EUROPEAN EXHIBITION OF
CREATIVITY AND INNOVATION

EURO INVENT 2012

CATALOGUE
CATALOG

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Gheorghe Asachi Technical University of Iasi

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

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

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

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

Alexandru Ioan Cuza University of 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: sandu_io3@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 Information Centre of European Commission "EUROPE DIRECT" Iaşi. The EUROPE DIRECT 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 de Informare al Comisiei Europene „EUROPE DIRECT" Iaşi. Acesta asigură transferul informației către cetățenii români şi feed-back-ul către Comisie, 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 Chemical Engineering and Environmental Protection

"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 Chemical Engineering and Environmental Protection at the "Gheorghe Asachi" Technical University of Iasi has the mission to train specialists for the chemical and environmental 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 in the chemical and biochemical engineering, environmental engineering and related fields, as well as in life-long education programmes for professionals that wish to extend their expertise. Chemical engineering education in the faculty brings a distinctive note by the value of its academic staff. Besides the formative activity, research in various fields, focused to multi-disciplinary national and international co-operation is highly valued.

Contact:
Blvd D. Mangeron 73,
RO - 700050, Iaşi, România
Tel: +40.232.278683 int 2135
e-mail: decanat@ch.tuiasi.ro
web: www.ch.tuiasi.ro

UNIVERSITATEA TEHNICĂ "GHEORGHE ASACHI" IAŞI
Facultatea de Inginerie Chimica si Protecția Mediului

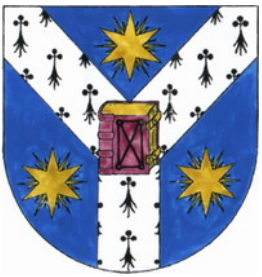
Universitatea Tehnica din Iasi este o alegere excelenta pentru absolventii de liceu care s-au hotarat sa imbratiseze o cariera in domeniul provocator al ingineriei. Cele unsprezece facultati ale universitatii sunt dotate cu laboratoare si echipamente de ultima ora, unde isi desfasoara activitatea specialisti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

Facultatea de Inginerie Chimică şi Protecția Mediului din cadrul Universității Tehnice "Gh. Asachi" din Iaşi, are ca misiune pregătirea specialiştilor pentru domeniul ingineriei chimice şi a mediului, prin programe de licență (4 ani), masterat şi doctorat. De asemenea, facultatea este implicată în proiecte de cercetare în domeniul ingineriei chimice şi biochimice, ingineriei de mediu şi domeniile conexe, precum şi în programe de perfecționare pentru specialiştii. Valoarea personalul academic din cadrul facultății aduce o notă distinctivă predării ingineriei chimice. Pe lângă activitatea de formare şi de cercetare în diverse domenii de activitate, apreciabile sunt şi cooperările multi-disciplinare naționale şi 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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Assistants: Maria CANACHE

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Ilinca DRAGANESCU

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PROGRAM EUROINVENT 2012

DAY 1 – THURSDAY MAY 10th	
8^{00}	Participants arrival
11^{00}	Opening Ceremony Welcoming Speeches Opening of National salon of Technical and Scientifical Books
13^{30}	Jury Evaluation
14^{00}	Media Interviews
16^{45}	End of Exhibition Day
17^{00}	European Visual Art Exhibition Opening - Muzeul Unirii Iasi

DAY 2 – FRYDAY MAY 11th	
10^{00}	Jury Evaluation
10^{30}	**WORKSHOP** – Romanian Creativity in European Context
12^{00}	Delegation presentation
14^{00}	Brokerage – by TEHNOPOLIS
16^{00}	**Scientific Book Salon** Award Ceremony
16^{30}	Jury Final Decision
17^{00}	End of Exhibition Day
18^{00}	Cocktail

DAY 3 - SATURDAY MAY 12th	
10^{00}	Exhibition closure
12^{00}	**EUROINVENT Award Ceremony**

Politica agricola comuna si dezvoltarea rurala - Oportunităţi în 2012

in parteneriat cu Consiliul Judetean Iaşi,
Centrul pentru Studii Europene, ARINE, CRPDRP

10 mai 2012

Drepturile şi oportunităţile oferite de cetăţenia europeană

In parteneriat cu Univ Al. I Cuza, Centrul pentru Studii Europene, Consiliul Judetean, ARINE

11 mai 2012

Relansare economică şi ocupare conform Europa 2020

Centrul pentru Studii Europene, Facultatea de Economie si Administrarea Afacerilor, AIESEC - Asociatia Studentilor Economisti, ARINE, OTIMMC

12 mai 2012

AWARDS LIST

EUROINVENT Great Prize
Prize of Europe Direct
Prize of FIR
Prize of UTI
Prize of Romanian Inventors Forum
Prize of ARHEOINVEST
Prize for Green Environment
Medicine Award
Best Design Award
International Delegation Award
Prize for the Youngest Inventor
Prize for the Woman Inventor
Prize for the Oldest Inventor
Aurel Vlaicu Order
Prize of AGEPI
Awards of Malaysian Delegation
Awards of South Corea
Awards of Moldavian Delegation
Awards of Iranian Delegation
Awards of Croatian Delegation
Awards of Ukrainean Delegation
EUROINVENT Gold Medal
EUROINVENT Silver Medal
EUROINVENT Bronze Medal
EUROINVENT Diploma
Certificate of Participation

The British Invention Show

the British innovation & technology show

24 - 27th OCTOBER 2012

Barbican Exhibition Centre

http://www.britishinventionshow.com/

T +44 (0)1462 451 111
T +44 (0)1462 459 999
E info@thebis.org

215 Fairfield Hall, Stotfold,
Hitchin, Hertfordshire,
SG5 4FZ. UK

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(Mihai Suchar - General Manager Quartz Matrix)

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- **STS** - simultaneous translation system
- **AirOpTek®** - compressed air monitoring and measuring system
- **DigiCheck®** - environmental parameters monitoring system
- **AirCheck®** - air temperature and humidity monitoring solution
- **AirDataSMS** - datacenter information security solution
- **TCheck®** - temperature measuring and registration system

for more information about **Research & Development** visit **www.quartzmatrix.com**

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(Mihai Suchar - Director General Quartz Matrix)

În cei
18 ani
de experiență

departamentul nostru de Cercetare & Dezvoltare a creat soluții și echipamente care livrează **+valoare**:

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- **AirCheck®** - soluție de monitorizare a temperaturii aerului și a umidității
- **AirDataSMS** - soluție de securitate a informațiilor pentru datacenter
- **TCheck®** - sistem de înregistrare și măsurare a temperaturii

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INTERNATIONAL JURY

Honorary President	**Kane KRAMER**	United Kigdom British Inventors Society
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	Mohd Mustafa Al BAKRI ABDULLAH	Malaysia Universiti Malaysia Perlis
	Soung-Mo HONG	South Korea Korea Invention Academy
	Ion SANDU	România Romanian Inventors Forum.
	Tudor LUPAŞCU	R. Moldova Science Academy of Moldova
	Valeriu DOROGAN	R. Moldova Technical University of Moldova
	Ionel MANGALAGIU	Romania „Alexandru Ioan Cuza" University of Iasi
	Cornel CIUPAN	România Technical University of Cluj-Napoca
	Ana ARNAUT	R. Moldova AGEPI Moldova
	Bogdan TEODORESCU	Romania QUARTZ MATRIX Iasi

VIII INTERNATIONAL SALON OF INVENTIONS AND NEW TECHNOLOGIES «NEW TIME»

September, 27-29, 2012
Sevastopol, Ukraine

Tel./fax: +380-692-555628, +380-692-932038,
+380-50-0094660, +380-50-8126191

E-mail: el-voz@i.ua

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 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 inventics exhibitions should put light on and find solutions to turn the inventics schools in institutions and to improving and harmonizing the laws regarding the intellectual propriety and the industrial one.

Another serious, upsetting and alarming aspect which I want to put light on is the fact that about 60 to 70% of the Romanian specialists with international output accepted to work abroad, where they are appreciated and stimulated according to their value. We should as well attract them and offer the opportunity to 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 fourth edition of EUROINVENT sent invitations to inventors associations from many countries, as United Kingdom, Spain, Croatia, Poland, Republic of Iran, Malaysia, Indonesia, Korea, United Arab Emirates, Turkey, Portugal, France Ukraine, Russian Federation, Republic of Moldova. A big number of institutions and individual inventors are participating from Romania, a remarkable fact being to have here many young inventors (from schools or universities) as well as older inventors. This show is exhibiting more than 210 inventions.

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

Prof. Ion SANDU – President of Romanian Inventors Forum

LIST OF PARTICIPANT INSTITUTIONS

Bulgaria

University of Chemical Technology and Metallurgy

Contact person: ***Andriana SURLEVA***
Address: 8 "Kl. Ohridski" blvd., 1756 Sofia, Bulgaria
E-mail: asurleva@yahoo.com
Web: http://www.uctm.edu/
Registration no: X.1

Cameroun

I.U.T-Université de Ngaoundéré

Contact person: ***Joseph SIELIECHI***
Address: BP 455 Ngaoundéré-Cameroun
Phone: (237)99935356
E-mail: jsieliechi@yahoo.fr
Registration no: X.30

Croatia

Croatian Inventors Association

Contact person: ***Neven MARKOVIC***
Address: Inventors Dalmatinska 121000, Zagreb, Croatia
Phone: + 385 1 46 12 517
E-mail: savez.inovatora.zagreba@zg.htnet.hr
Web: www.savez-inovatora-zagreba.hr
Registration no: 4.2, 7.3, 8.1, 8.2, 8.3, 10.2, 12.2, 12.3

Egypt

National Research Centre

Contact person: **Wafaa Mohamed HAGGAG**
Address: El-Threer Street, Plant Pathology Department, National Research Centre, Cairo ,Egypt
Phone: +02 01224269551
E-mail: Wafaa_haggag@yahoo.com
Web: www.wafaahaggag.com, www.nrc.sci.eg
Registration no: 2.1, 3.1, 3.2, 4.3, 4.4, 4.5, 6.5

France

Université de Technologie de Belfort Montbéliard

Contact person:	***Christian CODDET***
Address:	Rue de Leupe, Sevenans, France
Phone:	33 (0)3 84 58 30 24
E-mail:	christian.coddet@utbm.fr
Web:	http://lermps.utbm.fr/

Indonesia

Universitas Trisakti

Contact person:	***A. C. Arya***
Address:	Jl. Kyai Tapa No. 1, Kampus A, Gedung F&G, Lt. 5, R. 555, Grogol, Jakarta Barat 11440
Phone:	+62 857 10 15 46 83
E-mail:	a_c_arya@yahoo.com arya@trisakti.ac.id
Web:	www.trisakti.ac.id
Registration no:	5.14, 7.4

Iran

International Iranian Innovators & Elites Institute

Contact person:	***Mohammad Reza SHAFAIERAD***
Address:	Teheran, Iran
Phone:	021-77626690-4
E-mail:	fsie.iran@gmail.com
Web:	www.iiiei.com
Registration no:	1.9, 1.10, 3.9, 4.20, 7.15, 8.4, 8.5, 8.6, 14.5

Malaysia

Universiti Malaysia Perlis (UniMAP)

Contact person:	***Mohd Mustafa Al BAKRI ABDULLAH***
Address:	02600 Jejawi, Perlis, MALAYSIA.
Phone:	+604 9798928/+60125055020
E-mail:	Mustafa_albakri@unimap.edu.my
Web:	www.unimap.edu.my
Registration no:	1.11, 1.12, 1.13, 7.1, 7.2, 10.1, 12.1, 14.1, X.31-X.37

Poland

Association of Polish Inventors and Rationalizers

Contact person:	***Michał SZOTA***
Address:	Rydygiera 8 str, 01-793 Warsaw, Poland
Phone:	Telephone: 34-3250-721 mobile 600 298 200
E-mail:	spwir.agnieszka@gmail.com, mszota@wp.pl
Web:	www.polskiewynalazki.pl
Registration no:	5.1, 5.2

Portugal

Universidade Nova de Lisboa

Contact person:	***Catarina PEREIRA***
Address:	2829-516 Quinta da Torre, Portugal
Phone:	+351 212 948 322 ext. 11305
E-mail:	irina.sandu@fct.unl.pt
Web:	http://www.unl.pt/
Registration no:	X.18

Russian Federation

Arhimedes International Innovation Center

Contact person:	***Dmitry ZEZYULIN***
Address:	Sherbakovskaya 53 Str, RF - 105187, Moskow, Russian Federation
Phone:	+7.495.366.1465, +7.495.366.0344
E-mail:	mail@archimedes.ru
Web:	www.archimedes.ru

South Korea

Korea Invention Academy

Contact person:	***Soung-Mo HONG***
Address:	48-2 Chungpa-dong 3-ga, Yongsan-gu, Seoul, Korea, 140-133
Phone:	+82 711 0066 (KOR) / +1 226 808 1468 (ENG)
E-mail:	kinews@hanmail.net
Web:	www.kinews.org
Registration no:	1.3, 2.2, 5.15, 5.16, 5.17, 5.18, 5.19, 9.1, 12.4

Spain

MIBA MUSEUM

Contact person:	***Pep TORRES***
Address:	Ciutat 7 street - 08002 Barcelona, Spain
Phone:	+34 93 332 79 30
E-mail:	hello@mibamuseum.com info@stereo-noise.com
Web:	www.mibamuseum.com/ www.stereo-noise.com
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Turkey

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Contact person:	***Sajjad Yaghoubi***
Address:	No 76 – B5, Cumhuriyet St, Esenyurt, Istanbul, Turkey
Phone:	+90 531 505 09 77
E-mail:	robotpalas@gmail.com
Web:	www.trobotic.com
Registration no:	4.1.

United Arab Emirates

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Contact person:	***Amin Daneshmand Malayeri***
Address:	No.805, Golden Business Center, Airport Road, Deira, Dubai, UAE
Phone:	+971 4 251 75 07
E-mail:	amin.daneshmand@gmail.com
Web:	www.inventors.ae
Registration no:	X.9.

United Kingdom

British Inventors Society

Contact person:	***Kane KRAMER***
Address:	2 High Street, Hitchin, Hertfordshire, SG5 1BH, UK
Phone:	+44.1462.451111
E-mail:	info@thebis.org
Web:	www.thebis.org
Page:	14

United States of America

Winters Patent Law Offices

Contact person:	***David Winters***
Address:	2277-C Suite 237 Wilma Rudolph Boulevard, Clarksville, Tennessee 37040, United States of America
Phone:	+1 931-906-4445 Fax: 931-906-0131
E-mail:	winterspatentlaw@bellsouth.net
Web:	http://ipglobal.biz/
Page:	74, 229

Ukraine

"Centre "AJUMEL" LTD & CE "Agency of Economical Development of Sevastopol"

Contact person:	***Yuriy SKOMOROVSKIY***
Address:	P.O. Box 36, Sevastopol Ukraine 99006
Phone:	+38.0692.475728, Cell. :+38.050.0094660
E-mail:	el-voz@i.ua aumel@sevsky.net
Registration no:	14.2, 14.3, 14.4

Republic of Moldova

A.G.E.P.I. - State Agency on Intellectual Property

Contact person:	***Lilia BOLOCAN***
Address:	Str. Andrei Doga 24, bloc 1, MD-2024 Chişinău, R. Moldova
Phone:	+373.22.443253 (400608), fax: +373.22. 440119
E-mail:	office@agepi.md
Web:	www.agepi.md
Registration no:	3.5, 3.6, 3.7, 3.8, 4.14, 4.15, 14.6

Technical University of Moldova

Contact person:	***Valerian DOROGAN***
Address:	Bd. Ştefan cel Mare 168, MD2004, Chişinău, R. Moldova
Phone:	+373.22) 237861, fax: (37322) 232252
E-mail:	dorogan@adm.utm.md
Web:	www.utm.md
Registration no:	2.4, 2.5, 2.6, 2.7, 4.25, 5.11, 5.12, 10.7, 10.8, 10.9

State University of Moldova

Contact person:	***Eleonora BOLBOCEANU***
Address:	Str. Al.Mateevici 60, MD-2009 Chişinău, R. Moldova
Phone:	+373.22.577811; +373.22.244248
E-mail:	Imgl2002@yahoo.com
Web:	http://www.usm.md/
Registration no:	1.5, 2.3, 5.10

Academy of Science of Moldova
Institute of Genetics and Plant Phyisiology

Contact person:	***Mihnea Nadejda***
Address:	Str. Padurii 20, MD – 2002, Chisinau, R. Moldova
Phone:	069686866; +37322 521179
E-mail:	Mihneanadea@yahoo.com
Web:	www.asm.md
Registration no:	3.5-3.8, 3.10-3.17, 3.25-3.28

Academy of Science of Moldova
Institute of Chemistry

Contact person:	***Tudor LUPAŞCU***
Address:	Str. Academiei 3, MD – 2028, Chişinău, R. Moldova
Phone:	+373.22.725490, Fax: +373.22.739954
E-mail:	ichem@asm.md
Web:	www.asm.md
Registration no:	1.4, 4.27, 4.28, 4.41, 4.42, 9.4, 9.5, 14.4, 14.5

Academy of Science of Moldova
Institute of Zoology

Contact person:	***Tatiana BAZARENCO***
Address:	Str.Academiei 1, MD – 2028, Chişinău, R. Moldova
Phone:	+373.22.739809
E-mail:	izolasm@mail.md
Web:	www.zoology.asm.md
Registration no:	3.18-3.23

Academy of Science of Moldova
Institute of Microbiology and Biotechnology

Contact person:	***Ciloci Alexandra***
Address:	Academiei 1 str., 2028, Chisinau, Republic of Moldova
Phone:	373 22 73 98 24
E-mail:	alexandra.ciloci@gmail.com
Web:	www.asm.md
Registration no:	3.3, 3.4

Academy of Science of Moldova
Institute of Physiology and Sanocreatology

Contact person:	***Valentina Ciochina***
Address:	Str.Academiei 1, Chişinău, R. Moldova
Phone:	+373.22.725155, fax: +373.22.737142
E-mail:	vciochina@asm.md
Web:	www.asm.md
Registration no:	3.24, 4.26

State University of Medicine and Pharmacy, Nicolae Testemiţanu

Contact person:	***Viorel PRISACARI***
Address:	Bd. Stefan cel Mare 165, Chisinau, R. Moldova
Phone:	(3732) 24-17-82, 24-46-30
E-mail:	usmfvprisacari@mail.md
Web:	http://www.usmf.md/
Registration no:	4.29-4.32

National Scientific-Practical Center of Emergency Medicine (NCPCEM), State Medical and Pharmaceutical University „N.Testemiţanu"

Contact person:	***Valeria* NOVIKOVA**
Address:	str. T.Ciorba, 1, MD-2004, Chişinău, Moldova
Phone:	tel.: +(0 3732) 23-78-84, fax: 23-53-09
E-mail:	novikova.valeria@gmail.com
Web:	www.urgenta.md
Registration no:	4.21-4.24

National Center for Public Health, Republic of Moldova

Contact person:	**Constantin SPINU**
Address:	67/a, Gh. Asachi str., Chisinau Moldova, MD-2009
Phone:	+373 (22) 57-45-01
E-mail:	cspinu@cnsp.md
Web:	www.sanepid.md
Registration no:	4.33-4.36

Romania

Romanian Inventors Forum

Contact person:	***Ion SANDU***
Address:	Str. Sf. P.Movila 3, L11, III/3, Iasi, Romania
Phone:	+40.745.438604, fax: +40.232.214816
E-mail:	sandu_i03@yahoo.com
Web:	www.afir.org.ro
Registration no:	4.13, 4.37, 4.41, 4.42, 9.3, 14.14, 14.15

Romanian Inventors Forum – Bacau Brench

Contact person:	***Mihai LASCHI***
Address:	Aleea Ghioceilor 9, Sc. C, ap.2., Bacau, Romania
Phone:	+40752092376
E-mail:	laschi.mihai@yahoo.com
Registration no:	3.29, 4.19, 5.24

SC AREXMAN SRL

Contact person:	***Mircea MANOLESCU***
Address:	Tepes Voda 148, RO 021528, Bucuresti, Romania
Phone:	+40.721.218012, fax: +40.318.150394
E-mail:	mmanoles@yahoo.fr
Web:	www.seisme.ro, www.seismes.eu

Al.I.Cuza University of Iaşi
Physical Education and Sports Faculty

Contact person:	***Marin CHIRAZI***
Address:	B-dul Carol I 11, Iasi, Romania
Phone:	+40.232.201133
E-mail:	mchirazi@uaic.ro
Web:	www.uaic.ro
Registration no:	4.18

„Al.I.Cuza" University of Iaşi
Faculty of Chemistry

Contact person:	***Ionel MANGALAGIU***
Address:	Bd. Carol 11, 700506 Iasi, Romania
Phone:	+40 +232201343; fax: +40+ 232 201313
E-mail:	ionelm@uaic.ro
Web:	http://teclu.chem.uaic.ro/mangalagiu
Registration no:	X.14, X.15, X.28, X.29

„Al.I.Cuza" University of Iaşi
Faculty of Geography and Geology

Contact person:	***Mihai BRANZILA***
Address:	B-dul Carol I 11, Iasi, Romania
Phone:	0724-236743
E-mail:	mib@uaic.ro
Web:	www.uaic.ro
Registration no:	X.2, X.3, X.41, X.42

„Al.I.Cuza" University of Iaşi
Faculty of History

Contact person:	***Marius ALEXIANU***
Address:	B-dul Carol I 11, Iasi, Romania
Phone:	+40.724732617
E-mail:	alexianumarius@yahoo.com
Web:	www.uaic.ro
Registration no:	X.4, X.5

University of Medicine and Pharmacy Gr.T.Popa

Contact person:	***Simona STOLERIU***
Address:	Str. Universitatii 16 , RO-700115, Iasi, Romania
E-mail:	stoleriu_simona@yahoo.com
Web:	http://www.umfiasi.ro
Registration no:	X.10, X.20

University Politehnica of Bucharest

Contact person:	***Ioana Corina MOGA***
Address:	Splaiul Independenţei 313, 060042, Bucureşti, România
Phone:	+04 0727 850 098
E-mail:	corinamoga@yahoo.com
Web:	www.upb.ro
Registration no:	1.1, 1.2, X.16

The Naval Academy „Mircea cel Bătrân"

Contact person:	***DOBREF VASILE***
Address:	Fulgerului no.1 street, Constanta, Romania
Phone:	+4.0723381379
E-mail:	dobref_vasile@yahoo.com
Web:	www.anmb.ro
Registration no:	10.6, X.17

QUARTZ MATRIX

Contact person:	***Bogdan TEODORESCU***
Address:	5th Carol the 1st BLVD, Iasi, Romania
Phone:	+40232-217.248
E-mail:	office@quartzmatrix.ro
Web:	www.quartzmatrix.com
Registration no:	10.15, 10.16, 10.17

Banat University of Agricultural Sciences and Veterinary Medicine Timisoara

Contact person:	***Dorica BOTĂU***
Address:	Str. Calea Aradului 119, RO 300645, Timisoara, Romania
Phone:	+40.256.277238
E-mail:	dbotau@yahoo.com
Web:	http://www.usab-tm.ro/
Registration no:	X.6, X.7, X.8

„Gheorghe Asachi" Technical University of Iasi

Contact person:	***Carmen TEODOSIU***
Address:	Blvd. D. Mangeron 71, RO 700050, Iasi, Romania
Phone:	+40.232.278683
E-mail:	cteo@ch.tuiasi.ro
Web:	www.tuiasi.ro
Registration no:	5.8, 13.1, X11, X19, X21, X22, X23, X2, X.27

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

Contact person:	***Dan CAŞCAVAL***
Address:	Blvd. D. Mangeron 71, RO 700050, Iasi, Romania
Phone:	+40.232.278683
E-mail:	dancasca@ch.tuiasi.ro
Web:	www.tuiasi.ro
Registration no:	9.2, 9.3, X.39, X.40

„Gheorghe Asachi" Technical University of Iasi
Faculty of Electronics, Telecommunications and Information Technology

Contact person:	***Mircea Hulea***
Address:	Bd. Carol I, 700506, Iasi, Romania
Phone:	+ 40 744 824 115
E-mail:	mhulea@tuiasi.ro
Web:	www.etti.tuiasi.ro
Registration no:	10.4, 10.5

Institute of Computer Science,
Romanian Academy, Iasi Branch, Romania

Contact person:	***Horia-Nicolai TEODORESCU***
Address:	Bd Carol I nr 8, Iasi, Romania
Phone:	+40 332 106505
E-mail:	hteodor@etti.tuiasi.ro
Web:	http://www.iit.tuiasi.ro/index.php
Registration no:	10.3

„Gheorghe Asachi" Technical University of Iasi
Department of Teachers Education

Contact person:	***Ioan Gabriel SANDU***
Address:	B-dul Mangeron 71, Iasi, Romania
Phone:	+40.742.505160
E-mail:	gisandu@yahoo.com
Web:	www.dppd.tuiasi.ro

„Gheorghe Asachi" Technical University of Iasi
Faculty of Material Science and Engineering

Contact person:	***Petrica VIZUREANU***
Address:	B-dul Mangeron 71, Iasi, Romania
Phone:	+40.728.157977
E-mail:	peviz2002@yahoo.com
Web:	www.sim.tuiasi.ro
Registration no:	5.6, 5.7, 5.9, 6.1, 6.2, 6.3, 6.4, 6.7

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

Contact person:	***Alexandru STANILA***
Address:	B-dul Mangeron 71, Iasi, Romania
Phone:	+40 726 072 488
E-mail:	alstanila@yahoo.com
Web:	www.tuiasi.ro
Registration no:	7.9, 7.10

„Alexandru Ioan Cuza" Police Academy, Bucharest

Contact person:	***Gabriel Ioan OLTEANU***
Address:	Aleea Privighetorilor nr. 1A, sector 1, Bucuresti,
E-mail:	gabrielolteanu@yahoo.fr
Web:	www.academiadepolitie.ro
Registration no:	X.38

Stefan cel Mare University of Suceava	
Contact person:	***Adrian Graur***
Address:	Str. Universitatii nr.9 Suceava
Phone:	+40230.520.081 / 0230.520.080
E-mail:	elenao@eed.usv.ro
Web:	www.usv.ro
Registration no:	2.8-2.28, 4.37, 4.38, 5.20, 5.21, 8.7, 10.10, 10.11

Lucian Blaga University of SIBIU	
Contact person:	***Mihail Aurel ȚÎȚU***
Address:	Victoriei Street no 10, code 550024, Sibiu, RO
Phone:	+40 744 390 290; +40 727 390 290
E-mail:	titu.mihail@gmail.com; mihail.titu@ulbsibiu.ro
Web:	http://ppi.ulbsibiu.ro
Registration no:	5.3, 5.4, 5.5, 13.2

O.S.I.M. Bucharest	
Address:	Str. Ion Ghica, Nr. 5, Sect. 3, Cod 030044, Bucuresti
Phone:	021.306.08.00
E-mail:	office@osim.ro
Web:	www.osim.ro

Technical University of Cluj-Napoca	
Contact person:	***Cornel CIUPAN***
Address:	C. Daicoviciu 15, 400020, Cluj-Napoca, Romania
Phone:	+40.264.401200. Fax. +40.264.401514
E-mail:	cornel.ciupan@muri.utcluj.ro
Web:	www.utcluj.ro
Registration no:	4.40, 5.23, 6.8-6.14, 8.8, 10.12, 10.13, 10.14, 11.1, 14.13

Technical University of Cluj-Napoca Baia Mare Universitary Center	
Contact person:	***Vasile HOTEA***
Address:	Victor Babes 62A, Baia Mare, 430083, Maramures, Romania
Phone:	+40362407299 (optional)
E-mail:	vasilehotea50@yahoo.com
Registration no:	1.6, 1.7, 1.8, 6.6, 7.14

Military Equipment and Technologies Research Agency	
Contact person:	***Nicolae NĂCIOIU***
Address:	Str. Aeroportului 16, CP 19 OP Bragadiru, Ilfov
Phone:	Tel +40 21 423.30.58, Fax +40 21 423.10.30
E-mail:	rsi@acttm.ro
Web:	www.acttm.ro
Registration no:	5.22, 14.7, 14.8, 14.9, 14.10, 14.11, 14.12

SUDOTIM SA Timisoara / ECONET PROD Bucuresti	
Contact person:	***Victor GEANTA***
Address:	Iani Buzoiani, 1, Sector 1, Bucuresti, Romania
Phone:	+40-744553529
E-mail:	victorgeanta@yahoo.com
Web:	www.sudotim.ro;
Registration no:	7.5, 7.6, 7.7, 7.8

HIDROELECTRICA SA	
Contact person:	***Simona-Greta NEMTOIU***
Address:	Str. Prelungirea Vasile Alecsandri Nr.1, Tg-Jiu
Phone:	+40 746 459 238
E-mail:	Simona.nemtoiu@hidroelectrica.ro
Web:	www.hidroelectrica.ro
Registration no:	5.13

SC BIOTEHNOS SA	
Contact person:	***Laura OLARIU***
Address:	3-5 Gorunului street, 075100 Otopeni, ILFOV
Phone:	+40 31 710 2402
E-mail:	lolariu@biotehnos.com
Web:	www. biotehnos.com
Registration no:	4.16, X.24

S.C. Hofigal Export-Import S.A	
Contact person:	***Anca Daniela RAICIU***
Address:	2, Intrarea Serelor St, zip code 042124, sector 4, Bucharest, Romania
Phone:	021 334 74 86, 0730087664
E-mail:	marketing@hofigal.eu
Web:	www.hofigal.eu
Registration no:	4.16 – 4.12

INSTITUTE OF BIOLOGICAL RESEARCH Iasi Branch of INCDSB Bucuresti	
Contact person:	***Craita Maria ROSU***
Address:	Lascar Catargi no.47, IASI, ROMANIA
Phone:	0232 -218121
E-mail:	craita2002@yahoo.com
Registration no:	4.17

S.C. GL PROJECT S.R.L.

Contact person: ***Mariana-Daniela MANU***
Address: Bd. Carol I, nr. 4, 700505, IASI, ROMANIA
Phone: +40 757240416
E-mail: manu_daniela_iasi@hotmail.com
Web: www.glproject.ro
Registration no: 4.39

S.C. Tehnobionic S.R.L Buzau Romania

Contact person: ***Constantin PASCU***
Address: Str.Agriculturii 55, Buzau, Romania
Phone: +40.238.719188
E-mail: salin@buzau.ro
Web: www.salin.ro

The Palace of Children Iaşi

Contact person: ***Gheorghe COLBU***
Address: B-dul Carol I 2, Iasi, Romania
Phone: +40.232.410802, +40.728.172.111
E-mail: dcolbu@yahoo.com
Web: www.palatulcopiilor.iasinet.ro/
Registration no: 7.11, 7.12, 7.13 Page: 194, 329

History Museum, Roman

Contact person: ***Otilia MIRCEA***
Address: Roman, Jud. Neamt
Phone: +40-0741-024674
E-mail: otiliamircea@yahoo.com
Page no. 273

Person: ***Horia Mihail TEODORESCU***
Address: Cambridge, MA, US (USA)
E-mail: hmteo2002@yahoo.com
Registration no: 12.5

Person: ***Mihail CĂLIN – Artist Polifonic***
Address: Str Diminetii 9, Bl. 775, Iasi
Phone: +40747 263 908

INVENTIONS CLASSIFICATION

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

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Andrei CORBEA-HOISIE
Al.I.Cuza Publishing House

Valeriu DULGHERU
Technical University of Moldova (Moldova)

Maria GAVRILESCU
"Gh. Asachi" Technical University of Iasi

Gabriel Ioan OLTEANU
"Al.I.Cuza" Police Academy, Bucharest

Valentin SAVA
"G.Enescu" Art University Iasi

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Members: **Ilie BOSTAN**
"G.Enescu" Art University Iasi, UAP Iasi

Mihai TARASI
"G.Enescu" Art University Iasi, UAP Iasi

Dragos PATRASCU
"G.Enescu" Art University Iasi, UAP Iasi

Bogdan TEODORESCU
"G.Enescu" Art University Iasi, UAP Iasi

CLASS 1.

Environment - Pollution Control

1.1.

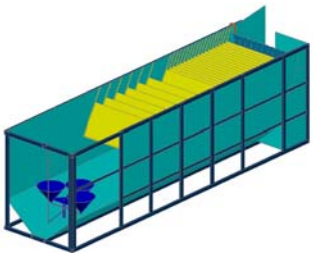
Title Final Settler for a Dissolved Air Flotation Unit

Authors Bogdan Dumitru NĂSĂRÎMBĂ GRECESCU, Gabriel PETRESCU, Ioana Corina MOGA
University POLITEHNICA of Bucharest

Institution SC DFR SYSTEMS SRL
University POLITEHNICA of Bucharest

Patent no. Patent application No. 0073/2011

Description A dissolved air flotation unit consists of two separate devices: pressurized capsule and lamellar settling. 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.



1.2.

Title	A Pressurized Capsule for a Dissolved Air Flotation Unit
Authors	Bogdan Dumitru NĂSĂRÎMBĂ, Gabriel PETRESCU, Ioana Corina MOGA GRECESCU University POLITEHNICA of Bucharest
Institution	SC DFR SYSTEMS SRL University POLITEHNICA of Bucharest
Patent no.	Patent application No. 0074/2011
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; 2. Modular construction.
Image	

1.3.

Title Noxious Insect Trapping System

Authors HAN, SEUNG JU

Institution Seoul International School, Korea

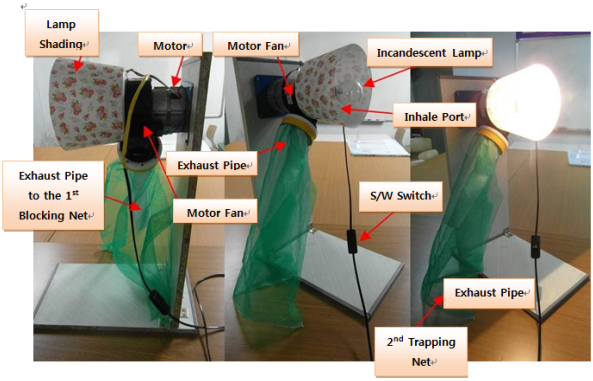
Patent no. KR10-2011-0009156

Description

Noxious insects are formed from filthy washrooms, drainage sewers and other unclean environment. Without using insecticide or pesticide, the invention allows the user to capture these harmful insects to prevent infectious disease for illness and to protect hygiene sanitary. The invention is a trapping system for noxious insects. It uses light from incandescent lamp to attract surrounding insects. When the insects are crowded close enough in range of the lamp shading, they are inhaled by the high-powered motor fan into a narrow exhaust pipe and flows into the 1st blocking net. Passing by the blocking net, they arrive at the 2nd trapping net in which a majority of the insects are captured. The trapping net uses magnet to easily combine/separate itself from the system.

Summer seasons have more flies and other similar filthy insects formed from dirty public bathroom, window frames, etc. In order to eliminate insects that irritate people in the outdoors and contaminate food in the indoors kitchen tables, without having to dispose them using pesticide, fly swatters, or a flypaper, this invention using incandescent light lamp allows one to "fish" all those insects at night time.

The invention attracts numerous bugs towards the illuminated incandescent lamp. When the bugs are attracted towards the lamp shading, with the high-powered motor-fan operated, the insects are inhaled into the suction port of the trapping system that carries them through the exhaust pipe to the 1st blocking net and continues along to the 2nd trapping net.

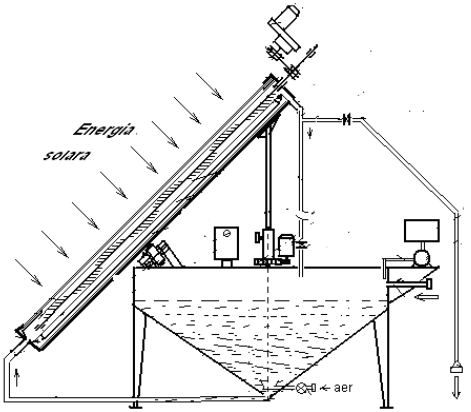


1.4.

Title	Procedure of river Prut water potabilization
Authors	Lupascu Tudor, Povar Igor
Institution	Institute of Chemistry of the Academy of Sciences of Moldova
Patent no.	Patent application a 2012 .0135, MD
Description	The procedure of river Prut water potabilization is characterized that for the removing of the reduced form inorganic substances are used active carbons oxidized and impregnated with copper ions.
	Acknowledgements: the research was carried out with the financial support of the project IZ73ZO_128036 "XENOPUT"

1.5.

Title	Photocatalysis for the resolving of technologic and ecologic processes
Authors	Covaliov Victor, Covaliova Olga, Duca Gheorche
Institution	State University of Moldova
Patent no.	MD № 3911, C02F, 5/2009; 3682, C02F, 8/2008; 3728, C02F, 2008; 3682, C02F, 2008 ; 186z, 5/2010; 210z 5/2010.
Description	The new methods of homogeneous and heterogeneous photocatalysis are presented, along with their industrial applications. Methods of nanocatalysts manufacturing and using for purification of natural and waste waters are elaborated. The reactors have been developed for regeneration of active carbons, used technological solutions, fotocatalytical air activation and gas emissions treatment.



1.6.

Title	Method of recovering lead from sulfate paste of recycled batteries
Authors	Vasile HOTEA
Institution	Tech Univ Cluj Napoca, North Univ Center of Baia Mare
Patent no.	Patent RO 119711 B1/28.02.2005
Description	1. The invention relates to a procedure of lead recovering from sulphate paste of recycled batteries by treating with an alcaline solution, at weight liquid-solid ratio of 6:1. The resulted solution is subjected to re precipitation with sulphuric acid, and resulted $PbSO_4$ is dissolved in ammoniacal environment, at 60^0C, it is processed in tribasic lead sulphate. and tribasic lead sulfate widely used as basic lead sulfate for the stabilization of PVC polymers.

1.7.

Title	Integrated Process for capture of sulfur dioxide and carbon dioxide in the flue gases
Authors	Vasile HOTEA
Institution	Tech Univ Cluj Napoca, North Univ Center of Baia Mare
Patent no.	Patent application 00382 / 2010
Description	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. The plant according to the patent consists essentially of a centrifugal scrubber (1) buffer solution of Na_2CO_3 (2), filter zeolite (6) and a rotating crystal tilt (5).

1.8.

Title	The chemical absorption of carbon dioxide capture from waste gases
Authors	Vasile HOTEA, Gabriel BADESCU, Jozsef JUHASZ
Institution	Tech Univ Cluj Napoca, North Univ Center of Baia Mare
Patent no.	RO Patent application a 00410 / 2011
Description	This patent application relates to a process for capture of carbon dioxide from waste gases. The process, the invention consists in a first step in treating waste gases counter with an aqueous solution of 2M sodium carbonate and potassium by

	absorption of CO_2 in solution, resulting treated gases and the second stage occurs CO_2 desorption in alkaline solution of bicarbonate and of carbon dioxide storage.

1.9.

Title	The filter of physical and chemical filteration of water in the depth and surface of the earth.
Authors	Fereidoon Hossein Nia
Institution	Iran
Patent no.	Pending
Description	Making complete purification and limpidity in water polluted by suspended solids. useful for surface and underground water .reduction of cost price of water purification using the said filter for 1/5 of the current expenses of usual and common methods.

1.10.

Title	Modernize Trash Bin Which Capable Of Stopping The Metal Waste Get Into Bin And Capable Of Separating The Waste
Authors	Mahmood Reza Shirazi, Mohammad Reza Dashti
Institution	Abadan Municipality, .Iran
Patent no.	Pending
Description	Ashcan with modern use of the capability to recognize the importation of precious metals inside it would be able to garbage separation. and capabilities including automated door (the user), announced terminal capacity for information about the amount of full of trash bin, terminal insects to prevent the gathering of the insects in trash bin and “ariel sharon” forex water garbage that the publication that smell of sweet water pollution and garbage. in the modern trash bin by using the capabilities of the top of that services and the new output in this field. it is worth mentioning that the bucket with

1.11.

Title	Novel Multipurpose Effective Microorganism (EM) SMaRT Ball
Authors	Mohd Mustafa Al Bakri Abdullah, Che Mohd Ruzaidi Ghazali, Kamarudin Hussin, Salehuddin Sabran, Mohamad Jaafar Sahari & Zarina Zawawi
Institution	Universiti Malaysia Perlis (UniMAP) & Technical Teluk Intan Secondary School (SEMAIAN)

Patent no. PI 2011000970

Description Nowadays, the use of effective microorganisms (EM) is numerable, including to be used in the home in daily life for everyone, also can even be used in industry. People can just get used this EM by buying it in the form of solid ball, called EM mud ball which is the ready product in the market. There are varieties of EM mud ball that would be the choice, but the speciality of this EM SMaRT Ball compared to the others in the market is it was produce from the Halal's based source of EM for multipurpose application and for water treatment this product will killed larva to become mosquito.

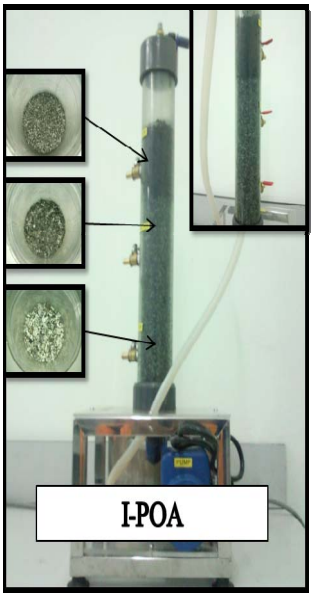
1.12.

Title Integrated Palm Oil Ash (I-POA): As Filter Media, Treatment For Industrial Wastewater

Authors Muhammad Iqram Bin Zulkifli & Siti Fatimah Binti Hj. Che Osmi

Institution University Malaysia Pahang (UMP)

Patent no. IP 2011001290



Description This project has converted the waste of palm oil ash into value added product. Therefore, in this project, Integrated Palm Oil Ash (I-POA) filter media is invented and design by integrate varies sizes of palm oil ash as a filter media to treat industrials wastewater. I-POA filter media give a lot of advantages to the treatment system, because it is a biodegradable material from palm oil industry wastage and easy to prepare-install, cost effective, low maintenance, and produce high quality of effluent. For big scale application, I-POA can be installed as a multi filter, which will not affect the effluent treatment capacity.

1.13.

Title	Development of Ultrasonic Assisted Membrane Anaerobic System (UAMAS) for Palm Oil Mill Effluent (POME) Treatment
Authors	Lee Hua Chyn, Yap Wai Mun, Chew Bee Tin, Abdurahman Hamid Nour, Farhan Mohd Said
Institution	University Malaysia Pahang (UMP)
Patent no.	IP 2011001720

Description

The direct discharged of waste water often caused environmental problems. The traditional ways for wastewater treatment has disadvantages from the economical and environmental perspectives.

In this invention, Ultrasonic Assisted Membrane Anaerobic System (UAMAS) was designed and used to treat the industrial wastewater, such as Palm Oil Mill Effluent (POME), sewage sludge and slaughter house waste.

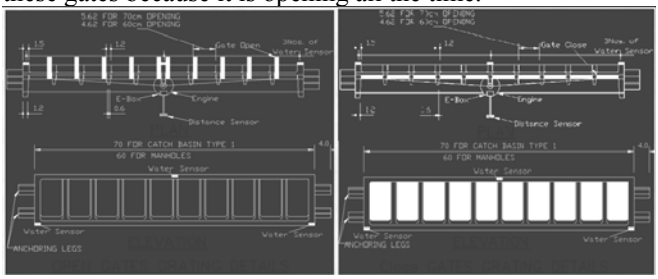
The new system is an alternative and cost effective method to treat high strength waste water. This system consists of a feed tank, four tubular cross flow ultra-filtration membranes (CUF) in a sintered stainless steel holder connected to an ultrasonic device, centrifugal pumps and a 50 L anaerobic digester.

CLASS 2

Energy and sustainable development

2.1.

Title	Automatically Gates for Storm water Inlets with E-Maintenance
Authors	Khaled Abdul Hamid Elnems
Institution	The Academy of Scientific Research and Technology
Patent no.	Patent application number 514/2011, Egypt
Description	Gates with Sensors fixed inside storm water inlet on entrance water and there is small place for socket to fix the USB Connection with the computer when they do the Electronic Maintenance. Advantages: •Prevent the entry of sand in the drainage of rain or filled in it, leading to the accumulation of rain water in the street outside the storm water Inlet. •Save time and effort for the workers by (Electronically Maintenance work) by measuring the percentages of sand inthe storm water Inlet inside without (remove cover for inlet or check it or more labors…, etc.) (Electronically) •Electronic drawing print end of the work day with showing the percentage of sand in the number and place of inlet with time maintenance check in the storm water Inlet without fraud in the periodic maintenance and rely on manual maintenance incorrect information •Safety from Terrorist Operations or missing anything into these gates because it is opening all the time.



2.2.

Title Power Generator Using Frictional Electricity

Authors CHA, HEUIJANG

Institution Idea Line Co., Korea

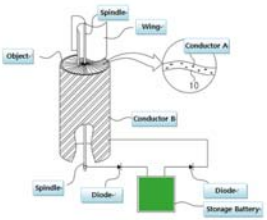
Patent no. 10-2009-0079419

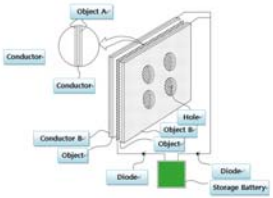
Description

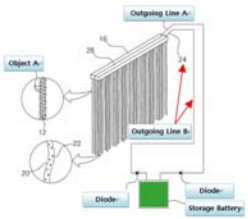
Electrically-charged heat is (+) and objects that flutter to wind such as wool, silk, glass, ivory, crystal, wood, cotton, rubber, sulfur, ebonite consist of (-) property. Having the (+) object on the left and (-) on the right, in between the weave, Conductor A is designed similarly to how static electricity is generated by friction. Thus, frictional electricity is able to be generated irrelevant to its generating site properties; sites with weak wind blowing, alternating wind blowing, or places occurring warm current. The rectifier diode is able to prevent the discharge of electricity, but charge up electricity instead and transmits it to the power line.

Electrification heat (+) has a special feature enabling frictional electricity (-) to be generated from mountain, sea, cities or places with: low blowing wind, alternating wind, and warm current. It is a similar idea of how static electricity is generated by materials with low resistance: wool, silk, wood, cotton, ivory, etc.

At a state when there is weak wind blowing, warm current flowing or wind alternating, the frictional electricity is able to be generated just like how static electricity generates. The frictional electricity has comparatively larger gross electricity generation compared to common generators.







2.3.

Title	Increase New of the Biogas Technology Efficiency and Biogas Purification
Authors	Olga COVALIOVA, Victor COVALIOV, Gheorghe DUCA, Dumitru UNGUREANU, Valentin BOBEICA, Irina SENICOVSCAIA
Institution	State University of Moldova
Patent no.	MD 4130, C02F, 10/2011; 4129, C02F, 10/2011; 4041, C02F, 8/20094 3994, C02F, 12/2009; 188z, C02F, 4/2010; 187z, C02F, 4/2010; 186z, C02F, 4/2010.
Description	The improved methods are presented of anaerobic fermentation of organic wastes, along with the automatic systems of biogas selective treatment with the removal of CO_2, aggressive H_2S and mercaptanes, in order to increase the biomethane utilization efficiency. Separated CO_2 is returned into the methanogenic process or for the microalgae growth, and their biomass is re-circulated in anaerobic biochemical process.

2.4.

Title	Solar parabolic Stirling system
Authors	Bostan Ion; Dulgheru Valeriu, Dicusară Ion, Ciobanu Oleg, Ciobanu Radu, Guţu Marin
Institution	Technical University of Moldova
Patent no.	MD 7118/2011, 3600, 2008; 2679, 2005.
Description	The invention relates to the thermal power plants without fuel burning and CO2 production, namely to plants for solar thermal energy conversion into electrical energy. The solar installation include the solar concentrator with parabolic mirror oriented around two axes and Stirling engine with precessional transmission.

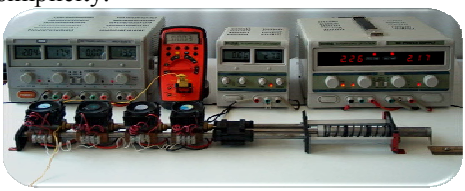
2.5.

Title	Hydrodynamic rotors with modified profile NACA for flow SHP
Authors	Bostan Ion, Graur Adrian, Dulgheru Valeriu, Bostan Viorel, Sochireanu Anatol, Ciobanu Oleg, Ciobanu Radu, Gladîş Vitalie.
Institution	Technical University of Moldova
Patent no.	MD 3845, 2009
Description	Hydrodynamic rotors provides kinetic energy conversion

	of river water into mechanical or electrical energy without building barrages. Increased efficiency is provided by blades aerodynamic profile and their optimum position for efficient conversion of water kinetic energy. The experimental prototypes of the rotors are fabricated.
2.6.	
Title	Horizontal Axle Power Wind Turbine with mechanical orientation to wind
Authors	Bostan Ion, Dulgheru Valeriu, Bostan Viorel, Sobor Ion, Sochireanu Anatol, Bodnariuc Ion, Dicusară Ion, Ciobanu Oleg, Ciobanu Radu, Trifan Nicolae, Odainâi Valeriu, Crudu Radu, Guţu Marin, Alcaz Dumitru, Porcescu Gavril.
Institution	Technical University of Moldova
Patent no.	Application S2012 – 0049, Patent MD 3847, 2009, 2431, 2004.
Description	Aeolian turbine include three blades rotor with aerodynamic asymmetric profile. The wind orientation of the turbine is doing through a two-wheeled windroze linked by a reducer with turbine nacelle. The power of 10 kW is produced at wind speed of 11 m/s.
2.7.	
Title	Eolian turbine moved by traffic.
Authors	Bostan Ion, Dulgheru Valeriu, Dicusară Ion, Ciobanu Radu
Institution	Technical University of Moldova
Patent no.	Patent MD 3544
Description	The invention refers to the domain of conversion plant for the eolian energy in electric energy. The blades in normal section have are described by logarithmic curve. The concave part of the blades is oriented according to the direction of the traffic. The increase of the coefficient of wind energy utilization is provided by additional injection of air-mass. The proposed eolian turbine will be used in small power wind units for private consumers.

2.8.

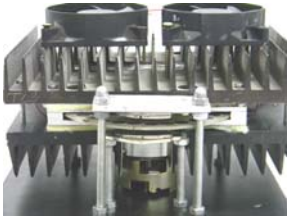
Title	Electric motor with limited displacement
Authors	CERNOMAZU Dorel, GRAUR Adrian, MANDICI Leon
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent RO 122946 B1
Description	The invention relates to an electrical motor realized through some acting modules with electromechanical actuators with paraffin arranged consecutively by means of some guiding rods and acting rods. Summed displacement of actuators excited by means of Peltier batteries can be found on an active element positioned using the guide rods and an acting rod at the end of the four modules. Applications: can be used in electrical drives and in sun tracking devices. Advantages: high power, constructional simplicity.



2.9.

Title	Thermomagnetic engine
Authors	CERNOMAZU Dorel, GRAUR Adrian, UNGUREANU Constantin, NIŢAN Ilie et. al.
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent application No. A/00139/2011
Description	The invention relates to an engine based on thermo-magneto-mechanical conversion and where the operation is possible by magnetic field distortion under the influence of temperature. The motor consists of a rotor made of insulating material, resistant to temperature, and where, on a peripheral route, are embedded more pills of gadolinium. A narrow zone of the peripheral route is subject to heat generated locally, by some electrical resistors, while the

remaining peripheral portion is subject to cooling by Peltier elements.



2.10.

Title	Adjustable power supply
Authors	Dorel CERNOMAZU, Adrian GRAUR, Leon MANDICI, Alecsandru SIMION, Iulian BACIU
Institution	Universitatea „Ştefan cel Mare" din Suceava
Patent no.	Application A/00166/18.02.2010, A/00167/18.02.2010, A/00204/14.03.2004
Description	The invention relates to a continuously adjustable power unit, designed to supply the voltage needed by some testing installations from the electrical equipment laboratories. The solution consists from a two columns magnetic core, having placed on one of the column a primary winding divided into two immobile semi-coils, serial between them and placed at the ends of the column; on the same column is positioned a secondary, moving, coil, connected in short-circuit. Applications: The power unit can be used to supply the voltage needed by some testing installations from the electrical equipment laboratories. Advantages: The power unit increases the electrical operating safety and is leading to the improvement of the electro security conditions.

2.11.

Title	Transformer for the continuous voltage control under load
Authors	CERNOMAZU Dorel, OLARIU Elena -Daniela,
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent applications No. A/00700/2008
Description	The transformer for the continuous voltage control under load is characterized through that the revolving secondary is operated by dint of an asynchronous engine incorporate in construction variable transformer; the three-phase asynchronous engine mentioned is constituted by a three-phase fixed stator of the frontal superior yoke of the

	afferent magnetic system of the transformer; in the air gap created between the stator and the upper extremity of the transformer's column is found out a rotor from aluminum mounted in the extension of electrically insulating cylinder of revolving secondary; under the act of magnetic field the cylindrical rotor is rotated and actuated on the rotational motion of the adjustable transformer mobile secondary's.

2.12.

Title	Asynchronous motor with multiple rotor
Authors	CERNOMAZU Dorel, MANDICI Leon, Olariu Elena Daniela
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent application No. A/00729/2008
Description	The invention describes a monophase asynchronous motor with reversible rotation direction and two rotation speeds having switchable shielding poles and more disk-rotors. The asynchronous motor it realized in accordance with the well-known "*Grosu*" solution and it consists of four inductor modules and five disk-rotors wherein each inductor module is consists of an open E-shaped magnetic core having three identical coils. The motor can be realized with one, two, three, four or five rotors and can be made with one or with more propellers.

2.13.

Title	Solar micromotor
Authors	CERNOMAZU Dorel, MANDICI Leon, UNGUREANU Constantin, et. al.
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent No. 119563 B1
Description	The invention relates to a solar micromotor with rolling rotor powered by pneumatic actuators that consist of a pneumatic recipient partially filled with volatile liquid. The pneumatic actuators act a disc rotor that rolls on an horizontal plane like a resting fidget, using some rods.

2.14.

Title	Electric motor with reduced speed
Authors	CERNOMAZU Dorel, MANDICI Leon, UNGUREANU Constantin, et. al.
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent application No. A/00545/2007
Description	The invention describes a motor that applies the electrical drives operating principle motors with rolling and flexible rotor. The invention refers to an electrical motor capable to develop high torque at low speed, with only few rotations in a minute, fed through industrial frequency without reducing gear. The solution, entailed by this invention, combines the design characteristics of a rolling rotor motor with the ones of a flexible rotor motor. It has a flexible ferromagnetic rotor that is situated on a shaft and relies on two sliding bearings. Advantages: constructional simplicity, low cost, operational reliability.

2.15.

Title	Flexible rotor
Authors	Constantin UNGUREANU, Nicolae SOREA, Mihaela Brânduşa NEGRU, Iulian BACIU, Niculina CREŢU, Elena-Daniela OLARIU, Mihaela GUGOAŞĂ, Dorel CERNOMAZU
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent **RO 122923 B1**
Description	The invention describes a flexible rotor-shaped glass, which is part of construction of solar engines for operation in tracking systems after Sun of solar converters. Flexible rotor consists of a flexible support, cylindrical, made of a magnetic or non-magnetic material which are provided with some ferromagnetic plates with round profile, profiled or flat, placed on the flexible support and provided with axial holes. Flexible rotor is driven by motor stator, consisting of several pairs of electromagnets which are activated successively through an phototransducer position.

2.16.

Title	Stepper motor
Authors	Jeder Mihaela, Olariu Elena, Creţu Niculina, et. al.
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent RO nr.122741
Description	The invention relates to an electrical stepper motor, with double rotor, realized on "ratchet wheel" principle that is actuated through the electromechanical actuators with paraffin. The electrical stepper motor is composed of two electromechanical actuators with paraffin excited by a battery with Peltier elements

2.17.

Title	Electric motor with mobile coil
Authors	Georgescu Dan, Jeder Mihaela, Olariu Daniela et. al.
Institution	Stefan cel Mare University of Suceava
Patent no.	Brevet RO nr. 125489 B1
Description	The invention relates to a electrical linear motor with mobile coil in short-circuit, with applications in electrical drives with special purposes. The motor presents the peculiarity that it consists from two distinctly electromagnetic systems which work successive, obtaining, thus a doubling of movable element' stroke of the motor. Advantages: the increases of the range of application as a result of increasing of movable element' stroke of the motor.

2.18.

Title	Thermobimetallic solar actuators
Authors	CERNOMAZU Dorel, MANDICI Leon, GRAUR Adrian et.al.
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent applications No. A/01102/2011; A/01164/2011; A/01166/2011; A/01168/2011
Description	The inventions relate to some actuators made on the principle of helio-thermo-mechanical conversion of solar energy. The thermobimetallic solar actuators are characterized by considerable value of forces and couples being realized in several different shapes.

2.19.

Title	Magnetostrictive vibromotor
Authors	CERNOMAZU Dorel, MANDICI Leon, GRAUR Adrian et.al.
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent application No. A/01427/2011
Description	The invention concerns a vibromotor whose operation is based on the phenomenon of magnetostriction. Operation and performance of the magnetostrictive vibromotor is due to an material called *terfenol* which are under the action of magnetic field generated by a coil supplied with alternating current.

2.20.

Title	VIBROMOTORS
Authors	Dorel CERNOMAZU, GRAUR Adrian, Alecsandru SIMION, Mihai RAȚĂ, IRIMIA Daniela et.al.
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent applications No. A/00203/2010, A/00650/2010, A00210/2010
Description	The inventions relate to different types of roller bladed vibromotors operating at industrial frequency. The working principle consists of transmitting of the vibrations obtained from a electromagnet mobile armature, through some roller blades and force friction to the rotor disk type.

2.21.

Title	Electromechanical actuator with bellow
Authors	Cernomazu Dorel, Laurenţiu Dan MILICI, Mariana Rodica MILICI, Ilie NIȚAN, Constantin Ungureanu, Olariu Elena, Mihai Raţă, Romaniuc Ilie
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent application No. A/00911/2010
Description	Actuator operation principle is based on decomposition of liquids in gas medium. The obtained gases, acting on the bellows, with a certain pressure, which leads to a linear movement of a shaft placed at the top of the actuator.

2.22.

Title	Microelectrochemical pump with hydrogen
Authors	Cernomazu Dorel, Laurenţiu Dan MILICI, Mariana Rodica MILICI, Ilie NIŢAN, Constantin Ungureanu, Olariu Elena, Mihai Raţă, Romaniuc Ilie
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent application No. A/00912/2010
Description	The invention comprises a rigid container which is placed an active liquid, a hydrogen generator, and a cell powered from a constant voltage source. Container through a pipe communicate with another elastic and deformable container placed inside a cylindrical tank in which liquid is stored.

2.23.

Title	Electromechanical actuator with liquid
Authors	Cernomazu Dorel, Laurenţiu Dan MILICI, Mariana Rodica MILICI, Ilie NIŢAN, Constantin Ungureanu, Olariu Elena, Mihai Raţă, Romaniuc Ilie
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent application No. A/01064/2010
Description	The actuator is made on the principle of electromagnetic motor with ratchet and whose operation consists in thermal excitation of a liquid placed within a elastic room which leads to deformation thereof and acting on a ratchet wheel, resulting in a rotation with a step.

2.24.

Title	Ultrasonic motors
Authors	Dorel CERNOMAZU, Laurenţiu Dan MILICI, Mariana Rodica MILICI, Ilie NIŢAN, Cristina PRODAN, Mihai RAŢĂ, Gabriela RAŢĂ , Elena- Daniela OLARIU
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent applications No. A/00667/2011, A/00669/2011
Description	Ultrasonic motor is made on the principle of converting the movement of vibration in a continuous rotary motion of rotation, characterized in that it can operate with a speed control by changing the distance between two disks forming a piezo-metal coupling and acting on the rotor disc.

2.25.

Title	Time relay
Authors	Ilie NIŢAN, Ilie ROMANIUC, Cristina DAVID, Elena–Daniela OLARIU et al
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent application No. A/00545/2007
Description	The invention relates to a thermal time relay, based on the principle of the operation of thermometric relays. Time relay is consists of an elastic element which communicates with a brass tank which is in contact with a heat source. Elastic element of the relay, according to invention, is constituted of a brass tube with the elliptical section, modeled after contour of a flat spiral and is filled with the mercury, this communicating at the bottom with a brass container also filled with mercury, that it is under the heat action generated by a Peltier battery. Under heat action received at the Peltier battery, mercury content in the brass tube and from the tank, it distend provoking the deformation of the brass tube, which by means of some auxiliary system, determine, after a preset time, closing an electrical contact.

2.26.

Title	Method for study of the electromagnetic field problems
Authors	IRIMIA Daniela, BOBRIC Elena Crenguţa; BUZDUGA Corneliu C, NEGRU Mihaela Brânduşa et al
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent application No. A/00455 din 25.05.2010
Description	The invention relates to an experimental method which completes the assembly of the theoretical methods used for numeric solving of the electromagnetic field problems: finite difference method, finite element method, boundary element method. The method is applied in the case of rotating machines and it is based on the utilization of a ferrofluid, over which some gold leaf powder is spread. The analysis of gold particles' movement is studied using the technique "of the moved images" and numeric photographic camera..

2.27.

Title	Electrostatic micromotors
Authors	Dorel CERNOMAZU ; Leon MANDICI; Elena Crenguţa BOBRIC
Institution	Ştefan cel Mare University of Suceava
Patent no.	*Patent applications nr.* A/00373/2000A; 01163/2000; *A*/1078/2002
Description	According to this invention, the micromotor is used on smaller electrical drives that exclude the influence of the exterior electromagnetic fields. The realisation of the micromotor is based on the use of the ceramics electrets and it begins with a very simple model similar to the „step by step" electromagnetical motors. The invention has a remarkable didactical aspect and it is used in "Special Electrical Machines" subject and for the study of the operating principle of the rolling rotor electrostatic micromotor.

2.28.

Title	Motor-generator group
Authors	Nicolae SOREA; Dorel CERNOMAZU; Leon MANDICI et al.
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent Application A/00551/16.07.2009
Description	Motor-generator group consists of a free piston Stirling engine fitted with the linear extension of an electric generator. The work produced by the Stirling engine is transmitted to the linear electric generator which has an inductor consists of a rod made of brass that is placed in opposition, several ring-shaped permanent magnets. The movement of the magnets inside the coil generates electricity.

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CLASS 3.

Agriculture and Food Industry

3.1.

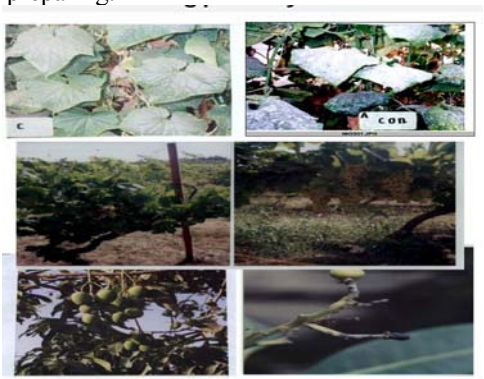
Title EN Biofungicide for controlling powdery mildew disease

Authors Wafaa Mohamed Haggag, Abd Kreem Fareed

Institution National Research Centre, Dokki, Egypt

Patent no. Egypt Patent application No. 2006010020/2009

Description The innovate concerned with biofungicide which consists of beneficial microorganisms instead of using the chemical pesticides for controlling the powdery mildew on several horticultural crops. Powdery mildews is major foliar pathogens of field-grown crops and affecting almost all the crop varieties in Egypt and in the world such as horticulture fruits (grape, mango,..), vegetables (cucumber, strawberry , pepper, .), field crops (wheat, barley,…) and others.
Microorganisms were isolated from environmental itself, and complete each other without any antagonistic effect. This biofungicide is safe for human and environment, cheap and easy for preparing.



3.2.

Title EN Biofungicide for controlling strawberry blight

Authors Wafaa Mohamed Haggag, Abd Kreem Fareed

Institution National Research Centre, Dokki, Egypt

Patent no. Egypt Patent application No. 2011061080

Description

The innovate concerned with biofungicide for controlling of blight disease of plants as strawberry as an alternative to chemical fungicides and increasing in bio-farming. The blight is caused by the fungal Phomopsis obscurans which affects leaves , branches during growth in the field and Botrytis cinerea which effects fruits during the period of growth and post harvest. Biofungicide is consistent of biopolymers auto formulation (Polysaccharide-peptide mixture) of Rhodotorula glutinis when grown in a medium with excess fructose as carbon source and soybean as nitrogen source . Bio-fungicides that is harmless human and the environment as well as crop output and export .

3.3.

Title EN

Nutritive medium for fungal strain *Fusarium gibbosum* CNMN FD 12 growing - proteases, xylanase and β-glucosidase producer

Authors

Deseatnic-Ciloci Alexandra, Tiurin Janeta, Bologa Olga, Coropceanu Eduard, Clapco Steliana, Stratan Maria, Labliuc Svetlana, Bivol Cezara, Dvornina Elena, Rudic Valeriu, Bulhac Ion

Institution

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

Patent no.

5561 2012 Mart. 27

Description

The invention is the elaboration of nutritive medium for fungal strain *Fusarium gibbosum* CNMN FD 12 submerged cultivation with including of coordination compounds of Co (III) with dioximes and fluorinated anions $[Co(DH)_2 \cdot (Thio)_2]F[PF_6] \cdot nH_2O$. The proposed medium ensures the increase with 56.36 - 58.92% of neutral proteases biosynthesis and reducing with 24 h of producer growing duration.

3.4.

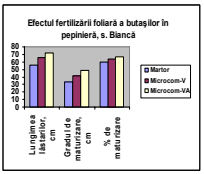
Title EN	*Fusarium gibbosum* CNMN FD 12 fungal strain – proteases, xylanases and şi β-glucosidases producer
Authors	dr.b. Deseatnic-Ciloci Alexandra, dr.b. Tiurina Janetta, dr.b. Clapco Steliana, dr. h. b Lupaşcu Galina, Labliuc Svetlana, dr.b. Stratan Maria, Dvornina Elena, dr.b Saşco Elena
Institution	Institute of Microbiology and Biotechnology of Academy of Sciences of Moldova, Institute of Genetics and Plant Physiology of Academy of Sciences of Moldova
Patent no.	5547 2012 Feb. 20
Description	The essence of the invention is in identification of *Fusarium gibbosum* CNMN FD 12 fungal strain – proteases, xylanases, β-glucosidases producer. The technical result is the obtaining of hydrolytic enzyme complex with large spectrum of action (acid and neutral proteases, xylanases, β-glucosidases) able to perform simultaneous hydrolysis of protein molecules and structural polysaccharides from vegetable matter.

3.5.

Title EN	Fertilization process extraroot vine
Authors	Toma Simion, Veliksar Sofia, Lisnic Stelian, Lemanova Natalia
Institution	Institute of Genetics and Plant Physiology ASM, AGEPI
Patent no.	MD: 2654; 2005
Description	The invention relates to agriculture, especially viticulture and can be applied to optimize mineral nutrition in critical phases of development of the vine. Process for controlling the mineral nutrition of the vine including vine extraroot treatment before flowering and over 2 and 4 weeks after the first treatment with 0.3% aqueous solution containing a complex of microelements Mn, Fe, Zn, B, Mo and Co, taken in appropriate 1:1,95:0,23:0,44:0,001:0,001 report, total consumption at 0.3 ... 0.5 L / bush. The result is the activation of metabolic processes in tissues and to increase plant resistance to unfavorable conditions.

3.6.

Title EN	Fertilization process extraroot vine
Authors	Toma Simion, Veliksar Sofia, Lemanova Natalia, David Tatiana, Kreidman Jana
Institution	Institute of Genetics and Plant Physiology ASM
Patent no.	MD 270; 2012
Description	The invention relates to agriculture, particularly viticulture, and can be used for optimization of mineral nutrition in critical stages of development and increase productivity and plant resistance. The problem solved by the proposed invention is to provide plants with nutrients required doses and optimal ratio of fertilizer and minimize negative impacts on the environment, increase productivity and longevity of vineyards. The proposed - extraroot treatment plant vines in preparation Microcom-VA - compared with that solution comes closer (Microcom-V) contribute more effectively to growth and maturation of shoots, which is very important in unstable climate conditions of Moldova, improves quality and quantity of harvest, with lower concentrations of nutrients and natural products provinenţă help reducing chemical pressing environment and includes integrated agricultural technology. It covers fertilization before flowering plants and more than 2 and 4 weeks after the first fertilization with an aqueous solution of a complex of microelements, which contains Mn, Fe, Zn, B, Mo and Co., with additional amino acids arginine, valine and succinic acid.



3.7.

Title EN	Method of treating sugar beet
Authors	Lisnic Stelian, Toma Simion, Veliksar Sofia, Chirilov Eleonora, Coreţcaia Iulia
Institution	Institute of Genetics and Plant Physiology ASM
Patent no.	MD: 3218; 2007
Description	The invention relates to agriculture, in particular the plant and can be used to optimize trace mineral nutrition in critical phases of development of sugar beet. Curing process sugar beet, the invention includes treating it extraroot with 0.3% aqueous solution of complex trace, containing Fe, Cu, B, Mn, Zn, Mo and Co, taken in a 1:1 ratio , 16:0,63:0,58:0,39:0,008:0,002, accordingly, performed in stage union leaves in rows and between rows leaf stage union, with a total consumption of 350 ... 400 L / ha.

3.8.

Title EN	Bacterial strain *Pseudomonas aureofaciens* for the increase of soybean productivity at soil drought conditions.
Authors	Emnova Ecaterina, Toma Simion, Gojineţchi Ortanţa, Daraban Oxana, Caunova Nina
Institution	Institute of Genetics and Plant Physiology of ASM
Patent no.	MD 3220; 2007
Description	The invention refers to biotechnology and may be used for mitigation of water stress in agricultural soil and increase of soybean productivity and crop quality. The strain of *Pseudomonas aureofaciens* bacteria was isolated from Moldovan soil (calcareous chernozem). It is stored in the National Collection of Nonpathogenic Microorganisms of the Institute of Microbiology of the Academy of Sciences of the Republic of Moldova under the number CNMN PsB-03. Bacterial strain is offered for seed inoculation before planting to increase the soybean productivity at soil drought owing to high capability of water-retaining exopolysaccharides (EPSs) synthesis, and contribution to the rhizosphere soil aggregation, and to water and nutrient regime improvement.

3.9.

Title EN	Inducing cold resistance in chickpea by applying silver nanoparticle treatment
Authors	SEYEDEH SANAM KAZEMI, SHAHAN DASHTI, REZA MAALI AMIRI, MORTEZA HANIFEH
Institution	Iran
Patent no.	Pending
Description	Applying silver nanoparticle treatment induced resistance to cold stress without any genetic modifications so that the productivity rate of the plant was increased under low temperature conditions. this way is cheap and environmentally friendly because of the applied dosage of silver nanoparticles which is less than the current agricultural applications.

3.10.

Title EN	The technology of effective organic system of growing of raspberries
Authors	Nicolae Bujorenu, M. Barbaros, V. Todiras, M. Marinescu, T. Ralea, E. Chirilov, I. Harea, N. Bejan, V. Svetlicenco
Institution	Institute of Genetics and Plant Physiology, Academy of Sciences of Moldova
Patent no.	MD 288 / Patent application No. 288/2011
Description	The technology of effective organic system of growing of raspberries includes: agrochemical and soil assessment of the land and the choice of suitable area for raspberry growing, organic fertilization and the application of environmentally safe pest management, the use of pest- and pathogen-free planting material of high quality cultivars grown in appropriate systems, installation of support and drip irrigation, use of environmentally friendly biologically active substances in the growing season to increase crop yield and fruit quality, the use of biological agents to control pests and diseases. The proposed technology will allow getting environmentally friendly products of raspberries, with complete abolition of the use of chemicals and fertilizers that are harmful to human health and the environment.

3.11.

Title EN	Process for presowing treatment of carrot seeds
Authors	Chintea Pavel, Botnari Vasile, Borovskaia Alla, Gonceacovschi Iuliana
Institution	Institute of Genetics and Plant Physiology of Academy of Sciences of Moldova
Patent no.	MD 365

Description	The process for presowing treatment of carrot seeds, according to the invention, includes their soaking in 0,001…0,005% aqueous solution of steroid glycoside moldstim during 5 minutes. The invention relates to agriculture and can be used for growing plants.

3.12.

Title EN	Nutrient medium for germination of sweet pepper Capsicum annuum L. pollen
Authors	Maşcenco Natalia, Chintea Pavel, Marcenco Alexandra, Balaşova Irina, Cozar Elena, Bespalco Lesea, Blandinskaea Olga.
Institution	Institute of Genetics and Plant Physiology of Academy of Sciences of Moldova
Patent no.	MD 289
Description	The invention relates to agriculture, in particular to a nutrient medium for germination of sweet pepper Capsicum annuum L. pollen and can be used in selection and seed growing. The nutrient medium contains polyethylene glycol, calcium nitrate, boric acid, an extract of glycosides dehydroconiferol-9`-O-β-D-glucopyranoside and dehydroconiferol-9-O-β-D-glucopyranoside, obtained from plants of Verbascum densiflorum Bertol. by their treatment with 50% aqueous solution of ethanol at boiling followed by the subsequent separation of dry extract on Sephadex LH-10 and Silicagel L 40/100 μ, the ingredients being taken in the following ratio, g/l: polyethylene glycol 100…150

3.13.

Title EN	Process for presowing treatment of sweet pepper seeds
Authors	Maşcenco Natalia, Chintea Pavel, Balaşova Irina, Cozar Elena, Bespalco Lesea, Blandinskaea Olga.
Institution	Institute of Genetics and Plant Physiology of Academy of Sciences of Moldova
Patent no.	MD 328
Description	The inventions relates to agriculture, particularly to a process for treating sweet pepper seeds. The process for presowing treatment of sweet pepper seeds includes their soaking for 12 hours in 0,00001…0,001% aqueous solution of glycosides, obtained by extraction from

aboveground parts of Verbascum phlomoides L. with 50% ethanol at boiling with separation

3.14.

Title EN	Micropropagation process of the Stevia rebaudiana Bertoni in vitro
Authors	Sîromeatnicov Iulia, Jacotă Anatol, Șveț Stepan, Chintea Pavel, Cotenco Eugenia.
Institution	Institute of Genetics and Plant Physiology of Academy of Sciences of Moldova
Patent no.	MD 57
Description	The invention refers to the biotechnology, in particular, to the process of the micropropagation of the Stevia rebaudiana Bertoniplants in vitro. According to the invention, the process includes the obtaining of explants, the sterilization, the segmenting and their cultivation in the nutritional environment Murashige-Skoog, that contains in addition of steroid glycosides obtained from aubergine roots Solanum Melengena L. by the extraction with water through boiling, the extract processing obtained with butanol-1and the absorption, in concentration of (2,5-3,0).10^{-3}%, in the same time we do the cultivation at 22-26°C, at 70% of the air humidity, with a photoperiod of 16 and 8 hours day and night, and the intensity of the lighting of 3000 lx. The result of the invention consists in growth of the somatic embryogenesis and the regeneration of the plants.

3.15.

Title EN	Treatment of onion seeds
Authors	Botnari Vasile, Chintea Pavel, Borovskaia Alla
Institution	Institute of Genetics and Plant Physiology of Academy of Sciences of Moldova
Patent no.	MD 414
Description	The invention consists in increasing the germination energy of 22,1% and total germination of onion to 5,1%, treated with 0.01% aqueous solution of steroid Ecostim. The method allows obtaining amicable germination and uniform growth of plants onions, increasing productivity and improving product quality. Agriculture

3.16.

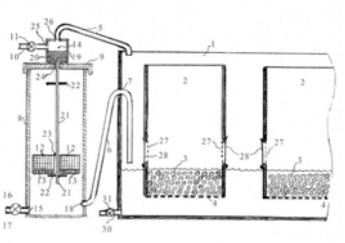
Title EN	Chick-pea (Cicer arietinum L.) var. Ovidel
Authors	Valentin Celac
Institution	Academy of Science of Moldova, Institute of Genetics and Plant Physiology
Patent no.	Pending
Description	The invention is related to the new chick-pea cultivar created and introduces in agriculture of R. Moldova(2012), with improved resistance to drought and diseases, produces a bean yeld 2,2 t/ha. Protein content in seeds – 20,8%, fat – 5,25%. The vegetative period - 103 days.

3.17.

Title EN	Chick-pea (Cicer arietinum L.) var. Rautzel
Authors	Valentin Celac, Liuba Coretchi
Institution	Academy of Science of Moldova, Institute of Genetics and Plant Physiology
Patent no.	Md60/2010
Description	The invention is related to the new chick-pea cultivar created with improved resistance to drought and diseases, produces a bean yeld - 1,71t/ha. Protein content in seeds – 20,9%, fat – 4,9%. The vegetative period – 95 days

3.18.

Title EN	Installation for incubation of spawn and keeping of fish prolarvae
Authors	CREPIS Oleg, USATÎI Marin
Institution	Academy of Science, Moldova, Institute of Zoology
Patent no.	Patent application MD 283/2010
Description	The invention relates to fish breeding. The installation includes a rectangular tank with water supply and drain pipes, wherein is placed an incubation chamber for spawn with perforated bottom. The installation is also equipped with an automatic water exchange regulation system. In the side walls of the incubation chamber are made rectangular perforated windows closed outside with elastic membranes for the partial diversion of water from the incubation chamber. The reservoir is made with the possibility of setting therein several incubation chambers of different dimensions depending on the quantity of spawn placed for incubation and the diameter thereof.



3.19.

Title EN	A fish spawning device.
Authors	CREPIS Oleg, USATÎI Marin, STRUGULEA Oleg, USATÎI Adrian
Institution	Academy of Science, Moldova, Institute of Zoology
Patent no.	MD 3875/2009
Description	The device consists of rectangular frames with nets stretched thereon, on wich it is uniformly distributed an artificial substrate. The frames are consecutively joined between them with the help of connectives with the possibility of rotation around the axis of connection. The device is also equpped with two rings provided with locks for frame fixation in vertical radially simmetric position.

3.20.

Title EN	Methods of artificial propagation of fish phytophagus
Authors	CREPIS Oleg, TODERAŞ Ion, USATÎI Marin, USATÎI Adrian, STRUGULEA Oleg
Institution	Academy of Science, Moldova, Institute of Zoology
Patent no.	MD 3020/2006, MD 236/2010
Description	The invention relates to fish-breeding. The process for silver carp, bighead carp or grass carp artificial reproduction includes common placement of the males and females into a basin with medium controlled conditions. A day before the artificial reproduction the temperature in the basin is increased up to 22…24°C, it is created therein a zone of water turbulent flows with the velocity of 0,3…0,5 m/s and are carried out periodic oscillations of the water level with an amplitude of 0,5…0,6 m. The injection of exohormonal preparations is carried out depending on the value of displacement from the nucleus centre in the ovocytes.

3.21.

Title EN	The methods for prophylaxis and treatment of ectoparazitosis in hens
Authors	RUSU Ştefan, ERHAN Dumitru, MASCENCO Natalia, FLOREA Vasilie, LUNCAŞU Mihail, ZAMORNEA Maria, BIVOL Alexei
Institution	Academy of Science, Moldova, Institute of Zoology
Patent no.	MD 3674/2008, MD 92/2009, MD 408/2009
Description	The methods (the proceses) consists treatment of hens by spraying (aerosol) with a 3...5% aqueous solution of the extracts obtined from the aboveground parts of dry tobacco Nicotiana rustica L., or wormwood Pzretrum cinerariifolium Trev., or daisy dalmatian Pzretrum cinerariifolium Trev.. For prophylaxis the treatment is carried out once, and for treatment – twice in a dose of 50 mL per hen, with an interval of 14 days.

3.22.

Title EN	The processes of production feeds that can be used for additional feeding of wild animals.
Authors	Munteanu Andrei, Savin Anatolie, Ţurcanu Ion
Institution	Academy of Science, Moldova, Institute of Zoology
Patent no.	MD 3584/2008, MD 3639/2008, MD 3794/2009
Description	Preparation and complementary feeding of wild animals with feed prepared from: 1) chopped grass hay, harvested befor flowering or in the flowering period with sweet beet pulp and iodated salt; 2) fresh apple pulp with dried common nettle (Urtica dioica L.) harves-ted in the flowering period and salt; 3) the milled barley straw with fresh apple pulp and table mineral salt iodated with KIO3 and cobalt chloride.

3.23.

Title EN	The installation for mowing of aquatie vegetation
Authors	CREPIS Oleg, TODERAŞ Ion, USATÎI Marin, USATÎI Adrian, STRUGULEA Oleg
Institution	Academy of Science, Moldova, Institute of Zoology
Patent no.	MD 233/2009
Description	The installation includes fitted on a motorboat a crescent-shaped blade with a sawtooth cutting edge, one end of the bland is attached to the bow of the boat, and the other in working condition is attached to the bottom of the boat from

the outside. The installation also includes a metal beam, on which are mounted in horizontal plane three blades. The sawtooth cutting edges of the side blades are directed outwards, and of the blade, placed perpendicular to the beam, inside the frame. Under the frame are fixed three pipes in the form of sled runners.

3.24.

Title EN	Stimulator for roosters' reproductive function
Authors	Boronciuc Gheorghe, Gulea Aurelian, Turcanu Stefan, Rosca Nicolae, Balan Ion, Birca Maria, Didilica Ina
Institution	The Institute of Physiology and Sanocreatology of the Academy of Sciences of Moldova
Patent no.	Patent application No. a20110108/2011
Description	As a stimulant for roosters' reproductive function it's proposed a coordinative compound between zinc and trichloroacetic acid Zn $(CCl_3COO)_2\ 4H_2O$.By using this compound, we have the opportunity to facilitate the reproduction and maintain the qualitative and quantitative indexes of spermatogenesis: the concentration of spermatozoids, their content in ejaculation, spermatozoids mobility and longevity. This is an inoffensive and ecological compound and doesn't have adverse reactions or effects.

3.25.

Title EN	New tomato cultivare Prestij
Authors	Grati Maria, Mihnea Nadejda, Jacotă Anatol, Grati Vasile
Institution	Institute of Genetics and Plant Physiology of Academy of Sciences of Moldova
Patent no.	Plant cultivation certificate N 514, MD
Description	The fruits of the variety *Prestij* are large with weighing 120-140 g, flatly round. The unripe fruits are green with a weakly pronounced spot at the basis, the ripe fruits are uniformly red. The number of seed lobes is 4-5, the seed number per fruit is more than 120. The fruits are characterized by high tasting qualities and contain 5.6-6.2% of dry matter, 5.5-5.4% of sugars, 52.0-55.0 mg/% of vitamin C, 0.56-0.78% of acidity. The variety is mid-ripening with a vegetation period of 108-114 days. In the transplant culture, the variety ensures a yield of 65.-72.0 t/ha, while the standard fruit yield is high (93.0...96.05%). The variety is resistant to cold

(80.0%). The varieties cultivare *Prestij* are recommended for cultivation through seedling transplants with a density of 55-57 thousand plants per ha. It can be used fresh, to produce juice and other tomato products. The cultivare *Prestij* is productive with large high-quality fruits, resistant to cold.

3.26.

Title EN	New tomato Mihaela
Authors	Mihnea Nadejda, Grati Maria, Chireeva Galina, Jacotă Anatol, Grati Vasile
Institution	Institute of Genetics and Plant Physiology of Academy of Sciences of Moldova
Patent no.	MD 39,
Description	New tomato varieties *Mihaela* have been developed at the Institute of Genetics and Plant Physiology. The fruits of the variety *Mihaela* are medium sized weighing 85.0...90.0 g, round shaped (I = 0.96). The fruits contain 4.5...5.2% of dry matter, 3.0...3.5% of sugars, 20...25 mg/% of vitamin C. The variety is early ripening with a vegetation period is 107-111 days. The total yield makes 50.0 t/ha-70.0 t/ha, the marketable yield is 48.0-68.0 t/ha. The varieties *Mihaela* are recommended for cultivation through seedling transplants with a density of 55-57 thousand plants per ha. It can be used fresh, to produce juice and other tomato products.

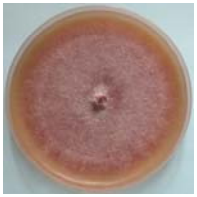
3.27.

Title EN	New tomato Jubiliar 60/20
Authors	Grati Maria, Mihnea Nadejda, Grati Vasile, Jacotă Anatol
Institution	Institute of Genetics and Plant Physiology of Academy of Sciences of Moldova
Patent no.	Plant cultivation certificate N 488, MD
Description	New tomato cultivare *Jubiliar* have been created at the Institute of Genetics and Plant Physiology. The fruits of the variety *Jubiliar*

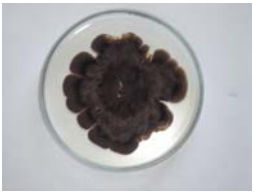
60/20 are cylindrical weighing 120-130g, slightly costate. Unripe fruits are uniformly whitish, the mature fruits are red and contain a medium number of seeds. The fruits are characterized by high tasty qualities and contain 5.0...5.5% of dry matter, 5.0...5.4% of sugars, 40.0...46.5 mg/% of vitamin C, the acidity is 0.40...0.50%. The variety is mid-late ripening, the vegetation period is 115-120 days. In the transplant culture, the variety ensures a yield of 60.0...70.0 t/ha, while the standard fruit yield is high (90.0...95.0%).
The varieties *Jubiliar* are recommended for cultivation through seedling transplants with a density of 55-57 thousand plants per ha. It can be used fresh, to produce juice and other tomato products. The variety *Jubiliar 60/20* is mid-late, high productive with superior tasting qualities, can be transported to long distances.

3.28.

Title EN	Method for identifying wheat genotypes resistant to root rot pathogens
Authors	Lupascu Galina, Sasco Elena, Gavzer Svetlana
Institution	Institute of Genetics and Plant Physiology of Academy of Sciences of Moldova
Patent no.	Patent application No. 3421, MD
Description	The invention relates to agriculture, in particular the selection and can be used to identify wheat genotypes resistant to root rot pathogens. The proposed method includes treating seeds with cultures filtrates of the fungus Fusarium and Drechslera, their germination and stem length measurement, statistical processing of data obtained by constructing histograms of distribution plant on phenotypic classes. However, it is considered resistant genotypes, which histograms are unimodal, without flattening, tearing or breaking trends continuity phenotypic classes



F.oxysporum



D. sorokiniana

3.29.

Title	*UNIVERSAL agricultural fertilizers*
Authors	Mihai LASCHI
Institution	Romanian Inventors Forum – Bacau Brench
Patent no.	Pending
Description	The invention relates to a universal fertilizer used in agriculture for cereal crops, vegetables, pomucole, wine, etc.. In order to achieve higher production, higher quality, to increase plant resistance to pests, drought and reduce the amount of water used for irrigation.

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CLASS 4

Medicine – Health Care - Cosmetics

4.1.

Title	Portable Bio Anti Headache Head Belt
Authors	Sajjad Yaghoubi, Saeid Dadashzadeh Sanghari
Institution	Istanbul Aydin University
Patent no.	Now in progressing in Turkey and Iran
Description	This Product Producing cools for removing and curing fever illness. This cool produced from chemical electrical plate forward of head. The other advantages of this head belt remedying head pain with magnet therapy. The method of applying magnet to the human body is considered safe and non-invasive.

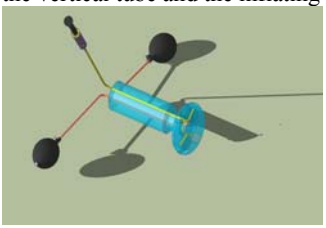
4.2.

Title	ACIDOSALUS® MOISTURIZING EYEDROPS
Authors	ROSA FERINČEVIĆ
Institution	MARINALAB Croatia
Patent no.	Pending
Description	The product has a soothing effect on tired and dry eyes. Troubles are alleviated or eliminated instantaneously and durable comfort provided in wearing all types of contact lenses. A unique formulation eliminates eye dryness and irritation caused by dust, blinding light, pollen, polluted or dry air, and wearing of contact lenses all day or for long periods of time. It copes with dry eye discomforts, and the effects of prolonged computer work, as well as intense exposure to Uv rays. The product is based on a combination of probiotic bacteria (lactobacillus acidophilus) and herbal components with the synergistic antiflogistic action of an outstanding stable formulation.

4.3.

Title	Vaginal balloon device & the modified pattern (for treatment of traumatic vaginal bleeding)
Authors	Mohammad Hamid Ibrahim Ali Altooky
Institution	Egypt
Patent no.	Patent application No. 2011040538 EGYPT
Description	1st New tool to treat vaginal wounds without sutures offer a new level of care & life quality for all women especially minorities

suffering hemophilia, Jehovah witness &cancer patients(in whom stitches are risky). Innovative design with special fixation mechanism, cheap, disposable, effective, can be used after all vaginal surgeries& normal delivery to stop bleeding from vaginal wounds, by exerting even pressure inside vagina, with possible use of haemostatic or sealant glues and cooling through same device. It decreases the blood transfusion need and reduce costs due to obstetric hemorrhage(sutures ,blood products, staff working hours, patients hospital stay..etc) by 1/3 in hospitals ,more over sanitary method that reduce infection rate. The invention device consists of 3 essential parts the upper horizontal fixed size inflatable ring for fixation inside vagina and lower vertical flexible size rubber tube with vales at the distal end of the vertical tube and the inflating device (manual /automatic).



4.4.

Title Novel treatment for multiple sclerosis and Autoimmune diseases.

Authors Sherif Salah abdul Aziz Hussin

Institution Cairo university, Faculty of Vet. Medicine, Egypt

Patent no. WO 2011/127936 A1

Description The invention relates to use pharmaceutical compositions share different biological active molecules for producing medicament utilized for the treatment of multiple sclerosis, Rheumatoid arthritis and related inflammatory diseases by specifically block cytokines receptors and inflammatory pathway.

4.5.

Title Antiviral combination for treatment HCV & HBV

Authors Sherif Salah abdul Aziz Hussin

Institution Cairo university, Faculty of Vet. Medicine, Egypt

Patent no. WO 2008/092466 A1

Description This invention introduce novel pathophysiology and therapy described that HCV play a specific role in disturbance the balance between two opposing enzymes mechanisms [Matrix Mineralloprotinases MMPase, tissue inhibitors of mineralloprotinases TIMPase 1 to 4]and[tissue plasminogen activator t-PA, Plasminogen activator inhibitor-2PAI-2].
Through activation of both MMPase and t-PA in turn the liver

cells start in defense with activation PAI-2 and TIMPase 1 to 4 . These cycles of activation and inhibition
continues till the organ tissues lose its defensive mechanism, paving the way to the spread of the viral invasion, studying these sequences help us in formulate a combination from 1- Tranexamic acid which acts an inhibitory effect on the Activation of plasminogen in the fibrinolytic cycle ie. The conversion of plasminogen to plasmin. 2-anti-streptokinase monoclonal antibodies 3- anti-streptolysine monoclonal antibodies to acts on plasmin and support the body with IgG antibodies against t-PA and MMPase 3 - we presume as well, that interacting with the polymerase system responsible for
the replication of the virus via initiating the formation of polymerase antibodies by subcutaneous injection of polymerase could be an additional measure to limit the replication of the virus.
All of them in combination stabilize the fibrin and the collagen which the virus targeting them for its activation closing the way for replication of the virus.

4.6.

Title	DRENOHEPAT - natural herbal product designed to optimize liver function and biliary tract and the procedures for obtaining this product
Authors	Daniela Ionescu, Mihele Elizabeta Denisa, Stefan Manea
Institution	S.C. Hofigal Export-Import S.A
Patent no.	Patent Application RO 0479/2011
Description	It is made from concentrated extracts of plants grown in an environmentally: ROSEMARY, THISTLE, AND RED SEABUCKTHORN, product composition having a highly complex essential compounds that constantly regenerate liver tissue and maintain liver health. It presents as oral capsules.

4.7.

Title	HOFIGAL DEODORANT
Authors	Manea Stefan, Ionescu Daniela
Institution	S.C. Hofigal Export-Import S.A
Patent no.	Patent Application RO 0557/2010
Description	The product is obtained based on gemoderivate and essential oils with antibacterial and antifungal spectrum, the use of this product stagnant in naturally way the produce of unpleasant smell of sweat and ensure freshness and naturalness of the body for at least 24 hours, without affecting skin and normal functions.

4.8.

Title	VEGETABLE OMEGA 3 SI OMEGA 6
Authors	Stefan Manea
Institution	S.C. Hofigal Export-Import S.A
Patent no.	Patent Application RO 0494/2010
Description	The product is more than many forms of plant version of fish oil known as omega 3. It contains a balanced ratio of 1: 3 omega 3 and omega 6, contributing effectively to the needs of continuous regeneration and brain lipids regulate major processes of the body, including reducing blood cholesterol and triglycerides.

4.9.

Title	GERIATRIC PROCESS IN BASE ONLY NATURAL
Authors	Manea Stefan, Tamas Viorica, Ivopol Veronica Lili si Ivopol Gabriel Calin
Institution	S.C. Hofigal Export-Import S.A
Patent no.	Patent Application RO 01072/2011
Description	Exclusive natural process-based geriatric refers to a special treatment of the body based on simultaneous transdermal diffusion of all the fat and water soluble natural compounds from biomass raw spiruluna, applied on the body itself, the process taking place over the entire body specially trained in this purpose other prior procedures. Treatment is performed in four sessions after a cure for 7 days, the benefits are visible, the skin becomes firmer, smoother, fresher, keeping their youthful appearance and the body maintains good health and mental alertness. The process is normally applied with good results in Breaza Sanatoriu.

4.10.

Title	BIONUTRIMIN-focused natural feed concentrates to replace multimineral
Authors	Authors: Ştefan Manea, Viorica Tamaş, Ionela Daniela Belală, Rodica Diana Criste, Veronica Hebeanu, Florian Ionescu
Institution	S.C. Hofigal Export-Import S.A, INCDBNA – Baloteşti
Patent no.	Pending
Description	Concentrate feed only natural herbal, rich not only in minerals but also other essential nutrients needed for growth of young animals and their health insurance, with favorable consequences on the quality of consumer food products: meat, milk, eggs etc. Comes as a powder and / or granules for use either in combination with other feed, either on its own. The new feed is obtained by associating concentrated in certain

reports and certain technological conditions of cheap vegetable products obtained in the food and / or natural food supplements (eg cakes, vegetables, fruit, etc.)

The methods used to characterize the physico-chemical and microbiological methods of concentrate feed obtained are standardized according to pH. Eur.şi FR X.

4.11.

Title Natural sheepskin processed and additivated with plants and medicinal and aromatic plant extracts, sanogenetic products made thereof and their process of obtaining.

Authors Tamas Viorica, Manea Stefan, Gaidau Carmen, Simion Demetra, Ivopol Gabriel, Bordei Natalita, Cozea Andreea

Institution S.C. Hofigal Export-Import S.A

Patent no. Patent Application RO A/00083/2011

Description

The patent demand refers to the methods of transferring the properties of milled plant and medicinal, aromatic plant extracts properties to sheepskin materials and items made from it. The medical devices - neck protector, sole upper, car headrest - were enriched with new sanogenetic properties such as: anti-inflammatory, relaxing, antimicrobial, refreshing, useful for domestic nursed patients, hospitals, heath and spa centers, drivers' comfort and indoor odor remediation.

The biological tests and the study of dynamic volatile active principle proved the high antimicrobial protection and long-lasting properties. The sheepskin medical devices are natural, compatible with human body, washable, delicate in direct contact with skin, offer a high warm comfort for different kind of diseases: orthopedic, diabetic foot, low blood pressure, cervical etc.

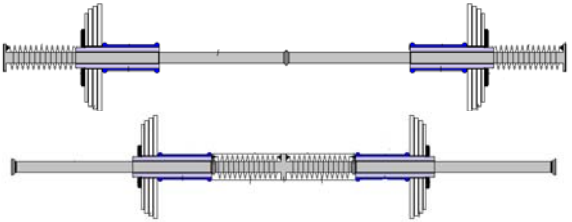
The preventive and comfort properties of sheepskin medical devices are also intended for stressed persons, computer users, drivers, old persons with chronic health problems.

4.12.

Title	RECUTEN
Authors	D. Mihele, D. Raiciu, Şt. Manea
Institution	S.C. Hofigal Export-Import S.A
Patent no.	Patent Application RO A 00929/ 2005
Description	Is a product that associated the glicerinohidroalcoholic extracts obtained from embryonic origin of fresh vegetable substances, buds and shoots, the first decimal dilution, respectively, fresh shoots of the vine - Vitis vinifera, Vitaceae family, fresh shoots of peach - Persia vulgaris, Rosaceae family, fresh shoots of blueberry - Vaccinium myrtillus, Ericaceae family, fresh buds of lilac - Syringa vulgaris, Oleaceae family, shoots fresh lime - Tilia tomentosa, family Tiliaceae, shoots fresh black mulberry - Morus nigra, family Moraceae, fresh shoots of wild rose - Rosa canina, Rosaceae family, fresh buds of black currant - Ribes nigrum, family Grossulariaceae, fresh shoots of willow - Salix alba, Salicaceae family, branches fresh rosemary - Rosmarinus officinalis, Lamiaceae family, fresh buds horse chestnut - Aesculus hippocastanum, family Hippocastanaceae, fresh buds of elm - Ulmus minor, family Ulmaceae.

4.13.

Title	Barbell with Multiple Uses
Authors	Hagiu Bogdan-Alexandru, Sandu Andrei-Victor, Sandu Ion
Institution	”Al. I. Cuza” University of Iasi, Faculty of Physical Education and Sports, Iasi, Romania Romanian Inventors Forum
Patent no.	RO Pending patent
Description	Subject of the invention consists in two types of systems expander-barbell witch have two sliding handles. The handles are connected by two springs that maintain a minimum distance from the center of the bar in the first example , or linking them to the extremities of the bar in the second example. Handles allow adding weights to external disks.



4.14.

Title	Method for diagnosing the severity of reflux oesophagitis
Authors	SCORPAN Anatolie, MD; BIVOL Grigorii, MD; SCURTU Alina, MD; SCURTU Serghei, MD;
Institution	AGEPI MD
Patent no.	Nr.2160/2003
Description	The invention relates to medicine, namely to gastroenterology. Method for diagnosing the severity of reflux oesophagitis including by esofagoscopiei, characterized in that it is determined during propagation peristalticii portion of the esophagus that starts at the spring aorta and ends esogastrice and reached the junction where the propagation time peristalticii is 6.0 ± 0.3 s, diagnosed mild severity, and 10.80 ± 0.65 - 14.80 ± 0.46 and the average severity and -extremely serious condition of reflux oesophagitis.

4.15.

Title	Method of treatment of chronic C hepatitis
Authors	BODRUG Nicolae, MD; RUDIC Valeriu, MD; BUTOROV Ivan, MD; ANTONOVA Natalia, MD; TIBERNEAC Maia, MD; ISTRATE Viorel, MD; SCORPAN Anatolie, MD
Institution	AGEPI MD
Patent no.	Nr. 3477/2008
Description	The invention relates to medicine, namely to hepatology and is intended for the treatment of chronic hepatitis C. Method, the invention consists in that it is given 300 ... 400 ml 0.9% NaCl solution ozonated containing 4 ... 5 mg / L ozone, intravenous drops a day for 10 ... 12 sessions in a series and simultaneously daily administered spasmolytic, hepatoprotective amino acids in normal daily dose. After completing the series in 5 ... 6 months is given a hepatoprotective. However, treatment is performed at least three years.

4.16.

Title	Therapeutic strategies for innovative anti-ageing cosmeceuticals, based on fully exploitation of three species of Romanian medicinal plants
Authors	Brandusa Dumitriu, Laura Olariu, Lenus Zglimbea
Institution	SC Biotehnos SA
Patent no.	pending
Description	The correct definition of the cellular / molecular target for the dermato-cosmetic claim is an important step in cosmetic product design. In order to fulfill this request, modern techniques are performed starting with advanced gene research and continuing with structural protein characterization, intra / extra cellular signaling pathways, etc. The development of these new

research border areas (cosmetogenomics, proteomics, etc) has as consequence the better understanding of skin ageing induced changes and to validate the efficacy of cosmetic ingredients.

Based on this depth characterization, Biotehnos Laboratories have developed *from three Romanian medicinal plants*, new anti-ageing active ingredients, targeting different aspects of this phenomena: restoring the fibril organization in superficial wound healing (saponozidic compound from *Callendula Officinalis*), estrogen-like action (bioactive complexes from *Trifolium pratense* and *Trigonella foenumgraecum)*, photo protective effect, counteracting the cellular damages induced by UV-A and UV-B radiation (a phyto-complex from *Trigonella foenumgraecum).*

All these vegetal ingredients are selective extracts and purified substances with a specific design in order to interact with the cellular / molecular target, produced through new technologies based on the fully capitalization of vegetal raw materials. The starting process is the ecologic growing of plants, followed by selective extraction in steps and separation of active components, ending with the recycling of the vegetal waste as provender for animals or organic fertilizer.

Cellular and genomic research for the ingredients design, together with the fully exploitation of vegetal raw material through advanced technologies will assure a positive impact on the quality of the new products.

Research activities were done during Dermolab project, with financial contribution from European Union (POS CCE ID 383 SMIS CSNR 6009 CTR 107/2010).

4.17.

Title Antineoplastic clavinic alkaloid type product of veterinary use and preparation process thereof

Authors Craita Maria ROSU, Pincu ROTINBERG, Zenovia OLTEANU, Stefania SURDU, Elena TRUTA, Cosmin Teodor MIHAI, Luminita HRITCU, Daniela GHERGHEL, Monica HANCIANU, Anca MIRON, Ana Clara APROTOSOAIE, Oana CIOANCA

Institution Institute of Biological Research Iasi – branch of INCDSB Bucuresti
„Alexandru Ioan Cuza" University of Iasi
"Ion Ionescu de la Brad" University of Agricultural Sciences and Veterinary Medicine of Iasi
" Gr. T.Popa" University of Medicine and Pharmacy of Iasi

Patent no. Patent application No. A/01301 / 5.12.2011

Description The invention proposes a new bioproduct of clavinic alkaloid type, extracted and purified from *Claviceps purpurea* fungus, as

natural antineoplastic product of veterinary use. Containing agroclavine as bioactive agent (in naturally occuring form), it had proved antitumoral action both *in vitro* (on HeLa tumoral cells) and *in vivo* (on animals bearing either spontaneous cancer or experimentally induced tumors). Its pharmacodynamic effectiveness has been registered in small doses (50 μg agroclavine/kg of body weight), which have also a low toxicity.
The proposed biotechnology includes: fermentation of *Claviceps purpurea* fungus on proper nutritive medium and in physical conditions which stimulates the clavinic alkaloids biosynthesis and fungal biomass development in short time (7 days); extraction from the liofilized mycelium; purifications by solvents and resuspension of dry residuum in DMSO at a final concentration of 250 μg bioactive product/ml.
Concomitantly with the significant antineoplastic effect induced by intraperitonealy, intravenously or locally administrations of the product to the animals with tumors, the new bioactive product can be included in the group 1 of the hematological toxicity (according with the classification of the World Health Organization: 0-4 degree). The new experimental oncochemotherapy has a good biocompatibility with life of the tested organisms, a very good tolerability and can be used in lower doses than those of some known anticancer drugs.
The new product is obtained by a non - polluted biotechnology, is cheap and easy to be performed at industrial level and has a high pharmacological value (enrichment of the „arsenal" of Romanian compounds with oncochemotherapeutic properties, from natural sources).

4.18.

Title HAM FOR TONING

Authors Marius NECULAES, Marin CHIRAZI, Andrei Victor SANDU

Institution Alexandru Ioan Cuza University Iasi, Faculty of sports and Physical Education

Patent no. Pending

Description

The "Ham for toning" is meant for people of all ages with deviations of the dorsal spine in sagittal plane, in order to correct these deficiencies (kyphotic postures and kyphosis).
The orthosis is made of an elastic fabric for the front side of the torso and of a non-elastic textile fabric for the back side, with an additional rigid paravertebral piece in order to create the functional discomfort (pain) at that level. The elastic fabric on the front side will bring the shoulders forwards, pulling and compressing at the same time the paravertebral piece, thus inducing pain at the level of the back. As a reflex mechanism to reduce the pain, the patient will voluntarily contract the muscles

of the back, pulling back the shoulders, against the resistance opposed by the elastic piece of the orthosis (on the front side of the torso) and the two straps attached to the orthosis, and the belt, thus toning the dorsal paravertebral muscles, relaxing at the same time the rear side piece that produced the pain stimulus.

4.19.

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

4.20.

Title	MS DRUG
Authors	MILAD VISMEH, MOHAMMAD SAEED HABIBI
Institution	Iran
Patent no.	Pending
Description	This drug is completely organic. this drug is very expensive and has fewer side effects. the experiment was performed on six patients and the patients were asked not to use of other drugs. positive effects were seen after the trial period. less muscle pain and difficulty walking largely disappeared

4.21.

Title	Adaptation and application of the World Health Organization (WHO) Surgical Safety Checklist in the setting of operation theatre of the Republic of Moldova.
Authors	Gheorghe CIOBANU, Ruslan BALTAGA, Liviu VOVC, Serghei ŞANDRU, Igor MIŞIN, Serghei COBÂLEŢCHI, Sergiu ZAHARIA, Ion CHESOV
Institution	National Scientific-Practical Center of Emergency Medicine (NCPCEM), State Medical and Pharmaceutical University „N.Testemiţanu" (SMFU „N.Testemiţanu")
Patent no.	MD 3310 08.02.2012
Description	Patient Safety is a serious concern all over the world and an indicator of quality and performance of Health System. For WHO, patient safety is a fundamental principle of health care. WHO has deployed extensive work dedicated to global and regional health priorities, guiding, advising and supporting its

Member States in improving quality and safety of care. WHO Surgical Safety Checklist, as safety tool, has been shown to reduce surgical morbidity and mortality all over the world in high resource settings countries. But it was never use in low income settings countries like the Republic of Moldova. NSPCEM study team elaborated the methodology of implementation of WHO Safe Surgery Checklist in the settings of operation theatre of the Republic of Moldova that fits local available human and economic resource, ethic and management features.Local team added one new compartment to WHO Safe Surgery Checklist and new one item, proposed an innovative method to share the duties between surgical team members on completing of the Checklist.Due to proposed measures WHO Safe Surgery Checklist was successfully implemented in the settings of the operation theatre of the Republic of Moldova..

4.22.

Title DEVICE - BONES HOLDER - WOUND EXTENDER-TRANSFORMER

Authors Borovic Eduard, Borovic Ecaterina

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

Patent no. 1359 – MD

Description The invention relates to medicine, especially in traumatology and orthopedics and can be used as an divece – bones holder – wound extender - transformerin osteosynthesis of long tubular bones. The principal effect of intraoperative application consist in posibilities of fixation bones fragmentes in the varior configurations, including the shaft and the metaphyseal bone's region allowing compression of bone fragments from different angles supporter of the bone axis, rotation of the arm due to capacity adjustable 180 ° in the frontal plane and, if necessary, changing position adjustable arm, changing the retractor, allowing reduction of numerical toolbox necessary for surgical manipulation and time reduction surgery.

4.23.

Title DEVICE WITH EXTERNAL ADJUSTABLE ELEMENT FOR OSTEOSYNTHESIS TUBULAR LONG BONES

Authors Borovic Eduard, Borovic Ecaterina

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

Patent no. 1358 – MD

Description The invention relates to medicine, especially in traumatology and orthopedics and can be used as an divece with external

adjustable element for osteosynthesis tubular long bones.The proposed problem is solved in that work the lower element position adjustable, so the adjustable lower arm in a horizontal plane is determined by a removable handle - guide. Density and conservation essential element position adjustable lower work therefore adjustable lower arm in the frontal plane of existence is ensured screw-ring. Compression plate fixation and bone fragments during extramedullary osteosynthesis is performed by rotating the crank clockwise, position adjustable lower element as U, so the adjustable lower arm, with projections up. L-shaped arms rigid upper element of U ensures reliable fixation of bone fragments.

4.24.

Title	DEVICE FOR INTRAOPERATIVE MALIGNANT OBSTRUCTED COLON LAVAGE
Authors	GHIDIRIM Gheorghe, MD, MIŞIN Igor , MD, ZASTAVNIŢCHI Gheorghe, MD
Institution	National Scientific-Practical Center of Emergency Medicine (NCPCEM), State Medical and Pharmaceutical University „N.Testemiţanu" (SMFU „N.Testemiţanu")
Patent no.	F2011.0049 din 2011-06-28
Description	The invention relates to medicine, especially for general and colorectal surgery and may be used as an „single step intraoperative lavaje device" for colonoscopy. The advantage consist from reducing the risk of contamination of the operative field, intraoperative examination of proximal compartments of the colon within colonoscopy, and lavage of upper channel is excluded needs of antireflux valve system, simplifying the device construction. The main effect of using the device is providing intraoperative bowel preparation in colon occlusive conditions for the possibility of neoplastic primary anastomosis.

4.25.

Title	COMPUTERIZED PHYSIOTHERAPEUTIC COMPLEX
Authors	Dorogan Valerian, Vieru Tatiana, Vieru Stanislav, Secrieru Vitalie, Munteanu Eugen, Balica Ştefan
Institution	Technical University of Moldova
Patent no.	Patent pending
Description	The complex integrates widely used physiotherapeutic procedures (electrophoresis, magneto therapy, laser therapy, treatment with ultraviolet and infrared radiation, millimeter wavelengths therapy, ion therapy) and is equipped with temperature, tension, and vibrations sensor. It is programmed using a PC and a database (standard regimes).

4.26.

Title	The process of formation of the intestinal bacteriocenosis in newborns
Authors	*Velciu Aliona, Timosco Maria*
Institution	The Institute of Physiology and Sanocreatology of the Academy of Sciences of Moldova
Patent no.	Patents MD 143
Description	The process includes treatment of nipple and areole of mammary gland before feeding with five doses of lyophilized preparation, containing a mixture of bacteria of *Bifidobacterium* and *Streptococcus* genus. The process of formation of the intestinal bacteriocenosis in newborns in a shorter period of time due to intestinal tract coordinated colonization with microorganisms from the obligatory genera and exclusion of spontaneous formation of bacteriocenosis with microorganisms from the environment.

4.27.

Title	Process for water purification from hydrogen sulphide and sulphides
Authors	MACAEV Fliur, SEPELI Felix, SEPELI Diana, ZVEAGINŢEVA Marina et alea
Institution	Academy of Sciences of Moldova, Institute of Chemistry
Patent no.	MD 4146 B1 2012.01.31
Description	The invention relates to pharmaceutical industry, in particular to the production of brevikollin-base from *Carex brevicollis* D.C.

4.28.

Title	Process for the production of brevikollin-base from *Carex brevicollis DC*
Authors	MACAEV Fliur, SEPELI Felix, SEPELI Diana, ZVEAGINŢEVA Marina et alea.
Institution	Academy of Sciences of Moldova, Institute of Chemistry
Patent no.	MD 4118 C1 2012.02.29; MD 4125 C1 2012.03.31
Description	Both of them - 1,3,4-Oxadiazole compo-unds containing disubstituted thiourea and compounds containing monosubstituted thiourea manifest Mycobacterium tuberculosis culture growth inhibition properties.

4.29.

Title	INTERNAL COMPLEXES OF COPPER (II) WHITH ANTIBACTERIAL AND ANTIFUNGAL ACTION
Authors	*Prisacari Viorel*, *Buraciov Svetlana, Tsapcov Victor, Birca Maria, Gulea Aurelian*
Institution	State University of Medicine and Pharmacy *''N. Testemitsanu''* of the Republic of Moldova

Patent no.	MD 2003
Description	The invention relates to a group of new tiosemicarbazona class of coordination compounds of transition metals, biologically active, showing marked bactericidal activity against gram-positive and gram-negative bacteria and fungicides. The activity of compounds is much higher compared with furacilini and nistatini used in medical practice. Antibacterial activity is higher by 64-4166 times the gram-positive microorganisms and from 2 to 297 times the gram-negative microorganisms, compared with furacilini and antifungal activity is 1,6 to 25,8 times higher compared with nistatini. However, the toxicity of compounds present is about 8 times lower compared with furacilini toxicity. The procedure for obtaining the compounds is simply declared, the initial substances are available, environmentally safe yield is 82%. *Application*: Medical and veterinary. Pharmaceutical industry.

4.30.

Title	Remedies new antiviral treatment and prophylaxis of oral herpes.
Authors	Diana Uncuţa, Valeriu Rudic
Institution	State Medical and Pharmaceutical University „Nicolae Testemiţanu"
Patent no.	MD 4110, 3724, 2671; Application MD: a20100032, a20100033, a20100034
Description	Advantages drug used to treat oral herpes diseases consist curative effect manifested major antiviral properties, inflammatory, regenerative. Drug use through effective drug to reduce the occurrence of relapses during treatment preventing these viral illnesses.

4.31.

Title	PROCEDURE FOR THE PROGNOSIS OF THYROID CANCER PROGRESSION RISK
Authors	Victor Popescu
Institution	State Medical and Pharmaceutical University „Nicolae Testemiţanu"
Patent no.	MD - 4038
Description	Invention provides identification of the methylation profiles of p15 gene in the DNA extracted from malignant tumor fragments of the thyroid gland and their comparison with the profiles of normal peritumoral tissue.

4.32.

Title	The cellular therapy methods
Authors	ABABII Ion, NACU Viorel, CIOBANU Pavel, GHIDIRIM Gheorghe, NACU Ludmila, REVENCU Tatiana, MOCAN Elena
Institution	State Medical and Pharmaceutical University „Nicolae Testemiţanu"
Patent no.	MD 3556; MD 3998; MD 3338; MD 1270; MD 834; MD 1168; MD 1585; MD 191Z; MD 258Y; MD 192.
Description	Experimental and clinical data of utilization of the cell grafts and composites to stimulate the bone regeneration and rehabilitation of patients with pseudoarthrosis and bone defects have showed the efficacy of treatment. Also experimental studies showed good results and perspective to treat the degenerative and inflammatory diseases in surgery, otolaryngology and uro-gynecology.

4.33.

Title	METHOD OF VACCINATION AGAINST VIRAL HEPATITIS B IMMUNOCOMPROMISED PERSONS
Authors	*Ig. Spînu, C. Spînu, M. Isac, V. Guriev, O. Sajen, P.Chintea*
Institution	National Center for Public Health, Republic of Moldova
Patent no.	MD a 2011 000 06
Description	The use of autohton plant origin medicinal products (Mestim, Pavstim, Pacovirina) as adjuvant with viral B hepatitis vaccine administrated patients with renal dialisis treatment with increased risks of infection diseases, reduces the number of non-respondente the vaccine persons, with increase of immunity level.

4.34.

Title	METHOD OF INFLUENZA AND OTHER ACUTE VIRAL RESPIRATORY INFECTIONS PROPHYLAXIS
Authors	*C.Spînu, P. Scoferţa, Ig. Spînu, Angela Roşca*
Institution	National Center for Public Health, Republic of Moldova
Patent no.	MD 3120, 3770
Description	The administration of the autohton product named persons of different ages, in particular with increased risk of flu illness in preepidemic, epidemic, (pandemic) and postpandemic periods, significantly reduce the number of illnesses and postflu complications in particular: bronhiolotes, brinhopneumonia and pneumonia. Pacovirin in particular is recommended people with compromise immune status and those who have absolute and temporary contra-indications to vaccination.

4.35.

Title	MEDIUM FOR HUMAN AND ANIMAL CELL CULTIVATION
Authors	*C.Spînu, Ig. Spînu, Angela Roşca, Liudmila Bîrca, Lilia Cijuhari, P.Chintea*
Institution	National Center for Public Health, Republic of Moldova
Patent no.	MD 3569
Description	Supplementation of the medium for cells cultivation (standard medium for cells cultivation with the addition of bovine serum) with vegetable biostimulator: capsicozid 3-O-[β-D-glucopiranozil (1→2)]-[β-D-glucopiranozil (1→3)]-β-D-glucopiranozil (1→ 4)- β-D-glucopiranozil (1→3)-β-D-glucopiranozil-[(25R)-5α-furostan-2α, 3β, 22α, 26-tetraol]-26-O-β-D-glucopiranozil in the final concentration 0.01 % increases final concentration of cells to around 8 (eight) times.

4.36.

Title	METHOD OF TREATMENT OF POST-COMBUSTION WOUND
Authors	*Furtuna Denisii, Coreţchi Liuba, Bahnarel Ion, Spînu Constantin*
Institution	National Center for Public Health, Republic of Moldova
Patent no.	MD Application SS 2011 0184
Description	Method of treatment of post-combustion wound, which is that therapy is administered in alternating flow red and infrared light, characterized in that red light gives the parameters: wavelength - 660 nm, dose - , light intensity - 41.6 ; and infrared: wavelength - 850 nm, dose - , light intensity - 49.06. This system produces faster cell regeneration compared with the nearest solution, efficiency of decreasing wound surface being 50 ... 60% of controls in 8 days. Granulation total period of wound is reduced by four days in compare to analogy.

4.37.

Title	Procedure for obtaing of oil nanodispersion with regenerative capacity
Authors	Bogdan Alexandru HAGIU, Ion SANDU, Violeta VASILACHE, Vasile TURA, Ionel MANGALAGIU, Constantin FILOTE, Andrei Victor SANDU
Institution	Ştefan cel Mare University of Suceava Romanian Inventors Forum
Patent no.	Patent application A/01216/26.11.2010
Description	The invention refers to a procedure for obtaining on oil nanodispersion with regenerative capacity for tissues, by

stimulation of Menzenchimal and hair folicle STEM cells.
The procedure uses sunflower oil (refined, neutralized and sterilized) for injection use, in which is dispersed coloidal silver (5-10 nm at 2,5,…5,0 ppm). The mixture is poured in glass ampoules **of** 1,2 or 3 grams.
Application**:** pharmaceutical and medical

4.38.

Title Apparatus for human vision study mechanism

Authors Mariana Daniela MANU, Gheorghe COHAL, Constantin FILOTE, Nicolae NĂCOIU

Institution Ştefan cel Mare University of Suceava

Patent no. Patent application No. A/01414/19.12.2011

Description

The holographic BioPhotonic laser model of the ocular globe removes from competition the old model of eye camera, updating and using data from laser science, holography, liquid crystals, biophotonics and electronics. Technically, it can result in several technical versions of Romanian Bionic Eye (RBE). The proposed model shows that the eye is a bifocal laser system with intermediate holographic system, characterized by:

• two optical focuses placed at the poles of the resonator, formed by diverging meniscus lens;

• a holographic intermediate lens, the crystalline, which makes correction of spherical shape and chromaticity aberration of image, but does not reverse the photographic image as it occurs in photographic theory, due to its special location.

Regardless of the rotation degree of the eye of around its optical axis, the image remains in the same position with the concerned actual object. Propagation of light between the poles of the system takes place in one direction during the day, and in the opposite direction at night. Light emitted by an external light source in contact with the corneal pole (divergent meniscus) is transformed into bioluminescence (BL), biological laser radiation: monochromatic, coherent, headed and amplified by nonlinear media of active matter, and termotrope liquid crystals (membrane)/ liotrope (nuclear). The ultra weak radiation increases with each crossed membrane, with each cell, with the production of amplitude and frequency modulation of emitted radiation, and brings about monochromatic laser impulse feature at retina level, 800-1200 osc/ sec. Bioluminescence results in colored, dynamic, clear and undistorted 3D hologram.

4.39.

Title	Mechatronic system for directing the bionic eye under the optical order. Bionic muscle
Authors	Manu Mariana-Daniela, Pleşu Gheorghe
Institution	S.C. GL PROJECT S.R.L.
Patent no.	Dosar O.S.I.M.
Description	Mechatronic system has the following structural and functional elements: box machine (1); bionic eye OB (2), consists of: bifocal laser resonator (3), polarizing filter (4); coaxial system of three lenses, corneal divergent meniscus lens (5) and macular divergent meniscus lens (6), a biconvex crystalline lens (7), the image is a hologram made straight, which makes optical control of targeting OB, a metal ring (8) fixed on the equator and the laser resonator, takes four EM coils in four positions, top down, right, left; each electro-magnetic EM coil (9) has a fixed part of the OB, part fixed to the wall of a box as "bionic muscles", which produces eye movement OB, this corresponds to involuntary eye movement, eye reflexes optical plano-convex a lens (10) placed behind the posterior pole of the OB, coaxial with macular lens, determines two rings Newton and eight quadrants, a sensor array photo- detectors (11) placed behind the plane-convex lens, has read a photodiode (12) in each quadrant; under the optical order photodiode generates an electrical current in an electrical circuit ; an electronic amplifier with switching power (13) takes the current generated by the photodiode, it increases by 10^8 -10^{10} times and transmits it to the EM coil of stimulated photodiode circuit ; activation energy of the various components is provided by the system in switching power strip (14).Mechatronic system has four electric circuits, each circuit is comprised of: electrical conductors (15), a photodiode and an EM coil.

4.40.

Title	Method for the manufacturing of scaffolds and composite materials designed for Tissue Engineering
Authors	Catalin Popa, Liana Cont, George Dindelegan, Viorica Simon, Ioana Brie, Codruta Pavel, Viorel Candea[a]
Institution	Technical University of Cluj-Napoca University of Medicine and Pharmacy "Iuliu Hatieganu" of Cluj-Napoca University "Babes – Bolyai" of Cluj-Napoca The Oncology Institute "Prof.Dr. Ion Chiricuta" din Cluj-Napoca
Patent no.	Patent application RO: A/10035/2010
Description	The patent refers to a manufacturing method for composite

scaffolds designed for the seeding and attaching of cells that form an implantable tissue. The composites are directly obtained through electrospinning performed on a collector that supports a unidirectional / bidirectional array of bioresorbable suture wires. A porous matrix containing micro / nanofibres is deposited through electrospinning on both sides of the as obtained composite sheet. The matrix and wires are made of different bioresorbable polymers, assuring optimal bioerosion duration, while maintaining the desired strength according to the application.

4.41.

Title	Process for the obtaining of an injection oil silver nanodispersion
Authors	Hagiu Bogdan Alexandru, Sandu Ion, Lupascu Tudor, Vasilache Violeta, Tura Vasile, Mangalagiu Ionel, Sandu Andrei Victor, Gonchyar Vyacheslav, Gonciar Veaceslav
Institution	Romanian Inventors Forum Institute of Chemistry of Academy of Science of Moldova
Patent no.	MD4106 (B1) — 2011-04-30
Description	The invention relates to medicine, namely to a process for the obtaining of an injection oil silver nanodispersion.The process provides for the mixing in a volume ratio of 5:1 of sunflower oil for injection with an aqueous colloidal silver nanodispersion with the size of particles of 5...10 nm, obtained from silver nitrate by precipitation with sodium citrate and stabilized with polyvinylpyrrolidone, at the same time the mixing is carried out under stirring at a speed of 300 vol./min within 15...20 min, then it is separated the aqueous fraction, and the oil nanodispersion with the concentration of colloidal silver of 2.5...5.0 ppm is vacuum-treated at a pressure of 0.085 atm, a temperature of 75...80 DEG C, during 20...30 min and packed in glass vials.The result consists in the possibility of administration of the oil silver nanodispersion by injection.

4.42.

Title	Artificial Halochambers
Authors	Sandu Ion, Canache Maria, Sandu Ioan Gabriel, Sandu Andrei-Victor, Vasilache Viorica, Chirazi Marin, Stirbu Catalina Mihaela, Stirbu Ilie Catalin, Lupascu Tudor
Institution	Romanian Inventors Forum Institute of Chemistry of Academy of Science of Moldova
Patent no.	MD4089 (B1), RO126285 (A2), RO126284 (A2), RO126283 (A2)

Description	The present invention relates to an artificial microsaline or halochamber for multiple users, consisting of a dry sealed chamber, with ionized windows, with UV filters having a recess cut in one of the walls wherein there is placed a ventilation system with hydrothermal air conditioning for carrying out a saline microclimate with relative humidity of 60...75% at a temperature of the environment of 18...22 DEG C , wherein the walls and ceiling are lined with two or more layers of sackcloth, of flax or hemp cloth impregnated with monocrystals deposited by recrystallization from oversaturated NaCl solutions as such or in admixture with KI, MgCland/or CaClin very small pre-established concentrations and wherein, in order to ensure a saline microclimate with dry aerosols, the air jet from the ventilation system passes through several layers of impregnated cloth stretched on rectangular wooden frames located in monoblock arrangements.

4.43

Title EN	Method of prophylaxis of pelvic organ complications of radiotherapy
Authors	Ghicavii Victor, Gavriluta Vadim, Ghicavii Vitalie
Institution	State Medical and Pharmaceutical University „N. Testemitanu”
Patent no.	482 MD
Description EN	The novelty consists in those that are administered once a day after meals for 15 days after beginning the cure of radiotherapy, one capsule (33000) of retinol, one capsule (0.2) of tocopherol and one tablet (0.2) of methiluracil. Simultaneously is administered "Dovisan" (*Oleum Semeni Cucurbitae*) on rectal microclisme of 20 ml one hour before radiation therapy. Also the product is administered orally, one teaspoon (5 ml) 2 times per day, from 2-3 days before initiation of radiation therapy course and throughout it. Use of "Dovisan" in the proposed association during radiotherapy cure, clearly reduces the degree of manifestation of early complications (cystitis, rectal, etc.) of radiation of the pelvic organs with the improvement of patients.

4.44

Title EN	Method for treatment of neovascular glaucoma
Authors	Cuşnir Valeriu, Rusu Aurel, Cuşnir Vitalie
Institution	State Medical and Pharmaceutical University „N. Testemitanu”
Patent no.	117 MD
Description EN	Method for treatment of neovascular glacoma which consists of the following: into the anterior chamber of the eye, under local

anesthesia, is injected by corneal paracentesis 0.1 ml of 2.5% avastin, after that in the conjunctival sac is instilled an antibiotic and applied a sterile dressing for a day; after 1-4 days is carried out a fistulising operation. The problem solved by this invention is the prevention of the bleedings during the performance of operations and in the postoperative period.

4.45

Title EN Method of prognosis of the evolution of endogenous uveitis

Authors Cuşnir Valeriu, Rusu Aurel, Cuşnir Vitalie

Institution State Medical and Pharmaceutical University „N. Testemitanu"

Patent no. 7001 MD

Description EN Method of prognosis of the evolution of uveitis endogenous, which consists of the following: in the 3-4 day of the treatment is collected blood, from which is separated serum by centrifugation , determine the total number of T lymphocytes (CD3 +) and the number of T lymphocytes mature (CD5 +), then the index of activity (IA) is calculated and if determined values up to 50% is predicted a favorable outcome of uveitis endogenous and when determining values greater than 60% is projected to unfavorable developments.

4.46

Title EN Antiinflammatory remedy in the hemorrhagic shock

Authors Vişnevschi Anatolie, Ghicavii Victor, Lutan Vasile

Institution State Medical and Pharmaceutical University „N. Testemitanu"

Patent no. 4004 MD

Description EN The novelty consists in the use of diethylphosphate-S-ethylisothiurea as anti-inflammatory remedy in the hemorrhagic shock, both in pre-hospital phase and at the hospital. The results obtained show that diethylphosphate-S-ethylisothiurea decreases inflammatory response in the hemorrhagic shock, especially by inhibiting iNOS, contributing to the reduction of nitrogen monoxide (NO). The advantage consists in that use of the product diethylphosphate-S-ethylisothiurea diminishes inflammatory events in the human body organs and tissues in a state of hemorrhagic shock.

4.47

Title EN	S-alkylisothiourea derivative for the treatment of uterine bleedings
Authors	Barcan Rafael, Ghicavii Victor
Institution	State Medical and Pharmaceutical University „N. Testemitanu"
Patent no.	PCT/IL2008/001466
Description EN	The novelty consists in the use of S-alkylisothiourea derivative to stop hypotonic postpartum uterine bleedings. S-alkylisothiourea derivative is administered intra-or para-cervical in dose of 0.02 dissolved in physiological solution. As a result of its action, there is contraction of myometrium with cessation of bleeding

CLASS 5

Industrial and Laboratory Equipments

5.1.

Title	The use of rapid cooling of a liquid alloy method to obtain substrates for the production of high-temperature superconducting tapes
Authors	Marcin NABIAŁEK, Michał SZOTA, Marcin DOŚPIAŁ, Jarosław JĘDRYKA, Katarzyna SZOTA, Henryk Dyja
Institution	Czestochowa University of Technology,Poland
Patent no.	Patent pending
Description	Presented rationalizing solution is related to production and properties of Fe-Ni tapes used as substrates of superconducting materials. The presented method involves solidification at huge cooling rates (amounting to up to 10^6 K / s) a liquid alloy onto a rotating copper cylinder. Produced using this method, materials are characterized by an proper texture and very good mechanical properties, allowing their use as a material for a base layer of superconducting material in the form of tapes. The use of materials produced using the method described for example in the electrical industry can lead to improved functional parameters of superconducting tapes and thus can contribute to reducing electricity consumption and promote environmental protection.

5.2.

Title	Rapidly solidified, magnetic materials for the production of high-temperature sensors and motors.
Authors	DOŚPIAŁ MARCIN, SZOTA MICHAŁ, NABIAŁEK MARCIN, DYJA HENRYK, PAWEL PIETRUSIEWICZ, DZILIŃSKI KAZIMIERZ, BŁOCH KATARZYNA, OŹGA KATARZYNA
Institution	Czestochowa University of Technology, Poland
Patent no.	Patent pending
Description	The rapid solidification method allows with proper

	selection of alloy composition and production process parameters to obtain hard magnetic materials with unique nanostructure. Obtained $TbCu_7$ type of structure is characterized by stable or abnormal (positive) coercivity and remanence parameters in wide temperature range. The production of such materials is extremely hard due to metastable character of desired crystalline phase. Projects related with described functional materials are counted to the so called "cutting edge" topics in manufacturing magnetic materials. Summarizing, due to unique thermo-magnetic properties these materials are extremely interesting for companies prducing high temperature sensors and motors working in harsh conditions.

5.3.

Title	DEVICE USED FOR THE MAGNETIC ACTIVATION OF THE PROCESSING THROUGH ELECTRIC EROSION, WITH A FILIFORM ELECTRODE
Authors	ȚÎȚU Aurel Mihail, OPREAN Constantin, MARINESCU Niculaie
Institution	Lucian Blaga University of SIBIU
Patent no.	Patent application A / 00629 din 10.08. 2009
Description	The invention refers to a device used for the magnetic activation of the processing through electric erosion, with a filiform electrode, built for the processing on specific machines that process with a filiform electrode, with a view to improve certain technological characteristics of the processing.

5.4.

Title	ELECTRONIC EQUIPMENT FOR GENERATING SINGLE-PULSE ELECTRICAL DISCHARGES
Authors	ȚÎȚU Aurel Mihail, NANU Dan, OPREAN Constantin, DIACONESCU Constantin, ȚÂȚU Gheorghe Aurel
Institution	Lucian Blaga University of SIBIU
Patent no.	Patent RO 118687 B
Description	The patent refers to an electronic equipment for generating single-pulse electrical discharges to be employed during experimental researches regarding the physical mechanism of material sampling during dimensional processing by means of electroerosion with massive electrode. The equipment is first and foremost employed for fundamental

research indispensable for the design and industrial implementation of ever-more efficient machine-tools for electroerosion processing

5.5.

Title	DEVICE FOR MAGNETIC ACTIVATION OF THE ELECTRO-EROSION PROCESSING
Authors	ŢÎŢU Aurel Mihail, NANU Dan, OPREAN Constantin, ŢÂŢU Gheorghe Aurel
Institution	Lucian Blaga University of SIBIU
Patent no.	Patent RO 118642 B
Description	The patent refers to a device for magnetic activation of the electro-erosion processing by massive electrode ensuring the overlapping and shaping of external magnetic fields, homogenous or non-homogenous, targeted towards the erosive clearance area.

5.6.

Title	THERMO-PNEUMATICAL CONVERTOR WITH HYDRO-ENGINE
Authors	Alecu Ioan, Antonescu Ion, Cuciureanu Dumitru, Cucoş Iulian, Dumitru Mihai
Institution	"Gheorghe Asachi" Technical University of Iasi
Patent no.	RO Pattent Application no A/01348/2010
Description	The invention is referring to a thermo-pneumatic convertor with oscillating operation connected to a hydro-engine with working fluid flow in closed loop which is developing useful mechanical work by acting in rotational motion of an electrical energy generator thus realizing the conversion of environment thermal energy in electrical energy. The technical problem that the invention is resolving consist in regenerative conversion and reconversion of environment thermal energy by faze transforming of a gas which modifies its physical state by the temperature and pressure difference, moving a uncompressible fluid by the pressure difference established in a closed loop with oscillating operation, developing useful mechanical work.

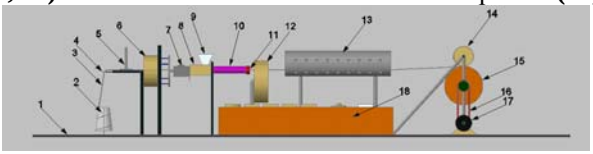
5.7.

Title	LOW HEAD HYDRAULIC TURBINE
Authors	Cucoş Iulian, Antonescu Ion, Alecu Ioan, Dumitru Matei
Institution	"Gheorghe Asachi" Technical University of Iasi
Patent no.	RO Pattent Application no A/00348/2011
Description	The invention refers to a turbine set in motion by low head water energy, allowing the kinetic-potential energy conversion into mechanical energy capable to turn an electrical generator. By increasing of turbine output water speed, an hydraulic device, using the Coandă effect, placed before the conical ejector (the turbine aspirator) determines the increase of depression in the conical ejector's region on its inner surface, fed with high hydraulic energy water from turbine's upstream, leading to the indirect tuning of turbine rotation speed and increasing of its conversion efficiency at low head placements.

5.8.

Title	Procedure and installation for coating yarns with ferrimagnetic substances.
Authors	Grosu Marian-Cătălin, Hossu Ioan, Avram Dorin
Institution	"Gheorghe Asachi" Technical University of Iasi, Romania, Faculty of Textile-Leather and Industrial Management,
Patent no.	Patent application No. A/00783/04.08.2011
Description	The invention regards a process and a device of covering to an ambient temperature of a various range of yarns with mixtures made of miscible binders into aqueous solution or solvents and ferrimagetic powders or other types. The device permit the deposit of a thin magnetisable film on different yarns types as: carded, combed, simple and twisted, monofilamentary and polyfilamentary, seamless and twisted yarns. The covering process of the yarn **(3)** is made by extruding, when this is passing through mixture being located into a special room **(10)** and then helped by a calibration device **(11)** that limits the dimension of deposited layer on it. The ferimagnetic layer of yarn is magnetised along of magnetic field lines generated by an electromagneti induction coil **(12)**. After magnetizing process occurs drying and fixing into a thermic chamber **(13)** followed by wrap on a bobbin with the system (**14,**

15, 16). The Instalation has an electric control pannel **(18).**



5.9.

Title	Heat Treatment Equipment for Cycling Ageing of the Aluminium Alloys
Authors	VIZUREANU Petrică, ŞTEFĂNICĂ Roxana – Gabriela, ACHIŢEI Dragoş – Cristian, NEJNERU Carmen, PERJU Manuela Cristina
Institution	„Gheorghe Asachi" Technical University from Iasi, Romania
Patent no.	Patent application No. DL 53/07.06.2011
Description	The complexity of the solution consist in a new method of achieving the precipitation of supersaturated solid solutions: repeated heating and cooling through alternant stationary and transitory thermal cycles assuring the achievement of smaller precipitates and finer dispersed in basis matrix. The technology of disperse precipitation in solid state meant for increasing aluminum alloys hardness is a process with several phases: solution quenching, hardening through disperse precipitation, nanophase into lattice by using thermal fields. For this purpose it is shown an automate installation for realizing thermal fields with alternant stationary and transitory cycle.

5.10.

Title	Compact portable apparatus for high-temperature welding and cutting of metals
Authors	Dr. Victor COVALIOV, Dr. Olga COVALIOVA
Institution	State University of Moldova
Patent no.	Brevete nr. 4087, BOPI, No. 12/2010; 4109, BOPI 4/2011; 4087, BOPI, 12/2010; 322z,BOPI 1/2011; Application no.2010-0108 2010.09.28.
Description	The design of a pilot compact portableapparatus is presented for the electrochemical generation of a mixture of oxygen and hydrogen, to be used for cutting and welding inder te

	high temperatures of various materials, including metals. The apparatus can be used at small industries, repair workshops and for repairs in the households, where there are no gas supply equipments and there is a need to ensure welding with high degree of flame purity.

5.11.

Title	OPTOELECTRONIC GAS SENSOR
Authors	Dorogan Valerian, Vieru Tatiana, Vieru Stanislav, Dorogan Andrei, Secrieru Vitalie, Munteanu Eugen, Balica Ştefan
Institution	Technical University of Moldova
Patent no.	Patent pending
Description	The sensor is equipped with a laser diode with vertical emission and an external optical resonator, which assures multiple propagation of laser radiation. The gash detection inside the external resonator's cavity is assured by fluctuating the emitted radiation wavelength in dependence on the environment's composition.

5.12.

Title	Cycle of inventions " CARTESIAN AND POLAR COORDINATES METERS OF IMPEDANCE "
Authors	Nastas Vitalie, Nicolaev Pavel
Institution	Technical University of Moldova
Patent no.	MD 248Z, MD 392Z, MD 420Z, MD 444Z, MD 445Z, MD 489Z
Description	The cycle of invention presents two methods for high-precision measurement of impedance: in Cartesian coordinates (MD489Z) and in polar coordinates (MD392Z), impedancemeters with simulated resonance for their practical implementation (MD445Z, MD444Z), and two impedance converters, used in impedancemeters as reference elements (MD489Z, MD392Z).

5.13.

Title	Portable equipment for cleaning and rehabilitation of transmission capacity for lubrication pipe flat valves
Authors	Grecu Marius, Raicu Ticusi Pantelie, Raduica Dragos, Nemtoiu Simona Greta
Institution	SC HIDROELECTRICA SA
Patent no.	RO Pending patent

Description

This invention relates to portable equipment for cleaning and rehabilitation of transmission capacity for lubrication pipes flat valves, used in hydroelectric plants. It is known that lubrication systems within hydraulic fittings contain pipes embedded in concrete, to which access is not easily accessible. Because of these drawbacks, periodic lubrication of pipes is very rare, leading to hardening grease, depositing calcite and inevitably their clogging. The technical problem solved by the present invention lies in creating the possibility of cleaning, respectively the operation of unclogging the pipes as well as their lubrication, pipelines to which access is difficult.

5.14.

Title Robo Cleaner for Windows of Skyline Buildings

Authors Bernard Dimas Rexa, Dr.-Ing. A. C. Arya

Institution Universitas Trisakti, Indonesia

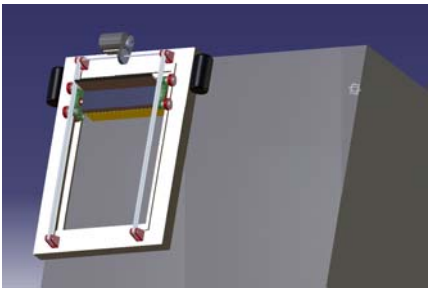
Patent no. *N/A*

Description

The growing amount of skyline buildings in Jakarta as the capital city of Indonesia brought the idea to find some effective solutions how to clean their windows. For that purpose will be needed expensive equipment such as gondola, crane and professional worker. It takes much time to clean windows of skyline buildings especially high-rise office building (> 50m), it is dangerous for the workers (cleaner) and this job costs expensive as well.

Robo Cleaner for windows of skyline buildings is a smart creation of robot which is programmed at its first construction (installation) before it starts to clean the windows. This robot consists of 4 vacuum legs, 1 wiper, 1 sponge and 1 sprayer. It is controlled by microcontroller and its motion is programmed by using software.

How it works: Robo Cleaner will be located at windows on the top side of the skyline building. It starts to clean each column of the window. This robot moves horizontally on each windows row of skyline-building and then to the next row vertically. So, we could clean the skylines building without gondola and it save cost according to the investment for equipments and human resources. It can minimize human error and avoid accident.



Robo Cleaner for Windows of Skyline Building

5.15.

Title Electric Outlet having a Cord Clipping Holder

Authors SONG, HO JAE

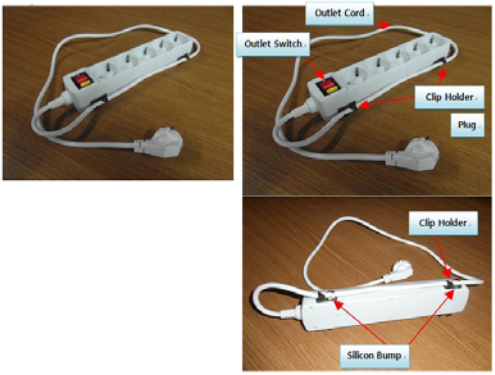
Institution Joong San High School, Korea

Patent no. KR 10-2010-0007941

Description The side of an electrical outlet has two L-shaped cord clip holders attached. On the diagonal groove of the clip holder, the electric cords can be inserted, pushing the cords to the opposite direction and when rotated, the cords will be fixed to the clip holder. The silicon bump is included in the holder that avoids the cords from coming loose. The holder allows user to organize tangling cords in the surrounding environment by fastening them altogether to this clip holder. The length of the cords can be controlled using the holder as well.

When not using the electric outlet sockets, the outlet's electric cord can be organized and put away easily with this clip holder by clipping it into the holder. The cord inserted will not untangle itself because of the silicon bump of the clip holder. The user can definitely control and organize the messy tangling of multiple wires and cords when the clip holder holds all of them together as well controls user's

preferred lengths of cords exposed.
Environments with many home appliances have numerous electrical cords tangling one another. The cord clip holder fastened on the side of the electrical socket outlet cleans up the messy environment with tangling wires by placing all of them into the clip holder, providing cleaner environment.



5.16.

Title Self-Assembling Bookshelf Using Magnets and Grooves

Authors CHAE, JU HEE

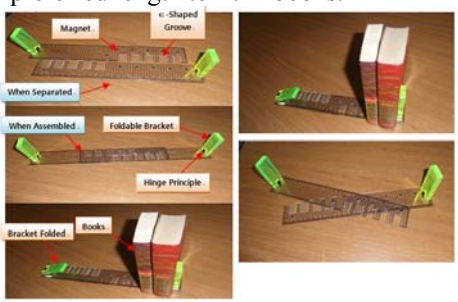
Institution Yang Jae High School, Korea

Patent no. 10-2012-0086275

Description

By applying a bracket that folds/unfolds like a hinge on one side of a 30cm-ruler, having two of such ruler can combine together to serve as a bookshelf when the brackets of each ruler are erected to side-support the books. Oppositely, when the brackets are folded, rulers are back for scaling and measurement. Two rulers each having 5 rectangular grooves carved on their side with no gradations can be attached together for the purpose of adjusting horizontal length of the bookshelf space. Also, on the central part of the rulers, there are holes to fit magnets in which enable the two rulers to combine/separate. When the two rulers are placed to mutually overlap each other, it is easy to fasten and unfasten them using magnets creating a combination of effective and portable self-assembled bookshelf function on two rulers.
Installing hinge-like foldable brackets on each side a ruler can create a bookshelf function when two of these rulers are united together. With brackets folded down, the rulers are

back to regular rulers for measurements and learning tool at school. When brackets are erected up, they are tall enough to support the books from both sides. The two rulers can be combined together by making "ㅁ" shaped equal-size grooves on one side of the rulers. This way, the two rulers can combine together inserting their grooves oppositely to each other like a puzzle. Having many grooves can expand the extent of the bookshelf space and the user can easily adjust the preferred length to fit in books.



5.17.

Title Ruler Having a Clip Holder for Writing Tools

Authors SONG, SION

Institution Dae Myeong Middle School, Korea

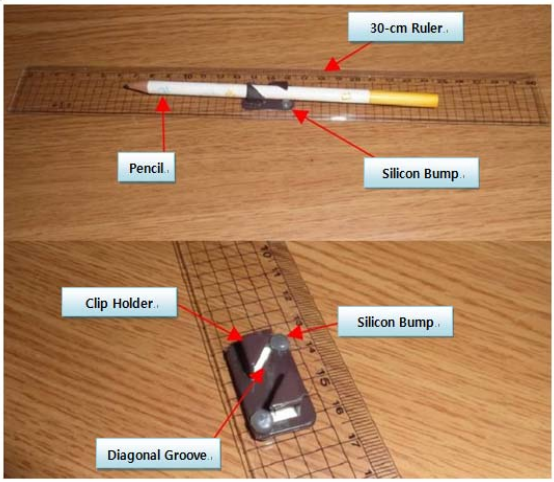
Patent no. 10-0015835

On the surface of a plastic 30cm-ruler, L-shaped clip holder is installed where a pencil can be inserted on the clip holder's diagonal groove. When the pencil inserted to the diagonal groove and rotated laterally, it mounts to the clip holder in which the silicon bump prevents the pencil from falling out or being broken. This is an idea applied to a ruler which the clip holder attached on the surface serves as pen/pencil holder.

Description The key feature is that because a ruler that is being used for measurement, drafting, drawing, etc always require a pencil or a pen. By installing a clip holder on the ruler surface, the pencil/pen can be inserted into the holder in which the elastic silicon bump of the clip holder grips the writing tool from falling out.

Because the 30cm-ruler can have a pencil or a pen clipped on top of the ruler surface, the user will never lose his writing tool while working or studying, but contributing effectively

to their process.



5.18.

Title Name Badge with Drink Holder Function

Authors SONG, MINSEO

Institution Do Gok Elementary School, Korea

Patent no. 10-0036728

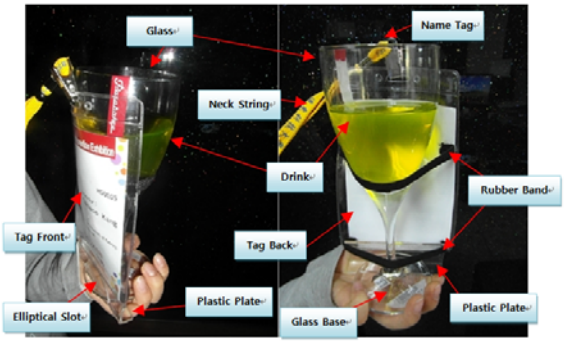
Description

The back-bottom of a name tag (visitor's badge) has L-shaped plastic plate equipped in which the plate's central part has an elliptical slot. This way, a wine glass' base can be inserted into the slot, which enables the name tag to maintain the balance of the glass. At the same time, the top & the middle part of the name tag is fastened by rubber bands aiding the tag to tightly hold a glass, cup or bottle. The person wearing the name tag can drink off the glass, cup or the bottle hung onto it without spilling the liquid.

The L-shaped plastic plate is adhered by silicon to the tag bottom of the back side. A hole is formed on each side of the name tag in which the rubber band is fastened on both sides, creating elasticity on the name tag. The L-shaped plastic plate has ellipse-shape hole (slot) formed in order to hold the base of the wine glass. For cups and glasses without such base to slot into the ellipse, the double elastic band on the middle and the top holds the cup tight.

In indoor/outdoor activities involving a lot of people such as

exhibitions, expos, conferences, meetings, etc, there are always the visitor badges/staff badges provided for all people. If the badges given to them have L-shaped plastic plate equipped, people are able to carry and leave their drinks on the name tag while eating standing up.



5.19.

Title 30cm-Ruler Having a Portable Bookshelf Function

Authors CHOI, YONG SUK

Institution Imae High School, Korea

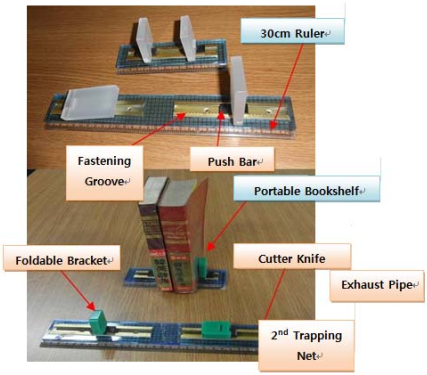
Patent no. 10-2009-1079858

Description

The surface of a 30cm-ruler has grooves to fasten cutter knife (box cutter) case with two foldable push bar brackets that slide along the cutter knife case. The push bar can either be erected or folded down. When folded down, the ruler can be used normally without any congestion. With the push bars erected, books of any kind can be located in between each bar to be compressed from both side, the ruler then serves as a bookshelf. The push bars apply force from both sides into the books placed in between them to grip them tight, preventing them from falling out of the shelf. Students and other users can use this invention as a regular ruler, but also as a portable singular bookshelf.

The 30cm-ruler is a tool that is generally being used for scaling, measuring size and length of objects, lines and for other various purposes. However, now this new idea has brought a ruler with a new function of being a portable bookshelf. The shelf space can easily be adjusted by just relocating the push bar brackets of the cutter knife along the

cutter knife case that is fastened to the ruler surface. The bracket is tall enough to support the whole ruler avoiding books from falling out of the whole. This certainly is an idea of 'instantly' transforming a normal ruler into a bookshelf.



5.20.

Title	Method for uniform nickel electroplating on a cooper base
Authors	Violeta VASILACHE, Ion SANDU, Constantin FILOTE, Andrei Victor SANDU
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent application No. A/00847/17.09.2010
Description	The patent consists in a method to achieve a uniform nickel layer by electroplating of a copper or a coppery iron support in the presence of polyvinylpyrrolidone, used in mechanical engineering as active surface agent.The method for uniform nickel electroplating of a copper or a coppery iron support is characterized by use of Watts baths to achieve thin passivated layers. Furthermore, it uses $NiSO_4 \cdot 6H_2O$ - 240 g/L and $NiCl_2 \cdot 6H_2O$ – 45 g/L acid solutions, 30 g/L boric acid as buffer system and 5 g/L polyvinylpyrrolidone as active surface agent, with the average temperature range between 50-65°C and the current densities range between 300 – 500 mA.

5.21.

Title Automated stacking system for paving stones on a stacking conveyor

Authors Constantin FILOTE, Mihai-Cristian TIRON, Ilie MIRĂUŢĂ

Institution Ştefan cel Mare University of Suceava

Patent no. Patent application No. A/00204/08.03.2011

Description The patent consists in an automated stacking conveyor that is formed of two band conveyers, 1 and 7, an extracting system 8, and a carrier fitted with an elevator 10, which stacks the items 16 on a staking conveyor using mainly the gravitation force as driving principle for final stacking of items, which represents the most difficult part of the job.

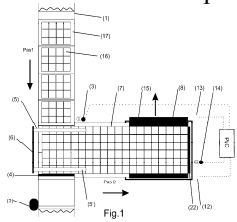


Fig.1

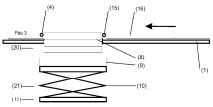


Fig.2

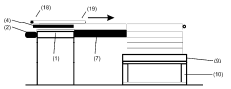


Fig.3

5.22.

Title Optical system for matrix multiplexing of signals

Authors Nicolae NĂCIOIU

Patent no. Pending

Description Multiplex and demultiplex presented system allows optical signals, allowing their use in information processing systems, surveillance systems, signaling systems, systems cripare etc. ..

5.23.

Title Orientation module with modular structure and multiple bends

Authors Vaida C., Plitea, N., Pisla, D., Gherman, B., Suciu, M.

Institution Technical University of Cluj-Napoca

Patent no. Patent pending no. A10113/2011

Description The patent refers to an orientation module with modular structure and multiple bends useful for surgical instruments. The solution offers multiple possible configurations which can be customized based on the

specific needs of a certain procedure. The solution intends to increase the workspace of the instruments providing a solution for the avoidance of areas or elements which block the direct access towards the surgical field. The actuation is achieved by means of a rotating knob which will orient the module based on the surgeon needs.
Compared to existing solutions, which present either rigid instrument or a few approaches where the active instrument head can be oriented around an axis, the presented solution represents an innovative approach by allowing the achievement of at least two bends, and furthermore, due to the modular construction allows the development of an entire family of surgical instruments. This solution can be integrated also in the structure of instruments which allow the orientation of the active tool, leading to a larger increase of the working space and the universality degree of the instrument.
Consisting of only four different components, and a very simple construction, these solutions can be implemented for any type of instrument dimensions (10, 5 or even 2 millimeters).

5.24.

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

„ Doctoral Scholarships for research performance at European level (EURODOC)" Project

Contract no. POSDRU/88/1.5/S/59410;

Project financed during 2009 – 2012

Coordinator: "Gheorghe Asachi" Technical University of Iasi, Romania

Partner: „Babeş Bolyai" University of Cluj-Napoca, Romania

Target Group: 130 PhD students

Project Funding: 18.943.804,97 RON

Project Main objective: Human capital development for research by doctoral programs to improve participation, enhancing the attractiveness and motivation for research. Development at European level of young researchers to adopt an interdisciplinary approach in research, development and innovation.

Project Manager: Prof. dr. eng. Mihaela-Luminiţa LUPU

CLASS 6

Mechanical Engineering - Metallurgy

6.1.

Title	Method and Device for Obtaining Homogeneous Products with Metal - Ceramic Structure
Authors	Ioan Carcea
Institution	"Gheorghe Asachi" Technical University of Iasi
Patent no.	117788 B
Description	The invention relates a process for obtaining homogeneous products with metal - ceramic structure, by instilling at 200 ÷ 500 ° C preheated ceramic powders, with inert gas, in a molten metal. A layer of protective equipment fondant is deposited over this molten metal. The procedure is performed into one equipment with a heating chamber for a ceramic powder which is driven by a piston at the top of the chamber. The preheated ceramic powder is angaged with an inert gas through a tube concentrically located in a rod provided with a mixing blade for metal melts in a crucible placed in a warm room .

6.2.

Title	Aluminum Alloys Obtaining Process with Improved Mechanical Properties by Micro Bonding with Nanostructured Prealloys
Authors	Vasile Soare, Dumitru Mitrica, Ionut Constantin, Costel Roman, Gabriela Popescu
Institution	Research and Development National Institute INCDMNR-IMNR "Gheorge Asachi" Technical University of Iasi
Patent no.	Patent application No. A/01359/2011
Description	The invention is related to a method of production of aluminium alloys with improved mechanical characteristics through nano-microaliere with prealiaje. 357.0 casting alloy has high strength in corrosive environments and produce highly complex casting parts.

Deformable alloy 5083 has a resistance associated to a good mechanical plasticity.
Microbonding of 357.0 and 5083 aluminum alloys is made with AlTi5B1 and AlSr10 nanostructured prealloys and pressed briquettes as bands produced by melt spinning ultra-fast freezing . This method produces cooling rates up to 105 K/s and can produce nano or cvasicristaline structures with properties far beyond that of other methods and in appreciable quantities. High-speed solidification process parameters applied to AlSr10 and AlTi5B1 prealloys have the following values:-melting temperature of 1100 ° C keeping the 1300 ° C, the distance of the crucible - disk is1.5 mm, disk - crucible angle of 70 degrees, diameter 1 mm hole crucible, pressure applied and demonstrated 1.5 bars of 1200rot wheel revolutions/min. 1500rot/min respectively. Obtained strips were pressed into briquettes of Φ 30 mmx4 mm at room temperature and with a force of 5 tons of force.

6.3.

Title The Electrochemical Process for Obtaining Ni-Zn-P Double Layer Thin Film for Anticorrosive Application

Authors Vasile Soare, Marian Buraga, Ionut Constantin, Ioan Carcea, Mihail Tarcolea, Ana Maria Popescu

Institution Research and Development National Institute INCDMNR-IMNR
"Gheorghe Asachi" Technical University of Iasi

Patent no. Patent application No. A/01259/2011

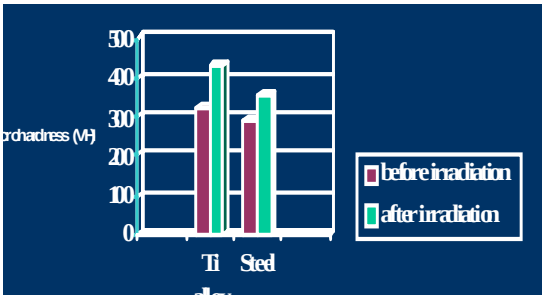
Description The invention concerns a process for producing thin films of double layer alloy NiZnP, through an autocatalytic and electrochemical codeposition process in two stages: in autocatalytic stage of deposition, the deposition bath consists of nickel sulfate solution, zinc sulphate, sodium hypophosphite, with concentrations: 40÷60 g/l $NiSO_4 \cdot 7H_2O$, 10÷20 g/l $ZnSO_4$, 10÷20 g/l $NaH_2PO_2 \cdot H_2O$, using as complexing and stabilization agents citric acid pH and ammonium chloride, pH adjusting agents, sodium hydroxide solution and agents to improve adhesion and film structure deposited thiourea and lactic acid. Codeposition electrochemical process in an electrolysis

	cell with a cathode coated steel plate with the first layer obtained, NiZnP autocatalytic, anodes made from platinum plates, and a saturated calomel reference electrode, characterized in that the temperature is 30÷40°C, applied voltage 0,7÷2,0 V, cathodic current density 70÷90 mA/cm2, anode-cathode distance 60÷80 mm, area ratio anode / cathode 5/1, pH of the electrolyte solution 2÷2,5, ratio H_3PO_4/H_3PO_3 is 10/1, deposition time 30÷60 minutes.
6.4.	
Title	Process and equipment for in-situ obtaining of aluminum alloys matrix composite materials reinforced with carbide particles
Authors	Vasile Soare, Dumitru Mitrica, Petru Moldovan, Mihai Butu, Ioan Carcea
Institution	Research and Development National Institute INCDMNR-IMNR "Gheorghe Asachi" Technical University of Iasi Technical University of Bucharest
Patent no.	Patent application No. A 2010 00853
Description	The invention relates to a process and one equipment for obtaining composite materials with metallic matrix by aluminum alloys alloyed with carbide forming elements such as silicon, titanium, ceramic particle reinforced from silicon carbide, titanium, etc. obtained by in-situ process. This process is conducted in argon atmosphere by blowing gas introduced like CH_4/Ar mixture, in aluminum - silicon alloy bath, methane dissociation and synthesis reaction of carbide formed between carbon and liquid alloy element. Composites with matrix of aluminum - silicon alloy and SiC particles reinforcement with small size of 5-10 μ, are obtained by blowing 10%CH_4 / 9 % gas mixture in liquid alloy matrix containing min. 7% Si and 0.5-0.7 % Mg, at a temperature of 900-1100 ° C, with a duration of 5-10 hours , then cooling and composite primary remelting at 670-700 ° C, keeping 5-10 min. for homogenization and casting in molds. Obtaining composite materials with matrix of aluminum alloy particles reinforced by in situ process by blowing

methane gas introduced as CH_4/Ar mixture, in liquid alloy bath is realized with equipment compose by a closed chamber melting reaction, with lid-cooled with water and connections for circulation of cooling water and the intake and discharge of protection gas and the resulting gases. In this chamber is inserted a graphite crucible with dense high height, at the bottom with a jet connection of gas mixture using reagent a number of nozzles with 1 mm diameter.

6.5.

Title	Laser Irradiation Techniques
Authors	Hebatelrahman Ahmed Hafiz Mustafa El Sabagh
Institution	Housing & Building National Research Center, Egypt
Patent no.	24014 Egypt
Description	The main idea of the new method depends on the the laser photon energy which is absorbed by the samples and cause microstructure changes which improve the mechanical properties without any significant changes in chemical composition. Applications and methods of exploitation * Improve the mechanical properties of the alloys such as hardness and wear. *Extends the life time of the alloys and makes them suitable for many applications such as bone replacement parts, dental elements, space applications, industrial spare parts and Increase the efficiency of surgical instruments. Applications require long periods of operation and maintain the dimensions. Marine applications and the parts are prone to erosion Properties of the treated alloys: Improved hardness by 36% (the hardness improved from 318 MHV to 437 MHV) – wear is improved by 99.8%- the particle size change from 10 to 7.5 ASTM - thickness of the treated part is only 250 nm.



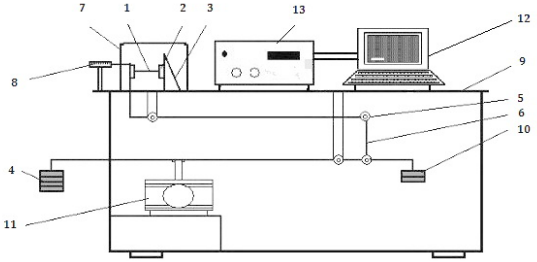
6.6.

Title	Installation of a continuously supply of cold materials processed through melting
Authors	Vasile HOTEA
Institution	Tech Univ Cluj Napoca, North Univ Center of Baia Mare
Patent no.	Patent RO 122230 B1/27.02.2009
Description	The patent reffers to an installation of a continuously supply of cold materials (coke, slag, funds), in the melting process in cylindrical rotary furnances.

6.7.

Title	Equipment for Thermo-Mechanical Fatigue Testing for Shape Memory Alloys
Authors	VIZUREANU Petrică, ACHIŢEI Dragoş – Cristian, NEJNERU Carmen, PERJU Manuela Cristina, ŞTEFĂNICĂ Roxana - Gabriela
Institution	„Gheorghe Asachi" Technical University from Iasi, Romania
Patent no.	Patent application No. DL 54/07.06.2011
Description	The complexity of the solution consist in combining thermal cycles, at maximum temperatures of 150º, with tension tests of the standard samples in order to establish the approximate number of function cycles of a marker, until it takes place the deterioration of shape memory properties and finally the breakage of the material. Standard samples, from memory shape alloys, will be tensioned, being caught between the dies, and the solicitation will be made by some levers system to whose

end it will be attached a plate with different weights.
- The type of the metallic material with memory shape, main critical heating points, and structural modifications that appear;
- Characteristic parameters of work medium: aggressively (corrosive or neutral medium), pressure, temperature;
- Life period – number of cycles to which the marker presents functioning guarantee.



6.8.

Title	Water Jet Processing System
Authors	CIUPAN Cornel, MORAR Liviu, GALIŞ Mircea, POP Aurel
Institution	Technical University of Cluj-Napoca
Patent no.	RO 121987/2008
Description	The patent offers a new solution of an abrasive water jet cutting machine with amplifier included in the cutting head. The novelty consists of a sonic transfer through pressure waves.

6.9.

Title	Method of Control for Industrial Robots
Authors	Ciupan Emilia, Morar Liviu, Ciupan Cornel
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application RO: a 2008 0451/2008
Description	The patent offers a new method for controlling industrial robots based on a neural network training algorithm. The training data is determined by the mathematical model or physical model experiments on the robot.

6.10.

Title	Method of training robots to avoid obstacles
Authors	Ciupan Emilia, Morar Liviu, Ciupan Cornel
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application RO: a 2008 0450/2008
Description	The patent offers a new method for training industrial robots to avoid collision in the workspace. The obstacle avoidance path for the robot is automatically done by proper network training.

6.11.

Title	Mechanisms for achieving high precision translational and rotational motion
Authors	Veja Adrian, Sucala Felicia
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application RO: A2011 00195/2011; A2011 00196/2011
Description	The authors have developed two mechanisms for the rotation and translational movement. The innovative idea is to realize a pinion consists of two flanges and a roller chain. The pinion engages with a rack or a cycloidal wheel profile, which leads to a lower cost price.

6.12.

Title	Method for vibrations attenuation attached to the hand-arm system of the human operator.
Authors	Mariana ARGHIR, Aurora Felicia POP
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application RO: A2012 10010/08.04.2012
Description	The method provides a new process of attenuation of vibrations which act upon the human operator's hand at work during processing on a machine tool. In the context of the method is established scheme mechanics, differential equations system written, which will give the solution by integration, for comparative arm-hand human with or without device attenuator attachment.

6.13.

Title	Vibrations attenuator attached to the arm-hand human system
Authors	Mariana ARGHIR, Aurora Felicia POP
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application RO: A2012 10011/08.04.2012
Description	A new device vibration attenuation hand-arm human operator during the production process. The device will be designed, dimensioned and realized in real conditions of work. Will be perform measurements of vibrations on the arm of a worker with or without the attached device.

6.14.

Title	Linear-oscillating hydraulic motor
Authors	Vuşcan Gheorghe Ioan
Institution	Technical University of Cluj-Napoca
Patent no.	RO112309
Description	Linear-oscillating hydraulic motor is an original combination of a linear hydraulic motor and a oscillating hydraulic motor. The motor piston is made of a linear oscillating motor with fixed sequence that provides a rotation of up to 3000. The motor has three draw bars which are arranged at 1200 related to the piston, and with the vertically movement, they make the functions of a linear motor. Oscillating movement is transmitted through the central shaft.

CLASS 7

Buildings and Materials

7.1.

Title	Novel Multipurpose Geopolymer Coating For High Temperature
Authors	Mohd Mustafa Al Bakri Abdullah, Prof. Dr. Kamarudin Hussin, Prof. Dr. Mohammed Bnhussain, Assoc. Prof. Che Mohd Ruzaidi Ghazali, Liyana Jamaludin, Norazian Mohamed Noor & Muhd Izzat Ahmad
Institution	Universiti Malaysia Perlis (UniMAP) & King Abdul Aziz City Science and Technology (KACST)
Patent no.	US 20110290153 & PI 2012700134
Description	Multipurpose Geopolymer Coating is a novel material consists of fly ash or clay base material with intentionally incorporated silicate binder. With the use of Multipurpose Geopolymer Coating, this material resulted with superior product for construction industry. With suitable strength range, this cost effective novel Multipurpose Geopolymer Coating has been tested using real industrial construction processing and supported with industrial coating company. Its various excellent properties cover high strength, excellent curing time, chemical resistance, light weight, and excellent mechanical performance at both ambient and elevated temperature.

7.2.

Title	UniMAP WF Brake Pad: A Novel Waste Filler Friction Composite
Authors	Che Mohd Ruzaidi Ghazali, Kamarudin Hussin, Shamsul Baharin Jamaludin, Mohd Mustafa Al Bakri Abdullah, Mohamed Faisol Mohamed Nor.
Institution	Universiti Malaysia Perlis (UniMAP)
Patent no.	IP 20093237
Description	Friction composite is an important part of braking system for all types of vehicles especially as brake pad. Asbestos was widely used in pads for its heat resistance, but due to

health risks, it has now been replaced by a mix of alternative fibers such as mineral fibers, cellulose, aramid, PAN, chopped glass, steel and other metal fibers. UniMAP WF Brake Pad is a novel brake pad produced by using waste filler such as palm ash, slag, waste metal filler, waste PCB and mineral filler together with the phenolic/ geopolymer resin as a binder. The properties such as wear and mechanical are comparable with the existing brake pads in the market.

7.3.

Title	TRACTION CONNECTION MOUNTING ASSEMBLY
Authors	Dejan Ciglenečki
Institution	Tekoop d.o.o., Croatia
Patent no.	Pending
Description	The Invention is a take-apart traction hook with an assembly for quick manual mounting or removal of the traction connection without extra tools. This Invention is a simplified design of an assembly for attaching the traction hook to the steel structure fixed on the vehicle, which meets all safety standards in force The simplified design of the mounting assembly reduces the production cost of the traction connection and thereby makes the product more attractive to the end user. The traction hook fitted with the said assembly is suitable for use with all types of passenger cars and light delivery vehicles.

7.4.

Title Eco Composite from Fibers of Empty Fruit Bunch of Oil Palm (EFB) for Component of Body Armour Vest

Authors Mickel Roberto, Dr.-Ing. A. C. Arya
Institution Universitas Trisakti, Indonesia

Patent no. *Pending*

Description

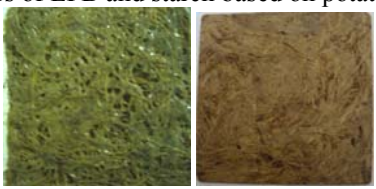
The production of crude palm oil (CPO) generates wastes such as biomass, and liquid waste, gas as well. Biomass of Empty Fruit Bunch of Oil Palm (EFB) is available in high amount and will be disposed through burning in incenerator. It causes air pollution.

Utilization of EFB fibers is a solution to replace the unfriendly stuffs such as mineral, synthetic, etc. which are used to produce commercial and technical products today. Indonesia is the biggest CPO producers worldwide with 21.5 Mio. tonnes production in 2011. The amount of CPO and EFB biomass is aquivalent.

By keeping its natural honey comb structure (lightweight construction) of EFB fibers and using the binding agent from potato the strong composites can be produced. Fibers and binding agents will be mixed. The mixture in form of plates is called as prepregs. Prepregs will be hot pressed at 160 ^{0}C, 5 bar, for 30 min to produce 2 mm Eco Composites. Eco Composites have strenghness (Modulus Elasticity) at 1.8 GPa, ceramic only by 400 MPa.

Today plates from ceramics, Polyaramide (PA), High Performance Polyethyline (HPPE) each with weight of 2-4 kg will be used as hard plates as component of body armour vest. These materials are **not** renewable and **not** environmental friendly as well. Eco Composites from EFB fibers can replace ceramics, PA, HPPE by using 5 layers eco composites (weight: less than 0.7 kg).

Environmental friendly material for protecting people can be produced from renewable resources, such as from natural fibers of EFB and starch based on potato.



Prepregs (*left*), Eco Composite (*right*)

7.5.

Title RETENTION APRON FOR CENTRIFUGAL CRUSHERS

Authors Victor GEANTĂ, Ionelia VOICULESCU, Radu ŞTEFĂNOIU, Horia BINCHICIU, Radu Mihai NEGRIU

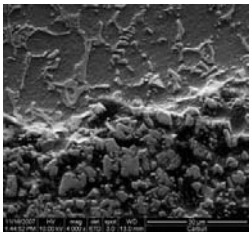
Institution SC ECONET PROD SRL Bucureşti

Patent no. RO125587/30.01.2012

Description

RETENTION APRON for centrifugal crushers, whose active region consists of a composite material with embedded metallic carbide with composition: C = 0,6...0,9%; Mn = 1,5...5%; Si = 0,7...1%; Cr = 1...2%; W = 2...5%, Fe = rest %; the metallic carbides result from mechanical grinding of worn waste mixed in equal proportions with angular granules obtained from melted and grounded tungsten carbide powder having dimensions of 800 ... 1500 μm; the metallic carbides waste have the folowing composition: WC = 95%, Ctotal= 3,81%, Cfree = 0,02%, Fe ≤ 0,21%, Cr ≤ 0,038%, V ≤ 0.01%, Ti ≤ 0,01%, Mo + Co + Ni < 0,045%).

APPLICABILITY DOMAIN: manufacturing of anti-wear resistance structures of the natural aggregates grounding installations.



7.6.

Title PROCEDURE AND INSTALLATION FOR OBTAINING POWDERS OF BINARY ALUMINIUM-MAGNESIUM ALLOYS USED FOR MAKING METAL PIECES WITH THIXOTROPIC STRUCTURE

Authors Horia BINCHICIU, Victor GEANTĂ, Ionelia VOICULESCU, Aurelia BINCHICIU, Radu ŞTEFĂNOIU, Emilia BINCHICIU, Radu Mihai NEGRIU

Institution SC SUDOTIM AS SRL Timişoara

Patent no. RO125770/30.12.2011

Description

PROCEDURE for obtaining metallic powders of binary Al-Mg alloys used for making pieces with thixotropic structure comprising the steps of:

- controlled feeding, with a proper chemical composition prescribed for metal powders, of a 97% active aluminum wire and a Mg-cored aluminium pipe in a induction furnace with graphite crucible;
- wire melting under protective cryolite flux layer using the induction furnace;
- discharging, through ceramic nozzle, of the molten jet alloy on a revolving drum, placed in a closed preforming chamber protected by argon atmosphere; from the rotating drum the melted alloy is projected onto a deflector plate adjustable assembled inside the preforming chamber under a variable angle of 0 ... 45^{o}.

APPLICABILITY DOMAIN: production of precursors for obtaining the parts with thixotropic structure.

7.7.

Title ELECTRODES COATING FOR WELDING DEPOSITION USING HARD RESISTANT WEAR ALLOYS

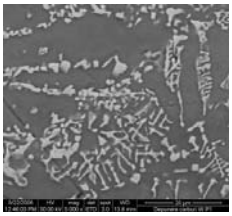
Authors Prof. Dr. Eng. Ionelia VOICULESCU, Dr. Eng. Aurelia BINCHICIU, Prof. Dr. Eng. Victor GEANTĂ, Dr. Eng. Horia BINCHICIU, Lect. Dr. Eng. Radu ŞTEFĂNOIU, Lect. Dr. Eng. Daniela IOVĂNAŞ, Eng. Radu Mihai NEGRIU, Eng. Emilia BINCHICIU

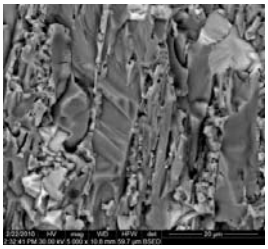
Patent no. SC SUDOTIM AS Timişoara

Description RO125761/30.12.2011

Electrodes coating for loadings by welding with alloys with 87 % Iron – 13 % Chromium and approx. 2 % Carbon and Lanthanides, used for the obtainment, by extrusion on rods with 83 % Iron – 17 % Chromium, of electrodes for manual electric welding; the shell consists of a mechanically homogenized mixture, mass-scale, comprising in: 22 – 26 % Marble; 21 – 25 % Fluorspar; 5 – 7 % Rutile; 25 – 30 % Iron; 8 – 10 % Chromium; 3 - 4 % FeSi 45; 3 – 5 % Colloidal graphite; 0,5 – 1 % Aluminum; 0,5 – 1 % Lanthanides; 0,5 – 1 % Carboxymethylcellulose and liquid Sodium Silicate (18 % from the pulverulent total mass).

APPLICABILITY DOMAIN: obtaining of ledeburitic welded structures with a high hardness.

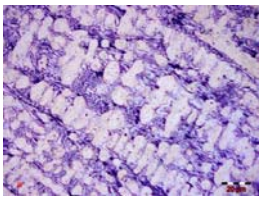




7.8.

Title	WEAR PREVENTING SHIELD AND MANUFACTURING PROCESS
Authors	Dr. Eng. Aurelia BINCHICIU, Prof. Dr. Eng. Ionelia VOICULESCU, Prof. Dr. Eng. Victor GEANTĂ, Dr. Eng. Horia BINCHICIU, LECT. Dr. Eng. Radu ŞTEFĂNOIU, Lect. Dr. Eng. Daniela IOVĂNAŞ, Eng. Emilia BINCHICIU, Eng. Radu Mihai NEGRIU
Institution	SC SUDOTIM AS SRL Timişoara
Patent no.	RO125760/30.12.2011
Description	WEAR preventing shield, consisting of a support of sheet metal made of thermo-resistant steel, low alloyed with Chromium and/or Molybdenum wherein there are made channels forming a rhombus-shaped grid with a depth of max. 1/2 of the support thickness and a length equal with its depth, but not lower than 10 mm; inside the mentioned channels are deposited by welding hard alloy layers with 71 % Fe – 25 % Cr – 2,5 % C – 1 % Mo – 0,5 % V, with a over raising of max. 10 mm and a crystalline grain orientation along the mechanical stress of the shield. APPLICABILITY DOMAIN: anti-wear protection of the active surfaces of the power plants fan mills.






7.9.

Title	Execution procedure of a load-bearing wood structure, for individual buildings, using only one basic type of prefabricated element
Authors	Stanila Alexandru, Stanila Oana
Institution	Faculty of Civil Engineering and Building Services, “Gheorghe Asachi” Technical University of Iasi
Patent no.	Patent pending

Description

The invention includes individual buildings, with a wood load-bearing structure, and an execution that implicated only one basic type of prefabricated element, with the same transversal cross-section, but of different lengths. After the prefabricated elements have been realized, they must be mounted on site to create the framing system, according to the project. The structural foundation is made of reinforced concrete. After being mounted and placed on the spot, the created load-bearing structure permits the walls and floors classical applications.
The invention consists in an execution procedure of a load-bearing wood structure for individual buildings of maximum three floors, using exclusively one type of structural prefabricated element, done in the factory and mounted on site, on an already built foundation.
The invention strongest points are its wide and easy applicability. Its purpose is to build a load-bearing frame structure made of wood, at a minimum work effort, greatly adding to work productivity, and quality of structure. In addition, this type of system reduces the needed qualification degree of the workers, materials costs, and execution costs per unit surface.
The problem that the invention solves is creating a prefabricated wood structure made of one single element type, executed in the factory, therefore adding quality to the final product, due to the highly restrictive quality control. In addition, the modular design ensures the execution on site of load-bearing column, beams and girders with a minimum effort.

7.10.

Title Procedure for implementation of reinforced concrete frame structures made of truss-like elements

Authors Alexandru STĂNILĂ, Ana-Maria TOMA, Marian PARASCHIV, Ionuţ-Ovidiu TOMA

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

Patent no. Pending

Description

According to the patent, the present work describes the implementation of reinforced concrete frame structures made of truss-like elements as an alternative solution to the already existing classical procedure. The solution involves a system of a lost formworks made of thermal insulating composite materials for prefabricated slabs, columns and beams leading to a modular concept for the structure. The reinforcement is already placed inside the formwork from the factory, thus eliminating the possibility of human error on the construction site. The assemblage can be quickly positioned according to the design

	blueprints, with or without additional reinforcement to insure the continuity at the joints, and the concrete can be poured in the formwork creating a monolith truss-like structure. The benefits are manifold including, short construction time, reduced labor costs, reduced material consumption, high accuracy, increased stiffness of the structure. In addition, the concrete can be designed to be more environmentally friendly with the incorporation of supplementary Cementitious materials to replace the Portland cement as well as other industrial by products highly recommended within the scientific community for their advantages.

7.11.

Title	PREFABRICATED INSULATION PLASTER BOARD AND PROCESS FOR MAKING IT
Authors	Dumitru STÂNGACIU, Gheorghe COLBU
Institution	S.C. IGLU S.R.L, The Palace of Children Iasi
Patent no.	Patent Application 00003 / 01.03.2012
Description	The invention concerns a prefabricated insulating element with two layers, made by placing polystyrene insulation board over gypsum board, which is reinforced by dispersed glass fibers in a freshly poured formwork.

7.12.

Title	ELASTIC PARTITION WALLS
Authors	Gheorghe COLBU, Dumitru STÂNGACIU
Institution	The Palace of Children Iasi, S.C. IGLU S.R.L
Patent no.	Patent Application A 01449 / 23.12.2011
Description	The invention relates to partition walls, light elastic type, used for rooms with the role to increase acoustic insulation. The technical problem solved by the invention consists in the production of elastic partition walls for enhanced attenuation of airborne noise by introducing into the walls elastic pieces of rubber and reinforced dense plaster boards.

7.13.

Title	REINFORCED PLASTER BOARD AND PROCESS OF MAKING IT
Authors	Dumitru STÂNGACIU, Gheorghe COLBU
Institution	S.C. IGLU S.R.L, The Palace of Children Iasi
Patent no.	Patent Application A 00688 / 18.07.2011
Description	The invention relates to a reinforced plaster board on two directions used in constructions for achieving the self-

supporting partition walls or interior cladding of external walls

7.14.

Title	The eco-materials synthesis by alkaline activate of industrial wastes
Authors	Vasile Hotea, Badescu Gabriel, Juhasz Jozsef
Institution	Tech Univ Cluj Napoca, North Univ Center of Baia Mare
Patent no.	RO Patent application a 01080 / 2011
Description	The patent application relates to a process of immobilization toxic heavy metals (Pb, Cd, Zn, Cu) from metallurgical slag and natural zeolite tuff as a construction material with compressive strength of 40-50 MPa. The process, is to enable the raw material (slag and zeolite tuff) with sodium silicate and sodium hydroxide so that the ratio Na_2O / SiO_2 have a positive effect on compressive strength.

7.15.

Title	IMPACT OF CONSCIOUSNESS FIELD ON STRENGTH & CRYSTALLIZATION OF CEMENT
Authors	BAHAREH KAFASH KAZAZI
Institution	Iran
Patent no.	Pending
Description	This research has been done to study impact of consciousness field on the characteristic and behavior of material particles, cement in this particular case. the gained results showed significant increase in the fundamental characteristic of cement , i.e. hardness

CLASS 8.

Aviation, car industry and transportation

8.1.

Title	DR-1 RUBBER LEVEL CROSSING
Authors	SLOBODAN RAJIĆ
Institution	TELECOR ZAGREB, Croatia
Patent no.	Pending
Description	The Dr-1 Rubber Level Crossing is a system installed on railway crossings where the track intersects with the asphalt road at the same level. Its task is dual: to ensure a smooth and noiseless passage of vehicles over the track and to facilitate the track overhaul. The system is disassembleable and can be reassembled on its previous place. It consists of one multi-purpose rubber element (being installed between the rails and on their outside), one metal element (provided in two variants), and screws.

8.2.

Title	ELECTROMAGNETIC ELEVATOR
Authors	Anton Bačić, Ružica Kamenjašević
Institution	Srednja škola za elektrotehniku i računalstvo, Croatia
Patent no.	Pending
Description	The principle of work is based on electromagnetic induction, and the elevator is on steel guideways. The complete circuit consists of 16 coils with the central iron core which function as magnets. This elevator works with the repulsion force of magnets of different poles. The flow of current through the coils causes the iron cores to behave as electromagnets, as they are polarized so that the north pole faces the elevator and the repulsion force of the same poles pushes the elevator up. Considering that the elevator is on the coils it can not

move from its path, and is directed upwards by the positive polarization.
By reducing the flow of current through the coils, the strength of the electromagnet reduces and the elevator starts descending. Thanks to the built-in electromagnetic brakes the elevator spends electricity only when it goes up, and when it goes down it does not spend any energy. In the case of a power failure as a safety measure there is a synchronous motor on each guideway, that is powered by a battery filled from a solar panel, and is sufficient to descend the elevator to the ground floor until the power supply is restituted.

8.3.

Title	ELECTROCYCLE
Authors	Juraj Juričić, Igor Pomazan, Boris Caput
Institution	IN KLUB inovatora Rijeka, Croatia
Patent no.	Pending
Description	Electricity driven electrocycle can serve an urban means of transport. All the features and sports characteristics of the bicycle are kept, but the goal can be reached easily, without getting tired, using green energy. It reaches the speed of over 40 kmph. The range is cca 30 km, with consumption of less than 1kn per 100 km. The recharge of a completely empty battery takes two hours, and parital recharge significantly less.

8.4.

Title	MULTIPURPOSE GAS – BURN URN
Authors	MOHAMMAD YOUSEFZADEH
Institution	Iran
Patent no.	Pending
Description	Multipurpose gas burn urn, with separated body and heater which is completely healthy due to not using tin and lead. it prevents wasting energy, prevents holes and explosion and without using burner in this urn it helps keeping the taste of tea and prevents boiling

8.5.

Title	NEW CONCRETE-BASED COMPOSITE
Authors	ROBABEH JAZAEI
Institution	Iran
Patent no.	Pending
Description	In this invention specific substances for concrete and executive methods are used to increase the structure flexibility, accordingly, making it possible easily to implement complicated architectural designs. the construction costs are considerably declined. furthermore, this system provides the necessary workability and durability to construct extraordinarily elegant buildings and industrial segments.

8.6.

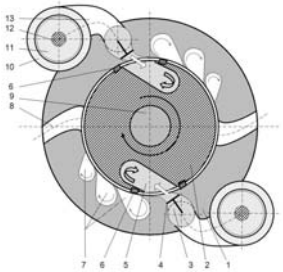
Title	HOURGLASS SOLAR
Authors	SAEED FALLAHI, HAMZEH MIRZAEI
Institution	Iran
Patent no.	Pending
Description	Led traffic lights appear in the hourglass model is a real hourglass. when cars are stopped at red lights top panel is completely red it also occupies less space and consumes very little energy from the sun that day comes. hourglass solar has capable of feeding power and solar energy, graphic display and reduce power consumption to 20 watts

8.7.

Title	Rotary internal combustion engine
Authors	Ioan MIHAI, Elena Daniela OLARIU
Institution	Ştefan cel Mare University of Suceava
Patent no.	Patent application No. A/00090 - 09.02.2012
Description	The invention concerns an internal combustion rotary engine using stationary chambers at constant volume. The air needed for the combustion is taken from outside, specifically from a cylinder in which two double effect pistons are triggered. The driving torque is obtained using the tangential momentum generated by exhaust gases acting upon rotary cavities. The gas jet generated by such action is powerful enough to generate driving torque by acting on the rotor in opposite directions. The

pressured air needed for the combustion is compressed in a cylinder by two hydraulic or mechanical double effect pistons.
Until now, Wankel, Karol and orbital-type piston rotary engines have been developed. It is well known that only the Wenkel rotary engine had market success, being produced in series. From a design point of view, the rotary engines have major advantages over internal combustion piston-driven engines, showing higher compactness and lower vibrations.
The advantages of using such a rotary engine are the following:

- ✓ the possibility to use combustion chambers at constant volumes;
- ✓ much higher pressures can be attained without the devastating effect of the explosion acting on the sliding-block linkage;
- ✓ the duration of the combustion process can be controlled;
- ✓ the rotation movement does not require other intermediary mechanical devices.



8.8.

Title	Method and system for one line vehicle traffic control
Authors	LEŢIA Tiberiu, CIUPAN Cornel
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application RO: 1090/2009
Description	The invention relates to a method and a system of traffic control vehicles and use a control device and a mechanical system which imposes an obstacle for those cars which do not meet the required speed in the control section.

CLASS 9

Chemical and Textile Industry

9.1.

Title Elastically Foldable Clothes Hanger

Authors HAN, SEUNG JU

Institution Seoul International School, Korea

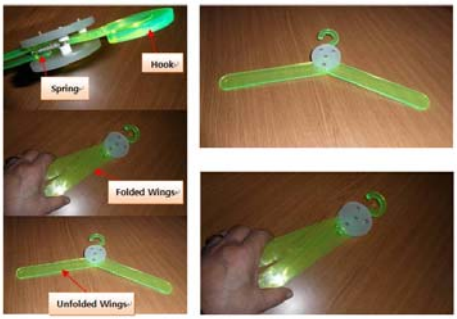
Patent no. 10-2011-0037251

Description

In order to maintain the shape and form, thus the quality of upper-wear clothing while hanging it, the two shoulders (wings) of this clothes hanger are linked to the central pin of the hanger in which the spring is fastened for both shoulders to fold linearly to be easily inserted into the shirt's collar opening (head). By releasing the hand holding the hanger inside the clothes, the elasticity of the spring is eased, automatically unfolding the wings back to their positions.

It is often difficult for handicapped individuals to repetitively hang/unhook t-shirts, knitwear and other upper wear clothes having narrow collar openings. Furthermore, forcing to hang such clothing with small-sized neck opening may stretch the collar, damage its health and quality in terms of balanced collar shape. For that reason, this unique hanger is designed in which the hanger's body pivots and allows the two wings to be folded. The hanger's central pin and the spring fastened allow both wings to fold. With the wings folded, the hanger can be inserted vertically into the shirt's head opening. Releasing the hand inside would automatically release the elasticity fastened to the wings to unfold back "inside" the shirt.

The effect of this clothes hanger is that it maintains the clothes' collar shape without stretching or damaging the clothes, especially for women's clothing that varies in numerous shapes and sizes. The invention makes it easier for people and handicapped individuals to hang clothes effectively.



9.2.

Title	Process for obtaining biocomposites based on cellulose acetate and anionic clay
Authors	CIOBANU Margareta Gabriela, CARJA Gabriela
Institution	"Gheorghe Asachi" Technical University of Iasi, Romania / Faculty of Chemical Engineering and Environmental Protection
Patent no.	OSIM Patent application No. A/00461/28.05.2010
Description	The invention relates to a process of obtaining biocomposites based on cellulose acetate - anionic clays (type lamellar double hydroxides, LDH) in the form of porous films suitable for use as controlled release systems for drugs or sponge in medical treatment.

9.3.

Title	INSECTOFUNGICIDAL COMPOSITION AS AN ALCOHOL SOLUTION AND PROCESS FOR PREPARING THE SAME
Authors	Sandu Ion, Lupascu Tudor, Luca Constantin, Vasilache Viorica, Hayashi Mikiko, Vlad Fulga Daniela, Sandu Ioan-Gabriel
Institution	"Alexandru Ioan Cuza" University of Iasi "Gheorghe Asachi" Technical University of Iasi, Romania Romanian Inventors Forum
Patent no.	OSIM Patent application No. A/00461/28.05.2010
Description	The invention relates to an insecto-fungicidal composition for the treatment of antique wood, in particular for the treatment of natural and polychrome wood, with a view to eliminating insecto-fungal attack and stopping the process of fragilization of antique wood items. According to the invention, the composition employs the synergistic

organic system as a homogeneous mixture dispersed in isopropyl or isoanyl alcohol, which contains 12...15% propolis, 5...10% coniferous tree resin or saponified colophony, 1.5...3% lyophilized oak tannin and 3...5% polyethylene glycol of the PEG-1000 type.

9.4.

Title Process for water purification from hydrogen sulphide and sulphides

Authors RUSU Vasile, NASTAS Raisa, MAFTULEAC Alexei, PANIŞ Aliona, LUPAŞCU Tudor

Institution Academy of Sciences of Moldova, Institute of Chemistry

Patent no. MD 4142 B1 2011.12.31

Description

The invention relates to a process for water purification from hydrogen sulphide and sulphides and may be used in communal farms, fish breeding enterprises, public aquariums, autonomous filters, as well as for purification of ground waters.

The process consists in the use of modified diatomite, obtained by pre-treatment of diatomite with excess of 30% $MnCl_2$ solution at determined conditions.

9.5.

Title Inhibitor of steel corrosion in water

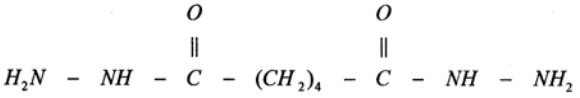
Authors LOZAN Vasile, PARŞUTIN Vladimir, ŞOLTOIAN Nicolae, CERNÎŞEVA Natalia, COVALI Alexandr,

Institution Academy of Sciences of Moldova, Institute of Chemistry

Patent no. MD 359 Z 2011.11.30

Description

The invention relates to the field of protection of metals from corrosion in water and can be used for inhibition of steel corrosion in closed pipeline systems. Adipic acid dihydrazide with the formula:



is used as an inhibitor of steel corrosion in water at a concentration of 0.05...1.00 g/L. The result is a significant reduction of corrosion losses and increase of the life of pipelines.

Proiect „Burse Doctorale pentru Performanţa în Cercetare la Nivel European (EURODOC)”

Contract nr. POSDRU/88/1.5/S/59410;

Proiect finanţat în perioada 2009 – 2012

Beneficiar: Universitatea Tehnică “Gheorghe Asachi” din Iaşi

Partener: Universitatea „Babeş Bolyai” din Cluj-Napoca

Grup ţintă: 130 doctoranzi

Finanţare proiect: 18.943.804,97 RON

Obiectivul general al proiectului: Dezvoltarea capitalului uman pentru cercetare prin programe doctorale pentru îmbunătățirea participării, creșterii atractivității şi motivației pentru cercetare. Dezvoltarea la nivel european a tinerilor cercetători care sa adopte o abordare interdisciplinara în domeniul cercetării, dezvoltării şi inovării.

Director proiect: Prof. univ. dr. ing. Mihaela-Luminiţa LUPU

CLASS 10.

Information Technology and Communication

10.1.

Title	Smart Online Electrical Billing Management System using GSM
Authors	Wong Ying Yin, Dr. Noraziah Ahmad & Dr. Ahmed N. Abdalla
Institution	Universiti Malaysia Pahang (UMP)
Patent no.	IP 2011000591
Description	Nowadays the billing system integrated with smart meter is used by staffs, residents and those who use electricity to retrieve the price rate and meter value of power consumption. There are several billing system integrated with smart meter invented in Italy, Sweden, UK, USA and so on. However, the current metering system in Malaysia is not capable to measure variable time price and it is gradually replaced by digital or smart meters. The purpose of this study is to develop a prototype of Smart Online Electrical Billing Management System (SOEBIMS) using GSM. SOEBIMS is an online web application as it can reduce human errors and save time to key in the data from keyboard. SOEBIMS helps to retrieve the real time meter value via GSM and send it to customer's mobile phone through GSM. The staffs are allow to modify the variable package price in specific duration. The administrator can analyze the customer's power consumption data and generate the report from the data online. The prototype is developed using waterfall model as the prototype can be implement and develop by followed the sequential phases. The prototype will be able to introduce the billing system to the customers, get the power consumption data from smart meter, keep the data in centralized database and generate the report. It will help the user to access the data and report easily through online.

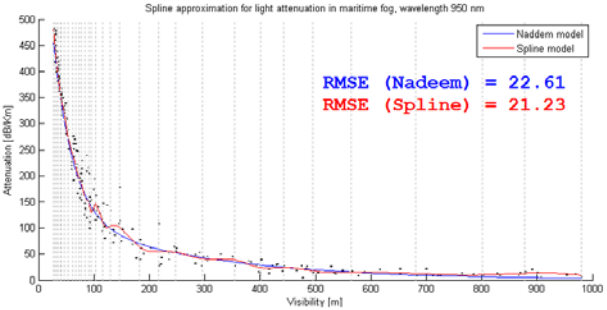
10.2.

Title	PICPLC (automation controller)
Authors	DAVOR GUSIĆ
Institution	Udruga inovatora FSB, Croatia
Patent no.	Pending
Description	Industrial environment for Microchip 16F and 18F microcontroller series. With the look and performances it is very similar to known commercial PLCs. The application area is wide, basically wherever there is need for control and regulation of the process (automation of the machinery in 'smart' houses). A great advantage over commercial PLCs is easy maintenance. The device is very well protected, but if there is, however, a damage of the processor, optocoupler or fuses, they can be easily replaced because they are placed on the base and they are easily obtainable.

10.3.

Title	Waves attenuation modeling by splines and fuzzy interpolators / extrapolators considering wavelength and atmospheric visibility - MOSIEFAU
Authors	Prof. dr. ing. Horia-Nicolai Teodorescu m.c.A.R., cs III drd. Silviu-Ioan Bejinariu, cs. drd. Cristina Diana Niţă
Institution	Institute of Computer Science, Romanian Academy Iasi Branch
Patent no.	ORDA Registration no. 14625 /30.11.2011
Description	The waves attenuation estimation is useful in performance analysis of FSO communication systems. It allows the emission system parameters setting to receive a good quality signal, considering the communication is affected by atmospheric conditions. The best models are based on Mie scattering theory but information about the propagation medium is needed. Other models (Kruse, Kim, Nadeem) use the visibility as a parameter but require the evaluation of simple or double exponential expressions. The proposed models use the atmospheric visibility as a parameter and are based on polynomial functions evaluation reducing the computing time. The estimated value of the attenuation is also more precise than in the exponential based models. The fuzzy model uses a list of measured attenuation values for different values of the atmospheric visibility and the wavelength

as input. The number of intervals, the number of averaged values in each interval and the standard deviation of the Gaussian function are user defined parameters. Modeling results consist of the list of fuzzy interpolation function coefficients. The approximated values and errors for all the measurements points are also computed.
The 3rd order spline model uses a list of measured attenuation values for different values of the atmospheric visibility and the wavelength as input. The number of interpolation points and the number of averaged values are user defined parameters. Modeling results consist of the spline function coefficients. The approximated values and errors for all the measurements points are also computed.



10.4.

Title Method and System for Time Interval Measuring

Authors Horia-Nicolai Teodorescu, Mircea Hulea

Institution Gheorghe Asachi Technical University of Iasi

Patent no. Patent application no: 00157/ 02. 2011

Description

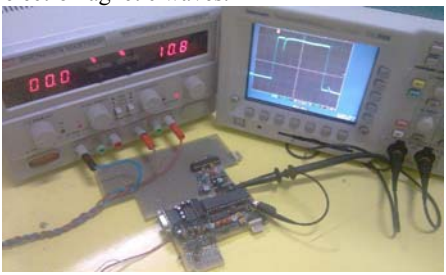
The invention introduces a hybrid method for high-precision time intervals measurements suitable for implementation on low-cost microcontrollers such as PIC18FXXX series from MICROCHIP. Using the build-in ADC and TIMER, the method combines the advantages of direct counting and time-to-voltage conversion (*TtV*) time measuring methods. The direct counting method is suitable for longer time intervals measuring, but it is less precise while the time-to-voltage conversion increases the precision of the time measurements being applicable for measuring shorter time intervals. The microcontroller measures the intervals by determining the elapsed time between the rising and the falling edges of a digital signal that represents the event. Because the event signal and the counter clock are not synchronous, we used the *TtV* method for compensating this misalignment. The event signal transitions are detected using the

interrupt system of the microcontroller; however, this induces auxiliary errors in the measured intervals. In order to compensate these errors, the system uses the *TtV* method for determination of the time lag between the transitions of the external signal and the executed subroutines. The microcontroller counts at the hardware level the rising edges of the digital signal, which gives the number or events.

Applications:
The time measuring system is suitable for using in:

- Parameter monitoring such as temperature, motors speed and light intensity.
- Analysis of the electronic circuits behavior;
- Response time measuring of the analogue and digital systems;
- Nuclear event counting;

1. Distance calculation using ultra-sounds or electromagnetic waves.



10.5.

Title Software Package for High-Precision Time Measuring Using Microcontrollers

Authors Mircea Hulea, Horia-Nicolai Teodorescu

Institution Gheorghe Asachi Technical University of Iasi

Patent no. O.R.D.A. registration number: 14413/25.11.2011

Description The software package includes an assembler program for MICROCHIP PIC18FXXX microcontrollers and a MATLAB program. The microcontroller program performs high-precision time interval measurement when two analogue signals are within a bi-dimensional amplitude window. This program controls the interrupts system, the AD converter, the TIMER of the microcontroller and an external DA converter that sets the limits of the measuring window. The main parts of the program are the interrupt subroutines executed at the beginning and at the end of the measured event that is defined by a digital signal. Thus,

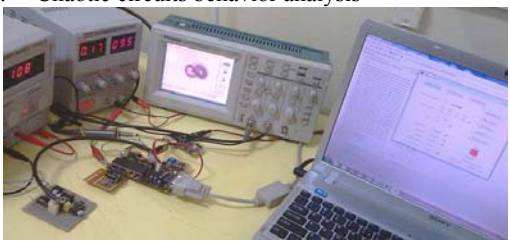
every time the microcontroller detects the rising or falling edges of the event signal, an AD conversion starts. For being able to measure time intervals shorter than an AD conversion, the priority of the interrupt triggered by the event end is higher than the priority of the interrupt initiated at the event onset. This operation principle ensures the measurement of the time intervals shorter than the interrupt latency. For evaluating the measured events rate, the controller counts the time intervals at the hardware level.

The MATLAB program processes the primary data generated by the microcontroller, calculates the events durations, and computes the average of the obtained results. Using the average time and the events number, the program builds two images of the analyzed figure by converting the data to gray-scale.

Applications:

- Parameter monitoring such as temperature, motors speed and light intensity.
- Analysis of the electronic circuits behavior;
- Response time measuring of the analogue and digital systems;
- Nuclear event counting;

2. Distance calculation using ultra-sounds or electromagnetic waves.
3. Chaotic circuits behavior analysis



10.6.

Title ELECTROMAGNETIC PULSE GENERATING SYSTEM IN THE LOOP CURRENT CONTROLLED EXPLOSION

Authors Vasile DOBREF*,Alexandru SOTIR*, Mircea CONSTANTINESCU*, Mircea IGNAT**,Lucian PÎSLARU-DĂNESCU**, Ioan PUFLEA**, Alexandru Aristofan TEIŞANU**, Iulian IORDACHE**, Mihai BĂDIC***

Institution * The NAVAL ACADEMY "Mircea cel Bătrân" Constantza-ROMANIA/** INCDIE ICPE-CA Bucureşti-

ROMANIA/ ***ICPE SA-Bucureşti ROMANIA

Patent no. Patent application No. A 00551/2011

Description

This invention relates to a system of generating electromagnetic pulse current loop controlled explosion, for locking systems whose operation is based on electromagnetic principles. Electromagnetic pulse generation system, the invention consists of a coil wound with rectangular cross section, arranged on a steel cylinder, a current loop antenna with the role of emission and a cylinder of copper or iron shorting role the field coil turns. Inside the coil is a unit load for the main explosive detonation providing it with a timing device.

Magnetic flux is compressed by the explosion main explosive load and blast wave front produces progressive shorting field coil turns, resulting in a significant increase in current for 50-100.MHz.

The electromagnetic pulse generated by explosive magnetic flux compression allows obtaining high power electromagnetic pulses by performing a sequence of optimal timing for it is in connection supercondensatoare battery coil, the time at which the inductorcurrent reaches maximum and when the time when fuel caps to trigger the explosion that made shorting the coil turns.

Power and frequency spectrum of electromagnetic pulse are determined by the current loop transmitters, relizând hundreds of MHz frequencies while 50-100MHz.

Applications: The invention concerns a system for generating high-power electromagnetic pulse. The explosion can be controlled and used as a new technique for testing the stability of operation of microcomputers and microprocessors used in control structures of high-risk processes, such are nuclear power plants, petrochemical plants, directing air traffic, shipping, rail, from atmospheric discharges.

10.7.

Title	COMPUTER AIDED SYSTEM FOR MEASURING THE PARAMETERS OF BI-STABLE MAGNETIC WIRES
Authors	Zaporojan Sergiu, Calmîcov Igor, Pavel Victor, Larin Vladimir, Cărbune Viorel
Institution	Technical University of Moldova
Patent no.	Patent pending
Description	The system contains a sensor, a specialized device for data acquisition and digital processing, and a host computer. The specialized device provides the operation of signal conditioning, analog to digital conversion, and its real time processing. The host computer provides the visualization and storage of the signal as well as the monitoring and configuration of the device via universal serial bus USB.

10.8.

Title	METHOD OF DETERMINING THE QUALITY OF NANOSTRUCTURES
Authors	A. Dorogan, V. Dorogan, T. Vieru, A. Sîrbu, N. Sîrbu, V. Zalomai
Institution	Technical University of Moldova
Patent no.	Patent pending
Description	An analysis method of nanostructures' quality had been developed using the calculation of optic reflection spectra according to the dispersion relations of the multiple oscillators method applied to the excitonic polaritons [1, 2]. The method permits to determine the dumping factor, which characterizes the layers' quality, the structure perfection and, also, the oscillators force of electronic transitions. The parameters of the revealed energetic levels of quantum wells and of quantum dots can be determined using a row of calculations. The reflection spectra contours are, also, determined using Kamers-Kronig relations, which permit to determine the refractive index n, the extinction coefficient χ, the real ($\varepsilon 1$) and imaginary ($\varepsilon 2$) part of the complex dielectric constant ε.

10.9.

Title	DETERMINATION OF REFRACTIVE INDEX IN PLANAR WAVEGUIDES
Authors	A. Dorogan, V. Dorogan,V. Parvan, N. Sîrbu
Institution	Technical University of Moldova
Patent no.	Patent pending
Description	Nanolayered waveguides with quantum wells possess birefringence properties, even those based on isotropic materials

[1 - 3]. The most sensitive methods of studying birefringence properties in nanowaveguides are the methods of interference spectroscopy. A typical image of interference can be observed in the interference spectra of birefringent nanostructures. The elaborated method permits to analyze the spectral dependence of the refractive index for the ordinary (Ep) and extraordinary (Es) lightwaves from absorption or reflection interference spectra of nanolayers. The maxima and minima positions of the interference spectra can be determined using simple PC software „Origin".

10.10.

Title	Domotic system for comfort and safety
Authors	Calin Ciufudean, Corneliu Buzduga, Alecsandru Chetrariu
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent application No. A/00745/2009
Description	This invention refers to an automated system witch monitors methane gas leaks from street pipes and local distribution points and alerts in real time the gas dispatcher by indicating the exact location of the failure. At the some time the area of sensors witch located the methane gas leaks commands the local valves to switch off in order prevent explosions. Information can be delivered wireless and/or by telephone.

10.11.

Title	Domotic system for comfort and safety
Authors	Calin Ciufudean, Corneliu Buzduga, Oana Ungureanu
Institution	Stefan cel Mare University of Suceava
Patent no.	Patent application No. A/00746/2009
Description	The invention relates to a system whitch ensures the comfort and safety for the inhabitants of a house. The domotic system for comfort and safety monitorizes the house comfort parameters such as: temperature, humidity, electric charge of the ambient. The domotic system also monitorizes the house perimeter and sends messages if necessary (e.g. in case of unauthorized access). The messages are sent by using a wired/cordless/GSM telephone to a dispatcher and to owner of the monitorized perimeter.

10.12.

Title	System and method for secure communication between fixed and mobile devices
Authors	Aştilean Adina, Folea Silviu, Avram Camelia, Hulea Mihai, Miron Radu Florin, Leţia Tiberiu Ştefan, Ciupan Emilia
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application RO: a2010 1037/2010
Description	The patent refers to a system and a secure method of communication between fixed and mobile devices based on fingerprints. The secured access system consists of one or more transmitter subsystems and a receiver subsystem consisting of a distributed application server connected to the Internet. The transmitter subsystem has a fingerprint reader equipped with storage and processing unit, with the added possibility of communicating using Bluetooth technology, Wi-Fi for short range communications, or GPRS, for large distances. The secured method of communication assumes the sending-receiving of an encrypted message using a symmetric key encryption algorithm and limited key lifetime. The symmetric key generation method uses information from a fingerprint reader belonging to the communication session participants and their positions. Authentication is performed according to a protocol involving the user position, the identity codes of the entities involved in the communication process and the number of communication sessions between users, in addition to fingerprints.

10.13.

Title	Method and hardware architecture for the automatic addressing of microarray images
Authors	Monica BORDA; Ioan Bogdan BELEAN, Romulus TEREBES, Raul Emil MALUTAN
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application RO: a2010 0824
Description	The patent provides a method enables the automatic spot location sites of various types of microarray images, eliminating the need for a workstation and a dedicated software platform. The method is used for determination of gene expression of the diseased cells.

10.14.

Title	National Electronic Folder for Patients and its creation method
Authors	Miclea Liviu Cristian, Sauciuc Dragoş George, Stan Ovidiu Petru, Dehelean Cătălin, Enyedi Szilárd, Ştefan Iulia Adina
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application RO: a20101033/2010
Description	The method presents how a national IT network which is available in medical units can be created and used to transfer data between these units according to the medical data communication standard EN/ISO 13606. This method is used to create a nationally accessible database comprised of demographic and medical data of the patients. The electronic folder is based on a national reference registry and and a national archetype registry which interconnect with medical units databases.

10.15.

Title EN	DigiTrafic® – people counting management system
Authors	Bogdan Teodorescu
Institution	QAURTZ MATRIX
Description EN	DigiTrafic® is the ideal tool developed for analyzing business performance and for an effective management in decision making process. DigiTrafic® can be used as a cloud service. Advantages: - Provides annual, monthly, weekly, daily and hourly intervals statistics on customer traffic - Effective measures of marketing campaigns and chosen media channel - Monitors customer traffic before, during and after implementation of a marketing campaign - Provides useful information for synchronizing delivery periods and periods of supply when there are less clients - Correct sizing of staff sales, variation depending on customer flow - Monitoring events on different audience segments - Counting on a single door entry / exit doors or on separate doors - Graphic displays for all statistics related to recorded data

- Centralized on-site traffic data collected and it processes them automatically in the form of tables and graphs

Technical specifications:

- It includes an infrared transmitter, a counter receiver and acquisition and processing software for PC
- Can be equipped with local display and keypad illuminated liquid crystal system
- Records flow of customers on a single door or on separate doors for input and output
- Enables software control equipment, collection of traffic data at predetermined intervals and allows graphical display of collected information
- Configuration schemes are password protected

10.16.

Title EN AirOpTek® – monitoring and control of industrial compressed air installations system

Authors Bogdan Teodorescu

Institution QAURTZ MATRIX

Description EN

AirOpTek® is an integrated system for measuring, monitoring and control for structural and operational efficiency of industrial compressed air installations.

AirOpTek® can be used as a cloud service.

Advantages:

- evaluating the energy efficiency of plant compressed air generation area in the distribution and consumption for optimizing the structure and technologies used on all three components
- assessing the energy performance indicators
- monitoring work cycles
- framing technological discipline

Technical specifications:

- equipment for measuring physical parameters (flow rates, electricity, pressure, humidity and temperature)
- digital communication system (485 C network, TCP-IP, wireless or GPRS)
- programmable command and control equipment
- SCADA software application for recording data, generating reports and alarms, human operator interface, database and communication structure for data collection

Monitored parameters:

- compressed air temperature and humidity at inlet and outlet of the compressor station

- flow in Nm3 / h from generation and consumption of different areas (for diameters between 25 and 150 mm)
- electricity consumption for the compressor and reporting them to the effects obtained
- pressures in different parts of compressed air installation
  loss of pressure profiles in various branches of distribution

10.17.

Title EN E-Net® – energy management system

Authors Bogdan Teodorescu

Institution QAURTZ MATRIX

Description EN

E-Net®, the energy management and utilities solution, developed entirely by our research and development department, is a complete integrated application for telereading metering data, real time tracking consumption, technical, commercial and managerial reports, to substantiate accurate consumer forecasts correlated with the level and structure of everyday activities.

E-Net® can be used as a cloud service.

Advantages:

- Employment in the type of contract with the electricity supplier
- Programmable alarm parameters overcoming the exclusionary effect of the penalties
- Reducing costs associated with energy balance by 20-50% using historical reports
- Generating accurate forecasts and determinating the minimum cost of acquiring energy
- Choosing the optimal type of contract and supplier selection based on energy profiles
- Exactly knowledge of energy costs on profit centers/products/lots with the possibility of energy allocation and tracking budgets
- Precise measurement of the processes energy efficiency
- Fast determination of energy distribution failures (real time measuring, loss avoiding)

E-Net is the essential element of the optimization cycle and of reducing energy consumption based on: assessment, planning, designing, implementation, management and maintenance solutions and energy efficiency and performance technologies.

Implementing such a strategy it will translate in immediate benefits related to the direct costs of acquisition of energy, reducing consumption and actual energy intensity reduction/product unit. The process becomes an essential part in monitoring and controlling costs and evaluating and processes developed technologies.

CLASS 11.

Printing and Advertising

11.1.

Title	**Advertising device with mobile presentation stands**
Authors	Vuşcan Gheorghe Ioan; Haiduc Nicolae
Institution	**Technical University of Cluj-Napoca**
Patent no.	Patent No: 123184/2010
Description	The invention relates to a advertising device with mobile presentation stands, easily applicable to any cylindrical or conical existing pole, driven by currents of air power even at low speeds of wind. Mobility of the device provides a more effective dynamic advertising than a static device and provides the necessary energy for eventual applied spotlights.

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still much left to invent

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CLASS 12.

Safety, protection and rescue of people

12.1.

Title	Innovated Precautionary System For Hazardous Gas In Vehicles
Authors	Umar Rafie Bin Mohammad Zaini
Institution	Tun Ghafar Baba Mara Junior Science College
Patent no.	Pending
Description	Nowadays, vehicles incidents happen frequently which usuallly cause by the leakage of hazardous gas in the vehicles.Death, damages and loses are closely related,especially when involving cars and families.Big number of death and damages recorded, normally causes by the driver which felt dizzy and sleepy when they are exposed to the hazardous gas. The problem was causes by the system of the vehicles which cannot support to warn the driver about the hazardous gas exposure.Innovated Precautionary System For Hazardous Gas In Vehicles is developed to overcome the problems face during the exposure of the hazardous in vehicles,at the same time help to save your vehicle and family.

12.2.

Title	CARBON VERTEBRAE PROTECTOR –CVP
Authors	IGOR PUHAR
Institution	FAKULTET STROJARSTVA I BRODOGRADNJE, Croatia
Patent no.	Pending
Description	Carbon Vertebrae Protector is a modern and efficient protector for spine and neck made as a combination of modern materials and innovative solutions. The protector consists of three units. The first unit are hard anatomically shaped segments which fit to user's back and support and protect the back at falls or impacts. The second unit is the core of the protector, made of non-Newton materials, that connects hard segments and enables more comfort and at

	the same time better protection. The third unit are all the additional materials and elements that give more comfort (polyurethane foam), protection (kidney belt, suspenders) and hygiene (fast sweat separation, a sense of freshness, anti-bacterial treatment).

12.3.

Title	NESU CARD - No1 cell phone protection
Authors	Jurica Mavrović, Slavko Lauš
Institution	Presencia d.o.o, Zagreb, Croatia
Patent no.	Pending
Description	Eliminates electromagnetic loads of a mobile device. NESU is made of material without previous treatment (copper 0.2 mm, titanium 1 g/m2, quartz 1 g/m2). The layer is non-toxic and well tolerated by the human body, a reason why its application has also been tested in medical technology. It is made using the vacuum process. The Vegetative Resonance Test (IMEDIS Test) shows that NESU eliminates electromagnetic loads. Apart from loads induced by cell phone conversation, those coming from other devices or already existent at the start are also eliminated. NESU has a soothing effect on the nerve degeneration meridians and the colon and revitalises the blood meridian. NESU is designed for any existing mobile device. Sized 25 mm x 10 mm, 0.2 mm thick, it is placed in the casing of a mobile device (if its cover can be opened) or pasted on the back (if the mobile device cannot be opened).

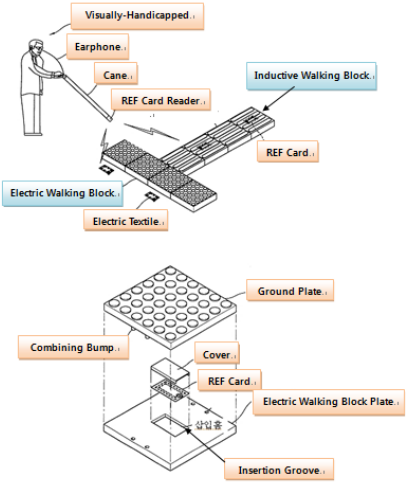
12.4.

Title	REF-Identifying Cane for Visually-Impaired Person
Authors	SONG, HO JAE
Institution	Joong San High School, Korea
Patent no.	10-2011-0067235
Description	Installing REF cards onto “electric sidewalk blocks” for guiding visually-handicapped individuals and REF card reader system on the tip of a cane would enable the person holding the cane to detect the cards installed on the blocks without making physical contact to the blocks. The REF reader withdraws any information saved from its

environment and converts it into voice version to transmit to audible earphone used by the person. In this way, the person will be guided for any nearby convenience, restaurants, public service centers, etc, through vocal guidance worked by his/her cane.

Visually-handicap-leading walking block with REF card built into it allows a visually-impaired person to use this cane installed with non-contact REF card reader system to detect/transmit all information collected from the walking block to the person by sound, without making actual contact with the cane to the block. Either wired or wireless, the converted voice information will be audible to the person through earphone and guide him with the surrounding information and directions.

Direction guidance can be provided to visually-handicapped people using REF card (Bar code) built-in electric walking blocks. The person uses his walking cane in which its grounding tip is installed with REF card reader that links to such walking blocks to channel information detected into sound (guide voice) and transmits to the person through earphone. Transmission of information is wire-wireless and the guiding system effectively provides various information of surrounding services and guidance to directions.



12.5.

Title Reconfigurable radiation shield

Authors Horia Mihail Teodorescu

Patent no. Patent Number US 8,143,607 issue date 03/27/12
Patent application no: US20100084586A1, April 8, 2010

Description

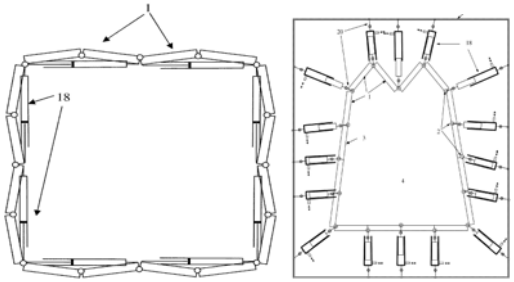
Object. The invention discloses a reconfigurable radiation shield that improves the ratio of protected volume per shield mass. The invention uses deformable and/or repositioned slabs, where a computing device automatically performs the reconfiguration, in response to the incident radiation measured by a set of sensors.

Purpose. The first technical problem solved is the design of an adaptive radiation shield able to ensure an increased protection to radiation, especially when the radiation intensity and the direction from which the radiation comes are changing. The second technical problem solved is the design of the said adaptive radiation shield with a lower mass than a fixed shield made of the same materials.

The adaptive radiation shield and its constructive variants presented in the invention solve the above-mentioned problems and eliminate or reduce the disadvantages of the classic designs.

Applications. The shield can be used for radiation protection for:

- Medical applications
- Hazardous environments
- Personnel protection in space
- Hardware protection
- Mobile radiation laboratories
- Decontamination vehicles and decontamination robots



CLASS 13.

Sports, Games and Leisure

13.1.

Title Hybrid device designed to electric energy production for island users

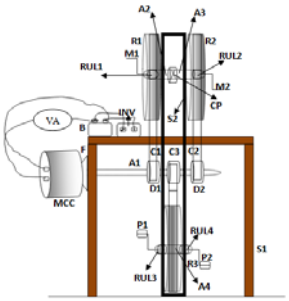
Authors Hanganu Radu, Simion Alecsandru
Institution "Gheorghe Asachi" Technical University of Iasi, Romania

Patent no. Patent application No. A/00239/04.04.2012

Description

The invention refers to a hybrid device with high efficiency for production of electric energy for island users and which is put in operation by human force.

According to the invention, the hybrid device for production of electric energy with high efficiency for island users immplies the use of a D.C. permanent magnet electric machine under generating duty. The machine is fixed on the support S1 by means of the flange F. The support S1 has three holes for the belts C1 and C2 that go through and for the support S2. The D.C. machine is brought into play with the wheels R1, R2 handeled by the arms and R3 handled by the legs, by means of the cranks M1 and M2, and the pedals P1 and P2 respectively. The wheels R1 and R2 are placed on the shafts A2 and A3 by means of the bearings RUL1 and RUL2. The shafts go through the support S2 and put each other into gear by means of the one way coupling CP. The shafts are connected to two disks with gully, D1 and D2, which are solidary with the shaft of the electric machine, A1, by means of two wide belts, C1 şi C2. The wheel R3 is fixed on the shaft A4 by means of RUL3 and RUL4. The shaft A4 goes through the support S2 and is connected to the disc with gully, D3,



(which is solidary with the shaft A1) by means of a sleeve-reversal wide belts, C3.
Applications

- Production of electric energy for island users where there is no supply systems or appears frequent discontinuities in voltage supply;
- Gym machinery for a good fettle, especially for overweight persons;
- Use in gym halls, fitness, beauty parlours, villas, lake dwellings, etc.

13.2.

Title	ELECTRONIC TARGET SHOOTING GAME ON THE PC
Authors	OPREAN Constantin, ŢÎŢU Aurel Mihail, MĂRGINEAN Ion, RENTEA Cornel, BRAD Remus, BERILIU Ilie
Institution	Lucian Blaga University of SIBIU
Patent no.	Patent application A / 00614 /05.08. 2009
Description	The invention refers to an electronic target shooting game, which requires the adaptation and complement of the PC or videophone with an interface for the interactive electronic shooting game, in the circumstances of competitions for points between opponents who are either in the same place or far apart, using the global communication networks.

CLASS 14.

Other

14.1.

Title	Green Natural Organic Surface Finish (G-NOSF) - A New Generation of Surface Finish Material For Electronic Metallization Application.
Authors	Mohd Arif Anuar Mohd Salleh, Mohd Mustafa Al Bakri Abdullah, Dr. Nik Noriman Zulkepli, Prof. Dr. Kamarudin Hussin, Muhammad Salihin Zakaria, Muhammad Hafiz Zan@Hazizi, Flora Somidin.
Institution	Universiti Malaysia Perlis (UniMAP)
Patent no.	PI2011000849
Description	Among the existing Surface Finish layer, G-NOSF material is the cheapest resource that can be readily found in natural source. G-NOSF is not harmful and toxic to the living. It can decomposed and easily disposable. It can be casted on metal surface (Copper) with various techniques with preferable thickness. As G-NOSF is made from elastic material (Natural Rubber), it will help the bulk solder to wet easily without slip to each other. Preparation of G-NOSF is simple and fast, hence, it is very convenient to our user to change the existing Surface Finish to our product as it will not take much cost.

14.2.

Title	DEVICE "TULIP"
Authors	V. Goch, V. Novikov, M. Goncharenko, Yu. Skomorovskyy, A. Karpin
Institution	Centre on Living Systems Study of Ukrainian Academy of Sciences: Centre "Ayumel" LTD
Patent no.	Pending
Description	Produced device on the basis of electromagnetic effect connected with model of oscillator for living systems activity harmonization.

14.3.

Title	HARMONIZER OF ONE' INDIVIDUAL TIME
Authors	V. Goch, V. Kulinichenko, V. Novikov
Institution	Centre on Living Systems Study of Ukrainian Academy of Sciences: Centre "Ayumel" LTD
Patent no.	Pending
Description	On the basis of process of oscillation, electro-magnetic body activity and "individual" time normalization effect understanding produced device for harmonization of one' "individual" time.

14.4.

Title	Crystal Energy Concentrator Device
Authors	V. Goch, V. Kulinichenko, A. Perminov, N. Perminova, Yu. Skomorovskyy, V. Selishchev
Institution	Centre on Living Systems Study of Ukrainian Academy of Sciences: Centre "Ayumel" LTD
Patent no.	Pending
Description	Generation of high positive energetic zones by means of device configuration effect with special crystal form produce bioadequate support for living systems harmonization.

14.5.

Title	TRIGONOMETRIC RULE
Authors	SHAHRAM ALIZADEH, MAHSA FEYZI, FARZAM SADRIFAR, HONARE EMROOZ
Institution	Iran
Patent no.	Pending
Description	There is no difference with an ordinary ruler lines, but only if the color is measured. that it seems designed for beauty. using the same color lines, you do the math over a few hundred. all the trigonometric ratios of the ruler can be achieved without the need to give formula and calculator.

14.6.

Title	Basket
Authors	Volentir Madalina, 10 years
Institution	Lyceum "Ion Creanga", Students str 10/3, Chisinau, Republic of Moldova
Patent no.	Pending
Description	Basket is made from color paper. It is useful for

keeping light objects. Beautifies the interior of room.

14.7.

Title	Unmanned Vehicles System (UVS)
Authors	Liviu COŞEREANU, Georgică SLĂMNOIU, Daniel LĂPĂDAT, Nicolae NĂCIOIU
Institution	Military Equipment and Technologies Research Agency
Patent no.	Pending
Description	System integration is under one point of observation, command, control and analysis of multiple unmanned vehicles with the same or different roles and destinations. Vehicles that can be integrated in the system are the following: 1. Automated Transfer Vehicul (ATV) 2. Unmanned Orbital System (UOS) 3. Unmanned Aerian Vehicle (UAV) 4. Unmanned Surface Vehicle (USV) 5. Unmanned Ground Vehicle (UGV) 6. Unmanned Under-Water Vehicle (UUV)

14.8.

Title	Unmanned Ground Vehicle (UGV)
Authors	Ion GHERGHINA, Laura ŢIGLEANU, Camelia MAZĂRE, Nicolae NĂCIOIU
Institution	Military Equipment and Technologies Research Agency, Center for Testing-Evaluation and Research for Weapons
Patent no.	Pending
Description	The product has the symbolic name "CIBERIS" and is designed for surveying, observation and intervention in small terrestrial spaces with limited access;

14.9.

Title	Unmanned Aerian Vehicle (UAV)
Authors	Cornel PLEȘA, Camelia MAZĂRE, Cornel Axente, Dumitru Marin
Institution	Military Equipment and Technologies Research Agency, Center for Testing-Evaluation and Research for Weapons
Patent no.	Pending
Description	The product is known under the trade name "BOREAL V", is used as a mini air platform research, supervi, observation and measurement of size specific physicochemical earth's atmosphere

14.10.

Title	Mechanical equipment hydraulic-drive amplification user capabilities
Authors	Dumitru Marin, Laura ȚIGLEANU, Camelia MAZĂRE, Petre VOICU
Institution	Military Equipment and Technologies Research Agency, Center for Testing-Evaluation and Research for Weapons
Patent no.	Pending
Description	Equipment shown is for those who want to achieve at the individual activities that require long journeys, distances, great physical effort but is helpful for people with permanent disabilities or rehabilitation phase.

14.11.

Title	Multipurpose camouflage system
Authors	Tiberius TOMOIAGĂ, Cornel TODIRICĂ, Daniel ȚURCANU, Iulian NICOLA
Institution	Military Equipment and Technologies Research Agency, Center for Testing-Evaluation and Research for Weapons
Patent no.	Pending
Description	The proposed invention relates to an algorithm and methodology for determination of models based on direct evaluation of the color of different types of geographical areas (plains, hills, plateaus, mountains), evaluating the distribution of colors and prevailing colors in estimating field radiometric measurements in the fields visible and near infrared. Wavelengths determined for most predominant color and lighting levels according to time of day models allow printing materials to provide adequate camouflage purpose.

14.12.

Title	Unmanned Surface Vehicle (USV)
Authors	Marius HANGANU, Georgică SLĂMNOIU, Radu OVIDIU, Adrian CIUCULIN, Gheorghe CALANCEA
Institution	Military Equipment and Technologies Research Agency, Center for Scientific Research for Naval Forces "Carol I" National Defense University
Patent no.	Pending
Description	The trade name "SECRIS" is a vehicle used for detection, classification and identification of risk factors generate local underwater security, contributing to: • more economic use of resources allocated to the tasks of detection, classification and identification of risk factors of safety underwater generators (marine mines, IEDs, shipwrecks, etc..) • improve safety of navigation in the districts under the jurisdiction of Romania; • improving knowledge of the characteristics of the continental shelf and marine environment monitoring parameters (salinity, temperature, etc..; • inspection of drilling platforms, dams, locks, port construction, cable / subsea pipelines, etc.

14.13.

Title	Method of the batch optimizing
Authors	CIUPAN Emilia
Institution	Technical University of Cluj-Napoca
Patent no.	Patent application RO: a2009 1091/2009
Description	The problem that the invention solves is to achieve a method of optimizing the batch in a statistical system for inventory management. The method is based on historical of consumption, using a mathematical model and a neural network and allows determination of the order and size order, to avoid rupture of stock.

14.14.

Title	Method for reproducing the picture with reconstructed image
Authors	Sandu Ion, Lupascu Tudor, Sandu Irina Crina Anca, Vasilache Viorica, Sandu Andrei Victor, Botsan Viktor, Botan Victor
Institution	Romanian Inventors Forum Institute of Chemistry of Academy of Science of Moldova
Patent no.	MD469 (Y) — 2012-01-31
Description	The invention relates to painting, namely a method for reproducing the picture with reconstructed image.The method, according to the invention, consists in the fact that are fixed reference points on the picture and is photographed the picture. Using a program for image editing in the chromatic system of cyan, magenta, yellow and black colors is reconstructed the polychrome image of the picture. Then it is prepared a rigid framework of cardboard, wood or wall by applying a primer, consisting of compatible binders and fillers. The image is then printed on a rigid base, using an inkjet printer in the same chromatic system, specially adapted to the plane geometry of the surface. After drying of ink, the surface is compatibly varnished.

14.15.

Title	Process for chromatic restoration of lacunary zones of old paintings
Authors	Sandu Ion, Lupascu Tudor, Sandu Irina Crina Anca, Vasilache Viorica, Sandu Andrei Victor, Botsan Viktor, Botan Victor
Institution	Romanian Inventors Forum Institute of Chemistry of Academy of Science of Moldova
Patent no.	MD409 (Y) — 2011-08-31, RO127086 (A2) — 2012-02-28
Description	The invention relates to painting, namely to a process for chromatic restoration of lacunary zones of old paintings.The process, according to the invention, consists in that are fixed some reference points on the painting, is taken a photograph of the lacunary zone of the painting, including also in the image the visible adjacent zones. Using the software for image editing in the chromatic system of the cyan, magenta, yellow and black colors is reconstructed the polychrome image in the lacunary zone. Then the said zone is prepared for printing by applying putties, consisting of compatible binders and fillers. The image is then printed on the lacunary zone using an inkjet printer in the same chromatic system, specially adapted to the planimetry of the surface. After the ink is dry, on the surface is applied a compatible varnish.

X. Innovative Researches
Students – MsD – PhD - PostDoc

X. 1.

Title	A New Fluorescent Probe for Toxic Cyanides Sensing in Aqueous Media
Authors	Andriana Surleva and Nikoloi Gerogiev
Institution	University of Chemical Technology and Metallurgy, Sofia, Bulgaria
Description	A new fluorescent sensor for free and weak acid dissociable cyanide is proposed. The sensor works in 100 % aqueous media via ligand displacement mechanism.

X. 2.

Title	Facies Associations and Sequence Stratigraphy of the Sarmatian deposits in the Eastern Carpathians Foreland Basin System
Authors	Bogdan Gabriel Răţoi, Mihai Brânzilă
Institution	Alexandru Ioan Cuza University of Iaşi Department of Geology and Geography
Description	Facies analyses have been carried out in the field, collecting data on lithology, grain size, sedimentary structures,sand : mud ratio, bed thickness, fining and thinning upward and coarsening and thickening upward cycles in three different sections . Nine facies associations (FA) have been distinguished and interpreted in terms of sedimentary environments, parts of depositional systems. In terms of sequence stratigraphy were been identified several progradational or shallowing upward parasequences . The identified parasequences indicate a rise of the sea level, followed perhaps by a transgression. The interpretation of the facies associations revealed a coastal depositional system. This work was supported by the the European Social Fund in Romania, under the responsibility of the Managing Authority for the Sectoral Operational Programme for Human Resources Development 2007-2013 [grant POSDRU/107/1.5/S/78342]

X. 3.

Title	Paleofauna of the Fălciu Hills
Authors	Daniel Bejan, Mihai Brânzilă
Institution	Alexandru Ioan Cuza University of Iasi

Description

Department of Geology
The formations of the last sedimentary megasequence that cover the Scythian Platform bear several Miocene, Pliocene and Quaternary vertebrate localities. The villages Pogana, Zorleni, Roşieşti, Mânăstirea, Fălciu, (Vaslui District) are places where we have discovered an important palaeontological material. The material collected consists of vertebrate fauna that herbivores and carnivores. The ierbivore comprises Rhinoceros Paleofauna with genus *Chilotherium* sp., *Dicerorhinus* sp. and *Stephanorhinus megarhinus* (de Christol). Mammoths are represented by *Mammuthus trogontherii* and *Mammuthus primigenius*. Species in the *Cervidae* family include the "giant deer" (*Megaloceros giganteus*), *Alces alces* and *Capreolus sp.* The *Bovidae* are the most diverse group of living ungulates that *Bos primigenius* and *Bison priscus.* In the south part of Fălciu Hills discovered the remains of bones and maxillary belonging *Ochotona ursui* and *Testudo* sp. Carnivores Fauna is represented by species *Canis lupus*.
This work was supported by the European Social Fund in Romania, under the responsibility of the Managing Authority for the Sectorial Operational Program for Human Resources Development 2007-2013 [grant POSDRU/88/1.5/S/47646].

X. 4.

Title *The Carpathian-Dnistrian space in ancient literary sources*

Authors Curcă Roxana-Gabriela
Institution Faculty of History, „Al.I. Cuza" University of Iaşi

Description

The novelty brought on by the proposed project lies in the realization, for the first time, of an exhaustive historical-philological analysis of the Roman-Greek literary sources concerning strictly the carphatian-dnistrian space in proto-historical period. An absorbing vision is therefore offered on how this geographical area entered the scope of ancient authors, from historians and geographers to writers. The project aims at studying the carpathian-dnistrian space as it is reflected in the Greek and Latin literary sources, from multiple points of view: geographical, historical, economical, linguistical, etc. The project is structured in two parts: the first part is the theoretical analysis (focused on geographical and ethnographical situation of the area, ethnical background, religion, Historical dimension, etc.)

and the second part consists in a bilingual *corpus* of Greek and Latin texts (the selection of the Greek and Latin author's texts that contain information on different aspects of the carphatian-dnistrian space and their symbolic value of those texts).

X. 5.

Title *Ethnoarchaeology of Salt Springs and Salt Mountains from the extra-Carpathian zone of Romania*

Authors Alexianu Marius-Tiberiu

Institution „Al.I. Cuza" University of Iaşi

Description This ethnoarchaeological project on salt – a primordial reference of humanity – represents a world premiere approach from the methodological perspective and as spatial extension. Starting from an original Romanian study of 1992, it continues the researches carried on by a Franco-Romanian team since 2003 and those within a Romanian *Idei* CNCSIS (2007-2010) exploratory project. This approach was tested on the eastern Sub-Carpathian area of Romania, with impressive results. The extension of the researches to the whole extra-Carpathian area is justified by the exigencies specific to a saturated model. Unlike the previous project, the researches take into account – besides salt springs – salt mountains/cliffs; the correlations between their exploitations are thus systematically analyzed for the very first time in the world. The research has as purpose two main axes: identifying salt springs and salt mountains/cliffs and the adjacent archaeological vestiges, and ethnological investigations through spatial analysis. These data modelled and interpreted in all dimensions, corroborated with the available ancient and medieval sources, will constitute a solid referential (valorising a unique situation in Europe) anywhere in the world where there are archaeological traces of salt exploitation, but not followed by current non-industrial practices. The researches will underline the universal invariants, without omitting the idiographic behaviours.

X. 6.

Title The researches concerning the biosynthetic capacity of secondary metabolites depending on the genetic diversity in a collection of chilli pepper local populations in Western Romania

Authors Lazăr A., Poşta G., Petolescu C., Berar V.

Institution Banat University of Agricultural Sciences and Veterinary Medicine Timisoara

Description The research project aims the quantitative evaluation of the biosynthesis capacity of secondary metabolites (capsaicin and carotenoid compounds) in a total of 20 local populations of chilli

pepper (Capsicum annuum L.) collected from Western Romania and the genetic variability assessment of local populations of chilli pepper using molecular markers.
The research project involves the use of modern methods of quantifying the biosynthetic products of secondary metabolism in a germplasm of chilli pepper (Capsicum annuum L.).
The evaluation of capsaicin and carotenoid compounds biosynthesised in in vitro tissue and cell cultures involves the development of callus from different explants on different types of hormonal balance in the culture medium and quantification of secondary metabolites in vegetal extracts obtained using biochemical, spectrophotometric and chromatographic techniques.
The biosynthesis capacity assessment in callus cultures will be compared with the biosynthesis quantification in chilli pepper fruits reached at technological and physiological maturity.
The aim is the selection of local populations with superior characteristics in terms of biosynthesis capacity, populations used in the pepper breeding programs and food, pharmaceutical, medical and industrial purposes.

X. 7.

Title Investigation of control mechanisms of the alfalfa multileaflet trait, genes - transcription factors - phytohormones interactions

Authors Boldura Oana, Popescu Sorina

Institution Banat University of Agricultural Sciences and Veterinary Medicine Timisoara

Description
Alfalfa – the most important forage crop rich in protein, can be improved by modifying leaf architecture (number of leaflets), to increase the amount of protein. Leaf morphology is controlled by certain genes whose expression level can detemin alterations initial model.
It is demonstrated the expression level correlation with the occurrence of KNOX genes in alfalfa grown multileaflet trait.
The postdoctoral project main goal is to identify the time positioning and networking of hormone levels concentration and modification in the level of expression of six KNOX genes in alfalfa. These findings allow deciphering the molecular mechanisms leading to the appearance and multileaflet trait to identify methods by which it can be stabilized in descents, for the protein naturally increasing.

X. 8.

Title Assessment of somaclonal variability using molecular markers and identification iridaceae family genotypes with high content of carotenoid pigments and isoflavones

Authors	Lăpădătescu Simona, Petolescu Cerasela, Bălă Maria, Lazăr A., Botău Dorica
Institution	Banat University of Agricultural Sciences and Veterinary Medicine Timisoara
Description	In the present study we evaluate the regeneration ability of fev German iris (*Iris germanica* L) varieties and genetic diversity of th regenerated plants using molecular markers. In addition, researc aimed identification of the genus Iris genotypes with a high conter of isoflavones. German iris, is known for the accumulation of number of isoflavones, perhaps the largest number of isoflavonoid in a single genus of nonleguminous plants. They accumulate mainl in the rhizomes, these compounds being used in the pharmaceutica industry. Isoflavones assessment will be made by appropriat analytical methods. Finally, it sets the level of somaclonal variatio and also existing evidence of superior genotypes in terms c pigment content and isoflavones The natural mode of reproduction in the Iris genus limits large-scal production of valuable plants. Iris reproduction by seeds is rarel used due to problems with germination, low seed production i some species, capacity for cross-pollination, and long juvenil period in plant development. Cell and tissue culture method ha become popular in iris reproduction since it considerably increase plant multiplication factors and improves the quality of valuabl planting stock.

X. 9.

Title	e-Supply Chain Management by ERP implementation approaches
Authors	Shapoor Zarei 1, Amin Daneshmand Malayeri 1,2
Institution	1Arab Invention and Innovation Academy, Dubai, UAE 2 World Wide Science Academy, KL, MALAYSIA
Description	Supply chain management (SCM), a management approach to optimize internal costs and productivity, has evolved as an application of e-business technologies. SCM is a powerful strategic function capable of radically improve customer value proposition by redesigning the intranet and Internet-enabled collaborative channel partnerships. Latest developments in information technology have propelled the e-Supply Chain Management (e-SCM) concept to new dimensions. In the past, neither markets nor products changed much over time, companies are acquired initially superiority could leverage, considerable resources and knowledge process, mature distribution channels, advertising and marketing influence and the latest technologies to maintain this lead. Today it is clear that there is no such thing as sustainable competitive advantage and also that all benefits

	are *temporary.* due to rapid acceleration in the erosion of competitive advantage in almost all businesses can be traced back to developing new technologies quickly. Since more than death is sudden new business models that have been rapidly challenging the current leaders leverage the special skills that enable them to invade and conquer the market more targeted customer segments. This research program provides a broad literature review to identify the latest trends in e-SCM. Also, try to study some of the problems associated with e-SCM, along with their solutions and practices.

X. 10.

Title	Study regarding the effects of acid etching on enamel affected by non-cavitated carious lesions
Authors	Stoleriu Simona, Pancu Galina
Institution	University of Medicine and Pharmacy „Gr.T.Popa"-Iassy, Romania, Faculty of Dental Medicine
Description	The aim of the study was to establish and to compare the effects of ortophosphoric acid and hydrochloric acid on enamel affected by incipient carious lesions with different evolution. 20 teeth having acute and chronical non-cavitated carious lesions were used in this study. The teeth were sectioned in two halves through the middle of the non-cavitated lesions. The halves of 5 white spot lesions and of 5 brown spot lesions were analyzed using an atomic force microscope (AFM) to establish the surface roughness. 5 halves with white spot lesions and 5 halves with brown spot lesions were etched using 37% ortophosphoric acid (Scotchbond etchant gel, 3M ESPE), and an equal number of samples were etched using 15% hydrochloric acid (ICON-etch, DMG Dental Products Ltd) for 2 min, then washed with water and analyzed by AFM. The initial surface roughness of the enamel was higher in the white spot lesions, comparatively with the brown lesions. For both types of non-cavitated lesions, acid etching with phosphoric and hydrochloric acid significantly increased the surface roughness of the enamel when comparing with the enamel surface before etching. The hydrochloric acid led to a surface roughness significantly higher than ortophosphoric acid, in both acute and chronical non-cavitated carious lesions. The roughness values obtained after etching with ortophosphoric and hydrochloric acid were higher in the white spot lesions, when comparing with brown spot lesions.

X. 11.

Title	Studies on water footprint assessment in the sustainable water resources management
Authors	Simona-Andreea Ene, Carmen Teodosiu

Institution	"Gheorghe Asachi" Technical University of Iasi
Description	This research project aims to study the possible uses of the "water footprint" instrument in order to improve the sustainable management of water resources, considering the interactions between stakeholders. The main elements of originality proposed by this project are the integration aspects of this instrument, water footprint, and contributions to its development and adaptation so as to improve the efficiency of water resource management. The two stages of studying the water footprint assessment, the calculation and the impact and risk assessment are very important issues in formulating strategies for an efficient use of water resources. The project activities will be conducted by using the following logical sequence: critical analysis of the water resources management at the industrial facility or regional level, a case study related on the "water footprint" instrument use for an industrial activity, highlighting the major impacts and risks and at the end, a final verification related to how this tool can respond to various changes that may occur in the sustainable use of water resources in Romania. The study also will follow up on the possibility of integrating this tool with other specific instruments such as integrated impact and risk assessment or life cycle assessment in order to reduce the risk of pollution and anthropogenic impacts on water resources.

X. 12.

Title	MWNT- reinforced PA6 nanocomposites obtained by electrospinning
Authors	Monica Alina Călin
Institution	"Gheorghe Asachi" Technical University of Iaşi, Faculty of Textile, Leather and Industrial Management
Description	Nanotechnology plays an essential role in the textile industry. It involves a controlled manipulation of nanoscale structures and their integration into larger materials, of different scales. In the textile field, nanotechnology refers mainly to the fabrication of nanofibers or the surface modification of fibers or fabrics. In order to produce nanofibers the electrospinning method is used. Its principle is based on drawing a jet of polymer solution through the electrical field in order to obtain synthetic fibers at nanoscale. The diameter of the obtained fibers can are in the range of 10-1000nm. Due to the unique properties of the carbon nanotubes (CNT), the study is focused on obtaining polymer nanofibers charged with (CNT) using the electrospinning method. The polymer used is PA6. The electrospinning of the polymer solution was made with different parameters. The

samples obtained were analyzed with a scanning electron microscope (SEM). The diameters of the fibers were measured in order to determine the optimum electrospinning parameters.

X. 13.

Title Achieving Biomimetic Structural Color for Textiles – „Dyeing without colorants"

Authors Mirela Teodorescu
Institution „Gheorghe Asachi" Technical University of Iasi

Description

For thousands of years colors of textiles and clothes have been obtained from pigments. Until some decades ago, people did not realize that Nature also „dresses" herself into amazing structural colours. Most of these colours are based on simple optical phenomena: thin film interference, multilayer reflectors, diffraction gratings, photonic crystals, light scattering.

Although structural colours have been reported in a diverse range of species, including birds, fish, molluscs, annelids and arthropods, however, butterflies displays among the most diverse reflecting surfaces, probably because they have scales supporting, even at submicron level, very complex architectures.

The bright colours and reflective properties of butterfly wings can offer great innovations for textiles and clothes. The tropical Morpho butterfly displays a brilliant blue due to multilayer interference from vary small structures on wing scales. Light interacts with these structures leading to a high intensity reflection spectrum which varies strongly with the angle of incidence and the angle of observation.

The study focuses on understanding the physical phenomena behind the structural colour and the development of theoretical and practical models that imitates butterfly's scale nanoarchitectures. The industrial potential of these structures for use in textile applications is demonstrated by varying different parameters, leading to a wide colour palette.

The novel range of nanomaterials with biomimetic structural colour can offer an eco footprint for textile industry, replacing the photodegradable and toxic dyes.

X. 14.

Title X-ray studies of new 3(*2H*)-pyridazinone derivatives

Authors Dorina Mantu,[1] Sergiu Shova,[2] Vasilichia Bejan,[1] Ionel I. Mangalagiu[1]

Institution [1] "Al. I. Cuza" University, Faculty of Chemistry
[2] "Petru Poni" Institute of Macromolecular Chemistry

Description

Pyridazine and its 3-oxo derivatives, pyridazin-3(2*H*)-ones are the representative classes of the 1,2-diazinic compounds. The synthesis of novel pyridazinone derivatives and investigation of their chemical and biological behavior have gained more importance in recent decades, since they are invaluable compounds proving fascinating practical applications for medicine, opto-electronics, agriculture, etc. Also, a large number of pyridazinones are well known as intermediates for drugs and agrochemicals.

The aim of this work was to synthesize new 6-phenyl-3(2*H*)-pyridazinones derivatives, substituted at N^2 diazinic position and their use as organic ligands in complexation reactions with various metal ions. Thus, a structurally new compound was obtained, both under classical conditions and unconventional methods.

The structure of newly compound was proved by spectral analysis (IR, MS, NMR) and X-ray diffraction. Financial support was provided by the project: PN-II-DE-PCE-2011-3-0038, no. 268/05.10.2011.

X. 15.

Title X-ray studies of new isoindolo-1,2-diazine compounds with aromatic structures

Authors Vasilichia Bejan,[1] Sergiu Shova,[2] Dorina Mantu,[1] Ionel I. Mangalagiu[1]

Institution [1] "Al.I. Cuza" University, Faculty of Chemistry
[2] "Petru Poni" Institute of Macromolecular Chemistry

Description

Compounds with highly fluorescent properties having extended π-conjugation continues to arouse interest because of their fascinating applications such as sensors and biosensors, electroluminescent materials, lasers, and other optoelectronic devices.

New N-bridgehead heterocyclic compounds with pyrrolo-pyridazine moiety represents a class with interesting optical properties, due to their containing a π-excessive pyrrole and a π-deficient diazine ring with one bridgehead nitrogen.

The aim of this work was to synthetise new isoindolo-1,2-diazine compounds with a pyrrolo-diazinic skeleton, using a general and straightforward strategy (quaternization and cycloaddition reactions) under classical conditions and nonconventional methods.

The structure of compounds was proved by spectral analysis (IR, MS, NMR) and X-ray diffraction.

Financial support was provided by the project POSDRU/89/1.5/S/49944.

X. 16.

Title Intensification of the Oxygen Mass Transfer Through the Air - Water Surface Related to the Biological Oxidation of Biodegradable Compounds
(POSDRU/89/1.5/S/62557)

Authors Ioana Corina MOGA

Institution University POLITEHNICA of Bucharest

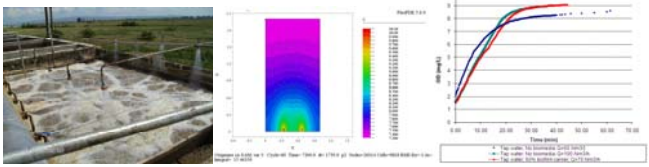
Description

Moving bed systems comprise all biofilm processes with continuously moving media, maintained by high air, water velocity or mechanical stirring. Small parts made of special materials with density close to the density of the water, are immersed in the bioreactors. This type of support is most effective because it does not clog and it does not require additional energy consumption. The biofilm carriers are kept in suspension and even mixed with the help of air bubbles generated by the aeration system.

The main purpose of this study is to determine the concentration of dissolved oxygen (DO) using mathematical modeling and numerical simulations. In the second stage, several experiments are realized and the aeration system efficiency is determined.

Oxygen transfer, the process by which oxygen is transferred from

the gaseous to the liquid phase, is a vital part of a number of wastewater treatment processes. Because of the low solubility of oxygen and the consequent low rate of oxygen transfer, the needed quantity of oxygen required for aerobic waste treatment through normal surface air-water interface is insufficient.
To transfer the needed large quantities of oxygen, additional interfaces must be formed. Submerged bubbles aeration is most frequently accomplished by dispersing air bubbles into the liquid. The diffused or bubble aeration process consists of contacting gas bubbles with water for the purpose of transferring gas to the water. The most commonly used diffuser system consists of a matrix of perforated tubes/membranes or porous plates arranged near the bottom of the tank. Such a system was considered in the present research.
Both results (from numerical simulations and experimental researches) show that the introduction of biomedia in the reactor increases the time contact between air bubbles and water and so the mass transfer of oxygen is more efficient.



X. 17.

Title "Mini"Class Underwater Remotely Operated Vehicle

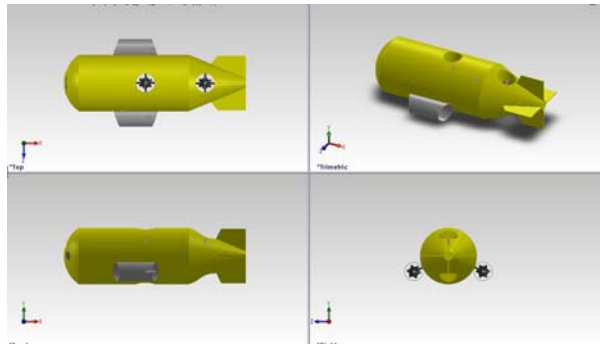
Authors Octavian Tărăbuță, Vasile Dobref

Institution "Mircea cel Batran" Naval Academy

Description

The Remotely Operated Vehicles (or ROV) are dedicated underwater systems with various degrees of autonomy, controlled by a human operator. ROVs may be fitted with a large array of sensors for visual or acoustic inspection of submerged targets or for measurement of hydrographic parameters as temperature, salinity, density, etc.
The ROV presented has relatively small dimensions (900 x 300 x 400 mm) that put it in the so-called "mini" class. The research team chose to propel the ROV with 2 horizontal and 2 vertical DC motors that provide the necessary movement in the water. For a better hydrodynamic behavior, the components are enclosed in a watertight streamlined body designed to withstand pressures of up to 4 bars. The control commands and the information from sensors (optical, depth, course, motors speed) are given and received through a laptop where the interface software is loaded.
The novelty of this project is given by the low cost of the ROV.

Generally, as these vehicles contain dedicated sensors, controllers, actuators and remote control systems they are expensive enough to be used by large companies that afford them. The authors succeeded in devising a configuration based on off-the-shelf components, thus drastically reducing the building costs for similar performances.
The developed ROV is meant to be used mainly for inspection of the vessel's hull and for emergency applications in shallow waters, port basins or lakes) replacing in these situations the need of divers.



X. 18.

Title New formulations of enzymes and Ionic liquids for removing protein-based materials from painted and polychrome works of art

Authors C. Pereira, I.C.A Sandu, L.C. Branco, T. Busani
Institution Faculty of Sciences and Technology, Nova University in Lisbon

Description New formulations using a combination of enzymes (three different proteases) and ionic liquids are proposed for the removal of proteinaceous varnish layers (egg white, animal glue, isinglass and casein). The treatment was applied on documented reconstruction of painted surfaces and gold leaf gilding. The use of ionic liquids (ILs) defined as "green solvents" as an alternative solvent to enzymes is an area in conservation science with a large number of possibilities: the ionic liquid is a material that can be designed (cation-anion combinations) to adjust to different requirements such as improvement of enzyme cleaning effectiveness, surface compatibility, and safety for the user.
To monitor and analyze the effectiveness of each formulation, a novel multi-scale non-invasive approach based

on four different analytical techniques: colorimetry (CIE L*a*b*), optical microscopy (OM) with visible and fluorescence light, atomic force microscopy (AFM) and scanning electron microscopy (SEM) was applied. The combinations of these techniques allowed an extensive and complete view of the surface material and its characteristics/behavior. Going to a nano-scale with the use of AFM proved to be of major importance to achieve a new further level of information; at the same time the conclusions were easily extrapolated to a larger scale.
The new formulations and the non-invasive multi-technique methodology we propose in this work can be applied in conservation-restoration practice but further experiments are required to optimize the parameters of the application and to validate it on real art objects.

X. 19.

Title Heterogeneous catalyst based on Romanian montmorillonite for the catalytic wet hydrogen peroxide oxidation of chlorophenols from wastewaters

Authors Daniela Arsene, Carmen Teodosiu
Institution „Gheorghe Asachi" Technical University of Iasi

Description Catalytic wet hydrogen peroxide oxidation (CWPO) is one of the most promising advanced oxidation processes, for the degradation of priority organic pollutants. Mixed Al-Cu pillared clays (AlCu PILCs) displays both good catalytic activity and high stability. The aims of this research was to study the CWPO of 4-chlorophenol over an AlCu PILCs prepared from indigeneous clay and compare it with catalysts prepared from reference materials. The pillaring process was successful for all the clays, as indicated by the increase in d_{001} basal space (XRD) and in the surface area (BET nitrogen adsorption/desorption isotherms). The catalysts were very active allowing complete elimination of 4-chlorophenol and a significant reduction of chemical oxygen demand values (COD). The Romanian montmorillonite from Valea Chioarului can be successfully used for the preparation of AlCu PILCs, giving catalysts with activities comparable with those obtained from reference materials.

X. 20.

Title Clinical and radiological study regarding the evaluation of incipient caries treatment using resin infiltration method

Authors Pancu Galina, Stoleriu Simona
Institution University of Medicine and Pharmacy Gr.T.Popa, Iaşi

	Odonthology and Periodontology Department, Cariology and Restorative Odontotherapy Discipline
Description	It has been demonstrated during the time that patients did not always follow doctor's indications regarding preventive or therapeutic measures, so it is difficult to stop the evolution of incipient carious lesion, especially when the lesion have an acute evolution. Incipient caries treatment with resin infiltration method is based on minimally invasive modern therapy. The purpose of this study was to evaluate, clinically and radiologically, the capacity of ICON infiltration system to stop the evolution of incipient caries lesions on smooth surfaces of the teeth. The study group included 14 patients which had on smooth surfaces of the teeth (buccal, oral, mesial and distal) incipient caries with acute or chronic evolution (having 0.1, 0.2 scores in ICDAS classification and E1, E2 or D1 in radiological classification). After cleaning and proper isolation, affected surfaces were infiltrated with ICON system (DMG, SUA). These surfaces were clinically and radiologically analized after 3, 6, 9 and 12 months to evaluate the evolution of the carious lesions. After 6 months only two lesions of 19 (10,52%), progressed in evolution from E2 to D1 and from E2 to D2 and after 12 months only one lesion progressed from D1 to D2. Arrested carious lesions were observed in 89,48% of the cases. The absence of carious lesion progression in time (after 12 months) recommends this method of being one of the most efficient therapeutic method for incipient caries.The results of our study are similar to other studies, showing a good therapeutically effect on stopping the evolution of proximal carious lesions.

X. 21.

Title	Studies and researches on the reconditioning of important automotive components which are subjected to heavy wear using thermal deposition methods
Authors	*Basescu Gica Narcis*
Institution	Technical University "Gh. Asachi" of Iaşi, *Faculty of Mechanical Engineering*, *street* Dimitrie Mangeron, *no* 29, *zip* 700050, ROMANIA
Description	The incorrect operation of the camshaft affects not only the normal engine service, but also its economic indices. The gas distribution mechanism elements are especially submitted to mechanical wear. Therefore, the main aspects of this type of wear can be found, grouped as followed: contact wear, abrasive wear, fatigue wear, particularly its pitting, exfoliation, cracking. The atmospheric plasma spraying method (APS) is one of most used methods for deposition on layers with different thickness on surfaces with different degrees of complexity. The purpose of

this research is to extend the lifetime of cam - follower by using a common, cheap and easily processed material, which coated through thermal barrier by modern methods of submission, are intended to prevent spallation, improving mechanical behavior and wear resistance. The deposited layer comes as a filler element to the basic material and between these two can speak of a limit of separation or interface more or less clearly delineated.
This research presents a new concept of thermal barrier coating for the prevention of delamination of the sprayed layer. This consists in an adherent layer of NiMoAl (90-5-5) and a top coat of Al_2O_3-TiO_2, deposited by atmospheric plasma spraying (APS) on specimens which the camshaft are made.

X. 22.

Title Studies and research on increases wear and corrosion resistances of surfaces turbine blades per thermal deposition methods

Authors *Pintilei Geanina Laura*
Technical University "Gh. Asachi" of Iaşi,
Institution *Faculty of Mechanical Engineering*,
street Dimitrie Mangeron, *no* 29, *zip* 700050, ROMANIA

Description

The achievement of the ceramic layer on the turbine blades for aircraft engine is now a usual method for increasing strength and durability of the blades. Turbine blades for aircraft engine are subdued, during functioning, to thermal and mechanical stresses, which can lead to their deterioration. Thermal barrier coatings (TBCs) are used to isolate the components of gas turbines which are submitted excessively temperatures and allows these coatings to take action as a thermal barrier.
Turbine blades for aircraft engine are subdued, during functioning, to thermal and mechanical stresses, which can lead to their deterioration.
The purpose of this research is to extend the lifetime of turbine blades by using a common, cheap and easily processed material, which coated through thermal barrier by modern methods of submission are intended to prevent spallation, improving thermo-mechanical behavior and performance at high temperatures.
The thermal barrier consists in an adherent layer of NiMoAl (90-5-5) sprayed with electric arc and a top coat of ZrO_2/20%Y_2O_3, deposited by atmospheric plasma spraying (APS) on specimens of Ni base superalloy, of which the aircraft turbine blades are made engine Tumanski R13 which equips the MIG 21.

X. 23.

Title Composite modular strenght –low profile partial foot prosthetic

Authors Dimitriu Bogdan Ioan
Institution University "Gheorghe Asachi" Iasi, Mechanical Faculty –

Description	Material Science Department The state of art of prosthetics for partial foot amputation have the big deficit of an predefine strength and a height difference between ground and the stump because of intermediate parts. My project is about a modular lamellar system with a low profile that can be upgrade according to strength necessity.

X. 24.

Title	Innovative research approaches of S.C. Biotehnos SA in cosmetic and pharmaceutical industry
Authors	Laura Olariu, Emilia Buse
Institution	SC BIOTEHNOS SA
Description	Biotehnos research infrastructure was developed with financial help from POS CCE 74/04.09.2009 ID 275 SMIS-CSNR 2801 which enhancing its dermatocosmetical and pharmaceutical research capacity through organization of three new research laboratories (Biotechnological Research, Chromatography and Bioanalytical studies and Topic Conditioned Products) and upgrading Bioactive Extracts Sector with equipments of higher standards thus completing the own research system of interrelation *concept → applications ↔ optimization → capitalization.* This provides the functionality of an innovative research algorithm between *rigorous quality control of biological materials*, then *obtaining technologies of superior physical-chemical characterizated actives principles* and *proving of specific biological actions* by deeper researches at molecular and cellular level that supporting in vivo effects which are valued by an *efficient product formulations*. We implemented an efficient system of innovative processes and products development starting with quantification of toxic residues (pesticides and heavy metals) from biological materials by validated gas chromatography, AAS and LC-MS methods follow up by own *in vitro* analyses of toxicity and specific biological activity as well as *in vivo* extrapolation of significant target actions. First in our country, we perform *state of the art researches of specific gene expression by qPCR* for the genomic approach in early and deep assessing of efficacy and *in vitro*/ *ex vivo* studies of penetration and dermal absorption of actives topics by Franz diffusion for proving in vivo effects that represent the cutting edge of cosmetic and pharmaceutical science. We performed all stages of researches according of bioproduct quality and safety standards of UE legislations.

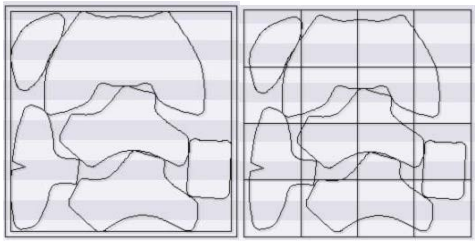
X. 25.

Title Testing and calibration for an original software, developed to estimate material consumption for leather and synthetic products, based on compact drawing method

Authors Antemie Alex

Institution Technical University "Gh. Asachi" of Iaşi, Faculty of Textile-Leather and Industrial Management,

Description Correct estimation for materials consumption, since design stage of a product, is an important step, because materials costs constitute a significant partf of the selling price of a leather or synthetic products (footwear, handbags, upholstery,etc.. ..). Through time, theory specifies various methods for estimating consumption; compact parts drawing is one of them. This article presents the concepts of software testing, to optimize how the computer program operates, specific parameters of this estimation method, and a study of their influence on the final result, in order to establish the optimal variation of these parameters. Research orientation for this purpose is justified by the fact that the method of drawing compact parts is frequently used in industry, but often there are hard to tolerate deviations between theoretical estimation and real values.



X. 26.

Title Preparation and functional properties of Co-TiO_2 nanocomposites thin films

Authors M. Poiană[1], M. Dobromir[1], V. Nica[1], A.V. Sandu[2] and V. Georgescu[1]

Institution [1] Faculty of Physics "Al. I. Cuza" University of Iasi
[2] Gheorghe Asachi Technical University of Iasi

Description

Metal matrix nanocomposites are formed from a metal matrix in which nanosized particles of another material are implanted, in a view to obtain a material with new functional properties. We prepared by electrodeposition Co-TiO_2 nanocomposite films composed of a Co metal matrix containing embedded TiO_2 nanoparticles. This is a very appropriate and inexpensive method to produce nanocomposite films.

The electrolyte contained $CoSO_4 \cdot 7H_2O$, H_3BO_3, NaCl, $Na_2SO_4 \cdot 10H_2O$ and TiO_2 nanoparticles, which were added to the plating solution with continuous stirring. The film composition was controlled either by the addition of different concentrations of TiO_2 nanoparticles in the solution, or by modifying some electrodeposition parameters (such as applied voltage or stirring speed of the electrolyte). The Co-TiO_2 films were characterized by X-ray photoelectron spectroscopy, X-ray diffraction and scanning electron microscopy analysis.

Magnetic measurements were carried out at room temperature by means of two methods: using an induction type device with data acquisition system and by torque magnetometry. The introduction of TiO_2 into the thin nanocomposite film changes the direction of the easy magnetization axis in relation to the film plane (from in-plane to almost normal to plane) as an effect of the morphology modification. We have found that functional properties of the Co-TiO_2 nanocomposite films depend on the TiO_2 nanoparticles content, which is influenced by deposition parameters. The Co-TiO_2 nanocomposite films (containing about 1.3 at. % Ti) exhibit a giant magnetoresistance contribution of 47.6 %. This effect is very promising for potential applications of Co-TiO_2 nanocomposite films in spintronics.

X. 27.

Title Research studies on the development of textile products for physically disabled people

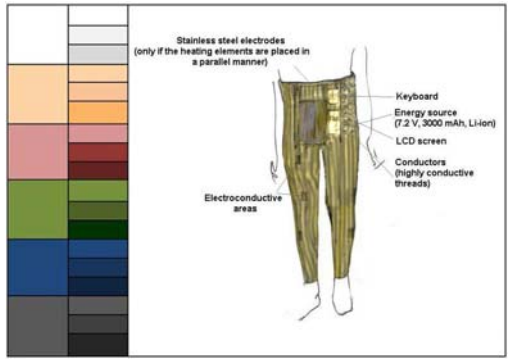
Authors Ioana Petcu

Institution "Gheorghe Asachi" Technical University, Faculty of Textile-Leather Engineering and Industrial Management

Description

The product we are trying to develop is a pair of compressive heatable trousers for people who suffer from the paralysis of the lower limbs. No matter the type of disabling condition –in most cases, the patients face a pronounced feeling of cold due to the lack of muscle activity and circulatory problems. Through the electroconductive wires inserted into the structure, the product

will generate heat warming up the legs and also stimulating blood flow, and will mainly be characterized by these three functions: the heating function, the compression function and the aesthetical function.
The first two are being analyzed in collaboration with Knowledge Center, Design and Technology, Enschede, The Netherlands. The results are very promising as new textile heating possibilites arise. As for the aesthetical function of the product, it has only been partially investigated via survey questionaire from 20 patients of the Physical Rehabilitation Hospital in Iasi, Romania, regarding their medical condition, chromatic choices and general clothing concerns.
Other steps of this study imply a complet thermal profile of the paralyzed limbs of patients, methods of implemeting the coresponding electronic components into the textile structure of the product and developing a flexible, stretchable and stable conductive structure.



X. 28.

Title Obtaining of ZnO/clinoptilolit and nTiO3/clinoptilolite and study of their antibacterial properties

Authors Violeta Elena Copcia, Claudia Mihaela Hristodor, Simona Dunca, Reni Iordanova, Albena Bachvarova-Nedelcheva, Ion Sandu

Institution "Alexandru Ioan Cuza" University of Iasi

Description Objectives of this study were to estimate the ability of antimicrobial activity of ZnO/clinoptilolit and ZnTiO3/clinoptilolite in solid media (agar plates) against Gram-negative Escherichia coli ATCC 25922 and Gram-positive Staphylococcus aureus ATCC 25923. Samples of clinoptilolite rich tuff (from Beli Plast deposit in Eastern Rhodopes, Bulgaria) treated with oxalic acid were obtained. Finally, the ZnO and ZnTiO3 were incorporated into this clinoptilolite samples.

Financial support was provided by the project POSDRU/89/1.5/S/49944.

X. 29.

Title SYNTHESIS OF SILVER/CHITOSAN/CLAY BIONANOCOMPOSITES USING CHEMICAL REDUCTION METHOD

Authors Claudia-Mihaela Hristodor, Violeta Elena Copcia, Andrei Victor Sandu, Eveline Popovici

Institution "Alexandru Ioan Cuza" University of Iasi

Description In this study, silver nanoparticles silver/chitosan were synthesized into the lamellar space of clay using the chemical reduction method (ascorbic acid as reducing agent). Chitosan, clay, and AgNO3 were used as the natural polymeric stabilizer, solid support, and silver precursor, respectively. The properties of silver/chitosan/clay bionanocomposites were studied as the function of concentration of silver/clay ratio. The textural and morphological properties were studied. Meanwhile, the crystalline structure and d-spacing of the clay interlayer, average size and size distribution, surface morphology, elemental signal peaks, functional groups, and surface plasmon resonance of silver/chitosan/clay were determined by powder X-ray diffraction (XRD), FTIR spectroscopy, N2 adsorption-desorption isotherms, particle size analysis and Scaning Electron Microscopy (these studies infer that the particles are mostly spherical in shape) which reveal of the nano nature of the particles.

Financial support was provided by the project POSDRU/89/1.5/S/49944.

X. 30.

Title Study of the retention capacity of iron salts by ceramic material : Application for the removal of residual coagulant in drinking water

Authors J.M. SIELIECHI, G. JOSEPH KAYEM, I. SANDU

Institution University of Ngaoundere, Cameroon

Description The objective of this work is to used natural materials (biomaterials) to reduced the residual coagulants in drinking water. The aluminum and iron contents in drinking water can mainly be derived from the water treatment process because these metal ions is commonly used as reactant for coagulation-flocculation. When the optimum physico-chemical condition of the treatment of raw water is not well established, the probability

of the presence of residual coagulants in treated water increases. In most water treatment plants, variation in raw water quality and the quantity make necessary a good monitoring of the optimum condition of treatment. In spite of these, consumers are exposed to dangerous consumption of residual coagulant in drinking water. There are numerous studies about these metals associated with various health problems and obstructing water distribution networks.

X. 31.

Title Mini Coal: Optimum Heat, Portable, Eco-friendly and Reuse Materials (MINI COOPER)

Authors MUHAMAD HUSNI BIN ABDUL RAHIM, IQMA ASYILA BINTI ILIAS

Institution SCIENCE JOHORE SECONDARY SCHOOL

Description Coal is a substance that we use to heat something like dish or boiling water. But the main problem in this situation is how to reduce smoke during coal burning. However, normal coals have their disadvantages. These are several problem that can be listing are black mark if touch it, too much smoke and need flame to make sure the coal is burning. Human factor are using to make sure the coal is heat and burning such as controlling air ventilation. We got an idea to produce a new coal to solve the problem. The appearance of the new coal is design in a small size than ordinary coal. The processes to produce this coal are more easily and take short time. It is a new invention created by us to replace the ordinary coal. The ordinary processes to produce coal are using trees that we need cutting down trees. Now, we save the environment by using wastage material. We have thought an alternative to find overcome the problem why the ecosystems are destroyed by human beings. The coal is create by us is using wastage coconut shell and others ingredients to reduce wastage product and pollution. We have maximized use of coal and minimized the cost. The advantages of this project are eco friendly because it is produce by using wastage material. The coal does not produce flame and smoke. Its temperature can be reach until 510°C .The coal can be heated in 7 to 8 hours without depend human factor. Ventilation air is one of main factor to helping process of burning to become long lasting. It is portable to bring anywhere .If touch the dry coal doesn't leave any mark on hand.

X. 32.

Title A Continuous Aerobic Composter

Authors Ahmad Nasri bin Othman

Institution Science Selangor Secondary School

Description

Solid waste disposal has become a serious issue for country and municipal governments throughout the nation. As available landfill space decreases and the cost of siting and building new landfill increases, local authorities are struggling to develop alternative means of meeting the waste disposal challenge. A big part of these problems come from organic waste into the solid waste. Municipal solid waste in Malaysia has a large percent of food waste (around 50-60 percent) that makes a lot of problems in disposal methods. Composter is an instrument that enhances natural surroundings which promotes the natural process of decomposition of solid waste into compost.

X. 33.

Title Mobile Sunpack

Authors Muhammad Zulkifli Amirudin, Ahmad Nasri Othman, Aini Arifah binti Abdul Karim

Institution Science Selangor Secondary School

Description

Mobile Sunpack as an alternative to the common use of generator. It consists of rechargeable battery that can be charged by AC and DC connection. With solar energy as a primary energy charging source, consumers can charge their power pack during day and use it as an alternative electrical supply. The battery capacity is matched with the consumption needs and equipped with efficient DC lights for longer usage. Therefore, this product can be used as a mobile generator, that can be packed, and carried anywhere.

X. 34.

Title Sustainable 'CB' From rice straw waste

Authors Muhammad Khairi B. Ramli

Institution Tun Abdul Razak Integrated School

Description

Our research is to study the production of cement board using rice straw. This board was made from rice straw, cement and water. Two chemical are added is aluminium sulphate and sodium silicate. Cement :rice straw mixture by weight was 2.5:1, 2.75:1 and 3.0:1 used to produces a cement board.The bending strength (MOR, MOE) of cement board were tested according Malaysia Standard MS 934.The physical and mechanical

properties of cement board made form rice straw were comparable with those of other board available in market

X. 35.

Title From Waste To Wealth :'ParBo' From Biomass of Palm Oil

Authors Muhammad Khairi B. Ramli

Institution Tun Abdul Razak Integrated School

Description

The oil palm consist of only about 30% of the total biomass produced in the plantation. The remainder of consist of huge amount of oil palm wastes such as oil palm shells, mesocarp fibers and empty fruit bunch (EFB) from the mills and the oil palm fronds oil palm trunks from the field during replanting the oil palm tree. If the biomass wastes does not utilised,it will encourage environmental pollution.

One of the biomass wastes is the oil palm fronds. It can be produces into potential product such as particles board. The flow chart of the particle board manufacturing are from raw material, the oil palm fronds to chipping then flaking the chips into different size of particles. Next is air-drying, screening to four size of particle(2.0mm, 1.0mm, 0.5mm and fine size), oven drying, forming and lastly pressing in hot press to form a particle board. Testing is conducted to study the density, thickness swelling, water absorption, and Modulus Of Rupture test.

In conclusion, the biomass waste can be overcome through producing particles board. This particles board can be used in furniture making industries and same time reduce the environmental pollution causes by oil palm frond in plantation

X. 36.

Title AQUERACT

Authors Siti Norsarah Bt Suhaimi

Institution Tunku Kurshiah College

Description

Due to the up growing modernization in the plumbing field, types of pipes were invented. Typical hoses used for filling of the portable water tanks in are similar to garden hoses but are made of non-porous materials that are less likely to collect bacteria or affect the water's taste. They are colored white as a distinguishing characteristic. There are a number of common attachments available for the end of the hose, such as sprayers and sprinklers (which are used to concentrate water at one point or spread it over a large area). The hoses are typically made out of synthetic rubber or soft plastic, reinforced with an internal web of fibers. As a result of these materials hoses are flexible and their smooth exterior facilitates pulling them fast trees, posts and other obstacles. They are also generally tough enough to

survive scraping on rocks and being stepped on without damage or leaking. Most hoses are not rated for use with hot water, and their packaging will generally specify whether or not this is the case. Nowadays, we often see toilet hoses lying on the floor of the public toilets. Hence the feel of disgust will surround the people who use the particular toilets. The retractable hose is a flexible tube to carry water. Sometimes the male and female connectors disintegrate or fall out of older hoses, which results in high pressure leakage spraying from the hose. After carrying out detailed research, Aqueract now, provides an efficient system for the public. Firstly, users are able to use hose which operates automatically and this would then prevent clothes especially with long sleeves from getting stuck to the entering of the hose. Throughout the hose being pulled back, an anti-bacterial spray sanitize the hose used. Therefore, the hose will always be clean without any germs. There is also sensor being installed to Aqueract that functions to stop the water before the hose is retracted. So, there will be no excess water spill thus water can be saved. An alarm is also placed to warn the users if they fail to retract the hose after using it. As a conclusion, Aqueract are ready to perform a better service for the public.

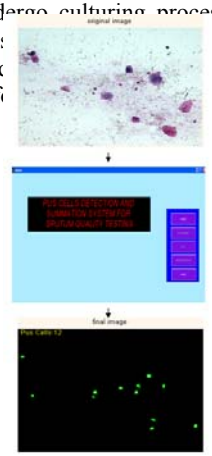
X. 37.

Title Detection and Summation of Pus Cells for Sputum Quality Testing

Authors Norazura Abdul Halim & Rosyati Hamid
Institution Universiti Malaysia Pahang (UMP)

Description

Diseases of the lung such as *Moraxella catarrhalis*, *Mycobacterium tuberculosis* and others can be detected from sputum. However, sputum needs to undergo culturing process which requires high cost before these di d. So, sputum quality testing based on Mo ia should be performed to avoid any waste f y sputum. Based on this criterion, pus cell is one of the cellsin sputum that should be calculated in order to determine the quality of sputum. Sputum sample that consist more than 25 pus cells is considered as quality sputum. Only the quality sputum sample can undergo culturing process. In Hospital Universiti Sains Malaysia



	(HUSM), they calculate the number of pus cells manually from offline image which is taken from x10 computerized microscope. So, this invention which is a system can replace this manual method by detecting and counting the number of pus cells automatically from offline sputum image and determine either the sample is a quality sputum or not. 4 sputum images which represent one sample of sputum will be processed and the final result will reveal the number of pus cells in that sputum sample and either the sputum has a quality or not. Image processing tools from Matlab is used to develop this system.

X. 38.	
Title	Forensic investigation of the security features of the illegal border documents
Authors	Daniel Potolincă, Ion Sandu
Institution	„Al. I. Cuza" Police Academy
Description	This research deals with the examination of the illegal border documents taking into account the security features and document manufacturing. Some aspects of the scientific investigation and the way how the counterfeit is realized has been given and were exemplified by case studies. The methods used to analyze the counterfeit is manly based on physical methods (visual, optical, spectroscopic techniques).

X. 39.	
Title	Utilization of low-cost biosorbent mixture for integrated treatment of aqueous waste stream in continuous system
Authors	Laura Bulgariu[1], Dumitru Bulgariu[2,4], Matei Macoveanu[1]. Sandu Ion[3]
Institution	[1]Gheorghe Asachi Technical Univeristy of Iasi, Faculty of of Chemical Engineering and Environmental Protection [2]"Al.I.Cuza" University of Iasi, Faculty of Geography [3]"Al. I. Cuza" University of Iasi, Arheoinvest Interdisciplinary Platform [4]Romanian Academy, Filial of Iasi, Collective of Geography
Description	This invention relates to the description low-cost biosorbent mixture utilization for the integrated treatment of aqueous waste stream, in column-packed system. The biosorbent mixture is obtained by mechanically shaken of algae biomass, which is a low-cost biosorbent with high biosorption capacity for numerous heavy metals (Pb(II), Cd(II), Co(II), etc.), and commercially available Purolite A-100 exchanger resin, which retain several anions (such as nitrate and sulphate) from aqueous solutions. The mixing these two components was done to prevent the clogging

of the column and to ensure reasonable values of aqueous solution flow rate. The main advantage of this procedure is that after passing through the biosorbent mixture-packed column, the aqueous waste stream has significant lower concentrations of heavy metals and inorganic anions, which are also pollutant for aquatic environment. The procedure described in this invention included: (i) the methodology for preparation of biosorbent mixture and column-packed equipment; (ii) study of the influence of most important design parameters, such as flow rate and initial pollutants concentration on the biosorption performances of the column; (iii) optimal experimental conditions required for the efficient and economic integrated treatment of aqueous waste stream, (iv) implementation limits of the biosorbent mixture-packed column. The procedure described in this invention includes methodological details for each work step and applicability limits.

X. 40.

Title

Enhancing of biosorptive performances of algae biomass for heavy metals by alkaline treatment

Authors

Laura Bulgariu[1], Marius Lupea[1], Dumitru Bulgariu[2,3], Matei Macoveanu[1]

Institution

[1] Gheorghe Asachi Technical Univeristy of Iasi, Faculty of of Chemical Engineering and Environmental Protection

[2] "Al.I.Cuza" University of Iasi, Faculty of Geography

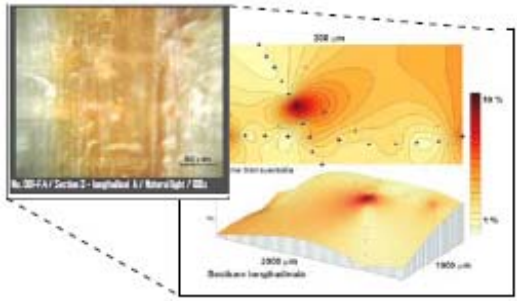
[3]Romanian Academy, Filial of Iasi, Collective of Geography

Description

This invention relates to the description of alkaline treatment procedure for enhancing of biosorptive performances of algae biomass for heavy metals (Cd(II), Pb(II) and Co(II)) from aqueous effluents. This treatment implied the mixing of algae biomass with alkaline solution (0.2 mol/L NaOH) when an increase of biosorption capacity with 23–26% for studied heavy metals was obtained. The main advantage of this procedure is that the enhancement of the biosorption capacity of algae biomass is done without using additional expensive additives, and thus the cost of the adsorbent preparation remains low.

The procedure described in this invention included: (i) the methodology for preparation of alkaline treated algae biomass; (ii) comparative study of the influence of some experimental (initial heavy metals concentration and contact time) on the biosorption capacity of algae biomass and alkaline treated algae biomass; (iii) optimal experimental conditions required for the efficient and economic removal of heavy metals by biosorption on alkaline treated algae biomass; (iv) implementation limits of the biosorption procedure. The main advantage of this procedure

is that allows the removal of heavy metals by a eco-friendly method which has acceptable costs of implementation and exploitation. The procedure described in this invention includes methodological details for each work step and applicability limits.



X. 41.

Title

Installation for the experimental study of soils degradation processes from protected spaces (glasshouses and solariums)

Authors

Bulgariu Dumitru[1,4], Laura Bulgariu[2], Rusu Constantin[1,4], Sandu Ion[3]

Institution

[1]"Al. I. Cuza" University of Iasi, Faculty of Geography and Geology

[2]Technical University Gheorghe Asachi of Iasi, Faculty of Chemical Engineering and Environmental Protection

[3]"Al. I. Cuza" University of Iasi, Arheoinvest Interdisciplinary Platform

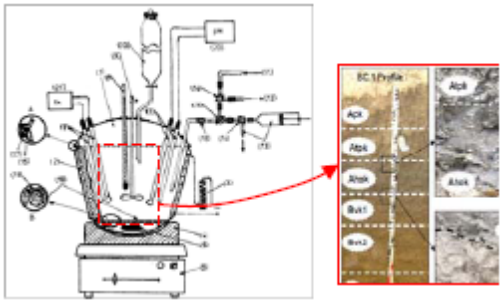
[4]Romanian Academy, Filial of Iasi

Description

The invention relates to the description of an installation for the experimental study of the dynamics of soils degradation processes, which can be used for the estimation of spatial-temporal evolution of soils degradation processes, and of the impact of salinisation, campactation or pedogeochemical segregation processes in soils from protected spaces (glasshouses and solariums). The main component of the installation is a micro-reactor, with a total volume of 1250 cm^3 and an optimum work volume of 800 cm^3. The solid phases (soil samples) are placed on a support consisting of a set of three sieves, made of Teflon and stainless steel. For heating of the micro-reactor, can be attached an electrical heating jacket provided with temperature regulator. The monitoring of pH, redox potential and ionic species concentration in soil sample is done using adequate electrochemical sensors. The installation has a special device for collection of solution samples from micro-reactor (for detailed physic-chemical analysis) and the control of work atmosphere

(pressure and composition of gas phase), and a device for phasing of solutions in micro-reactor. The installation allows the experimental modelling in solid-liquid, solid-liquid-gas, liquid-gas multi-phases –multi-components systems, at pressures of 0.5–1.75 atm., temperatures of 5–45^{o}C, and is easily adaptable in relation to an appreciable number of physic-chemical operational parameters.

Financial support for the studies was provided by the Romanian Academy, Filial of Iaşi, Collective of Geography - III project / issue 3 / 2013 phase.



X. 42.

Title Advanced recovery of precious metals from secondary sources

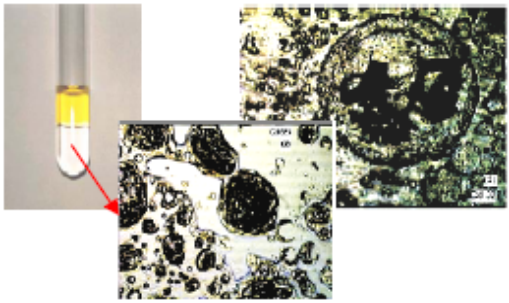
Authors Dumitru Bulgariu[1,3], Laura Bulgariu[2], Mihai Brânzilă[1]

Institution
[1] "Al.I.Cuza" University of Iasi, Faculty of Geography;
[2] "Gheorghe Asachi" Technical Univeristy of Iasi, Faculty of Chemical Engineering and Environmental Protection
[3]Romanian Academy, Filial of Iasi, Collective of Geography

Description

This invention relates to the description of advanced recovery procedure of precious metals from secondary (sediments, alluvial deposits, mining dumps) by extraction in aqueous two- phase systems, formed from an organic polymer (polyethylene glycol, PEG) and an inorganic salt (ammonia sulphate). The utilization of aqueous PEG-based two-phase systems for the advanced recovery of precious metals, has a great potential due to their non-toxicity, durability and relatively low cost of preparation. In such extraction systems, the precious metals (Au, Ag, Pt) can be selectively separated after materials dissolution in presence of chloride ions, as extracting agents. The procedure described in this invention included: (i) the methodology for preparation of aqueous two-phase system adequate for precious metals extraction: type and characteristics (pH, concentration) of phase-forming salt, optimum concentration and molecular mass of polyethylene glycol, mixing ration of the phases and contact

time; (ii) concentration range of chloride extracting agents; (iii) experimental conditions required for the efficient extraction of precious metals; (iv) efficiency, selectivity and implementation limits of the extraction procedure. The main advantage of this procedure is that allows the advanced recovery of precious metals from secondary sources by a eco-friendly method which has acceptable costs of implementation and exploitation. The procedure described in this invention includes methodological details for each work step and applicability limits.



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.

B-dul Carol I, nr. 2 Iasi
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 EDUCAȚIEI CERCETĂRII TINERETULUI ŞI SPORTULUI

THE PALACE OF CHILDREN, IAŞI

1. **Sistem didactic de orientare panou solar**

- BALAN GHEORGHIȚĂ - cl. a IX – a
- PÎRÎU ADRIAN IOAN – cl. a IX – a
- POPESCU ANDREI – cl. a VIII – a

prof. PANTELIMONESCU REMUS, Palatul Copiilor Iaşi
prof. COLBU GHEORGHE, Palatul Copiilor Iaşi

2. **Robot „Experimental – Sumo”**

- POPA ADRIAN – cl. a VII - a
- COVACI ADRIAN – cl. a VIII – a

prof. PANTELIMONESCU REMUS, Palatul Copiilor Iaşi

3. **Şah didactic**

- SÎMPETRU VLAD – cl. a IX – a
- AVĂDANEI EMANUEL – cl. a VI – a

prof. PANTELIMONESCU REMUS, Palatul Copiilor Iaşi
prof. COLBU GHEORGHE, Palatul Copiilor Iaşi

4. Instalaţie eoliană pentru casă

- PÎRÎU ADRIAN IOAN – cl. a IX – a
- GHIAŢĂ SORINA – cl. a X – a

prof. PANTELIMONESCU REMUS, Palatul Copiilor Iaşi
prof. COLBU GHEORGHE, Palatul Copiilor Iaşi

5. Vehicul de agrement solar II

- BALAN GHEORGHIŢĂ – cl. a IX – a
- ATASIEI DIANA – cl. a X – a
- PÎRÎU ADRIAN IOAN – cl. a IX – a

prof. PANTELIMONESCU REMUS, Palatul Copiilor Iaşi
prof. COLBU GHEORGHE, Palatul Copiilor Iaşi

6. Ou electromecanic

- BUTNARU ALEXANDRU – cl. a IX – a

prof. PERJU CONSTANTIN- Palatul Copiilor Iaşi

7. Ou rotitor cu LED–uri

- ROMANIUC RADU – cl. a X – a

prof. PERJU CONSTANTIN- Palatul Copiilor Iaşi

8. Arcuşul electronic

- GHIAŢĂ SORINA – cl. a X – a
- ATASIEI DIANA – cl. a X – a

prof. COLBU GHEORGHE, Palatul Copiilor Iaşi

9. Gospodărie ecologică

- POPESCU IRINA– cl. a II – a
- AVĂDANEI EMANUEL – cl. a VI – a

prof. COLBU GHEORGHE, Palatul Copiilor Iaşi

10. „Navă cu vele”

- HARIGA CODRIN – cl. a VI-a
- BALAN PETRU –cl.a XII-a

coord. prof. Mihai Stratulat, Palatul Copiilor Iaşi
coord. prof. Carmen Sandu, Palatul Copiilor Iaşi

11. „Şalupă militară”

- COTRUȚĂ SILVIU NICULAE – cl. a X-a
  coord. prof. Mihai Stratulat, Palatul Copiilor Iaşi

12. „Pompă benzină Dacia”

- BUCĂTARU CLAUDIU GEORGE– cl. a XI-a
- TĂNASE RADU MIHAI– cl. VI-a
  coord. prof. Chiriță Daniel, Palatul Copiilor Iaşi

13. „Motor M 110”- (Mobra 50cc - în secţiune)

- CANTIMIR TRAIAN BOGDAN -cl. a VIII-a
- SURU MIHAI -cl. a VIII-a
  coord. prof. Chiriță Daniel, Palatul Copiilor Iaşi

14. „Reologia vopselelor”

- AANEI LARISA – cl. XI – a
- JEITAN ALEXANDRA – cl. X – a
  prof. Gabriela Andrei, Palatul Copiilor Iaşi

15. „Compoziţii”

- VIERU ALEXANDRU – cl. a IX-a
- MARIAN BIANCA-MARIA – cl. a VII-a
- DAMIAN DRAGOŞ – cl. a V-a
- DEDIU AMELIA – cl. III-a
- OLARIU IOANA – cl. Vi-a
- AMARANDI LIDIA – cl. a IX-a
  prof. Mădălina Toma Palatul Copiilor Iaşi

16. „Compoziţii”

- CREȚU ANCUȚA – cl. a XI-a
- BÎRLEANU IULIA – cl. a XI-a
- STOICA ALEXANDRU SILVIU – cl. a XI-a
  prof. Dumitru-Eugen Colbu Grup Şcolar “Oltea Doamna” jud. Suceava

Proiect cofinantat din Fondul Social European prin Programul Operational Sectorial pentru Dezvoltarea Resurselor Umane 2007 - 2013
Axa prioritară: 1 "Educatia si formarea profesională în sprijinul cresterii economice si dezvoltării societătii bazate pe cunoastere"
Domeniul major de interventie: 1.2. "Calitate în învătământul superior", Cod Contract :POSDRU/86/1.2/S/62307
Beneficiar: Academia de Politie "Alexandru Ioan Cuza" Partener: Universitatea "Alexandru Ioan Cuza" Iasi

Promovarea cercetării științifice din domeniul criminalisticii în activitatea judiciară

Obiectivul proiectului

Proiectul este conceput să dezvolte, ca obiectiv principal, un program de MASTER care să asigure o pregătire complexă specialistilor ce își desfăsoară activitatea în domeniul criminalisticii - în fapt Criminalistica acoperă cea mai mare parte a activitătilor cu caracter aplicativ care se desfăsoară în domeniul judiciar.

Master in Criminalistica

Programul de master in criminalistica are rolul de a educa participantii pentru a deveni cercetatori in forensic, oferindu-le posibilitatea de a acumula cunostinte deosebite de specialitate. Absolventii sunt incurajati astfel sa isi continue educatia si cu studii de doctorat.

Master-ul in forensic isi propune sa formeze absolventii pentru cariere in cercetare la institute de prestigiu cum ar fi institutele de medicina legala, de criminalistica din cadrul inspectoratelor de politie, dar si a altor centre de cercetare-investigare.

www.cercetaricriminalistice.ro

Obiective operationale

- Îmbunãtãtirea managementului universitar si cresterea capacitãtii universitãtilor partenere de a furniza, un program de master pentru pregãtirea corespunzãtoare a specialistilor criminalisti;
- Plan de învãtãmânt si programe analitice adecvate competentelor necesare masteranzilor pe piata fortei de muncã;
- Extinderea oportunitãtilor de învãtare si promovare a inovãrii în domeniul criminalisticii;
- Consolidarea cooperãrii dintre cele douã universitãti;
- Cooperarea cu principalele institutii din mediul profesional pentru implementarea cerintelor standardelor ocupationale din domeniu în programul de master.
- Dezvoltarea unor activitãti de cercetare stiintificã care sã implice si masteranzii;
- Elaborarea de cursuri si alte materiale documentare cu înaltã valoare stiintificã;

- Dezvoltarea si îmbunãtãtirea mobilitãtii cadrelor didactice si masteranzilor prin desfãsurarea de vizite de documentare în institutii de prestigiu din Austria, Franta, si Marea Britanie;
- Organizarea si desfãsurarea de manifestãri stiintifice cu participare internationalã;
- Extinderea utilizãrii TIC în activitãtile de predare/învãtare, management si planificare a activitãtilor prevãzute în program;
- Promovarea unei înalte interdisciplinaritãti stiintifice si tehnologice, o diversitate a cazuisticilor abordate ca bazã practicã;
- Impunerea si mentinerea standardelor academice în toate activitãtile prevãzute în program;
- Recunoasterea si valorificarea competentelor personalului didactic si potentialului de învãtare al masteranzilor;
- Acceptarea diversitãtii organizationale si culturale;
- Dezvoltarea si impunerea unui sistem de evaluare complex si flexibil;
- Îmbunãtãtirea serviciilor de documentare stiintificã si bibliotecã;
- Promovarea programului de master la nivel national si european;
- Realizarea si publicarea unui periodic al programului de master numit "International Journal of Criminal Investigation".