- oxygen and eye and cell foci and temperature.

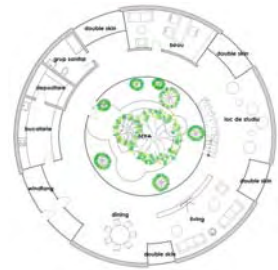
Applications. Laser Power Station (LPS) can be any size, and the structure can be adapted to purpose: a. electric power obtaining; b. holographic image ; c. to initiate a chain of CELs, to amplify the optical power about 1000 000 000. CEL can be transported to any place on Earth, at any height, but requires water.



Class

RO.242.

Title	**Green core house**
Authors	Vladimir Oprea, Ioana Coșa, Oana Neculai
Institution	**Technical University "Gheorghe Asachi" of Iasi**
Description	The green core house is a concept that offers you an outdoors experience in the middle of your living room. The green core house has a dome shape and an architectural and functional design that ensures safety, high comfort and an overall community feeling. The idea implies using modern technologies (like ventilation, special type of facades and glass materials etc.) to help create the proper environment inside a dome-shaped house that will put the inhabitants closer to nature than ever before.



RO.243.

Title **THERMAL INSULATION WITH PEARL STONE**

Authors MOREGA DRAGOS DAN, NEMTOIU SIMONA-GRETA

Patent Patent application No. A/00185/2016

Description

The invention relates to a thermal insulation for buildings. The thermal insulation, acording to the invention, is achieved by fixing aluminum frameson the buildingwalls, caught by dowels to the OSB plywood and expended polystyren, over which is applied mesh and plaster. Blank spaces between building's wall and OSB plywood are filled with pearl stone.

Figure A represents the thermal insulation, aluminum frames (6) are fixed between building's wall (1) and OSB plywood (3) and expendedpolystyren (4). Blank spaces between building's wall and OSB plywood are filled with pearl stone (2). Mesh and plaster (5) is applied over the expended polystyren.

The invention can be applied to the construction of buildings regardless of their destination.

RO.244.

Title **Electrical floating installation for ice melting**

Authors VLAICU-POPA EREMIA-MARIUS, NEMTOIU SIMONA-GRETA

Patent Patent application No. A/00184/2016

Description

The invention relates to a electrical floating installation for ice melting that forms near dams and hydro powerplants.

The installation,according to the invention,consists of an electric wire (1)mounted on a PVC pipe (2) through 55 holes with diameter of Ø 10 mm.

In figure B is designed the electrical scheme of the installation, electric wire (1) is powered by 220 V AC voltage from an electrical supply box(3) provided withan On-off button(4) and an automatic fuse (5). It emits an amount of heat for melting the ice formed in water depth and above within a radius of about 60 cm.

This invention can be applied in hydropower plants.

RO.245.

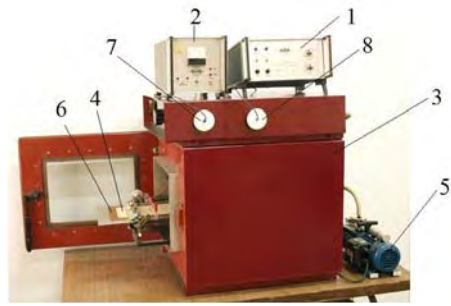
Title	**EQUIPMENT FOR PLASMA DECONTAMINATION**
Authors	Frunza Viorica, Ioanid Emil Ghiocel, Rusu Dorina, Savin Gabriela, Dunca Simona, Tănase Cătălin
Institution	S.C. Romcatel Impex Research Design S.A. Iasi
Patent	Patent application No. A00533/2015
Description	This invention refers to an "afterglow" plasma decontamination equipment which allows the inactivation of fungi and bacteria on two-dimensional cultural heritage items (paper, parchment, photographs), by locating them on the exterior of the active plasma formed between electrodes. These treatments aim at preserving the surface characteristics and, implicitly, the original authentic appearance. The equipment is intended for paper restoration-conservation laboratories.
Class	5

RO.246.

Title	**MULTIPURPOSE EQUIPMENT FOR PAPER DOCUMENTS CONSERVATION**
Authors	Ioanid Emil Ghiocel, Rusu Dorina, Totolin Marian, Vlad Ana Maria
Institution	Moldova" National Complex of Museums, Iasi, Romania
Patent	Patent application No. **A00308/2014**
Description	The invention refers to a multipurpose equipment intended for performing treatments of decontamination, cleaning and polymer protective coating of paper documents, aiming at their long term preservation. The equipment is usable in conservation laboratories from museum, libraries and archives. The presented equipment's were designed for the use of

restoration-conservation laboratories, for treating the cultural heritage items based on organic supports.

Class Invention Classification: 5



Dan Georgescu

RO.247.

Title **DRIVES AUTOMATIC FISHING HOOK**

Authors Georgescu Dan

Patent A01K91/10 / Patent application No. 2/2009

Description The invention relates to a device that allows automatic operation fishing hook when the fish swallows the bait or moving it. It consists of a body which is provided with a hole above and an opening rear, within the body there being provided a rod with a piston that by manually compressing a spring, having one end fixed to the inside of a sheath, until a button paperclip locks in the hole posterior sheath being bound in two symmetrical points a fishing line, which is also correlated to the membrane secured to the rear end mobile arc, the top clip delving beneath the sheath and a spur of the clip blocks bow position tablet, the device is activated when the fish swallows the bait or moving with her fishing line moving the sheath forwards, the clip is released and the spring pushes spur clip up, by splitting the arc membrane is pushed at the same time thread fishing is pulled back hope for catching fish. (max 250 words)

Class 14

Toader BUTINCU

RO.248.

Title	Flying machine
Authors	Buţincu Toader
Patent	RO 126657/2014, 126658/2014 and 125765/2015
Description	These machines take off and land vertically and differ one from another, particularly because of their construction and the principle of functioning of the active components at the interaction with the air. As regards the first machine, the load-bearing capacity is obtained by means of air turbines, which may function successively or simultaneously, at various rotations. The second machine develops a sustentation force subsequent to the passing of air through a complex system driven by two or more ram-jet engines. The load-bearing capacity of the third machine may be obtained principally as a result of the difference of static pressure between the lower side and the upper side of the active plates, difference caused by several air propellers. With special equipping, any of these three flying machines may take off from, respectively land on a body of water. These machines may be used for the air transportation of persons and goods, for tourist activities, for saving people in case of calamities and/or catastrophes from hardly accessible places, for missions that are specific to the national defense and public order, for forestry exploitation, for territorial mapping, for fire extinguishing actions, for fighting against diseases and pests in agriculture and forestry etc.
Class	8

RO.249.

Title	Hydraulic Wheel
Authors	Buţincu Toader, Butincu Niculina
Patent	Patent application no. A/00257/2014
Description	The wheel has several cups mounted on a special hub, together with which they rotate around a central cylindrical element, fixed on a shaft leaning against two supporting elements that sustain the entire wheel. The construction of the components and the modality of their assembly assure the integral utilization of the potential (gravitational) energy of water from any natural source, no matter the size of the

level difference between the free surface of the water and the axis of symmetry of the hydraulic wheel. The particularity of this wheel lies in the fact that the entire quantity of water used is circulated only through the interior.
It has multiple advantages because it functions slowly and uniformly, shock and noise free, it does not affect the environment, it develops a high torque, it has good reliability, the exploitation costs are negligible and do not require permanent supervision of functioning.
It may be used in any domain requiring mechanical energy, directly usable or by turning it into electric, pneumatic, hydraulic etc. power.

2

RO.250.

Title Hydrostatic Water Pump

Authors Buţincu Toader, Buţincu Niculina

Patent Patent application no. A/00258/2014

Description

The pump has three pistons, rigidly connected one from another, by means of a common shaft, which can move rectilinearly – alternatively and simultaneously inside three cylinders: one piston and one central cylinder with large diameter, for driving the pump and the other two pistons and cylinders, with identical diameters, but a lot smaller, are placed at the ends of the principal cylinder, providing the water pumping.
The access of the water inside the three cylinders is gravitational and symmetric, through pipes, which contain two disk-shaped valves, rigidly connected by means of a rod and driven by one hydraulic water cylinder, having role of command and control of the pump's functioning, by means of a hydraulic switch.

2

Daniel BENTEA

RO.251.

Title **Gravitational Electric Hybrid System**

Authors **Daniel Bentea**

Patent Pending

Description

The invention relates to a system for producing electricityusing gravitational field. Electric system according to the invention ,It is provided with a body (1) the basis on which are arranged bars, (2) vertical at the upper end of which some are willing pulleys (3) over passing a flexible element (4) having one ofheads a heavy element (5) and at the other end drum (6) arranged a shaft (7) which is a rotation (8) of the transmission that engages element (9) flexible transmission that sends movement to a wheel (10) fixed on a shaft transmission (11) to ask movement reaches a box (12) distribution and further movement reaches a shaft. (13) and a transmission bevel (14) on a shaft (15) and from there to the generator (17) electricity, current generated by it being transformed so that the intensity voltage and, a transformer (18) from which is fed a group (19) of batteries and an electric motor (20)

2

Danuț SIMOIU

RO.252.

Title	**Modular multi-use boat**
Authors	**Danuț Simoiu**
Patent	Patent No. 126847/2011
Description	A modular boat that can be transformed easily in various useful objects: trunk box, tool cabinet, tent, camping table, trail box. It is easy to install and to perform transformation in various objects.
	13

RO.253.

Title	**Aero-hydrostatic Motor**
Authors	**Danuț Simoiu**
Patent	Patent application No. A/00195/2015
Description	Power generating installation, operating in liquid medium, motioned by gas (air), which develops energy that can be used for power generators, pumps, compressors and other machinery. Subject installation is a relatively simple construction, based on Boyle-Mariotte's law and Archimede's principle and generates power using compressed air injected deeply under water.
Class	2

RO.254

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

RO.255

Title	Design for non - carbonated drink labels
Authors	VITAMIN AQUA S.R.L.
	VITAMIN AQUA S.R.L.
Patent	Design No 4043323 to 4043327 / Intellectual Property Office UK
Description	Design for non - carbonated drink labels - water with vitamins beverage in 5 different assortments (Mg, Zn, Ca, B12 and C+)

RO.256.

Title	SOLAR WATER-HEATER WITH RECYCLED MATERIALS
Authors	**Constantin MUSTATEA**
Patent	RO126595/2014
Description	Low - priced solar water-heater (DIY) with recicled materials. Safetly and durable ; careful with environment

RO.257.

Title	**Universal Rotary Engine**
Authors	Adrian IONESCU
Patent	Pending

RO.258.

Title	**NEURAL SYSTEM REPLY**
Authors	**Constantin COSTESCU**
Patent	-
Description	The project that works on discovering the neural waves is called NSR, coming from Neural System Reply. NSR is composed from two main parts: the NSR sensor and the NSR core. The sensor will capture the neural waves and will transmit the signals to NSR core that will decode and will show the anatomic-pathologic maps. As the brain is capable to regulate and maintain the functions of the body, we can conclude that the neural packets will include all metrics of body functionality. This is the future of medical imagistic.

RO.259.

Title	**Actuating and rotating movement transmission mechanism with increasing torque**
Authors	**Ilie BATAUSU**
Patent	Application no:A2013 00652
Description	Actuating and rotating movement transmission mechanism with increasing torque. This invention refers to a mechanism for transmitting rotational movement, that at the time of transmission, input can be given by relevant forces of a chain or belt transmission or hydraulic turbine blades of a river micropower plant or to manufacturing equipment, at a set rotation, with increasing torque.

RO.260.

Title	**Device for angle tri-sectioning**
Authors	Vasile BACIU
Patent	----------
Description	Device for angle tri-sectioning and method for measurements
Class	14.

RO.261.

Title	**Robotic Hand**
Authors	Marian STOICA
Institution	**C.N. „Alexandru Lahovari”**
Description	This project is a very realistic robotic hand that can imitate user’s gestures. It is based on ATmega microcontrollers. It has a wide area of applicability: from medicine to industry.
Class	Innovative research

Adrian ROSCA

RO.262

Title	**System and way of moving for a n-wheel vehicle. The Rosmar Hreasca system (1 wheel/ n-1 wheels)**
Authors	Adrian ROSCA
Pantent	Pending
Description	This invention is a novel way of making vehicles move. When a vehicle that has planetary gears, gearbox, groups remains blocked/ bogged down in mud, snow, ice, the Rosmar Hreasca system intervenes and the vehicle starts moving again. Also, this system can overcome any ramps and slopes of angles over 45 degrees, with no need for the driver to leave the car. Even if a vehicle does not have planetary gears, gearbox, groups, the car can still be moved using the Rosmar Hreasca system. This system does not change either the gauge or the ground clearance of the vehicle. The best way of moving is when Rosmar Hreasca is using the ratio 1 wheel/ n-1 wheels.
Class	Innovative research

RO.263

Title	**CERAMIC MATERIALS USED FOR A NEW PROCEDURE OF POTABILIZATION OF SURFACE AND GROUND WATER**
Authors	**Ion SANDU, Monica-Anca CRETU, Joseph SIELIECHI, Viorica VASILACHE, Andrei Victor SANDU, Violeta VASILACHE, Ioan Gabriel SANDU**
Institution	**Vasile Lovinescu College, Falticeni, Romania**
Description	Our work consist of a new procedure of detoxification of the surface and ground water, using in the last step of potabilization a ceramic filter with a caustic mode between 1.2 and 2.8 and with different granulometry. The advantages of the procedure are related to the reactivation of the ceramics proposed to be used in the modern stations of potabilization. Ceramic have ionic change capacity which is produced by hydroxylic marginal structures Al–OH and by those of acid types Si(Ti)–O-H+. These marginal groups depend by stoechiometric ratio (caustic module) Si:Al, but also by position of two coordination centers of basic structure tetrahedron from basic structure, because industrial ceramics have tetrahedrons and octahedrons of silicate and aluminate ions as basic units. Ceramics with high concentration in Al(III), Ca(II), Mg(II), K(I) and Na(I) have amphoteric character with basic values to medium. Ceramics with Si(IV), Ti(IV) and Fe(III) have amphoteric character through acid values, this type being acceptable for fabrication of granules for water treatment. We studied a lot of technical ceramics fabricated in Romania by Brikstone Society from Iasi, and also traditional ceramics produced by potters from Schitul Stavnic. The chemical composition studied by SEM-EDX methods was correlated with ceramics acidity and with capacity of retention of Fe(III) cations. The aim of the study was to select optimal ceramics for chemisorptions processes in the final stage of ground and surface water treatment for potabilization, and to obtain pure waters with proper organoleptic properties.
Class	Innovative Research

S.C. PLASTPROD S.R.L.

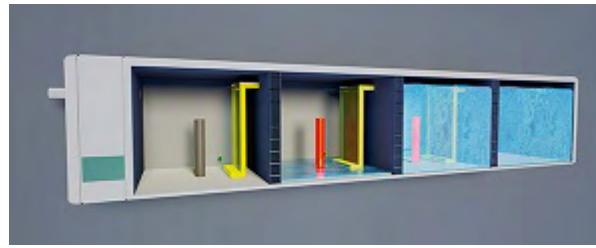
RO.264

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 Emilian Savencu, Alexandru Savencu, Ramona Savencu**
Institution	**S.C. PLASTPROD S.R.L.**
Pantent	-
Description	1 - The extraction method of natural dyes 2 - Equipment for extraction and concentration of natural dyes 3 - Application technology of natural dyes on fibers Created in the program: Partnerships in priority areas (materials, processes and innovative products) the Era Net CROSSTEXNET project, 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

Cristian Constantin CHIRIECI

RO.265

Title	**Modular Water Heater Tank**
Authors	Chirieci Cristian Constantin
Institution	**-**
Pantent	PCT/RO2016/000007
Description	The invention refers to a special under pressure automatic water heater tank, that can use two or more interior heating modules, series connected one to another, according to the construction needs.
Class	2



B-dul Carol I, nr. 2 Iasi
ROMANIA
Tel/Fax: +40.232.410802

THE PALACE OF CHILDREN, IAȘI

"The Palace of children is an educational institution which deals specific instructive- educational activities outside school classes, where children complete their knowledge and go thoroughly into some domains, develop skills according to their calling and options and where their spare time may be organized in educational programs. These free activities may be attended, according to their own choice by children under the school-age, elementary school children, middle school, vocational school and high school students as well as children coming from orphanages, irrespective of nationality, sex and religion, according to their interest, skills and preferences." (Excerpt from the Regulations of organisation and functioning of Clubs and Palaces of Children)

Founded in 1953 under the denomination of the House of Pioneers with only seven clubs, the present Palace of Children has undergone dramatic changes as far as the number of clubs and their diversity is concerned.

Nowadays the Palace of Children functions with sixty clubs focused on cultural, artistic, technical, practical, scientific, sportive and touristic domains. They appeal to the 76.154 children in kindergardens, elementary schools, middle schools, vocational schools and high schools in 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.

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ROMANIA
Tel/Fax: +40.232.410802

PALATUL COPIILOR, IAŞI

"Palatul Copiilor este o instituție de învățământ în care se desfășoară activități instructiv-educative specifice, în afara cursurilor școlare, prin care se aprofundează și se completează cunoștințe, se dezvoltă aptitudini potrivit vocației și optiunilor copiilor, se organizează petrecerea timpului liber prin programe educative.

La activități pot participa în mod gratuit și la libera alegere, copii preșcolari și elevi din ciclul primar, gimnazial, profesional, liceal și din casele de copii, fara deosebire de nationalitate, sex și religie, corespunzator intereselor, aptitudinilor și preferințelor lor."

(Extras din Regulamentul de organizare și funcționare a cluburilor și palatelor copiilor)

Înființat în anul 1953, sub denumirea de Casa Pionierilor, având un număr de 7 cercuri, actualul Palat al Copiilor a cunoscut o dinamica puternică în ceea ce privește numărul de cercuri și diversitatea lor.

În prezent la Palatul Copiilor functionează un număr de 60 de cercuri cu profile din domeniile cultural-artistice, tehnico-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 echipa de cadre didactice calificată și specializată pentru activitatile de timp liber, formată din profesori, ingineri, maiștri coregrafi și antrenori.

Unitatea este dotată cu aparatură și materialele necesare unei bune desfășurări a activității specifice din cercuri. În prezent, Palatul Copiilor întreține legături cu unități de profil similar din 12 țări, de pe 3 continente.

Palatul Copiilor
IAŞI
O POARTĂ CĂTRE VIITOR
Bd. Carol I nr. 2
Iasi, jud. Iasi, cod 700506
Tel/Fax: +40 232 410.802
Email: pciasi@gmail.com

MINISTERUL EDUCAŢIEI CERCETĂRII TINERETULUI ŞI SPORTULUI

THE PALACE OF CHILDREN, IAŞI

1. DISPOZITIV LEVITAŢIE ELECTROMAGNETICĂ
Stărică Daria cl. a X a
Guzu Casian cl. a IX a
Motoc Smaranda cl. aVIII a
Prof. Pantelimonescu Remus
Prof. Colbu Gheorghe

2. SISTEM ROBOTIZAT CU APLICAŢII DIVERSE "EV3"
Gheorghiţă Sebastian cl. a VII a
Toma Răzvan cl. a XI a
Prof. Pantelimonescu Remus

3. "BIO LINE" DE LA EXPERIMENT LA REALITATE
Josanu Rareş cl. a VII a
Bujor Răzvan cl. a VIII a
Prof. Pantelimonescu Remus

4. VEHICUL PENTRU TEREN GREU ACCESIBIL
Motoc Smaranda cl. aVIII a
Popescu Irina cl. a V a
Prof. Colbu Gheorghe

5. GOSPODĂRIE ECOLOGICĂ
Artene Andrei cl. a VII a
Enuţă Matei cl. a III a
Prof. Colbu Gheorghe
Prof. Ursachi Mihaela

6. AEROMODEL RADIOCOMANDAT CU MOTOR BRASHLES

Tiezzi Vlad cl. a III a

Prof. Matei Doru

7. AEROMODEL CAPTIV CU MOTOR TERMIC

Apostolescu Lucian cl. a IV a

Prof. Matei Doru

8. CONSTRUCŢIA UNEI IMPRIMANTE 3D DIN MATERIALE NECOVENŢIONALE

Sandu Rareş Mihai cl. a II a

Chiriţă Raluca cl. a X a

Prof. Chiriţă Daniel

9. NAVA DE AGREMENT

Alexa Petru Silvu cl. a VIII a

Stupcanu Călin Viorel cl. a XIII a

Artene Andrei cl. a VII a

Prof. Stratulat Mihai,

Prof. Sandu Carmen

10. SISTEME DE ÎNCĂRCARE/ELIBERARE CONTROLATĂ A MEDICAMENTELOR

Tiba Isabela cl. a XI a

Alexandra Tănasă cl. a XI-a

Prof. Gabriela Andrei

11. RECICLAREA HÂRTIEI DE BIROU

Guzu Casian cl. a IX a

Buzincu Alexandru cl. a XI a

Tudor Bosoc cl. a XI a

Prof. Gabriela Andrei

***

12. **COMPOZIŢII**

Dumitraş Denisa cl. a VIII a

Stoica Denisa cl. a X a

Muşilă Mihaela cl. a VI a

Prof. Colbu Dumitru-Eugen

Liceul Tehnologic „Oltea Doamna" Dolhasca

***

13. COMPOZIŢII

Marian Maria cl. a XI a

Vieru Alexandru cl. a XI a

Prof. Toma Mădălina

Palatul Copiilor Iaşi

Highlighting the Heritage of the History Museum Through Educational Projects – A New Approach to Learning and Experiencing

Otilia Mircea
History Museum Roman

Our aim, through the educational projects developed during 2015 – 2016, has been to present and promote the collections of the History Museum of Roman and to improve and develop the relationship school – museum.

Objectives

The most important objective was to encourage the target group – kindergarten, primary and secondary school children - to come to the museum. The objective has been accomplished when school children, who did not have any knowledge of history or archaeological evidence, understood the importance of restoring ancient artefacts. In order to make them understand what a heritage item represents, the projects have been imagined as fairy tales or puzzles.

Activities

The projects included many activities with cultural and educational character, activities organized both at the History Museum and at the participating schools. Specialized staff – archaeologists, curators, restorers, but also kindergarten, primary and secondary teachers got involved in the development of this project. Thus, the children took part in activities such as visits at the History Museum, as a source of knowledge and acknowledgment of new information, and practical activities in schools, in order to develop their creativity and imagination. Together with Ana Lăcrămioara Băcăoanu, restorer at the History Museum of Roman, we presented, at kindergartens and schools, representative vases from our museum collections and we explained the children how to approach them and how to look at them when they come to the museum.

During the first activity organized at schools, each child simulated the restorer's work using puzzles, namely they reconstituted different types of vases from cardboard pieces. This way, the children became familiar with the fact that few clay vases are found entire, undivided in archaeological excavations, the majority being found broken into pieces, the restorer's work being to identify each part in order to put them together and to make the vase as it used to be.

For this stage of the project, we have selected vases from different historical periods (for example, from Neolithic, Bronze Age, 3rd – 2nd centuries B. C, 1st century B. C – 1st century A. D, 2nd – 3rd centuries A. D and the Middle Ages). The vases – some being undivided, others broken into pieces – have been chosen in order to show the work of the restorer in the laboratory. At the same time, we presented the children the entire process of the fragments, from the moment they had been discovered in archaeological sites until they are exhibited in a museum collection, drawing their attention upon the work of the restorer in the laboratory of the museum.

For the second activity, we took into consideration the direct approach of the artefacts from the collections of the History Museum, through practical applications. This way, we made templates of some vases which the children decorated, emphasizing different stages of their restoration. According to their age, the children used different materials (clay, seeds, tissue paper etc) and techniques (painting, collage, moulding).

Combining the activities, both in schools and at the museum, our intention was to encourage the children of all ages to come to the History Museum, to develop their imagination and creativity and to discover new skills in order to be creative.

Translation: Prof. Brumă Adriana-Delia, Şcoala Gimnazială "Vasile Alecsandri" Roman, jud. Neamţ

Valorificarea Patrimoniului Muzeal prin Proiecte Educaționale - Un nou model de cunoaștere și învățare

Otilia Mircea
Muzeul de Istorie Roman

Prin proiectele derulate în 2015 -2016 s-a urmărit prezentarea și promovarea colecțiilor pe care le deține Muzeul de Istorie din Roman și dezvoltarea relațiilor dintre muzeu și școală.

Obiective

Cel mai important obiectiv a fost de a atragere spre muzeu *grupul țintă* - preșcolari și elevi din clasele primare și gimnaziale. Punctul maxim a fost atins în cazul copiilor care nu au noțiuni de *istorie* sau *dovezi arheologice*, iar pentru a dezvolta capacitatea lor de a înțelege ceea ce reprezintă un obiect de patrimoniu, proiectele au fost concepute ca o *poveste* și ca un joc, de tip *puzzle*.

Activități

Proiectele au inclus mai multe activități cu caracter cultural - educațional, care au fost desfășurate atât în muzeu, cât și în unități de învățământ, prin implicarea personalului de specialitate – arheologi, muzeografi, restauratori, custozi - și a cadrelor didactice din învățământul preșcolar, primar și gimnazial. În acest sens, copiii au avut ca activități ***vizite la muzeu,*** ca sursă de cunoștere și asimilare de noi informații, și ***aplicații practice în școală,*** pentru a dezvolta creativitatea lor. În acest sens, împreună cu doamna **Ana Lacrămioara Băcăoanu,** restaurator la Muzeul de Istorie, am promovat în școli și grădinițe vase reprezentative din muzeu și le-am explicat cum trebuie privite acestea atunci când vin în vizită la muzeu.

La prima activitate desfășurată în școală fiecare copil a ***simulat munca de restaurator*** prin jocuri de tip puzzle, respectiv au reconstituit vase din fragmente decupate. În acest sens, copiii au fost familiarizați cu faptul că puține vase din ceramică sunt descoperite întregi în săpăturile arheologice, majoritatea fiind sparte, iar rolul restauratorilor este acela de a identifica fiecare parte componentă pentru a le reface așa cum au fost odinioară.

Pentru această activitate au fost selectate vase din diferite perioade istorice (neolitic, epoca bronzului, secolele III- II î.Hr., secolele I î. Hr. – I d. Hr., secolele II – III d. Hr. și perioada medievală). Vasele selectate - unele fiind întregi, altele fragmentate- au scos în evidență intervențiile pe care restauratorii le-au efectuat în laborator. De asemenea, le-am prezentat copiilor drumul parcurs de vasele fragmentate, din momentul descoperirii lor în siturile arheologice până ajung în circuitul expozițional, atrăgându-le atenția asupra intervențiilor efectuate de restauratori în laboratorul muzeului.

Cea de-a doua activitate a avut în vedere abordarea obiectelor din colecțiile Muzeului de Istorie prin ***aplicații practice***. În acest sens, s-au conceput șabloane ale unor vase pe care copiii le-au decorat sub îndrumarea cadrelor didactice, punând în evidență diferite etape din restaurarea vaselor. În funcție de vârstă, aceștia au folosit diverse tehnici (colaje, pictură, modelaj) și materiale (plastilină, pastă de modelat, semințe, textile, hârtie etc.). Prin combinarea activităților, derulate atât în instituțiile de învațământ, cât și în muzeu, s-a urmărit atragerea copiilor spre muzeele de istorie, dezvoltarea imaginației copiilor și descoperirea aptitudinilor pentru a fi creativi.

Rezultate

În timpul orelor de creație, îndrumați de cadrele didactice, și ajutați și de părinți, au realizat diverse lucrări, care au fost expuse în clase, în școli/grădinițe, iar cele mai frumoase în cadrul unor expoziții temporare organizate la Muzeul de Istorie Roman.

Participanți la Expoziția Europeană a Creativității și Inovării 2016

Dr. Otilia Mircea, coordonator de proiect Muzeul de Istorie Roman
restaurator Ana Lăcrămioara Băcăoanu, Muzeul de Istorie Roman

Școala Gimnazială *Vasile Alecsandri*, Roman, județul Neamț
profesor Adriana Brumă
profesor învățământ primar Ana Geanina Huțan
profesor învățământ primar Nicoleta Iamandei

Colegiul Național *Roman Vodă*, Roman, județul Neamț
profesor învățământ primar Mihaela Huci
profesor învățământ primar Anișoara Cojocaru
profesor învățământ primar Camelia Manea
profesor învățământ primar Maria Bîrjovanu

Școala Gimnazială *Alexandru Ioan Cuza*, Roman, județul Neamț
profesor învățământ primar Doina Țarălungă
profesor învățământ primar Cristina Samson
profesor învățământ primar Eugenia Meaută
profesor învățământ primar Mihaela Moraru

Școala Gimnazială, Comuna Gâdinți, județul Neamț
profesor învățământ primar Ana Maria Coca

Școala Gimnazială, Comuna Ion Creangă, județul Neamț
profesor învățământ primar Ana Pleșca

Școala Gimnazială *Carmen Sylva*, Horia, județul Neamț
profesor învățământ preșcolar Carmen Mititelu

Școala Gimnazială *Mihai Eminescu*
Grădinița cu Program Prelungit Nr.1, Roman
Educatoare Mihaela Ion

Școala Gimnazială *Elena Cuza* Galați
Profesor Liliana Zaharia

LUCRĂRI DIN EXPOZIȚIA *CULTURĂ, ARTĂ ȘI EDUCAȚIE* - 2015

1. Ciofu Rareş, clasa a III-a B, îndrumător **prof. înv. primar Nicoleta Iamandei, Școala Gimnazială *Vasile Alecsandri*, Roman, județul Neamț**

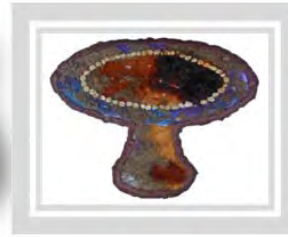
2. prof. înv. primar Ana Geanina Huțan, Școala Gimnazială *Vasile Alecsandri*, Roman, județul Neamț

3. preşcolari, grupa mare, îndrumător educatoare **Mihaela Ion, Școala Gimnazială *Mihai Eminescu* – Grădinița cu Program Prelungit Nr. 1, Roman, județul Neamț**

4. Baciu Raluca, clasa a III-a, îndrumător **prof. înv. primar Anișoara Cojocaru, Colegiul Național *Roman Vodă*, Roman, județul Neamț**

5. Neagu Denis, clasa I B, îndrumător **prof. înv. primar Mihaela Huci, Colegiul Național *Roman Vodă*, Roman, județul Neamț**

6. Tomba Luca, clasa a IV-a, îndrumător **prof. înv. primar Camelia Manea, Colegiul Național *Roman Vodă*, Roman, județul Neamț**


7. Tabarcea Cătălin, clasa a II –a A, îndrumător **prof. înv. primar Doina Țarălungă, Școala Gimnazială *Alexandru Ioan Cuza*, Roman, județul Neamț**

8. Tălmaciu Amalia, clasa a II –a C, îndrumător **prof. înv. primar Mihaela Moraru, Școala Gimnazială *Alexandru Ioan Cuza*, Roman, județul Neamț**

9. Arnăutu Denisa Andreea, clasa a III – a A, îndrumător **prof. înv. primar Eugenia Meaută, Școala Gimnazială *Alexandru Ioan Cuza*, Roman, județul Neamț**



10. Maftei Maria, clasa a III- a D, îndrumător **prof. înv. primar Cristina Samson, Școala Gimnazială *Alexandru Ioan Cuza*, Roman, județul Neamț**

11. Paulin Diana, clasa pregătitoare, îndrumător **prof. înv. primar Ana – Maria Coca, Școala Gimnazială, Comuna Gâdinți, județul Neamț**

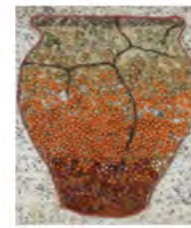
12. Irodei Ana Maria, clasa I A, îndrumător **prof. înv. primar Ana Pleșca, Școala Gimnazială, Comuna Ion Creangă, județul Neamț**

LUCRĂRI DIN EXPOZIȚIA *MUZEUL DIN ȘCOALA NOASTRĂ –ATELIER DE CREAȚIE ȘI EDUCAȚIE* - 2016



1. prof. înv. preșcolar Carmen Lenuța Mititelu, Școala Gimnazială *Carmen Sylva*, Horia
2. Adăscăliței Grasu Daniela Gabriela, clasa a II a, **îndrumător prof. înv. primar Mona Cozma, Liceul Tehnologic *Spiru Haret* Piatra Neamț**
3. Timofte Yarina, clasa pregătitoare, **îndrumător prof. înv. primar Aurica Bontaș, Liceul Tehnologic *Spiru Haret* Piatra Neamț**





4. Iftimie Delia, clasa a IV – a C, îndrumător **prof. înv. primar Elena Axinia, Școala Gimnazială Nr. 2, Piatra Neamț**
5. Cîbi Clara, clasa a III – a D, îndrumător **prof. înv. primar Dana Solomon, Școala Gimnazială Nr. 3, Piatra Neamț**
6. Andrei Silvia, clasa a II –a C, îndrumători **înv. Carmen Munteanu și înv. Ioan Calin, Școala Gimnazială *Nicu Albu*, Piatra Neamț**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