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INVENTICA 2017

IAŞI – ROMÂNIA

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National Institute of Inventics – Iaşi

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Boris Plahteanu – In memoriam

When a great personality leaves us, his image is perpetuated in the public space by two categories of people: those who knew the deceased and those who did not know him. Those in the first category are most privileged being the depositories of informations, memories, emotions, which bear the imprint of authenticity and uniqueness. It is a great responsibility to pass on to others, the emotion of contact with that missing personality.

Generally, those who have had such a great honour must answer at least two questions: What did that personality do in life? What he left behind? And the second question, How was that personality, in fact?

In the case of Professor Boris PLAHTEANU one can speak, in relation to the first question, about an important spiritual inheritance. Professor Boris PLAHTEANU has had important scientific and technical contributions to the field of mechanical machining systems and inventics. He has written a large number of scientific papers, books, patents and presented many scientific communications, he has participated in many invention salons and exhibitions. He left for, future generations, The National Institute of Inventics, Performantica Publishing House, Inventics Magazine, ICMS Machine-Tools Conference, Inventics Salon, Inventics Conference, Romanian Institute of Inventics Foundation Iaşi-IRIIS. All of this has been done, under his direct guidance and, other, along with Professor Vitalie BELOUSOV. We, those, who witnessed these actions, some of us directly involved, have the duty to preserve, consolidate and further increase these entities. If we were to speak in a Christian hey, we received the cathedral and we are going to preserve it and increase its brightness.

Regarding the second question, it is very difficult to reduce a man so complex to such essence. Let us refer to the teacher's modesty, to his work capacity, to his analytical and synthetic spirit, to his spiritual elegance? If we were to express as concisely as possible, we could say that the Professor Plahteanu was simply a good man. He was a good teacher, a good researcher, a good inventor, a good head of department, a good director of the institute, a good organizer of scientific events, but above all, he was a good man. A man for whom human value counts, he himself having a human value that surpasses all the qualities that define him. Professor Plahteanu came from another academic world, that drew its essence from a the old university of Iassy.

He was telling us about happenings, events, facts deeds that were related to other academic habits, other behaviors and human attitudes.

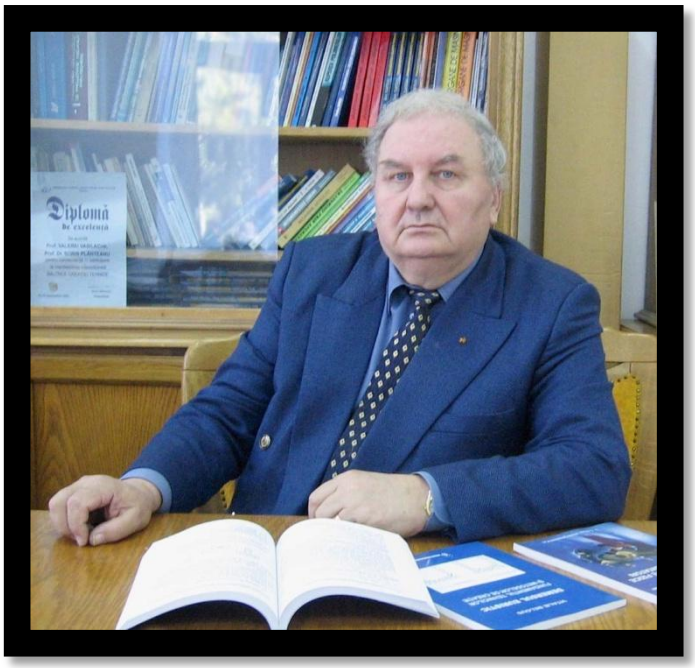
Let's be glad we met him and we were around him!

Let us be glad that we have the chance to share others the experiences we lived with Professor Plahteanu!

God rest him in peace!

Prof. Neculai-Eugen SEGHEDIN, PhD.

Manager National Institute of Inventics, Iassy



Boris Plahteanu – In memoriam

Atunci când ne părăseşte o mare personalitate, ne gândim că imaginea acesteia este perpetuată în spaţiul public de două categorii de persoane: cei care l-au cunoscut pe defunct şi cei care nu l-au cunoscut. Cei din prima categorie sunt cei mai privilegiaţi, fiind depozitarii unor informaţii, amintiri, trăiri, care poartă amprenta autenticităţii şi unicităţii. Este o mare responsabilitate să transmiţi mai departe, celorlalţi, emoţia contactului cu o personalitate dispărută.

În general, cei care au avut aşa o mare cinste, trebuie să raspundă la cel puţin două întrebări: Ce a făcut acea personalitate în timpul

vieţii? Ce a lăsat în urmă? şi a doua întrebare, Cum era, de fapt, personalitatea respectivă?

În cazul prof. Boris PLAHTEANU se poate vorbi, referitor la prima întrebare, de o importantă moştenire spirituală. Profesorul a avut contribuţii ştiinţifice şi tehnice importante în domeniul sistemelor de prelucrare mecanică şi inventicii. A scris un număr important de lucrări ştiinţifice, cărţi, brevete de invenţie, a expus multe comunicări ştiinţifice.â şi a participat la multe saloane şi expoziţii de inventică. A lăsat mai departe, generaţiilor viitoare, Institutul Naţional de Inventică, Editura Performantica, Revista de Inventică, Conferinţa de Maşini-Unelte ICMS, Salonul Inventica, Conferinţa Inventica, Fundaţia Institutul Român de Inventică Iaşi-IRIIS ş.a. Toate acestea au fost realizate, unele sub directa îndrumare a domniei sale, altele împreună cu prof. Vitalie BELOUSOV. Noi, cei care am fost martori ai acestor acţiuni, unii dintre noi implicaţi direct, avem datoria de a păstra şi de a creşte mai departe aceste entităţi. Dacă ar fi să vorbim în cheie creştină, noi am primit catedrala, urmează să o conservăm şi să-i creştem strălucirea.

În ceea ce priveşte cea de-a doua întrebare, este foarte dificil să reduci la esenţe un om atât de complex. Să ne referim la modestia profesorului, la puterea de muncă, la spiritul său analitic şi sintetic, la eleganţa sa spirituală? Dacă ar fi să ne exprimăm cât mai concis cu putinţă, am putea spune că profesorul Plahteanu a fost, pur şi simplu, un om bun. A fost un bun profesor, un bun cercetător, un bun inventator, un bun şef de catedră, un bun director de institut, un bun organizator de manifestări ştiinţifice, dar, mai presus de toate acestea, a fost un om bun la suflet. Un om pentru care conta valoarea umană, el însuşi având o valoare umană care întrecea toate calităţile care îl defineau. Prof. Plahteanu venea din altă lume academică, o lume care îşi trăgea esenţele din veche universitate ieşeană. Ne transmitea întâmplări, fapte, care ţineau de alte cutume universitare, de alte comportamente şi atitudini umane.

Sa fim bucuroşi că l-am cunoscut şi că i-am fost în preajmă!

Să fim bucuroşi că avem şansa de a transmite şi altora experienţele trăite împreună cu profesorul Plahteanu!

Dumnezeu să-l odihnească în pace!

Prof. univ. dr. ing. Neculai Eugen SEGHEDIN

Director,

Institutul Naţional de Inventică Iaşi

European Innovation Scoreboard 2017

Executive summary

EN version

Executive summary

European Innovation Scoreboard 2017: a revised measurement framework

This year's edition constitutes a major conceptual advancement of the report. Following developments in policy priorities, economic theory and data availability, the previous measurement framework was in need of adjustment. Its revision for the present edition aims at better aligning the EIS innovation dimensions with evolving policy priorities, improving the quality and timeliness of the indicators, better capturing new and emerging phenomena as digitisation and entrepreneurship, and providing a toolbox with contextual data, which can be used to analyse structural differences between Member States. The revision has benefited from interactions with renowned experts in the field and representatives of EU Member States.

The new measurement framework is composed of ten dimensions, including a new dimension on the innovation-friendly environment. Last year's dimension on economic effects has been split in two separate dimensions measuring the impact of innovation on employment and sales. By deleting three indicators and including five new indicators, the number of indicators has increased from 25 last year to 27 this year. In addition, definitions have been revised for six indicators. Another change is that comparisons between countries and over time are made relative to the performance of the EU in 2010, thereby providing an improved monitoring of performance changes over time.

The EU is catching up with the United States, while it is losing ground vis-à-vis South Korea and Japan

At the global level, the EU is less innovative than Australia, Canada, Japan, South Korea, and the United States. Performance differences with Canada and the United States have become smaller compared to 2010, but those with Japan and South Korea have increased. Japan has improved its performance more than three times as much as the EU, and South Korea has improved its performance more than four times as much as the EU. The EU maintains a performance lead over China, but this lead is decreasing rapidly with China having improved more than seven times faster than the EU. The EU's performance lead over Brazil, India, Russia, and South Africa is considerable.

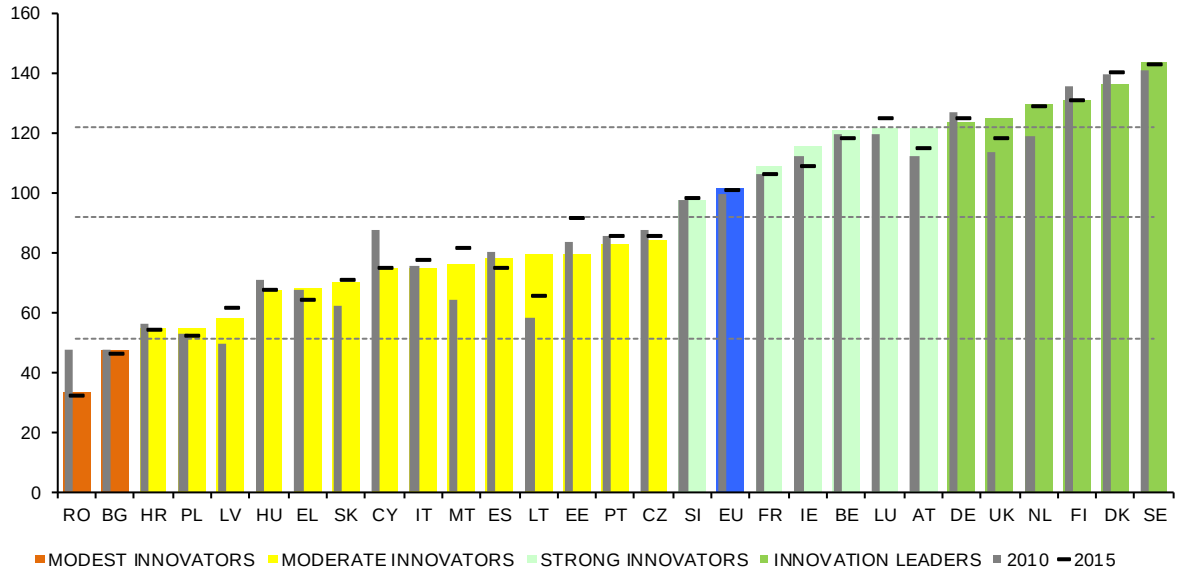
Performance of innovation systems is measured by average performance on 27 indicators

The new EIS measurement framework distinguishes between four main types of indicators and ten innovation dimensions, capturing in total 27 different indicators. **Framework conditions** capture the main drivers of innovation performance external to the firm and cover three innovation dimensions: *Human resources*, *Attractive research systems,* as well as *Innovation-friendly environment*. **Investments** capture public and private investment in research and innovation and cover two dimensions: *Finance and support* and *Firm investments*. **Innovation activities** capture the innovation efforts at the level of the firm, grouped in three innovation dimensions: *Innovators*, *Linkages,* and *Intellectual assets*. **Impacts** cover the effects of firms' innovation activities in two innovation dimensions: *Employment impacts* and *Sales effects*.

Member States are classified into four performance groups based on their average performance scores

Based on their average performance scores as calculated by a composite indicator, the Summary Innovation Index, Member States fall into four different performance groups (**Figure 1**). Denmark, Finland, Germany, the Netherlands, Sweden, and the United Kingdom are *Innovation Leaders* with innovation performance well above that of the EU average. Austria, Belgium, France, Ireland, Luxembourg, and Slovenia are *Strong Innovators* with performance above or close to that of the EU average. The performance of Croatia, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Poland, Portugal, Slovakia, and Spain is below that of the EU average. These countries are *Moderate Innovators*. Bulgaria and Romania are *Modest Innovators* with performance well below that of the EU average.

Figure 1: Performance of EU Member States' innovation systems



Coloured columns show Member States' performance in 2016, using the most recent data for 27 indicators, relative to that of the EU in 2010. The horizontal hyphens show performance in 2015, using the next most recent data for 27 indicators, relative to that of the EU in 2010. Grey columns show Member States' performance in 2010 relative to that of the EU in 2010. For all years the same measurement methodology has been used. The dashed lines show the threshold values between the performance groups in 2016, comparing Member States' performance in 2016 relative to that of the EU in 2016.

Performance has increased for the EU but not for all Member States

Compared to 2010, the innovation performance of the EU has increased by 2 percentage points. At the level of individual Member States, results differ with an increase in performance in 15 countries and a decrease in performance in 13 countries. Performance has increased most in Lithuania, Malta, the Netherlands, and the United Kingdom, and decreased most in Cyprus and Romania.

Switzerland remains the most innovative country in Europe

Comparing the EU Member States to other European and neighbouring countries, Switzerland remains the most innovative European country. Iceland, Israel and Norway are Strong Innovators performing above the EU average, Serbia and Turkey are Moderate Innovators, and the Former Yugoslav Republic of Macedonia and Ukraine are Modest Innovators.

In two years' time, EU innovation performance is expected to increase by 2 percentage points

Last year's report introduced, for the first time, a forward-looking analysis of EU innovation performance, discussing more recent developments, trends, and expected changes. This exercise is repeated this year using the revised measurement framework. The analysis explores EU trend performance on 19 indicators, for which a robust calculation of expected short-term changes proved possible. Increasing performance is expected for 12 of these indicators, and decreasing performance for six indicators. Overall, the innovation performance of the EU, relative to its performance in 2010, is expected to increase from 102% this year to 104% in two years' time.

This analysis also includes a trend comparison of the EU with its main competitors. At the global level, the trends observed in recent years can be expected to continue, with the EU catching up with the United States in two years' time, while the EU's performance gap towards Japan and South Korea would increase and its lead over China decrease further.

Tabloul de bord european privind inovarea 2017

Rezumat

Versiunea RO

Rezumat

Tabloul de bord european privind inovarea 2017: un cadru de măsurare revizuit

Ediția de anul acesta constituie un progres conceptual major al raportului. Ca urmare a evoluțiilor în materie de priorități politice, teorie economică și disponibilitate a datelor, cadrul de măsurare anterior necesita o ajustare. Revizuirea acestuia pentru prezenta ediție vizează o mai bună aliniere a dimensiunilor inovatoare ale Tabloului de bord european privind inovarea (EIS - *European Innovation Scoreboard*) cu prioritățile politice în evoluție, îmbunătățirea calității și a caracterului actual al indicatorilor, înregistrarea cu mai mare acuratețe a fenomenelor noi și emergente precum digitalizarea și antreprenoriatul și furnizarea unui set de instrumente conținând date contextuale, care pot fi utilizate pentru a analiza diferențele structurale dintre statele membre. Revizuirea a beneficiat de interacțiunile cu experți renumiți din domeniu și reprezentanți ai statelor membre ale UE.

Noul cadru de măsurare este compus din zece dimensiuni, incluziv o nouă dimensiune privind mediul favorabil inovării. Dimensiunea de anul trecut privind efectele economice a fost împărțită în două dimensiuni separate care măsoară impactul inovării asupra ocupării forței de muncă și a vânzărilor. Prin eliminarea a trei indicatori și includerea unor cinci indicatori noi, numărul de indicatori a crescut de la 25 anul trecut la 27 anul acesta. În plus, au fost revizuite definițiile pentru șase dintre indicatori. O altă schimbare o reprezintă faptul că comparațiile între țări și de-a lungul timpului sunt efectuate în raport cu performanțele UE în 2010, oferind, prin urmare, o monitorizare ameliorată a modificărilor performanțelor de-a lungul timpului.

UE ajunge din urmă Statele Unite, în timp ce pierde teren față de Coreea de Sud și Japonia

La nivel global, UE este mai puțin inovatoare decât Australia, Canada, Japonia, Coreea de Sud și Statele Unite. Diferențele de performanță în raport cu Canada și Statele Unite au devenit mai mici comparativ cu 2010, dar cele cu Japonia și Coreea de Sud au crescut. Japonia și-a îmbunătățit performanțele de trei ori mai mult decât UE, iar Coreea de Sud și-a îmbunătățit performanțele cu peste patru ori mai mult decât UE. UE își menține superioritatea în materie de performanță față de China, dar această superioritate scade cu rapiditate datorită faptului că China și-a îmbunătățit performanțele de șapte ori mai repede decât UE. Superioritatea performanțelor UE față de Africa de Sud, Brazilia, India și Rusia este considerabilă.

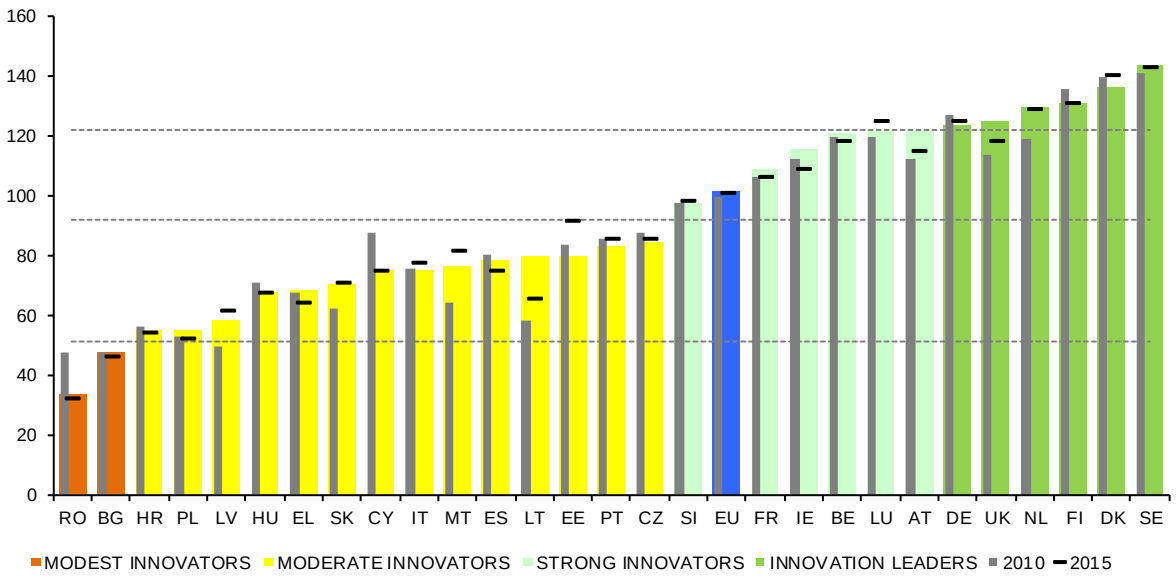
Performanța sistemelor de inovare este măsurată prin performanța medie pe baza a 27 de indicatori

Noul cadru de măsurare utilizat în EIS distinge patru tipuri principale de indicatori și zece dimensiuni ale inovării, înregistrând în total 27 de indicatori diferiți. **Condițiile cadrului** înregistrează principalii vectori ai performanței în materie de inovare care sunt externi întreprinderilor și acoperă trei dimensiuni ale inovării: *Resursele umane*, *Sistemele de cercetare atractive*, precum și *Mediul favorabil inovării*. **Investițiile** înregistrează investițiile publice și private în cercetare și inovare și acoperă două aspecte: *Finanțe și sprijin* și *Investițiile întreprinderilor*. **Activitățile de inovare** înregistrează eforturile de inovare la nivelul întreprinderii, grupate în trei dimensiuni ale inovării: *Inovatori*, *Legături* și *Active intelectuale*. **Impacturile** acoperă efectele activităților de inovare ale întreprinderilor în două dimensiuni ale inovării: *Impacturile asupra ocupării forței de muncă* și *Efectele asupra vânzărilor*.

Statele membre sunt clasificate în patru grupuri de performanță pe baza rezultatelor medii ale performanțelor lor

Pe baza rezultatelor medii ale performanțelor lor, astfel cum au fost calculate de un indicator sintetic, Indicele sintetic al inovării, statele membre se încadrează în patru grupuri diferite de performanță (**Figura 1**). Danemarca, Finlanda, Germania, Regatul Unit, Țările de Jos și Suedia sunt *Lideri în materie de inovare*, înregistrând performanțe în materie de inovare net superioare mediei UE. Austria, Belgia, Franța, Irlanda, Luxemburg, și Slovenia sunt *Inovatori cu rezultate excelente*, cu performanțe în materie de inovare deasupra mediei sau apropiate de media UE. Performanțele Croației, Ciprului, Estoniei, Greciei, Italiei, Letoniei, Lituaniei, Maltei, Poloniei, Portugaliei, Republicii Cehe, Slovaciei, Spaniei și Ungariei sunt inferioare mediei UE. Aceste țări sunt *Inovatori cu rezultate moderate*. Bulgaria și România sunt *Inovatori cu rezultate modeste*, cu performanțe în materie de inovare semnificativ mai scăzute decât media UE.

Figura 1: Performanțele sistemelor de inovare ale statelor membre ale UE



Coloanele colorate indică performanțele statelor membre în 2016, utilizând cele mai recente date pentru 27 de indicatori, în raport cu cele ale UE în 2010. Cratimele orizontale indică performanțele în 2015, utilizând următoarele cele mai recente date pentru 27 de indicatori, în raport cu cele ale UE în 2010. Coloanele gri indică performanțele statelor membre în 2010 în raport cu cele ale UE în 2010. Pentru toți anii a fost utilizată aceeași metodologie de măsurare. Liniile întrerupte indică valorile prag între grupurile de performanță în 2016, comparând performanțele statelor membre în 2016 cu cele ale UE în 2016.

Performanțele au crescut pentru UE dar nu pentru toate statele membre

Comparativ cu 2010, performanțele în materie de inovare ale UE au crescut cu 2 puncte procentuale. La nivelul individual al statelor membre, rezultatele diferă cu o creștere a performanțelor în 15 țări și o scădere a performanțelor în 13 țări. Performanțele au cunoscut cea mai mare creștere în Lituania, Malta, Regatul Unit și Țările de Jos și cea mai mare scădere în Cipru și România.

Elveția rămâne cea mai inovatoare țară din Europa

În comparație cu statele membre ale UE, cu alte țări europene și cu țările vecine, Elveția rămâne cea mai inovatoare țară europeană. Islanda, Israel și Norvegia sunt „inovatori cu rezultate excelente”, cu performanțe peste media UE, Serbia și Turcia sunt „inovatori cu rezultate moderate”, iar fosta Republică iugoslavă a Macedoniei și Ucraina sunt „inovatori cu rezultate modeste”.

În următorii doi ani, se preconizează ca performanțele în materie de inovare ale UE să crească cu 2 puncte procentuale

Pentru prima dată, raportul din anul trecut cuprinde o analiză prospectivă a performanțelor în materie de inovare ale UE, care dezbate cele mai recente evoluții, tendințe și modificări preconizate. Acest exercițiu este repetat anul acesta utilizând cadrul de măsurare revizuit. Analiza explorează tendințele UE privind 19 indicatori de performanță, pentru care o bază solidă de calcul al modificărilor preconizate pe termen scurt s-a dovedit a fi posibilă. Creșterea performanței este preconizată pentru 12 dintre acești indicatori, iar scăderea performanței pentru șase indicatori. În ansamblu, față de performanțele sale din 2010, se preconizează că performanțele UE în materie de inovare vor crește de la 102% în acest an la 104% în următorii doi ani.

Această analiză include, de asemenea, o comparație de tendință a UE cu principalii săi concurenți. La nivel global, se preconizează că tendințele observate în ultimii ani vor continua, UE ajungând din urmă Statele Unite în următorii doi ani, în timp ce decalajul de performanță al UE față de Coreea de Sud și Japonia va crește, iar poziția dominantă a UE în raport cu China va scădea în continuare.

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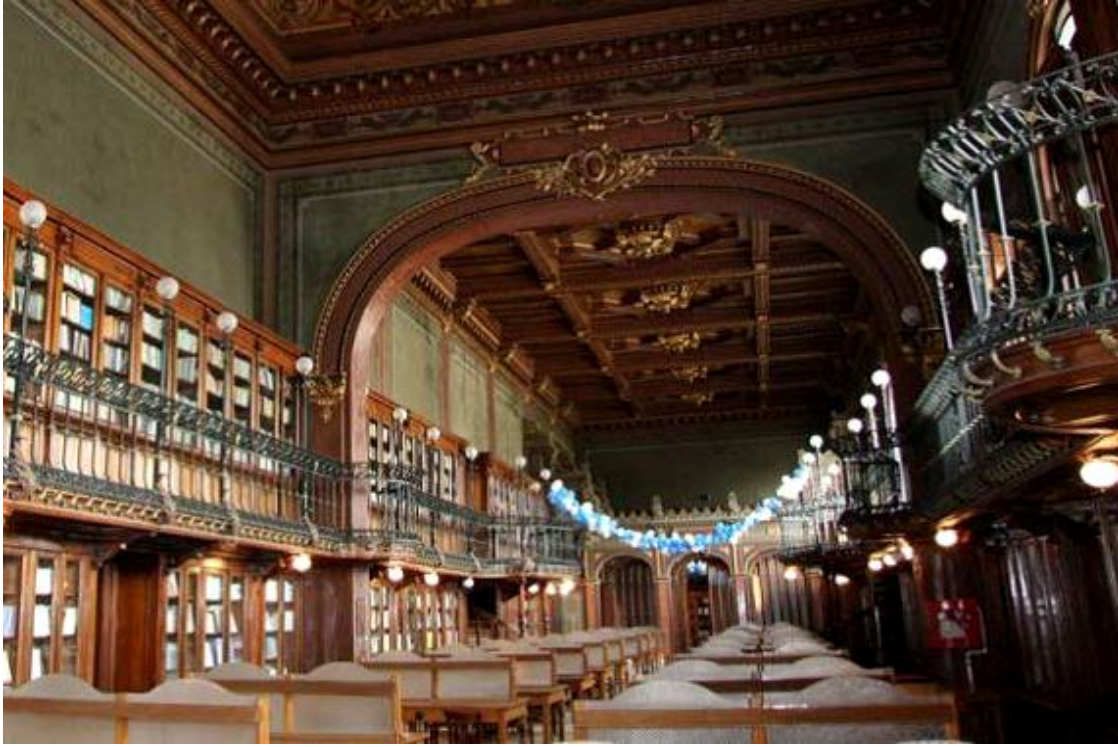

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NATIONAL INSTITUTE OF INVENTICS – IAȘI

Based on the foundation created by the first *Inventics School in Romania* (starting with 1966), through the enthusiastic work of a group made of universitary professors and inventors that propelled over 500 inventor students, school that uphold even before 1989 more than 15 editions of post-universitaries courses of inventics with over 1000 graduates and organized national inventics symposiums; the National Institute of Inventics was born, legitimated through Ministry of Education and Sciences' dispositions no. 700/1990 and 3204/1992 of founding and reorganization of the Inventics Institute in Iasi and according to article 5/HG no. 459/1994 regarding the organization and functioning ways of the Ministry of Research and Technology, HG no. 467/1994 and through disposition no. 2173/1995 where the Ministry of Research and Technology states the area of activity.

According to HG 459/29 July 1994 and in conformity with HG 1449/17 November 2005, enclosure 2, the National Institute of Inventics Iasi – INI is settled as one of the scientific research, technological development and innovation institutes and works at the National Authority for Scientific Research' order.

The National Institute of Inventics Iasi is a Romanian research-development institution as a juristic person, for public interest, financed by extra-budgetary incomes from research contracts.

Through its unique status obtained during 25 years of activity, the National Institute of Inventics Iasi has as fundamental objectives not only defining inventics as science and art of technical creation, placed as a combination of fundamental sciences and technology, economy, management, logics, psychology etc, performantics as engineering of human achievements, but also stimulating the processes of elaborating and implementing the inventions.

Inventics, science where the Institute revealed world-wide priorities, has a highly strategic importance, being surrounded and equal with atomic energy, genetic engineering, high technologies etc.

An entire strategy of fundamental and applied research programs was implemented in human resources and logistic areas, having as a main purpose keeping and enhancing efficiently the value of the drawback that the National Institute of Inventics has in this area, the development process being made by an increasing number of professional inventors, of high quality inventions, programs and papers for creative studding process, all these in order to create the emulation that determines among conceptual, design and research staff members an exponential multiplication and the quality of the scientific creation and technical process. The activity in the institute was designed as a flexible structure regarding research directions and projects ruled by person of consequences in this area, entailing and focusing conversant (12 universitary professors, 8 PhDs, 4 PhD leaders) and selecting and shaping a segment of young valuable researchers.

ACTIVITY FIELDS AND DIRECTIONS

I. Fundamental research in the following directions:

I.1. Performance engineering:

- Logic and psychopraxiologic bases of human performances.
- Performer's general and specific characteristics;
- Psychical, psycho-physical and physical performance;

I.2. Praxology, logic and bringing to an algorithmic form the technical creation:

- Logic creation procedures, techniques and methods;

• Modeling and treating technical creation processes through artificial intelligence methods;

• Value engineering and quality management

I.3. Technical creation's psychology:

• Technical creation's psychognoseology and psycho-sociology;

• Psycho-pedagogy, technical approaching, creational techniques and intuitive methods;

II. Promoting performantics, inventics (as a science) and inventions on national and international level:

II.1. Promoting performantics and inventics;

• Training inventologs and inventors as professions;

• Organizing and continuously improving a creative way of studying at all levels ;

• Writing analytical syllabuses for disciples that involve inventics;

• Writing and presenting scientific papers, theories and methods in inventics in front of international scientific forums;

• Accrediting Romania through INI at international organizations ;

• Organizing international conferences in inventics;

II.2. Promoting the protection of industrial properties and Romanian inventions:

• Promoting the necessity of protection industrial property objects;

•Logistical supporting the inventor-economical environment connections regarding industrial implementations of the inventions;

• Organizing international invention shows in Romania;
• Attending international invention shows outside borders.

III. Disseminating information regarding inventics, performantics and industrial property:

• Conceiving and publishing textbooks, treatises of inventics and performantics through own publishing house „PERFORMANTICA" (publishing house authorized by CNCSIS);

• Editing and publishing „INVENTICS REVIEW/ REVISTA DE INVENTICĂ" (magazine authorized CNCSIS) of international circulation, bilingual, with an international editorial staff (appears from 1990);

• Publishing the fundamental scientific research activity worked out of institute's members;

• Stimulating the educational creative process of specialists in all areas of activity, through publishing their relevant works with the help of the publishing house „PERFORMANTICA";

• Promoting science – Performantics through an opening process in all creational areas: science, literature, arts;

IV. Creating relevant inventions in areas like: mechanics, civil engineering, I.C.T., electronics, chemistry, textiles, etc.

RESEARCH AND DEVELOPMENT OFFER AND SERVICES

• Fundamental research having as a main purpose keeping and enhancing efficiently the value of the drawback that the National Institute of Inventics has in this area, made possible through procedures, techniques and stimulating methods of the creative activity, giving a start to as many inventors and inventions as possible, valued in performant processes and products.

• Creating and perfecting a new teaching creative system in all its levels and preparing professional inventors as their main job.

• Pre-competitive and applied research considering inventics, value engineering and performantic's concepts, that have as a main purpose increasing performances of the producing systems in real economy, creating new products, increasing their quality, raising labour productivity and lowering manufacturing costs, requires of a modern production process fulfilled through research processes regarding constructive and functional optimization of manufacturing equipments, through supervising, controlling and diagnosing processes and equipments, offering innovative solutions regarding the ways that assure product quality etc.

• Promoting the process of industrial property protection in all possible ways and assistance of this process.

• Scientific and technical examination and creating innovative solutions when they are required.

• Leading and supporting all possible inventor - economical environment connections for a better industrial implementation of the inventions.

• Technologically informing all conventional persons regarding the processes and the products that are desired to be competitive.

• Disseminating information that belong to the following areas: inventics, performantics, value engineering and industrial property through the magazine: „Inventics Review/ Revista de Inventica" and publishing house „PERFORMANTICA", through International Inventions Shows and conferences that the institute organizes or attending.

• Working out performant inventions in mechanics, I.T., electronics, chemistry, textile, hydromechanics and environment etc.

• Data banks of industrial property objects.

• Publishing books and papers through the publishing house of the institute „PERFORMANTICA", through the magazine „INVENTICS REVIEW/ REVISTA DE INVENTICĂ" and through „INTERNATIONAL JOURNAL OF CHAOS, THEORY AND APPLICATIONS"

SERVICES – COLLABORATIONS

There are offered scientific research, gathering documentary evidence, technological support and technical solution services in the following areas:

• electronic equipments of the cosmic space apparatus;

• electronic medical equipments;

• hydro technical, ecological and environmental installations and equipments;

• high pressure hydraulic systems and equipments;

• chemical and textile industry equipments and technologies.

The National Institute of Inventics provides these research offers and services co-operating with Technical University „Gheorghe Asachi" Iaşi, University of Medicine and Pharmacy „Gr. T. Popa" Iaşi, Piteşti University, INCD Textile-Leather Bucureşti.

• research processes and cold plasma equipments;

• special features H.F. generators;

• unconventional physic-chemical processes through collaboration with the Institute of Macromolecular Researches „Petru Poni" Iaşi.

ATTENDING CONSORTIUMS, NETS, TECHNOLOGICAL PLATFORMS

• National Institute of Inventics' interoperability as part of the Consortium of Institutes and Research Centers in Iasi „CENTIS", „Tehnopolis" Technological Park and METROPOLITAN IASI Programme;

• As a founding member of the „EUROpean OutPOST" Foundation – Regional development NORD-EST, and in consortiums and partnership with PNCD projects.

SHOWS AND EXHIBITIONS ATTENDING

Products' performances, inventors' capabilities in the institute and its collaborators are proofed by the ways it was prepared the participation at the International Inventions Shows „EUREKA" BRUXELLES, at four International Shows GENEVA, at IMPEX Show Pittsburgh (SUA), at other important European Shows: GENIUS, Budapest, EST-VEST EURO-INTELECT Sofia,, „ARHIMEDES" Moscova, „TESLA – FEST", Novi Sad, „INFO-INVENT" Chişinău, Casablanca.

On the whole, during the last 10 years, the National Institute of Inventics proved its performances, gaining in technical creation festivals more than 120 gold medals, other trophies and decorations. The National Institute of Inventics is the only institute whose members obtained „European Merit" Order. Moreover, our institute obtained the High Belgian Order „The Inventive Merit" comandor rank; 2 orders „The Inventive Merit" officer rank, high Romanian orders, 2 orders „Romania' Star " knight rank, 3 orders „Faithful Service" .

NATIONAL AND INTERNATIONAL AFFILIATIONS

The National Institute of Inventics is affiliated as a member to:

• International Association „EURISTICA" - Moscova, Russian Federation.

• International Club for Innovation – "ARCHIMEDES", from 2006.

• Through the Regional Center of Promoting Industrial Property's Protection, the National Institute of Inventics is part of the „PATLIB" net, creation of the National Patterns Offices and European Pattern Organization.

• INI is a funding member of the „EUROpean OutPOST" Foundation for Durable Development of the North-East Region.

"GHEORGHE ASACHI" TECHNICAL UNIVERSITY OF IASI, ROMANIA

Higher education represents an essential component, without which, the entire educational system would lack consistency and would not be able to meet the political, economic and social changes. It plays an essential role in making new departures for both the individuals involved in a forming undertaking process and those outside it. It offers models of consistent and solid development. In a world of constant change, the higher education institutions are expected to establish standards and guiding marks in society and to support the training of experts and shape characters meant to watch over them. The university as a higher education institution has to anticipate and react to the changes that take place on different social levels. The university`s

main task is to find an equilibrium between the alignment to new paradigms and the conservation of its primary mission. Therefore, nowadays, the main role of a university is to create a coherent, but flexible system meant to generate knowledge and guide towards its functional adjustment to the social structures.

The "Gheorghe Asachi" Technical University of Iasi is among the oldest and well known institutions from the country, having an important tradition in engineering, scientific and cultural education, with a distinguishable presence on the international level. The university trains engineers with high qualifications, able to respond quickly and efficiently to the requirements of innovation, research and economic development. Moreover, the university caries on programs designed to continuously upgrade the engineers` professional skills imposed by the tendencies appeared at a global level.

The university is highly receptive to the embracement of the European system values, both in education in research, being fully aware of the importance of its both national and international responsibilities. Auspiciously, the institution plans to develop the curriculum, to join the mobility schemes and the integrated programs of study, education and research. The Technical University has managed to strengthen its standards and achieve globally certified outstanding progress. Specifically, all of the "Gheorghe Asachi" Technical University development indicators support that assessment. These include diversification of specialization, the number of students and faculty members, research field decision-making autonomy, international cooperation opportunities and quality of education in most specialties.

The university has resources of intelligence and creativity, as well as the necessary competence for accomplishing the complex mission to generate, preserve, disseminate and apply the

accumulated scientific knowledge. It is concerned with establishing a system for quality assurance and academic excellence in teaching, scientific research and education, system based on the criteria and the methodologies compatible with those from the European countries.

The "Gheorghe Asachi" Technical University`s operative strategy is designed to achieve optimal development regarding its foremost activity fields: education, scientific research, as well as institution's involvement in social, economic and cultural activities.

THE MISSION

The "Gheorghe Asachi" Technical University is a high-end research and education institution. Its mission is to carry out specific activities to create, to exploit and to transfer knowledge to the society in fundamental areas – Technical Sciences, Architecture and Urbanism – as well as in interdisciplinary and complementary fields, involving the local community, as well as regional, national and international levels.

The "Gheorghe Asachi" Technical University, according to its mission and objectives set out in The University Charter, is assuming the role of education, scientific research and cultural institution. Among its prerogatives the following can be mentioned:

• Transmitting knowledge to new generations and perpetual professional training based on a three cycles study system – bachelor, master, and doctoral (PhD) studies programs – as well as postgraduate perpetual education and research programs. On each and every level, the university aims at stimulating critical thinking and creativity in order to offer our graduates a competitive chance on the labor market. At the same time, the institution is open to all members of society, in order to extend lifelong learning in line with worldwide science and technology developments;

• Conducting scientific research, development, innovation and technology transfer, as well as exploitation and dissemination of results. Together with teaching, these are inseparable components of the formative process and are intended to facilitate technological, economic, social and cultural progress in order to accommodate the requirements of the information society.

THE MAIN INSTRUMENTS TO ACHIEVE THE UNIVERSITY MISSION

• The recruitment of professors and the regulation of their status based on the relation between research activity and teaching activity;

• Creating and guaranteeing freedom and necessary conditions for students to reach their objectives in terms of culture and training;

• Encouraging the mobility of teachers, researchers and students in other universities;

• Documentation, on behalf of reciprocal exchange of information as well as developing joint scientific initiatives. In order to achieve these, the university has implemented general politics in recognition of studies and validation of titles, with the preservation of the traditions and historical origins of the education from "Gheorghe Asachi" Technical University of Iasi.

• Creating partnerships with representatives of the economic, professional and business environment, as well as research institutes in order to help prepare graduates meeting the labor market standards.

THE SCIENTIFIC FOUNDATION AND THE INNOVATIONAL CULTURE FOR PERFORMANCE - "ROMANIAN INVENTICS INSTITUTE- IRIIS "

The SCIENTIFIC FOUNDATION AND THE INNOVATIONAL CULTURE for PERFORMANCE - "ROMANIAN INVENTICS INSTITUTE- IRIIS " is a Romanian research-development institution as a juristic person, for public interest, founded in 2010. on the platform created by the first school for inventics in Romania (since 1966).

IRIIS is a organization for research and development of the new methods and scientific techniques and technologies in the field of inventics and Transfer of knowledge in the network and system approach to engineering of value in the sphere of innovative-inventive concept. Inventics, science where the Foundation revealed world-wide priorities, has a highly strategic importance, being surrounded and equal with atomic energy, genetic engineering, high technologies etc.

Senior members of the National Institute of Inventics continues its work in IRIIS Foundation , assisted by competent brilliant young.

An entire strategy of fundamental and applied research programs was implemented in human resources and logistic areas, having as a main purpose keeping and enhancing efficiently the value of the drawback that the IRIIS Foundation has in this area, the development process being made by an increasing number of professional inventors, of high quality inventions, programs and papers for creative studding process, all these in order to create the emulation that determines among conceptual, design and research staff members an exponential multiplication and the quality of the scientific creation and technical process.

The activity in the foundation was designed as a flexible structure regarding research directions and projects ruled by person of consequences in this area, entailing and focusing conversant - 9 universitary professors (5 PhD supervisor), - 7 PhDs, and selecting and shaping a segment of young valuable researchers.

Technical University "Gheorghe Asachi" of Iasi Lost Steps Hall, Iasi, Carol I Blvd, no. 11A

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Patents and patent applications

Universities from ROMANIA

University Politehnica of Bucharest

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**PROCESS FOR DEPOSITION OF OXIDE CERAMIC COATS / PROCEDEU DE DEPUNERE A STRATURILOR OXIDICE CERAMICE**
Authors	**MATEI CRISTIAN, BERGER DANIELA-CRISTINA, STOLERIU PAULA ȘTEFANIA**
Patent / patent application N°	127660
Description	The invention relates to a process for the deposition of oxide ceramic coats on various supports. According to the invention, the process consists in dissolving in distilled water the metal nitrates and the chelating agent, in excess of 25%, at the most, the resulting solution being then boiled up to the reach of a total concentration of 0.5...2 mol of metal ions and a optimal viscosity for pulverization, the second stage comprising the pneumatic pulverization of the solution as micrometric drops on a support heated up to a temperature of 200...300°C, in order to provide, in the impact moment, the energy needed for both water evaporation from the pulverized solution and initiation of the precursor combustion reaction, which leads to a temperature growth in the impact microzones with formation of metal oxide and adhesion thereof to the support.
Domain	(2006.01) C23C 4/10 Principală

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**SYNTHESIS PROCEDURE OF SOME MULTIFUNCTIONAL COMPOSITE MATERIALS WITH POTENTIAL APPLICATIONS IN BONE CANCER TREATMENT**
Authors	**ANTON FICAI, ECATERINA ANDRONESCU, CRISTINA DANIELA GHITULICA, DENISA FICAI, GEORGETA VOICU, GEORGIANA, MADALINA ALBU**
Patent / patent application N°	*RO127725-A2 / A 01171/24.11.2010*
Description	The invention refers to the procedure of obtaining multifunctional, composite materials designed for the treatment of bone cancer. Based on the invention, the multifunctional material is obtained starting from the collagen / hydroxyapatite gel, 3 – 10% magnetite nanoparticles (MNp), 10 – 500ppm Ag or Au nanoparticles and 0,1 – 10mg/g antitumoral, analgesic or anti-inflammatory agent. The composite antitumoral material is cross-linked with maximum 1% of glutaraldehyde, reported to collagen. The most important advantages of the multifunctional system are: the loco-regional delivery of the cytostatic agent assures limited side effects; the use of non-conventional antitumoral agents improves the antitumoral activity of the system and thus lower amount of cytostatic can be used; the release of the cytostatic can be intensified by applying externally alternative electromagnetic fields because due to the produced hyperthermia the diffusion of the drugs is also improved; the presence of the MNpassure a long-term antitumoral activity and thus reduce the risks of the recurrences.
Domain	Medicine - Health Care

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**COMPOSITIONS AND PROCESS FOR OBTAINING INNOVATIVE ENZYMATIC FORMULATIONS FOR ROOT CANAL LAVAGE**
Authors	**ANTON FICAI, DENISA FICAI, OVIDIU OPREA, STEFAN MANEA, ANNA-MARIA PANGICĂ, PETRU BODOGA, CAMELIA AGAPESCU**
Patent / patent application N°	A/00472/2016
Description	The present invention discloses the technology for obtaining root-lavage solutions based on enzymes and ternary components having an acidic, demineralizing, antimicrobial/antibiofilm role. The proposed solution is binary type, obtained by mixing the two components before use, at optim pH (the enzymes have maximum enzyme activity at a certain pH value). Due to the diversity of the components to be removed, a complex mixture of components is proposed by the present invention, which ensures efficient removal of organic and inorganic tissue as well as potential microorganisms. The organic component is difficult to be removed from the root canal by using existing irrigation solutions. In this regard, this patent application proposes the addition of enzymes that degrade organic components. Depending on the nature of the enzyme used, a metallic cofactor can induce increased enzymatic activities. Besides the enzymes and components necessary for optimal activity, the endodontic lavage solutions will contain calcium complexing agents, nanoparticles as antimicrobial agents and natural extracts
Domain	Medicine - Health Care

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**BONE GRAFTS BASED ON COLLAGEN, CALCIUM PHOSPHATE AND ZINC AND PROCESS FOR THEIR MANUFACTURING**
Authors	**ANTON FICAI, ECATERINA ANDRONESCU, DENISA FICAI, MARIA SONMEZ, IOANA VRAM NEDELCU MADALINA GEORGIANA ALBU**
Patent / patent application N°	RO129822 (A2)
Description	The invention discloses the technology for obtaining improved bone grafts mainly based on collagen (Coll) and Calcium Phosphates (especially hydroxyapatite (HA)) but also containing 1 – 10% Zn^{2+}. The ratio between the collagen and hydroxyapatite should be in the range of 1:1 to 1:4, being similar with the composition of the substituted/augmented bony tissue. The presence of Zn^{2+} is important because it can appear as ZnO (forming a ternary composite based on the three components COLL, HA and ZnO) or as $Zn_xCa_{5-x}(PO_4)_3OH$ (forming a binary composite containing COLL and zinc substituted HA (Zn-HA)). In both cases, the presence of zinc is beneficial because it can assure a faster healing of the defects but also assure an antimicrobial activity, especially in the form of ZnO. The as obtained materials are expected to be exploited in both dentistry and implantology. The Zn^{2+}release can be designed to assure faster or slower release and thus, mainly assuring a faster healing especially in the case of fractures or a prolonged, protective activity (especially in the case of osteoporosis for instance). and eugenol being extensively exploited.
Domain	Medicine - Health Care

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**MEHOD AND DEVICE FOR REDUCING THE VORTICES EFFECT ON SUCTION CHAMBER OF CENTRIFUGAL PUMPS**
Authors	**ADRIAN CIOCĂNEA**
Patent / patent application N°	A00313 / 24.05.2017
Description	The patent describes a method and a device used for reducing the nagative effect of vortices on suction chambers of centrifugal pumps. The device is basicaly consistig of three thin vertical cylinders symmetrically mounted on a horizontal rotating disk placed in front of the inlet section of the pipe. The section shape of the cylinders could be selected. The rotating device is moving by the water flux during the suction process. Due to the change of the water flux route, higher energy for the vortices is requested in order to reach the suction section of the pipe. Therefore vortices of low energy are not able to reach the inlet pipe section. Also high energy vortices are influenced by the general water motion and degenerates in low energy vortices. Brevetul prezintă o metodă și un un dispozitiv pentru reducerea efectelor negative ale vârtejurilor în camerele de aspirație ale pompelor centifuge. Dispozitivul constă în principiu din trei cilindri subțiri montați simetric pe un disc rotativ plasat în fața secțiunii de aspirație a conductei. Dispozitivul rotativ este pus în mișcare de către debitul de apă în timpul procesului de aspirație.
Domain	Hydrodynamics, Centrifugal Pumps

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**PROCESS FOR PREPARING MESOSTRUCTURED ALUMINOSILICATES IN THE PRESENCE OF N-BUTYLDIETHANOLAMINE**
Authors	**BERGER DANIELA-CRISTINA, NASTASE SILVIU, MATEI CRISTIAN**
Patent / patent application N°	130218
Description	The invention relates to a process for preparing mesostructured aluminosilicates to be used in catalytic cracking processes. According to the invention, the process comprises the aluminosilicates synthesis, in the presence of cetyl-trimethylammonium bromide, in basic medium, ammonia solution, using tetraethyl-orthosilicate, aluminium tri-sec-butoxide, in a molar ratio of 30...70 and N-butyldiethanolamine, the reaction mixture being left to age for 24 h, at 40°C, after which it is subjected to a hydrothermal treatment, for 24...72 h, at 150°C, and then it is calcined at 550°C for 5 h, to result in mesostructured aluminosilicates with a specific surface of 700...1050 m^2/g and an average pore size of 2.6...2.98 nm. The invention relates to a process for preparing mesostructured aluminosilicates to be used in catalytic cracking processes. According to the invention, the process comprises the aluminosilicates synthesis, in the presence of cetyl-trimethylammonium bromide, in basic medium, ammonia solution, using tetraethyl-orthosilicate, aluminium tri-sec-butoxide.
Domain	(2006.01) B01J 29/89 Principală (2006.01) C01B 33/20 Secundară

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**PROCESS FOR PREPARING AN OIL WITH HIGH CONTENT OF POLYUNSATURATED FATTY ACIDS AND A DIESEL BIOFUEL**
Authors	**ENĂȘCUȚĂ CRISTINA EMANUELA, STEPAN EMIL, PLEȘU VALENTIN, IANCU PETRICA, ȘTEFAN NICOLETA GABRIELA**
Patent / patent application N°	129836/30.03.2017
Description	The invention relates to a process for preparing an oil having a high content of polyunsaturated fatty acids combined as triglycerides and a Diesel biofuel. According to the invention, the process consists in dehydrating the fish oil up to a maximum water content of 0.05%, treating it with 0.9...1.15% alkaline catalyst dissolved in 19.15...32.1% methanol or ethanol, the reaction mass being then maintained at the temperature of 65...90 DEG C for 60...90 min while stirring, raw glycerine being separated by settling from the raw alkyl esters, wherefrom alcohol is separated by distillation, the alkyl esters are further successively separated by rectification to obtain the distillate 1 and the residue 1, then the distillate 2 and the residue 2, the distillate 1 is mixed with the distillate 2 to form a Diesel biofuel, while the residue 2 is treated with glycerine at a molar ratio of 1:2.3...2.4, with 0.85%...1.05% alkaline catalyst, at a temperature of 125...135 DEG C, for 6...8 h, at a pressure of 25...30 mbar, wherefrom an alcohol condensate is separated by distillation, the resulting raw triglycerides being washed with alcoholic solutions, water and volatile matter being eliminated by distillation to finally result in an oil. Claims: 2.
Domain	Int.Cl.*C10L1/02* Chemistry and chemical industry

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**SEMICONSTRAINED TOTAL ELBOW PROSTHESIS MADE OF SHAPE-MEMORY ALLOYS, WITH COUPLING SYSTEM BASED ON SHAPE-MEMORY EFFECT**
Authors	**BATALU N. D., SEMENESCU A., COSTOIU M. C., ANTONIAC V. I., DOICIN C., AMZA C. G., MATES I. M., CHIVU O., CODOREAN I. B., BARBU C, BADICA P., NEGOITA O.**
Patent / patent application N°	RO20160000383/2016 (RO131379-A0)
Description	Our proposed design eliminates auxiliary components used for connecting the ulnar and humeral components in a total constrained elbow implant. The connection between the ulnar and humeral components is based on shape memory effect (SME) of the metallic material used for the humeral component. SME allows the humeral component to reach two positions: open (before connecting), and close (after connecting). The body temperature (~36 ^{o}C) or warm saline solution will activate the humeral component to close. Initially, the humeral component is in an open position by keeping it in a cold environment (e.g., cold water). Modelul propus elimină piesele auxiliare folosite pentru conectarea componentelor ulnare și humerale dintr-un implant total de cot constrâns. Conectarea componentei ulnare de cea humerală se bazează pe efectul de memorie a formei (EMF) al materialului metalic folosit pentru componenta humerală. EMF îi permite componentei humerale să aibă două poziții: deschisă (înainte de conectare) și închisă (după conectare).
Domain	Medicine

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**TOTAL CONSTRICTED ELBOW PROSTHESIS MADE OF SHAPE-MEMORY ALLOY WITH HINGE-LIKE FIXATION AND COUPLING SYSTEM BASED ON SHAPE - MEMORY EFFECT**
Authors	**BATALU N. D., SEMENESCU A., COSTOIU M. C., SINESCU I., ANTONIAC V.I., DOICIN C. V., CODOREAN I. B., MATES I. M., BARBU C. A., BADICA P., GAVRILIU T. S.**
Patent / patent application N°	RO20160000188/2016 (RO131261-A0)
Description	Our proposed design eliminates auxiliary components used for connecting the ulnar and humeral components in a total constrained elbow implant. The connection between the ulnar and humeral components is based on shape memory effect (SME) of the metallic material used for the humeral component. SME allows the humeral component to reach two positions: opened (before connecting), and closed (after connecting). The body temperature (~36 ^{o}C) or warm saline solution will activate the humeral component to close. Initially, the humeral component is in an open position by keeping it in a cold environment (e.g., cold water). Noul model propus elimină piesele auxiliare folosite pentru conectarea unui implant total de cot. Conectarea celor două componente se face printr-un sistem de tip balama, pe baza efectului de memorie a formei (EMF) al materialului metalic utilizat la realizarea componentei humerale.
Domain	Medicine

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**METHOD FOR OBTAINING HYDROXYAPATITE SCAFFOLDS WITH PREDETERMINED PHYSICO-CHEMICAL CHARACTERISTICS FOR MAJOR BONE RECONSTRUCTION**
Authors	**F. MICULESCU, A. MAIDANIUC, M. C. COSTOIU, A. SEMENESCU, M. MICULESCU, F. IONITA-RADU, M. ARGHIRESCU**
Patent / patent application N°	RO 001-04.01.2017
Description	The proposed method consists in fabrication of scaffold structures for major bone defects repair, based on monophasic (hydroxyapatite – HAP) or biphasic (hydroxyapatite + tricalcium phosphate - α-TCP or β-TCP) ceramics which fulfill the product requirements related to mechanical strength and biocompatibility. The technical problem solved by this invention is the need for adequate adaptation of phase order and phase parameters, and for developing a specific procedure for producing a scaffold structure for major bone repair with predictable porosity and mechanical strength. The described method solves the technical problem by obtaining a predetermined ratio of HAP/TCP, after a preliminary stage of hydroxyapatite production by deproteinisation using thermal routes. Metoda consta in obţinerea unei structuri suport (scaffold) pentru repararea defectelor osoase majore obţinute din produse monofazice (hidroxiapatită - HAP) sau bifazice (hidroxiapatită + fosfat tricalcic de tip α-TCP sau β-TCP), care să îndeplinească cerinţele de rezistenţă mecanică şi biocompatibilitate.
Domain	

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**MECHANO-ELECTRICAL DRIER**
Authors	**FLORIN MICULESCU, MARIAN MICULESCU, COSMIN-MIHNEA COSTOIU, OANA-ROXANA CHIVU, CATALIN-ALEXANDRU BARBU, AUGUSTIN SEMENESCU**
Patent / patent application N°	RO131500(A0) — 2016-11-29 - Espacenet Internat. classification: D06F58/00; F26B11/14
Description	The patent relates to a mechano-electrical laundry dryer which can be used in households or hotels, for smaller or larger, coloured or white clothes or towels. The laundry dryer is characterised by autogenerating air streams which dry the clothes hanged on any type of holder by its horizontal translation motions, at rights angle with clothes or towels' positioning plane. The problem solved by the current invention is laundry drying without the warm air, which, by passing through wet laundry, accumulates water vapors which may condense and deteriorate the adjacent objects and the walls of the enclosure in which drying takes place. Invenţia se referă la un uscător de rufe, care poate fi utilizat in locuințe sau hoteluri, pentru rufe sau prosoape mari sau mici, colorate sau albe, caracterizat prin aceea că, prin mișcările de translație in plan orizontal, perpendicular pe planul de poziționare a rufelor sau prosoapelor, își auto-creează curenți de aer care usucă rufele prinse pe orice tip de stativ.Problema pe care o rezolva invenția este realizarea uscării rufelor fără aer cald, care, după trecerea printre rufele umede, are in componența sa vapori de apă ce pot condensa și pot produce deteriorarea obiectelor si a pereților incintei în care se realizează uscarea.
Domain	

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**MULTIMATERIAL ROD FOR EXTERNAL FIXATION DEVICE**
Authors	**ANTONIAC VASILE IULIAN, SEMENESCU AUGUSTIN, ORBAN HORIA, ADAM RAZVAN, MATES ILEANA MARIA**
Patent / patent application N°	RO131543 (A2) — 2016-12-30 - Espacenet Internat. classification: A61F2/02; C22C19/03; C22C23/00
Description	The multimaterial rod comprises a bone fixing part (1) made of biocompatible Mg alloys, with normal thread at the end towards the component (2) of the rod, while, at the other end, the thread is pointed, in order for it to penetrate the bone, and a rod-type component (2) - austenitic stainless steel, having the same diameter as the first component (1) and threaded at one end, the two components (1 and 2) of the rod being assembled by a ceramic sleeve (3) made of alumina or zirconia, which is externally ribbed to be easily screwed in and internally threaded. Invenţia se referă la o tijă multimaterial pentru fixator extern utilizata pentru stabilizarea fracturilor osoase, realizată din trei componente fiecare dintre ele executata dintr-un biomaterial diferit: o componenta care se fixează în os, realizată din aliaje biodegradabile de magneziu, filetată la un capăt iar celălalt capăt având formă ascuţită pentru a penetra in os, o altă componentă realizată din oţel inoxidabil austenitic, care se fixează pe cadrul general al fixatorului extern, conectate prin intermediul unei componente constituită dintr-un manşon executat dintr-un biomaterial ceramic de natura inerta biologic si chimic, din alumină sau zirconia, filetat la interior la ambele capete.
Domain	Mechanical Engineering - Metallurgy

Organization	**University Politehnica of Bucharest**
Patent / patent application title	**HYDRODYNAMIC BEARING USED TO SUPERFINISHING PARTS BY GRINDING PROCESS**
Authors	**SANDU CONSTANTIN, HADĂR ANTON, ZAPCIU MIRON, SANDU COSTIN, PARASCHIV MARIUS DANIEL, BRATU MIHAIIULIAN**
Patent / patent application N°	A /01013 DIN 19.12.2014
Description	The invention relates to a radial hydrodynamic bearing for general industrial machinery and equipment and especially the grinding machine tools. The technical problem solved by the invention is to improve performance by modifying the shape of bearings, lubricating and sustentation gaps between shaft and housing. Invenţia se referă la un lagăr radial hidro dinamic, cu utilizare generală pentru maşini şi echipamente industriale şi în special la maşini-unelte de rectificat. Problema tehnică pe care o rezolvă invenţia este îmbunătăţirea performanţelor lagărelor de alunecare prin modificarea formei interstiţiilor de ungere şi sustentaţie dintre arbore şi carcasă.
Domain	Echipamente Industriale / Industrial Equipments

„Gheorghe Asachi" Technical University of Iași

Organization	**„Gheorghe Asachi" Technical University of Iasi**
Patent / patent application title	**EQUIPMENT FOR SHREDDING - COMPACTING THE CHIPS AND SEPARATING-COLLECTING THE COOLANT FROM MACHINE-TOOL**
Authors	**ANA-MARIA BOCĂNEȚ, DRAGOȘ FLORIN CHITARIU, EMILIAN PĂDURARU**
Patent / patent application N°	OSIM A 00402/21.06.2017
Description	The invention refers to equipment for processing the metal chips resulting from mechanical machining and provides chips shredding, separating and collecting in two stages the coolant used during the machining process and chips compacting. According to the invention, the equipment consists of two main subassemblies: a subassembly for shredding and a chips compacting subassembly. In both parts there are provided elements for separating and collecting the lubrication-cooling liquid. The equipment uses usual resources that may be found at the workstation (electricity, compressed air). Invenția se referă la un echipament pentru procesarea așchiilor metalice rezultate în urma activității de prelucrare mecanică prin așchiere și realizează sfărmarea așchiilor, separarea și colectarea în două etape a lichidului de răcire-ungere utilizat în procesul de prelucrare și compactarea așchiilor.
Domain	Mechanics and machine industry

Organization	**"Gheorghe Asachi" Technical University of Iaşi**
Patent / patent application title	**PROTECTIVE MECHANISM FOR LOW-POWER HORIZONTAL WIND TURBINES**
Authors	**CĂLĂRAŞU DORU, SCURTU DAN, TIŢA IRINA, CIOBANU BOGDAN**
Patent / patent application N°	RO 126690 B1
Description	The invention relates to a protective mechanism for low-power horizontal axis wind turbines, mechanism that consists of a tilting device and a damping device.The tilting device acts upon rotor assembly and is designedto remove therotorfrom the wind when the wind speed exceeds safety limit.Removing of the rotor from the wind is done by tilting (rotating around a horizontal shaft having an orthogonal position related to the rotor shaft). When the wind speed decreases, the rotor returns to the nominal operating position. The damping device is provided with a hydraulic damper meant to improve the dynamic behaviour of the rotor assembly during the return stroke. Invenția se referă la un mecanism de protecție pentru turbine eoliene cu ax orizontal, de mică putere și constă într-un sistem de basculare și unul de amortizare. Sistemul de basculare este destinat scoaterii rotorului turbinei eoliene din vânt atunci când viteza vântului crește peste limta de siguranță. Scoaterea din vânt a rotorului se face prin basculare (rotire în jurul unui ax orizontal ortogonal cu axul rotorului). Când viteza vântului scade, se produce revenirea rotorului în poziția nominală de funcționare. Sistemul de amortizare are rolul de a reduce șocul din procesul de revenire al rotorului în poziția nominală de funcționare.
Domain	Low power horizontal axis wind turbines

Organization	**”Gheorghe Asachi” Technical University of Iaşi**
Patent / patent application title	**INTERCHANGEABLE INSOLE COVER FOR FOOTWEAR AND OBTAINING PROCESS**
Authors	**ANGELA DĂNILĂ, BOGDAN SÂRGHIE, CRISTINA-MARIA HERGHILIGIU**
Patent / patent application N°	5134
Description	The invention relates to an interchangeable shoe insole and obtaining method, and addresses the leather-footwear industry. The insole is made up as layers by applying a beeswax emulsion to a 100% cotton fabric through padding – rolling - storage at room temperature process, followed by the manufacture of the blank. The purpose of the invention is to improve the emollients performance and make its application easier, by providing an insole treated with a beeswax emulsion. Invenţia se referă la un acoperiş de branţ interschimbabil pentru încălţăminte şi la un procedeu de obţinere a acestuia şi se adresează industriei de pielărie-încălţăminte. Acoperişul de branţ este alcătuit sub formă de stratificat realizat prin aplicarea procedeului fulardare – rolare – depozitare la temperatura camerei a unei emulsii pe bază de ceară de albine pe un suport textil format dintr-o ţesătură de bumbac 100%, după care se realizează semifabricatul. Scopul invenţiei este de a îmbunatăţi performanţa şi usurinţa de aplicare a emolienţilor prin realizarea unui acoperiş de branţ tratat cu o emulsie din ceară de albine.
Domain	Leather-Footwear Industry

Organization	**"Gheorghe Asachi" Technical University of Iași[1], "Mircea cel Bătrân" Naval Academy of Constanța[2]**
Patent / patent application title	**AUTOMATED NAVAL PHOTO-ELECTRICITY COLLECTOR (A.N.P.E.C.)**
Authors	**ERMOLAI VASILE[1], POHONȚU ALEXANDRU[2],**
Patent / patent application N°	
Description	The A.N.P.E.C. projectis a prototype of an electro-mechanical system designed to increase the light absorption of a solar panel that is exploited in naval environments. In contrast to the land applications that relies on standard sun's trajectories during a regular year, a maritime solar tracker system requires a totally different approach. ANPEC's mainfunctionality is to solve the various sun's orientation problem resulting from the ship's change of routes and oscillatory moves (roll and pitch), induced by sea conditions. Sun's position is determined by analyzing data provided by four analog photoresists and the unit of time in which to do adjustment to servomotors is determined through a digital gyroscope. Dispozitivul A.N.P.E.C. este un prototip care are la bază un sistem electromecanic, proiectat să crească capacitatea de colectare a radiaţiei luminoase a unui panou fotovoltaic. În comparaţie cu sistemele de la uscat care sunt dirijate după o traiectorii standard ale soarelui, un sistem capabil urmărească soarele în mediului marin necesită o abordare total diferită.
Domain	Energy andunconventionalenergysources

Organization	**"Gheorghe Asachi" Technical University of Iași**
Patent / patent application title	**DISPOZITIV PENTRU DISTRIBUIREA MAI MULTOR LICHIDE**
Authors	**CRISTIAN-GYŐZŐ HABA**
Patent / patent application N°	A/00368
Description	A fluid distributor comprising three pressure vessels, each container containing another liquid is provided with valves for controlling the liquid distribution. The three containers are embedded in a protective and fastening housing, plus a valve actuator. The drive system enables the actuation of each valve separately or in combination, thus allowing the liquid to be discharged separately or mixed as required. Un distribuitor de lichide ce include trei recipiente sub presiune, fiecare recipient conţinând un alt lichid şi prevăzute cu supape pentru controlul distribuirii lichidului. Cele trei recipiente sunt încorporate într-o carcasă de protecţie şi fixare la care se adaugă un sistem de acţionare a supapelor. Sistemul de acţionare permite acţionarea fiecărei valve în mod separat sau în combinaţie permiţând astfel evacuarea lichidelor separat sau în amestec în funcţie de necesităţi.
Domain	Industrial Engineering

Organization	**"Gheorghe Asachi" Technical University of Iaşi**
Patent / patent application title	**REFRESH METHOD FOR THE WEIGHTS OF THE ANALOGUE SYNAPSES**
Authors	**MIRCEA HULEA**
Patent / patent application N°	no: 5133/15.06.2017
Description	The invention relates to a method for refreshing the weights of analogous synapses useful for the capacitive storage of the synaptic weights. The method consists in reactivating the artificial neurons at fixed time intervals. During neuronal reactivation, the load variation in the weight capacitor due to the drain current is compensated by an activation current which is opposite to the leakage current. Reactivation of neurons is determined by a single rectangular pulse generator which is directly connected without other auxiliary elements to the voltage divider that generates the equilibrium potential of artificial neurons. Invenția se referă la o metodă de reîmprospătare a ponderilor sinapselor analogice utilă pentru sinapsele cu stocarea capacitivă a ponderilor ce constă în reactivarea neuronilor la intervale fixe de timp. În timpul reactivării neuronilor variația sarcinii din condensatorul de pondere datorată curentului de scurgere este compensată printr-un curent de activare care apare în sens invers curentului de scurgere. Reactivarea neuronilor este realizată de către un singur generator de impulsuri dreptunghiulare conectat direct, fără alte elemente auxiliare, la divizorul de tensiune care generează potențialul de repaus al neuronilor artificiali incluși într-o rețea neuronală artificială.
Domain	Inteligent Systems, Neural Networks

Organization	**S.C. NEXT STUDIO SRL, "Gheorghe Asachi" Technical University of Iași**
Patent / patent application title	**STRUCTURAL CUBIC MODULES FOR PREFABRICATED CONSTRUCTIONS**
Authors	**S.C. NEXT STUDIO SRL, DORINA-NICOLINA ISOPESCU, OANA NECULAI, SEBASTIAN-GEORGE MAXINEASA**
Patent / patent application N°	
Description	The invention consists in cubic modules made of prefabricated metallic profiles, adjacent and stacked. The structural elements are steel columns and beams, with square hallow cross-sections, joined at the ends using connecting pieces especially designed for this prototype. The elements are fixed using bolts and this type of connection provides a semi-rigid behaviour at the structural node level. The perimeter closings have the bearing structure made of sandwich panels with metallic facings and rigid mineral wool core. The cubic modules present multiple advantages, such as easy and quick execution on site, the possibility of vertical and horizontal extension, flexible functionality, easily transportable and demountable elements. Invenția constă din module cubice formate din profile metalice prefabricate, alăturate și suprapuse. Elementele structurale sunt de tip stâlp și grindă din oțel, cu secțiuni tubulare pătrate, unite la capete prin intermediul unor piese de îmbinare concepute special pentru acest prototip.
Domain	Construcţii şi amenajări.

Organization	**"Gheorghe Asachi" Technical University of Iași**
Patent / patent application title	**HYBRID "MACON" LINTELS**
Authors	**DORINA-NICOLINA ISOPESCU, OANA NECULAI, IONUT-OVIDIU TOMA, IULIAN ZAPODEANU**
Patent / patent application N°	
Description	"MACON" hybrid lintels are elements consisting of several modules made from part ACC and part reinforced concrete or prestressed concrete. These prefabricated modules are precast. The combination of modules can be used for closing any opening of windows or doors, and for any wall thickness, and of different lengths for openings between 75 cm and 325 cm. Buiandrugii hibrizi "MACON" sunt elemente formate din mai multe module realizate din blocuri de BCA și din beton armat sau din beton precomprimat. Aceste module sunt prefabricate. Combinarea modulelor poate fi utilizată pentru închiderea oricărei deschideri a ferestrelor sau ușilor și pentru orice grosime a pereților și pentru lungimi diferite ale deschiderilor, între 75 cm și 325 cm.
Domain	Construcţii şi amenajări.

Organization	**„Gheorghe Asachi" Technical University of Iasi**
Patent / patent application title	**ECHIPAMENT DE DECOLMATARE PARȚIALĂ A ACUMULĂRILOR DE APĂ / EQUIPMENT FOR PARTIAL DESILTING OF WATER ACCUMULATIONS**
Authors	**MITROI RALUCA, VALENTIN BOBOC, ION ANTONESCU**
Patent / patent application N°	5131/13.06.2017
Description	The invention relates to a mobile equipment used for partial desilting of water accumulations. According to the invention, the device comprises a pump body in which an electric motor is introduced which acts on a rotor. When it starts, the suction of a liquid flow is produced, which passes through a grill, through the suction elbow and through the pump body and is discharged through the exit nozzle, which is driven by two electric propulsion engines equipped with propulsion propellers. Invenţia se referă la un echipament mobil utilizat pentru decolmatarea parțială a acumulărilor de apă. Echipamentul, conform invenţiei, este format din corpul pompei, în care este introdus un motor electric care acționează un rotor, la pornirea căruia se produce aspirarea unui debit de lichid, care trece printr-un grătar, prin cotul de aspirație și prin corpul pompei și este evacuat prin ajutajul de ieșire, care este direcționat cu ajutorul a două motoare electrice de propulsie echipate cu elice de propulsie.
Domain	Hydrotechnical engineering

Organization	**"Gheorghe Asachi" Technical University of Iași**
Patent / patent application title	**THE UNDERGROUND TOWER CEMETERY**
Authors	**OANA NECULAI, IOANA NISTOR, STEFANIA GUZGA, MIRCEA GROSU, RADUCU MIHAI GEANTAU**
Patent / patent application N°	
Description	The proposed concept comes as an improvement to the already existing custom, the burial of the inanimate bodies. One of the biggest problems of today's society regarding this subject is the lack of space and, at the same time, the huge areas that the cemeteries occupy. The best way to solve this issue is deep exposure by building a 20-floors reinforced concrete cylindrical overlaid cemetery, with the aim of protecting the environment and respecting funerary traditions, at the same time. Above ground, the building will look like a simple funeral monument, but in depth, where access will be made with a elevator placed at the middle of the structure, the stories constituting a layered cemetery. Conceptul propus vine ca o îmbunătățire a obiceiului deja existent, îngroparea corpurilor neînsuflețite. Una dintre cele mai mari probleme ale societății de azi cu privire la acest subiect este lipsa de spațiu și, în același timp, zonele uriașe pe care le ocupă cimitirele.
Domain	Construcţii şi amenajări.

Organization	**"Gheorghe Asachi" Technical University of Iași**
Patent / patent application title	**THE VERY HIGH SCHOOL**
Authors	**OANA NECULAI, IOANA-LAVINIA DARIE, VERIDIANA IULIANA MEDVES, MIRCEA GROSU**
Patent / patent application N°	
Description	This school concept consists in gathering together, in a skyscraper with 35 floors, all stages of education, from kindergarten to high school. This school concept consists in bringing together all stages of education, in a harmonious and modern manner. The building has canteens, green floors, sports floor and classrooms for separate activities and common activities for all ages. The uniqueness of this concept consists in gathering together all stages of education, involving in common activities all levels of classes, thus creating role models for the younger students and making the older students more responsible. Acest concept de școală constă în a aduce la un loc, într-un zgârie-nori cu 35 de etaje, a tuturor etapelor educației, de la grădiniță la liceu. Acest concept școlar constă în unirea tuturor etapelor educației, într-o manieră armonioasă și modernă. Clădirea are cantine, etaje de spații verzi, etaje cu săli de sport și săli de clasă pentru activități separate și activități comune tuturor vârstelor.
Domain	Education

Organization	**"Gheorghe Asachi" Technical University of Iași**
Patent / patent application title	**ROTATING WIND SHIELD**
Authors	**OANA NECULAI, RADUCU MIHAI GEANTAU, DAVID NACU**
Patent / patent application N°	
Description	This invention refers to a rotating wall that prevents gusts of wind from disturbing your outdoors activities. It has a wave shaped shield structure made from a strong and elastic material so that if the wind is more aggressive the wall will not break or get damaged. This wave shaped wall will be moving on a rail that has an underground system of pivot feet that keep the structure from falling over by applying pressure on a pneumatic spring system something similar to a car's suspension. Invenţia se referă la un paravan rotativ care împiedică rafalele vântului să vă deranjeze activitățile în aer liber. Are o structură de scut în formă vălurită, realizată dintr-un material puternic și elastic, astfel încât, dacă vântul este mai agresiv, peretele nu se va sparge sau deteriora. Acest paravan se va deplasa pe o șină care are un sistem subteran de picioare pivotante care împiedică răsturnarea structurii prin aplicarea presiunii asupra unui sistem pneumatic de arc, lucrând asemănător cu suspensia unui automobil.
Domain	Recreere

Organization	**"Gheorghe Asachi" Technical University of Iași**
Patent / patent application title	**INTELLIGENT THERMAL PROTECTION OF BUILDINGS**
Authors	**MARCEL IONESCU, ALEXANDRU STĂNILĂ, OANA NECULAI, MARIAN PRUTEANU, ANA-MARIA TOMA, TEODOR FADUR** **Student collaborators: AIACOBOAEI CLAUDIU, ZBUGHIN DANUT, CRISTIAN COSMIN-ADI, MITAN VASILE IOAN, ISACHE ANDREI MARIAN, NITU FLORIN**
Patent / patent application N°	
Description	The process is applicable to any type of building, new or old, and can be applied on the facades/walls to produce a fireproof plywood layer, ventilated and treated on both sides with special paints, thermally and naturally ventilated, intelligent, based on sensors and automated flaps. Advantages: - Thermal equivalence in cold weather is equal to a 20 cm expanded polystyrene thermo-system; - Reflects solar radiation of maximum intensity, meaning that approximately 86.3% of solar radiation is reflected away from the building; - Cools the exterior walls during summer time, , saving the air conditioning; - Removes water vapours in the walls during winter time, does not allow the occurrence of dampness; - Protects against external fires; - Costs equivalent to a classic thermo-system.
Domain	Construcţii şi amenajări.

Organization	**"Gheorghe Asachi" Technical University of Iaşi**
Patent / patent application title	**THERMAL PROTECTION OF EXTERNAL DOORS AND WINDOWS**
Authors	**MARCEL IONESCU, ALEXANDRU STĂNILĂ, ALEXANDRA IONESCU, OANA NECULAI, MARIAN PRUTEANU, ANA MARIA TOMA** **Student collaborators: AIACOBOAEI CLAUDIU, ZBUGHIN DANUT, CRISTIAN COSMIN-ADI, MITAN VASILE IOAN, ISACHE ANDREI MARIAN, NITU FLORIN**
Patent / patent application N°	
Description	The process is intended to enhance thermal protection of exterior doors and window openings in buildings by sealing and double thermal reflection phenomena. An elastic diaphragm that can be tightened by folding or rolling and which can seal the contour on a frame edge of the opening that needs to be protected, is treated with special thermo-resisting paints. Advantages: - In cold weather, more than 90% of the thermal radiation of heat sources is retained in the room; - In warm weather, it repels outdoor solar radiation on the protected area by at least 86%. - Low costs of 10-12 euro / sqm. Procedeul este destinat să sporească protecţia termică a golurilor exterioare de uşi şi ferestre la clădiri, prin fenomenele de etanşare si reflexie termică dublă. O diafragmă elastică, ce se poate strânge prin pliere sau roluire şi care se poate etanşa pe contur pe o ramă de bordare a golului de protejat, este tratată cu vopsele special termorezistente cu efect de termos.
Domain	Construcţii şi amenajări.

Organization	**"Gheorghe Asachi" Technical University of Iaşi**
Patent / patent application title	**CONSTRUCTIONS MADE OF EXPANDABLE PARALLELEPIPED MODULES FOR FULLY DEMOUNTABLE PREFABRICATED BUILDINGS**
Authors	**ALEXANDRU STANILA, OANA NECULAI, ALEXANDRU VLAD, ANA- MARIA TOMA, TEODOR FADUR** **Student collaborators: AIACOBOAEI CLAUDIU, ZBUGHIN DANUT, CRISTIAN COSMIN-ADI, MITAN VASILE IOAN, ISACHE ANDREI MARIAN, NITU FLORIN**
Patent / patent application N°	
Description	The invention refers to a compact parallelepiped construction module, having, in the initial phase, all the equipment and components included in a predetermined structural volume, easily stored and transported on a trans-container. A module manually or mechanically expands on one or two or all of its lateral faces into functional volumes provided by design. The module can be quickly tightened into its original form, fully recovered for storage or for transport to another location. Advantages: - High productivity and quality due to execution in factory, at minimum costs; - Easy mounting and un-mounting; - Increased functional flexibility; - Guaranteed lifespan of 30 years.
Domain	Construcţii şi amenajări.

Organization	**"Gheorghe Asachi" Technical University of Iași**
Patent / patent application title	**ART HOUSE**
Authors	**ALEXANDRU STANILA, OANA NECULAI, ANA-MARIA TOMA, TEODOR FADUR** **Student collaborators: AIACOBOAEI CLAUDIU, ZBUGHIN DANUT, CRISTIAN COSMIN-ADI, MITAN VASILE IOAN, ISACHE ANDREI MARIAN, NITU FLORIN**
Patent / patent application N°	
Description	The Art House is the product of an original, rapid, automatic, rapid-expansion, parallelepiped volume process, in a fan-shaped, flat-bottomed, and mobile interior partition walls. Advantages: -Faster installation on site in maximum 30 minutes. -Flexible functionality, like artistic creation workshop, exhibition space, holiday or permanent home. -Energy independence is possible. Casa de artă este produsul unui procedeu original de expandare rapidă, automată a unui volum paralelipipedic, într-o formă artistică, de evantai, cu pardoseală plată şi pereţi mobile de compartimentare interioară. Avantaje - Montaj rapid pe amplasament cu dare in exploatare în maxim 30 minute. - Flexibilitate funcţională, atelier de creaţie artistică, expoziție, locuinţă de vacanţă şi chiar definitivă. - Sunt posibile dotări de independenţă energetică.
Domain	Construcţii şi amenajări.

Organization	**"Gheorghe Asachi" Technical University of Iaşi**
Patent / patent application title	**FABRICATION METHOD OF REINFORCED CONCRETE DWELLING FLATS USING SEMI-FINISHED STRUCTURAL MODULES**
Authors	**ALEXANDRU STANILA, OANA NECULAI, ANA-MARIA TOMA, IONUT-OVIDIU TOMA, TEODOR FADUR** **Student collaborators: AIACOBOAEI CLAUDIU, ZBUGHIN DANUT, CRISTIAN COSMIN-ADI, MITAN VASILE IOAN, ISACHE ANDREI MARIAN, NITU FLORIN**
Patent / patent application N°	
Description	The invention refers to the realization of a block of flats made of semi-finished structural modules. From the factory a module contains: semi-fabricated formworks for thermo-insulated external walls and internal walls, soundproofed and reinforced ceiling formwork, and electrical and sewerage networks. On site, only minor reinforcement, concrete pouring and mechanized plastering are being carried out. Advantages: - Fast and low costs assemblage on site; - High quality and productivity due to factory fabrication - Increased functional flexibility; - Graduated service life of at least 50 years; - High cost reduction through high productivity, elimination of material losses, total transport optimization and reduced labour. Invenţia se referă la un concept de realizare a unui bloc de locuinţe din module structurale semifabricate.
Domain	Construcţii şi amenajări.

Organization	**"Gheorghe Asachi" Technical University of Iasi**
Patent / patent application title	**HIGHLY SENSITIVE STRAIN GAUGE**
Authors	**CRISTIAN FOŞALĂU,CRISTIAN ZET, DANIEL PETRIŞOR**
Patent / patent application N°	OSIM: A/00110/17.02.2015
Description	The invention refers to a highly sensitive strain gauge (HSSG) devoted to measure very small deformations for plane or curved surfaces, with good accuracy. Its main advantage is its high sensitivity assessed by the gauge factor, K, which is approximately 1000 times bigger than that of a conventional metallic strain gauge, namely about 2000. This makes it suitable to sense very small deformations, usually less than 1 ppm. It has a wide area of applications either for measuring direct strains or for indirectly gauging quantities like force, vibration, mechanical momentum, acceleration, etc. Invenția se referă la o marcă tensiometrică cu sensibilitate ridicată proiectată pentru a măsura cu acuratețe deformații mici ale suprafețelor plane sau curbate. Avantajul principal este descris de constanta de măsurare a mărcii K ce are valoarea 2000 și este de aproximativ 1000 mai mare comparativ cu soluțiile comerciale existente. Marca se poate fi utilizată la măsurarea deformațiilor cu amplitudini foarte mici, uzual mai mici de 1ppm. Gama de aplicații in care poate fi utilizată cuprinde măsurarea: deformărilor, forțelor, vibrațiilor, momente mecanice, accelerație, etc.
Domain	Sensors, Electronic MeasurementDevices,StrainGauge.

Organization	**“Gheorghe Asachi” Technical University of Iasi**
Patent / patent application title	**POREWATER PRESSURE SENSOR FOR LANDSLIDE PREDICTION**
Authors	**CRISTIAN ZET, CRISTIAN FOŞALĂU, DANIEL PETRIŞOR**
Patent / patent application N°	OSIM: A00127/2016
Description	The invention refers to a cost effective pore water pressure sensor (PWP) for landslide prediction, based on an integrated silicon pressure sensor. The aim of the sensor is to detect the wetting conditions that trigger the displacements of the underground layers. The pore water pressure has a simple construction, by measuring the pressure of the air in a small enclosure, air that is compressed by the water table. The pressure is measured with a silicon pressure sensor and it is converted in mm water column. Depending on the underground structure, many such sensors might be necessary at different levels. The information is collected at the ground level via a serial point to multipoint network. The sensor has a low cost, fine accuracy, low power consumption and is easy to install. Invenția se referă la un senzor de presiune hidrostatică utilizat în predicția alunecărilor de teren. Senzorul măsoară presiunea hidrostatică și să detectează valorile care produc alunecări între straturile din structura terenului. Senzorul determină presiunea hidrostatica prin măsurarea diferențială a presiuni creată de coloana de apă într-o incintă închisă, considerând ca referință presiunea atmosferică. Răspunsul senzorului este exprimat în milimetri coloană de apă.
Domain	Sensors, Electronic Measurement Devices,Sensor Networks. Land slide Prediction.

Organization	**"Gheorghe Asachi" Technical University of Iasi**
Patent / patent application title	**SMART MULTIMEDIA WALL/WINDOW**
Authors	**TUDORA ANA CRISTINA, TUDORA GABRIEL, PETRISOR DANIEL**
Patent / patent application N°	OSIM: A/00351, 09.06.2017 TUIASI: 5123, 06.06.2017
Description	The device, according to the patent, is composed from a transparent multilayer active surface comprising a monochrome display placed between two glass sheets, a color display and a supplementary glass sheet are added one each side of this structure obtaining a structure protected by the exterior glass sheets, an electronic circuit control board used for communication with external devices and obtaining the multimedia content to be displayed by the two color displays, and to control the opacity level of the monochrome liquid crystal display in order to simultaneously achieve the functionalities of displaying multimedia content on both sides of the active surface and adjusting privacy level of the surrounding ambient. Dispozitivul, conform invenției, este format dintr-o suprafața activă multistrat ce are în componenta să un afișaj monocrom plasat între două foi de sticlă, pe exteriorul cărora sunt montate câte un afișaj color și o foaie de sticlă pentru protecția exterioară, precum și un circuit electronic de comandă care comunică cu dispozitive externe pentru a achiziționa conținut multimedia și controlează imaginea afișata pe cele două afișaje color, precum și gradul de opacitate al afișajului cu cristale lichide monocrom.
Domain	Electronic Devices, Display Technology, Architecture, Interior Design.

Organization	**"Gheorghe Asachi" Technical University of Iași**
Patent / patent application title	**WASTED LIGNOCELLULOSIC MATERIALS FOR REMOVAL OF DYES FROM TEXTILE EFFLUENTS**
Authors	**CARMEN ZAHARIA, DANIELA SUTEU, AUGUSTIN MURESAN, EMIL IOAN MURESAN**
Patent / patent application N°	CBI No. 2013 0073
Description	Invention is referring to six types of wasted adsorptive materials of textile dyes (lignin, cellolignin, peat, sunflower seed shells, corn cob), having composition preponderently lignocellulosic, obtained from various types of natural agro-industrial wastes or by-products, which can be used for aqueous environment protection. These materials were processed mecha-nically (by cutting, mortaring, screening until dimensions smaller than 0.8 mm), characterized and tested related to its adsorptive capabilities and performances in removal of textile dyes, applying a simple adsorption procedure in static regime, with subsequent separation of solid and aqueous phases by sedimentation (and/or filtration, after case), associated with a technical valorization solution for the ‚spent' wasted adsorptive material. The textile effluents can have variable loads with textile dyes (20-300 mg dye/L), and the treated effluent can be recycled or discharged safely in diverse receptors. The efficiency of dyes removal can vary between 38.28 and 99.03 %, in relation with the wasted lignocellulosic material type, textile dye type and characteristics of industrial effluent, as well as specific operating conditions.
Domain	Environmental depollution technology application in textile industry

Organization	**"Gheorghe Asachi" Technical University of Iaşi**
Patent / patent application title	**CERAMIC BLOCK WITH MULTIPLE FUNCTIONS**
Authors	**ISOPESCU DORINA NICOLINA, BUDESCU MIHAI, ZĂPODEANU IULIAN DANIEL**
Patent / patent application N°	131645 A2 – 30.01.2017, a 2015 00530
Description	The invention relates to a ceramic body with vertical goals.It is characterized as having all the mitred corners, so that at the time of overlapping in walls, to create vertical channel, designed to accommodate the integration of electrical and sanitary networks as well as vertical fittings.The role of these vertical channel is to avoid further damage or breakage later of the ceramic body.At the same time, the vertical voids are positioned on the symmetry axis so that they create a cutting line to ensure a uniform cut without waste of material. Invenția se referă la un corp ceramic cu goluri verticale. Acesta este caracterizat ca având toate colțurile teșite, astfel încât în momentul suprapunerii în ziduri să se creeze șanțuri verticale, menite să satisfacă înglobarea rețelelor electrice și sanitare, precum și a armăturilor pe verticală. Rolul formării acestor șanturi este de a evita deteriorarea sau spargerea ulterioră a corpului ceramic.Totodata, golurile verticale sunt poziționate la nivelul axelor de simetrie astfel încât să se creeze o linie de decupare, menită să asigure o decupare uniformă fără risipă de material.
Domain	Structural elements; building materials.

Organization	**Romanian Institute of Inventions Iasi- IRIIS** **"Gheorghe Asachi" Technical University of Iași**
Patent / patent application title	**FIRST ORDER SQUID GRADIOMETER, METHOD AND CALIBRATION DEVICE** **SECOND ORDER SQUID GRADIOMETER, METHOD AND CALIBRATION DEVICE**
Authors	**OCTAVIAN BALTAG, MIUTA RAU**
Patent / patent application N°	RO 129609 A2 RO 129957 A2
Description	The inventions relate to a first and second order SQUID gradiometers, the calibration set circuit and a calibration method for the gradiometer coils and the magnetic gradient unit. The characteristics of gradiometers, as the coils sections and the baseline are memorised and data value for magnetic flux gradient are entered through a keyboard connected to a microsistem. The magnetic flux used for calibration is applied to coils of the SQUID gradiometers through other coils inductively coupled with gradiometers coils. The entire assembly can be connected to a computer via an interface and an appropriate program for communication. SQUID gradiometers thus produced can operate in a system of changes in magnetic flux gradient, can be checked or calibrated during measurements. Cele doua invenții se referă la gradiometre SQUID de ordinul întâi si ordinul doi, prevăzute cu circuite pentru calibrare și o metodă de calibrare atât a bobinelor de camp ale acestuia cât și a unității de gradient magnetic.
Domain	Medicine, Pharmacy Cosmetics

Organization	**"Gheorghe Asachi" Technical University of Iaşi**
Patent / patent application title	**PORTABLE DEVICE FOR THE COAXIALITY AND THE CONCENTRICITY DEVIATIONS CONTROL OF INNER CYLINDRICAL SURFACE**
Authors	**CIOATA FLORENTIN, ADRIANA MUNTEANU**
Patent / patent application N°	A 00404 21.05.2017
Description	The device provides self-centering on the interior cylindrical surfaces. It is equipped with a self-centering mechanism with contact on cylindrical surfaces made by three calibrated rollers and the displacement in the radial direction of these calibrated rollers is achieved by means of two fixed discs and a mobile disk. It is a portable control device, all the important components for the orientation - positioning of the control part and of the indicator instrument are integrated into the body of the device. The device is of medium complexity and ensures a sufficiently large range of values for the inner surfaces , thus having a great degree of universality. Dispozitivul asigură autocentrarea pe suprafeţele cilindrice interioare. Este prevăzut cu mecanism autocentrant cu contact pe suprafeţe cilindrice, fiind dotat cu trei role calibrate iar deplasarea pe direcţiea radială a acestor role calibrate se realizează cu ajutorul a două discuri fixe şi a unui disc mobil. Este un dispozitiv portabil de control, toate elementele componente importante pentru orientarea- poziţionarea fixarea piesei de controlat, respectiv, a instrumentului indicator, sunt integrate în corpul dispozitivului Dispozitivul este de complexitate medie şi asigură un interval suficient de mare de valori ale diametrelor suprafeţelor de centrare.
Domain	Devices for control

Technical University of Cluj-Napoca

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**METHOD OF INDUSTRIAL ROBOTS CONTROL**
Authors	**CIUPAN EMILIA, MORARLIVIU, CIUPAN CORNEL**
Patent / patent application N°	Patent OSIM 125211/30.05.2016
Description	The invention refers to a method used to determine a small set of points belonging to a robot workspace. This set is conceived to an effective training of the robot through neural networks. Invenția se referă la o metodă de determinare a unei mulțimi reduse de puncte aparținând spațiului de lucru al unui robot în vederea instruirii eficace a acestuia, folosind rețele neuronale.
Domain	Automation, measuring and control equipment

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**SYNTHESIS PROCEDURE FOR A NANOSTRUCTURED POWDER OF PERMALLOY (SUPERMALLOY)/RHOMETAL TYPE**
Authors	**IONEL CHICINAŞ, TRAIAN FLORIN MARINCA, FLORIN POPA, BOGDAN VIOREL NEAMȚU**
Patent / patent application N°	Patent OSIM 130354/30.12.2016
Description	The invention refers to a synthesis route for obtaining nanocrystalline and nanocomposite powder of pseudo core-shell type. The core of this powder is formed by alloy of Permalloy (Ni_3Fe) or Supermalloy(79Ni16Fe5Mo, % wt.) type with nanocrystalline structure and a high magnetic permeability and the shell is formed by Fe rich alloy, at the classic composition of Rhometal (64Fe36Ni, % wt.) alloy, obtained by microalloying and which possess a high electrical resistivity. The aim for obtaining this pseudo core-shell powder is to be used at the elaboration of magnetic core with good characteristics of soft magnetic material and in the same time with a high electrical resistivity, for medium frequencies applications. The synthesis procedure assume the use of a Ni_3Fe or Supermalloy nanocrystalline powder, with large particle size, obtained by mechanical alloying, and of a Fe carbonyl powder, with fine particle size. The composite particles are composed by large particles of Ni_3Fe (Supermalloy), covered by a layer of very fine Fe carbonyl (6-9 μm). By microalloying, obtained by annealing in protective atmosphere, at the exterior part of the Permalloy or Supermalloy is forming a layer (tens of μm) of Rhometal composition.
Domain	Metallurgy and material science

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**DEVICE TO REDUCE LUBRICATING OILS' VISCOSITY FOR COLD-STARTING PROCESS OF INTERNAL COMBUSTION ENGINES AT LOW AMBIENT TEMPERATURES**
Authors	**MARIAȘIU FLORIN EMIL, VARGA BOGDAN OVIDIU, DEAC TEODORA ALEXANDRINA**
Patent / patent application N°	Patent OSIM 128768/30.06.2016
Description	The problem solved by the invention is to optimize the lubricating oils' viscosity at low ambient temperatures, to eliminate the negative effects of engines mechanisms wear and friction losses. It uses a low power ultrasonic transmitter, located near the oil pump sump, electronically controlled. Immediate benefits of the invention are related to increasing the engine performance with reduced energetic consumption, reducing the wear of piston-rod mechanism, the wear of valve timing command system, also reducing the pollutant emissions during engines' cold start process. Problema pe care o rezolvă invenţia este optimizarea vâscozității uleiurilor de ungere în cazul temperaturilor ambientale scăzute, pentru eliminarea efectelor negative de uzură ale mecanismelor motorului aflate în mișcare relativă. Se utilizează un emițător de ultrasunete de mică putere, situat în baia de ulei a motorului și controlat electronic. Beneficiul imediat al invenției este acela de creștere a indicilor de performanță a motorului, cu consum energetic minim, reducerea frecărilor din mecanismul motor, din sistemul de distribuție și, de asemenea, reducerea emisiilor poluante în timpul procesului de pornire a motoarelor la rece.
Domain	Automobiles and road security

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**METHOD OF ROBOT TRAINING INTENDED TO OBSTACLE AVOIDANCE**
Authors	**CIUPAN EMILIA, MORARLIVIU, CIUPAN CORNEL**
Patent / patent application N°	OSIM 125210/30.05.2016
Description	The invention consists of a method for modeling the kinematics of a robot, based on neural networks, so that it bypass an obstacle located on its way while it moves between two points of the workspace. Neural model is obtained through a training process, "deliberately wrong", by associating the coordinates (X, Y, Z) of some points situated on the direct path of the robot with appropriate motor couplings coordinates of points on the detour path. Invenţia se referă la o metodă de modelare a cinematicii unui robot, bazată pe reţele neuronale, astfel încât acesta să ocolească un obstacol situat în calea sa la deplasarea între două puncte ale spaţiului de lucru. Modelul neuronal se obţine într-un proces de instruire „voit eronată” a reţelei prin asocierea de coordonate (X,Y,Z) ale unor puncte situate pe traiectoria directă a robotului cu coordonate ale cuplelor motoare corespunzătoare unor puncte de pe traiectoria de ocolire.
Domain	Automation, measuring and control equipment

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**PLASMA GENERATOR AT ATMOSPHERIC PRESSURE AND LOW POWER**
Authors	**DORIN-MARIUS PETREUȘ, EMIL PLĂIAN, ALIN MARIUS GRAMA, EMIL CORDOS, SERGIU IULIAN CADAR**
Patent / patent application N°	Brevet OSIM 128077/30.03.2016
Description	The invention consists of an electronic device that is capable to generate radiofrequency signal (13.56MHz) and to maintain plasma (~100W) at atmospheric pressure. It is used to generate integrated plasma in spectral analysis systems to estimate chemical composition of earth probe, materials, waste products etc. The device is portable, more reduced in weight and size, and has a very high power coupling efficiency. So it is a very useful tool for "in situ" chemical analysis of soils. Invenția se referă la un dispozitiv electronic capabil să genereze și să întrețină în câmp de radio frecvență (13,56MHz) plasmă de puteremică (~100W) dezvoltată la presiune atmosferică. Generatorul este portabil și are un randament ridicat de cuplare a puterii în sarcină, necesită costuri reduse de implementare și de întreținere. Este folosit, împreună cu un analizor spectral la determinarea compoziției chimice a probelor de pamânt, deșeuri etc., fiind foarte util pentru lucrul pe teren.
Domain	Environment – ecology, ecological management, environmental protection and monitoring

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**DEVICE FOR LONGITUDINAL ROLLING, RIGHT TOOTHED GEAR, ON PRESSES**
Authors	**MARIAN IONUT, TINTELECAN MARIUS**
Patent / patent application N°	OSIM 129217/29.01.2016
Description	The invention relates to a device powered by a press rolling made of a semi-metallic longitudinal develop a toothed crown gears with right teeth similar. The subject patenting fails to produce semi-finished metal gears (the future right gear with teeth) through the transformation process of compression in the longitudinal rolling. It shows the advantages of flow / movement of metallic material in plastic deformation process identic to the longitudinal rolling process, a process that ensures the realization of a row material with high dimensional stability and easy control of all parameters outbreak strain which characterizes the process. Invenţia se referă la un dispozitiv care acționat de o presă, realizează laminarea longitudinală a unui semifabricat metalic care dezvoltă o coroană dințată similară unei roți dințate cu dantura dreaptă. Dispozitivul brevetat reușește să producă semifabricate metalice dinţate (baza unor viitoare roţi dinţate cu dantură dreaptă) prin transformarea procesului de presare în cel de laminare logitudinală.
Domain	Mechanics and machine industry

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**CARBON DIOXIDE REMOVAL SYSTEM FROM FLUE GASES**
Authors	**VASILE HOTEA, GABRIEL BADESCU, JUHASZ JOZSEF**
Patent / patent application N°	OSIM 127080/30.03.2016
Description	The patent relates to a process for the removal of carbon dioxide from flue gases. Installation according to the invention consists mainly of a centrifugal scrubber, a storage tank and preparing a solution of sodium carbonate and potassium sprayed through the nozzle of special design, a condenser for the vapor stream rich in CO_2, desorption column with the role of the solvent regenerator and a condenser where the vapor stream rich in CO_2 desorption column is condensed, dried in the steam turbine, and stored. Invenția se referă la un procedeu de îndepărtare a dioxidului de carbon din gaze reziduale. Instalația, conform invenţiei, este constituităîn principal dintr-un scruber centrifugal, un rezervor de stocare și preparare a soluţiei de carbonat de sodiu și potasiu, pulverizată printr-o diuză de construcţie specială, un condensator pentru fluxul de vapori bogat în CO_2, o coloană de desorbţie cu rol de regenerator a solventului și un condensator în care fluxul de vapori bogat în CO_2 din coloana de desobrţie este condensat, uscat în turbina cu abur și stocat.
Domain	Environment – ecology, ecological management, environmental protection and monitoring

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**SOUND ABSORBENT COMPOSITE MATERIAL AND OBTAINING PROCESS**
Authors	**ANCUŢA ELENA TIUC, TIBERIU RUSU, OVIDIU NEMEŞ**
Patent / patent application N°	OSIM 129228 / 28.08.2015
Description	The patent relates to a sound-absorbent composite material used, both in the exterior and in the interior spaces, to reduce the overall noise, to reduce the structural noise transmission and to obtain appropriate acoustic spaces, and to a manufacturing process to obtain it. Sound-absorbent composite material according to the invention consists of 70...80% of soft wood saw dustor 70...75% beech wood fibers and20 ...30% of flexible two-component polyurethane foam (PUF) as a binder. According to the invention the process consists in introducing into a mixing container the two components oft he polyurethane foam, then followed by vigorous mixing at room temperaturefor 5...8 seconds, and then insert the sawdust of spruce / beech and mix for 12 seconds, the mixture was poured quickly into the mold, due to the high reaction speed, the mold was covered with a cap and left for 30...45 minutes for completion of the chemical reaction and to achieve dimensional stability as the materialis extracted from the mold.
Domain	Environment – ecology, ecological management, environmental protection and monitoring

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**METHOD FOR OBTAINING COMPOSITE REINFORCED POLYMERIC PLATES**
Authors	**PETRU PAUL BERE, PETRU BERCE, OVIDIU NEMEŞ, NICOLAE BÂLC**
Patent / patent application N°	OSIM 128093 / 29.05.2015
Description	The process for obtaining fiber-reinforced composite plates is filing the fibers with the un-polymerized matrix on a flat covered moldand pressed them in a machine. The innovative idea is to mold pressing the composite materia lwith an external force applied to the foil covering the composite material. Procedeul de obţinere a plăcilor din materiale compozite armate cu fibre constă în depunerea materialu lîmpreună cu matricea în stare nepolimerizată pe o matriţă plană acoperită cu o folie şi presate cu ajutorul unui dispozitiv. Idea inovativă constă în presarea materialului compozit pe matriţă cu o forţă exterioară aplicată pe folia care acoperă materialul compozit.
Domain	Metallurgy and material science

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**SEED GERMINATION METHOD INCLUDES PLACING THE SELECTED SEEDS INTO BOXES AND EXPOSING THEM TO INFRARED RADIATION OF HIGH WAVELENGTH UNTIL THE SEEDS GERMINATE OR UNTIL THE FIRST LEAVES OR FLOWERS EMERGE**
Authors	**COMAN MIRELA**
Patent / patent application N°	Patent OSIM 126456/29.11.2012
Description	The problem solved by the invention is that of creating a hospitable microclimate for seed germination, growth and development for a variety of vegetables and ornamental plant species. Method ensures a faster germination of seeds, seeds germinating in up to 1/4 to 1/3 of the time needed for the blank sample and also having a 10-15% higher germination rate. As the integrated germination process unfolds, the seed is in the ground, in its natural environment life, while irradiation occurs. Also, it can be used in any climate-controlled space, isolated chambers without the need for separate and special devices. Inovația adusă de procedura brevetată vizează crearea unui microclimat ospitalier germinării semințelor, dar și creșterii și dezvoltării unei varietăți de specii de plante legumicole și ornamentale.
Domain	Biology - agronomy - horticulture – zoo-technologies

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**RECONFIGURABLE GEARBOX**
Authors	**CORNEL CIUPAN, MIHAI STEOPAN, EMANUELA POP**
Patent / patent application N°	OSIM no. A/10043/26.07.2016
Description	The invention presents a reconfigurable gearbox designed for the skills development of students in the field of mechanical engineering. The solution offers students the opportunity to build over 20 different types of gearboxes, depending on the structure and the speeds selected by the work load of the machine tool. Reconfigurability of the box is provided by a modularized concept, by using interchangeable shafts and gears and by creating an optimized set of gears. The invention will help the students to understand important aspects related to the design, construction and operation of the gearbox and, in addition, contributes to the development of their creative abilities. Invenția prezintă o cutie de viteze reconfigurabilă proiectată pentru dezvoltarea abilităților studenților din domeniul ingineriei mecanice. Soluția oferă studenților posibilitatea de a construi peste 20 de tipuri diferite de cutii de viteze, în funcție de structura și vitezele selectate de sarcina de lucru a mașinii-unelte. Reconfigurabilitatea cutiei este asigurată de un concept modularizat, prin utilizarea arbori și roți dințate interschimbabile și prin crearea unui set optimizat de angrenaje. Invenția îi va ajuta pe studenţi să înțeleagă aspecte importante legate de proiectarea, construcția și operarea cutiilor de vitezeși, în plus, contribuie la dezvoltarea abilităților lor creative.
Domain	Mechanics and machine industry

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**PARALEL ROBOT FOR SPACE ORIENTATION AND MANIPULATION SISTEMS - SIMOS**
Authors	**ADRIAN PISLA, LIVIU CALIN VAIDA, DOINA LIANA PISLA**
Patent / patent application N°	OSIM no. A/00984/2015
Description	The patent refers to a robotic system designate to space manipulation and orientation, consist in two main components (intern robotic modules), one destined to incremental tasks for positioning – planar orientation of the active component caring platform (PCA) and the other one axial orientation and/or active torque transmission to an end effector. The two components works together having the same coordinating system. The “active” character of the platform results from the torque transmission capacity. Invenţia se referă la un sistem robotic pentru sisteme de manipulare şi orientare spaţială, alcătuit din două componente (module robotice interne), unul destinat activităţii incrementale de poziţionare-orientare plană a platformei port componentă activă (PCA), iar celălalt pentru orientare axială şi/sau transmiterea unui cuplu activ unui efector final. Cele două componente lucrează împreună având definit acelaşi sistem de coordonate. Caracterul „activ” al platformei rezultă din capacitatea de a transmite un cuplu.
Domain	Automation, measuring and control equipment

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**AUTOMATED MEDICAL INSTRUMENT FOR ROBOTIC ASSISTED BIOPSY**
Authors	**VAIDA CĂLIN, BÎRLESCU IOSIF, GHERMAN BOGDAN, TUCAN PAUL, PLITEA NICOLAE, PÎSLĂ DOINA**
Patent / patent application N°	OSIM no. A/00936/29.11.2016
Description	The present invention refers to an automated medical instrument for biopsy that uses a biopsy gun which is manually mounted in the instrument supporting frame. The biopsy gun is actuated on a linear trajectory, which in turn leads to the needle insertion/retraction, and it is fired using a pushing mechanism. Mounting the instrument on a robotic system leads to the robotic assisted biopsy task. Invenția se referă la un instrument medical automatizat pentru biopsie, conceput să execute procedura de biopsie folosind un pistol de biopsie care este montat manual în suportul instrumentului. Pistolul este deplasat pe o traiectorie lineară de către instrument, pentru a realiza inserția/retrația acului și este acționat prin intermediul unui mecanism de apăsare pentru prelevarea țesutului, obținându-se procedura automatizată de biopsie atunci când instrumentul este montat pe un robot.
Domain	Automation, measuring and control equipment

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**METHOD FOR MULTI-FUEL SUPPLY OF INTERNAL COMBUSTION ENGINES WITH AEROSOLS GENERATED THROUGH ULTRA-SONICATION FROM BIOFUELS BASED ON ALCOHOLS**
Authors	**BALDEAN DORU, MARIASIU FLORIN, BURNETE NICOLAE VLAD**
Patent / patent application N°	OSIM no. A/00407/06.09.2016
Description	The patent refers to a method of multi-fuel supply of the internal combustion engines, with aerosols produced through ultra-sonication from bio-fuels based on alcohols. The method according to proposed patent consists in using a device of fumigation made from a biofuel tank connected with a bio-fuel steady-state level chamber, a main ultra-sonication chamber in which is placed an ultrasonic emitter. Following the interaction of Ultrasounds with bio-fuel volume, due to the cavitation phenomena there are produced some bio-fuels aerosols, which are downloaded through a connecting pipe and transported inside the combustion chamber of internal combustion engine. Invenția se referă la o metodă de alimentare multicombustibil a motoarelor cu ardere internă, cu aerosoli produși prin ultrasonare din biocombustibili pe bază de alcooli. Metoda conform invenției constă în folosirea unui dispozitiv de fumigare format dintr-un rezervor cu biocombustibil aflat în legătură cu o cameră de nivel constant al biocombustibilului, o cameră principală de ultrasonare în care este dispus un emițător de ultrasunete.
Domain	Automobiles and road security

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**ELECTROMECHANICAL ACTUATOR WITH ELECTRONIC CONTROL DEVICE**
Authors	**ŞTEFAN BREBAN, PETRE-DOREL TEODOSESCU, ADRIANA-VOICANEAG, MIHAI CHIRCA**
Patent / patent application N°	OSIM No. A/10001/5.01.2016
Description	The invention presents an electro-mechanical actuator with electronic control device for the rotary drive of any components or equipment that require a maximum rotation of 180 degrees. The electromechanical actuator according to the invention is composed of a rotor having one or more permanent magnets with radial magnetization, mounted / fitted by means of a clamping bushing, or glued, on a shaft; the shaft being mounted on two bearings, each bearing being integrated in a plate made from a high magnetic permeability material; from coils placed around the stator poles, the stator poles being arranged on either side of the magnet / magnets placed on the rotor; the stator poles are mounted on some supports with high magnetic permeability, the supports are fixed on the ends of some plates to form together a rigid assembly; a circular torsion spring which is mounted around the rotor shaft, the spring having one end attached to one of the plates made from high magnetic permeability material, and the other end being fixed by means of a connecting element to the rotor axis; an electronic device that provides power to the coils and thus allows the movement between the two homing positions.
Domain	Automation, measuring and control equipment

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**VARIABLE RELUCTANCE MOTOR WITH OUTER ROTOR AND MODULAR CONSTRUCTION FOR E-BIKE APPLICATIONS**
Authors	**NICOLAE FLORIN JURCA, RĂZVAN INŢE**
Patent / patent application N°	OSIM No. A 2016 00756
Description	The patent refers to a variable reluctance synchronous motor with outer rotor and modular construction. The rotor is made up of 6 modules, between modules is an element of non-magnetic separation. Each module is made up of three separate magnetic elements fixed to each other by a dovetail joint. The connecting elements are made of non-magnetic material. Each pole rotor is provided with holes that allow attachment of 3 different lengths of spokes on the same module. Each spoke is fixed by means of safety spring pin. Using this motor with outer rotor and modular construction, facilities maintenance operations for a such systems making them more reliable and simple. Depending on the type of defect can be removed the entire motor or only components (rotor poles, spokes). Invenţia se referă la un motor sincron cu reluctanţă variabilă în construcţie modulară conform invenţiei are rotorul exterior. Rotorul este realizat din 6 module, între aceste module se află câte un element de separaţie nemagnetic. Fiecare modul este relizat din 3 elemente magnetice distincte, fixate între ele cu o îmbinare de tip coadă de rândunică, iar elementele de îmbinare sunt realizate din materiale nemagnetice. Fiecare element metalic al unui pol este prevăzut cu găuri care permit fixarea a 3 lungimi diferite de spiţe pe acelaşi modul.
Domain	Terrestrial, fluvial, maritime and aeronautical transport

Organization	**Technical University of Cluj-Napoca**
Patent / patent application title	**METHOD AND DEVICE FOR HYBRID POSITION SPEED CONTROL APPLIED TO THE INTELLIGENT PLATFORM CONTROL**
Authors	**L. VLADAREANU, R. I. MUNTEANU, T. SIRETEANU, I. DUMITRACHE, E. ALBU, M. ILIESCU, S. CONONOVICI, V. VLADAREANU, R. A. MUNTEANU, O. MELINTE, A. GAL, V. BARBU, M. S. MUNTEANU, D. MITROI, M. MOISESCU, O. CHELARU, I. MIHAI, I. SACALA, GH. FLOREA AND M. MIHAILOVICI**
Patent / patent application N°	OSIM No. A2016 00821/14.11.2016
Description	Invention refers to a method and device for hybrid position speed control of the motion trajectory in 3D space of the robots or mechatronic systems for improve performances by Intelligent Control laws in rescue operations, military applications, in moon experiments and MEMS / NMM applications. The invention has applications to intelligent control platforms for MEMS / NMM systems, rescue operations in critical situations such as natural disasters, terrorist actions, in moon experiments and military applications Metoda si dispozitivul se refera la controlul hibrid, viteza - pozitie, al traiectoriei de miscare generata de elementul efector final al unui robot sau sistem mecatronic, in spatiu 3D, care sunt actionate pe m grade de libertate de actuatoare cu histerezis mecanic ridicat, fiind integrate pe platforme inteligente de control pentru dezvoltarea de sisteme nano-electro-mecanice (NEMS) sau micro-electro-mecanice (MEMS).
Domain	Security, protection, safety – antiterrorism, disasters and accidents

"Lucian Blaga" University of Sibiu

Organization	**"Lucian Blaga" University of Sibiu**
Patent / patent application title	**DEVICE FOR SHARPENING PRISMATIC KNIVES BY ROUND GRINDING**
Authors	**ŢÎŢU AUREL MIHAIL, OPREAN CONSTANTIN, CIOARĂ SILVIU CONSTANTIN, CIOARĂ GHEORGHE ROMEO, DURDUN EMILIA, RĂCHIERU V. E. NICOLETA, SABĂU DAN**
Patent / patent application N°	A 2013 00016 / 04.01.2013
Description	The device is intended to turning hemispherical ends of rod type parts. Using two identical devices placed in parallel, can simultaneously process both ends of the rods supporting head restraints of some cars. The tools are fixed in two closed places, radial, eccentric and inclined practiced into the body of the device. After each regrinding of prismatic tool, his cutting edges will be implicit in the center plane of the device body as a result of contact with the front of correspondent positioning screw. It requires only initial adjustment. Invenţia se referă la un dispozitiv pentru ascuţit cuţite prismatice profilate prin rectificare rotundă destinate, de exemplu, echipării dispozitivelor pentru strunjit capete semisferice la piese de tip tijă. Dispozitivul pentru ascuţit cuţite prismatice profilate prin rectificare rotundă, conform invenţiei, înlătură dezavantajul menţionat prin aceea că, având o construcţie simplă şi un cost redus, permite ascuţirea cuţitelor prismatice profilate prin rectificare rotundă, fie plană, fie conică.
Domain	Industrial Engineering

Organization	**"Lucian Blaga" University of Sibiu**
Patent / patent application title	**GREENHOUSE INSULATION AGAINST LOSSES THROUGH GROUND THERMAL CONDUCTION**
Authors	**OPREAN CONSTANTIN, OPREA NLETIȚIA, ŢÎŢU AUREL MIHAIL, BONDREA IOAN, MĂRGINEAN ION, MOLDOVAN ALEXANDRU-MARCEL, BOGORIN-PREDESCU MARCEL**
Patent / patent application N°	A 2012 00845 / 20.11.2012
Description	Greenhouse insulation against losses through ground thermal conduction for improving the structure of the vegetable and flower greenhouses' foundation by inserting special under-layers with thermal conduction insulation role to the basic earth shell starting from the construction phase. Invenția este destinată pentru îmbunătăţirea structurii fundaţiei serelor legumicole şi floricole, prin intercalarea unor substraturi speciale cu rol de izolare termică de conducţie faţă de scoarţa terestră de bază, încă din faza de construcţie. *Principiu activ utilizat:* intercalarea unei structuri speciale de izolaţie, cu o conducţie termică foarte redusă, între solul fertil în care se dezvoltă rădăcinile plantelor şi scoarţa terestră pe care sunt construite serele, pentru a reduce substanţial pierderile prin conducţia termică terestră; în modul convenţional, izolarea serelor se face numai pentru pierderile prin pereţii şi acoperişul serelor, adică pentru a împiedica răcirea aerului de sus şi lateral, noua izolaţie împiedicând răcirea solului venind de jos.
Domain	Industrial Engineering

Organization	**"Lucian Blaga" University of Sibiu**
Patent / patent application title	**COMPUTER CHAIR WITH AN ACTIVE PRINCIPLE OF SPINE RELAXATION**
Authors	**BONDREA IOAN, ŢÎȚU AUREL MIHAIL, OPREAN CONSTANTIN, MĂRGINEAN ION, MOLDOVAN ALEXANDRU MARCEL, BOGORIN-PREDESCU ADRIAN**
Patent / patent application N°	A 2013 00825 / 11.11.2013
Description	For those persons working long hours behind the computer, was created with the purpose of reducing the negative effects on one's health and the stressful effects of the spine's continuous compression during continuous immobilization of the human body in the actual work behind the computer and to reduce and remove the already accumulated affliction of the spine due to prolonged work previously done at the computer. Destinație: Pentru persoanele care lucrează timp îndelungat la calculator, fiind realizat în scopul de a reduce efectele negative pentru sănătate şi efectele stresante ale comprimării continue a coloanei vertebrale pe timpul imobilităţii îndelungate a corpului uman în lucrul efectiv la calculator şi de a micşora şi înlătura afectarea deja acumulată a coloanei vertebrale în urma lucrului îndelungat efectuat anterior la calculator. Prin aplicarea invenţiei se obţin următoarele avantaje: reducea stresului în lucrul la calculator; creşterea productivităţii prin eficienţa efectelor de relaxare; menţinerea sănătăţii lucrătorilor; refacerea sănătăţii coloanei vertebrale deja afectate.
Domain	Industrial Engineering

Organization	**"Lucian Blaga" University of Sibiu**
Patent / patent application title	**DEVICE AND METHOD FOR ELECTRONIC MEASUREMENT OF LEAF SPRINGS QUALITY**
Authors	**BORZA IOAN SORIN, ŢÎŢU AUREL MIHAIL**
Patent / patent application N°	A 2015 00003 / 05.01.2015
Description	The invention consists of a device and a method of electronic measurement of the dimensional quality of plate springs, in the technological field of leaf springs. The invented device and method cancel the above-mentioned disadvantages, ensuring a specific verification bench for plate springs; the spring to be measured is attached to this bench which, using transducers and a dedicated program computer, ensures immediate results of the necessary technological measurements made. Dispozitiv şi metodă de măsurare electronică a calităţii arcurilor foi, constând în preluarea într-un ansamblu de dispozitive a datelor mecanice reale ale arcurilor foi, imediat după procesul de producţie a lor, conversia lor electrică digitală, interfaţa rea cu un sistem de calcul prevăzut cu program ce aplică tehnicile obiectuale ale bazelor de date, asupra bazelor de date relaţionale. Aplicarea dispozitivului şi metodei de măsurare permite mărirea productivităţii procesului de testare a arcurilor produse şi o gestionare operativă a informaţiilor despre ele.
Domain	Industrial Engineering

Organization	**"Lucian Blaga" University of Sibiu**
Patent / patent application title	**LARINGOSCOPE USED IN MEDICAL EMERGENCIES**
Authors	**SABĂU DAN, SABĂU MARIANA, SABĂU ALEXANDRU DAN, SMARANDACHE ANDREEA MARIA, DUMITRA ANCA MARIA, SMARANDACHE CĂTĂLIN GABRIEL, ȚÎȚU AUREL MIHAIL**
Patent / patent application N°	A 2015 00002 / 05.01.2015
Description	The invention referes to a laryngoscope used for medical emergencies, for tracheal intubation, witch is considered the best method to ensure a good and protected airway during resuscitation. Tracheal intubation is a good choice when we have trained and experienced personnel. It is considered to be superior to other techniques that ensure good and free airways, because when is done correctly realises: Functional airways, Protected airways, Posibility of aspiration, Posibility of correct ventilation during thoracic compressions, Liberty of a member of resuscitation team, Alternative way for volatile drugs. Prezenta intervenție se referă la un laringoscop destinat urgențelor medicale, pentru a efectua intubația traheală, care este percepută ca fiind cea mai bună metodă de asigurare a unei căi aeriene patente și protejate intrare suscitare. Intubația traheală reprezintă o metodă de ales atunci când există personal cu abilități și experiență corespunzătoare. Este considerată a fi superioară tuturor celorlalte tehnici de asigurare a libertății căilor aeriene superioare.
Domain	Industrial Engineering

Organization	**"Lucian Blaga" University of Sibiu**
Patent / patent application title	**PROCEDURE OF THE RE-TREATMENT OF TEXTILE MATERIALS DYED WITH DIRECT DYES**
Authors	**COMAN DIANA , GRIGORIU AURELIA , DRĂGAN STELA ECATERINA, GHIMICI LUMINIŢA**
Patent / patent application N°	118314 / 2003
Description	The invention is referring to a procedure of retreatment of dyeing of cellulosic fibres made materials, performed with direct dyes, in order to enhance both the washing fastness and hue's stability. The method relies on a textile material treatment with a cationic product of polycondensation of epychloro-hydrine with amines. By invention application a superior valuing of the textile materials dyed with direct dyes is achieved through the enhancement of functional and comfort features, the maintenance of touch and of colors lightness, as well the reduction of the environment pollution. Invenţia se referă la un procedeu de stabilizare a vopsirilor cu coloranţi direcţi, pe fibre celulozice, şi constă dintr-o operaţie de tratare a materialului textil într-o baie ce conţine o cantitate de 1.94- 3% produs cationic de policondensare a epiclorhidrinei cu dimetilamina şi tri-etilentetramina, la un raport de flotă Hm = 1/50 (hidromodulul) şi la o temperatură de 30°C, timp de 30 min. Suportul textil celulozic este vopsit cu o soluţie conţinând coloranti direcți de tipul CI Direct Red 80, CI Direct Blue 71, CI Direct Black 56 cu concentrația de 2%, NaCl 10% şi Na_2C0_3 1%, concentraţiile fiind raportate la cantitatea de material.
Domain	Industrial Engineering

Organization	**"Lucian Blaga" University of Sibiu**
Patent / patent application title	**RE-TREATMENT PROCEDURE OF DYEING WITH DIRECT DYES ONTO CELLULOSIC FIBRES**
Authors	**COMAN DIANA , GRIGORIU AURELIA , DRĂGAN STELA ECATERINA, GHIMICI LUMINIŢA**
Patent / patent application N°	118809 / 2003
Description	The invention is referring to a procedure of retreatment of dyeing of cellulosic fibres made materials, performed with direct dyes, in order to achieve their stabilization. The method relies on a textile material treatment with a cationic product realized by the polymerization of epychloro-hydrine with a dimethyl-amine and a poly-functional amine. The invention shows the advantage of employing of a product with a reduced toxicity and a simple application and the obtaining of sustainable textile supports. Invenția se referă la stabilirea componentelor flotei de tratare şi a parametrilor de aplicare a acestora astfel încât să conducă la îmbunătăţirea rezistenţelor la tratamente umede cu modificări minime de culoare, cât şi folosirea unui produs cationic cu structură liniară și stabilitate mărită în timp. Procedeul de retratare a vopsirilor cu coloranţi direcţi pe fibre celulozice, se realizează printr-o operaţie de tratare a materialului textil vopsit într-o baie cu o soluţie, urmată de spălarea, stoarcerea şi uscarea materialului, soluţia de tratare conţinând epiclorhidrină, dimetilamină şi o amină polifuncţională.
Domain	Industrial Engineering

"Ştefan cel Mare" University of Suceava

Organization	**"Stefan cel Mare" University Suceava**
Patent / patent application title	**PIEZO-THERMAL MEASURING SYSTEM**
Authors	**GHEORGHE GUTT, VALENTIN POPA**
Patent / patent application N°	OSIM RO130704/2015 /A2
Description	The invention relates to a detector for converting the intensity of low frequency electromagnetic radiation from the environment into a proportional frequency variation of oscillating circuit, the frequency being measured with a particularly high piezo-thermic sensitivity. Invenţia se referă la un detector destinat transformării intensităţii radiației electromagnetice de joasă frecvență din mediul ambiant într-o variaţie proporţională de frecvență a unui circuit oscilant, frecvenţa fiind măsurată cu o sensibilitate deosebit de ridicată pe cale piezo-termică
Domain	Electromagnetic Shilding - Environment – Ecology, Ecological Management, Environmental Protection and Monitoring

Organization	**Stefan cel Mare University Suceava**
Patent / patent application title	**PROCESS AND AUTOMATIC MACHINE FOR MAKING CORRECTION PLUGS**
Authors	**GHEORGHE GUTT**
Patent / patent application N°	OSIM RO127737/2012/B1
Description	Automatic machine for the production of correction plugs to replace the black falling nodes of the timber in order to increase its quality. The equipment includes automatic debit system. Maşină automată pentru fabricarea cepurilor de corecţie destinate inlocuirii nodurilor negre căzătoare din cherestea in scopul innobilarii acesteia. Echipamentul include şi sistemul de debitare automată
Domain	Environment – Ecology, Ecological Management, Environmental Protection and Monitoring

Organization	**Stefan cel Mare University Suceava**
Patent / patent application title	**AUTOMATIC MACHINE FOR MACHINING HEADS OF CYLINDRICAL WOOD TAILS FOR VARIOUS HAND TOOLS**
Authors	**GHEORGHE GUTT, VALENTIN POPA**
Patent / patent application N°	OSIM A00978/2016
Description	It is high performance equipment, fully automatic, of high productivity and lower production costs. It is composed of hemispherical milling unit to one end of the wooden rods, a tapered milling unit to the other end of the wooden rod, an automatic feeding system of wooden rods, an automatic machine tool feeding magazine. Este un echipament performant, complet automat, de productivitate ridicată şi costuri de producţie reduse. Are în compunere o unitate de frezare semisferică a unui capăt al tijelor de lemn, o unitate de frezare tronconică a celuilalt capăt al tijei de lemn, un sistem de avans automat al tijelor de lemn, o magazie de alimentare automată a maşinii.
Domain	Mechanics and Machine Industry

Organization	**Stefan cel Mare University Suceava**
Patent / patent application title	**LOW FREQUENCY ELECTROMAGNETIC RADIATION ALARM SYSTEM**
Authors	**GHEORGHE GUTT, VALENTIN POPA, CRISTIAN FLORIN - ALEXUC**
Patent / patent application N°	OSIM RO130941/2016/A2
Description	Portable and capsulated small-size electronic device of labor protection designed for staff working in high and medium intensity low-frequency electromagnetic radiation. Exceeding the permitted electromagnetic radiation intensity level is audible and luminous signalized. Mijloc electronic de protecţie a muncii, capsulat, portabil şi de dimensiuni mici, destinat personalului care lucrează în medii cu radiație electromagnetică de joasă frecvență, de intensitate mare şi medie. Depăşirea nivelului intensităţii radiaţiei electromagnetice permise este semnalizată sonor şi luminos
Domain	Electromagnetic Shilding - Environment – Ecology, Ecological Management, Environmental Protection and Monitoring

Organization	**Stefan cel Mare University Suceava**
Patent / patent application title	**ELECTROMAGNETIC SHIELDING PANEL**
Authors	**AMARIEI SONIA, GUTT GHEORGHE, GUTT ANDREI**
Patent / patent application N°	OSIM/RO127.030/2012
Description	Decorative panel made from concentric rings of wood chipper behind which are placed invisible cage copper coils and nets of composite material for shielding of high frequency electromagnetic radiation. Tablou ornamental ce are in spate, invizibi, inele l de cupru in scurtcircuit pentru joasa frecventa si plase din material compozit si un număr mare de circuite electromagnetice oscilante pasive de tip L-C pentru ecranarea radiaţiilor electromagnetice de inaltă frecvenţă
Domain	Electromagnetic Shilding - Environment – Ecology, Ecological Management, Environmental Protection and Monitoring

Organization	**Stefan cel Mare University Suceava**
Patent / patent application title	**BIKES WALKING ASSIST DEVICE**
Authors	**GHEORGHE GUTT, VALENTIN POPA**
Patent / patent application N°	OSIM A00962/2014/A2
Description	The invention relates to an electronic system for precise measurement of speed, acceleration and braking intensity of the bike**.** All informations are correlated precisely with the GPS electronic map of the route traveled by the cyclist. The same system allows recording and storing information about the shock at a brake or a bicycle frontal impact with another static body or in motion. Invenția se referă la un sistem electronic de măsurare precisă a vitezei, a aceleratiei şi intensităţii frânării unei biciclete. Toate informaţiile sunt corelate precis cu harta electronică GPS a traseului parcurs de biciclist. Acelasi sistem permite înregistrarea și stocarea informaţiilor despre nivelul șocului la o frânare bruscă sau la un impact frontal al bicicletei cu un alt corp static sau în mișcare.
Domain	Automation Control and Measuring Equipment

Organization	**Stefan cel Mare University Suceava**
Patent / patent application title	**VIDEOSPECTROMETER**
Authors	**GHEORGHE GUTT,SONIA GUTT, TODIRICA FLORIN-SORIN, ANDREI GUTT**
Patent / patent application N°	OSIM RO127336/2012/B1
Description	Apparatus for the determination of elemental chemical composition by atomic emission spectrometry, of welding cord or the walls of a thermal cutting edge, made on and in metals, by electrical, gas or laser processes. The spectrometer can also be used to determine the chemical composition of molten metal materials, furnace batch composition and conversion, as well as to determine the chemical composition of hot gases resulting from explosions with milliseconds run time. Aparat pentru determinarea compoziţiei chimice elementale, prin spectrometrie de emisie atomică, a unui cordon de sudură sau a pereţilor unui rost de tăiere termică, realizate pe şi în metale, prin procedee electrice, cu gaze sau cu laser. Spectrometrul poate fi folosit şi pentru determinarea compoziţiei chimice a unor materiale metalice topite, a compoziţiei şarjelor de furnal şi de convertizare precum şi pentru determinarea compoziţiei chimice a gazelor fierbinţi rezultate la explozii cu timpi de desfăşurare din domeniul milisecundelor.
Domain	Metallurgie and Material Science

Organization	**Stefan cel Mare University Suceava**
Patent / patent application title	**AUTOMATIC MACHINE FOR MANUFACTURING CORRECTION PLUGS**
Authors	**GHEORGHE GUTT , ANDREI GUTT, SONIA AMARIEI**
Patent / patent application N°	OSIM A001059/2016
Description	The invention relates to an automatic machine for the manufacture of correction plugs for falling black nodes in lumber with thicknesses between 5 and 10 mm and diameters between 10 and 55 mm, the standardized pitch between diameters being from 5 to 5 mm and having one of beveled flat sides at 1.5x45$^{o.}$. Invenţia se referă la o maşina automată destinată fabricării unor cepuri de corecție a nodurilor negre căzătoare din cherestea având grosimi cuprinse între 5 și 10 mm şi diametre cuprinse între 10 și 55 mm, pasul standardizat între diametre fiind din 5 în 5 mm și având una din laturile plane teșită la 1,5x45^{o}
Domain	Environment –Ecology, Ecological Management, Environmental Protection and Monitoring

Organization	**Stefan cel Mare University Suceava**
Patent / patent application title	**MINI AUTOMATIC HORIZONTAL LATHE FOR MAKING WOODEN CORRECTION PLUGS.**
Authors	**GHEORGHE GUTT**
Patent / patent application N°	OSIM A00670/2014/A2
Description	Complete automatic equipment, of high productivity for manufacture of wooden correction plugs intended to replace the black falling nodes of lumber to improve its quality. Echipament complet automat, de inalta productivitate, destinat fabricarii cepurilor de corecţie de lemn destinate înlocuirii nodurilor negre căzătoare din cherestea in vederea innobilării acesteia
Domain	Environment –Ecology, Ecological Management, Environmental Protection and Monitoring

Organization	**Stefan cel Mare University Suceava**
Patent / patent application title	**APPARATUS FOR AUTOMATIC DETERMINATION OF MEMBRANE PERMEABILITY TO AQUEOUS LIQUIDS**
Authors	**SONIA AMARIEI, GHEORGHE GUTT, LILIANA NOROCEL, ROXANA PUŞCASELU**
Patent / patent application N°	OSIM A00315/2017
Description	The apparatus is an important means of investigation for the automatic determination of aqueous permeability of the membranes underlying the manufacture of edible glasses Aparatul reprezintă un mijloc de investigare important pentru determinarea automată a permeabilităţii la lichide apoase a membranelor care stau la baza fabricarii paharelor comestibile
Domain	Environment –Ecology, Ecological Management, Environmental Protection and Monitoring

Organization	**Stefan cel Mare University Suceava**
Patent / patent application title	**DEVICE FOR DETERMINING FOOD ANISOTROPY**
Authors	**AMARIEI SONIA, GUTT GHEORGHE, OROIAN MIRCEA - ADRIAN, SĂNDULEAC ELENA, PĂDUREŢ SERGIU**
Patent / patent application N°	OSIM A00674/ 2013
Description	Optoelectronic device for measurement anisotropy of solid, soft, viscoelastic and viscoplastic food during their progressive load, in advanced conditions of thermostatting, with an electronic texturometer. Dispozitiv optoelectronic care permite măsurarea anizotropiei produselor alimentare solide și semisolide văscoelastice şi văscoplastice în timpul solicitării progresiv crescătoare a acestora, in condiţii de termostatare avansată, cu un texturometru electronic.
Domain	Food Products and Technologies–Food Bio-Security

University of Agricultural Sciences and Veterinary Medicine of Iași

Organization	**USAMV Iasi**
Patent / patent application title	**PHYSIOTHERAPHY PROCEDURES TO RECUPERATE SPINAL WALKING IN DOGS WITH IRREVERSIBLE THORACOLUMBAR SPINAL CORD LESION**
Authors	**HENEA MADALINA-ELENA, TIPA GEORGIANA ANDREEA, SOLCAN GHEORGHE**
Patent / patent application N°	
Description	Many of spinal cord lesions are inducing irreversible paraplegia. Spinal walking (SW) is described as the acquisition of an involuntary motor function in paraplegic dogs and cats without pain perception affected by a thoracolumbar lesions. Although the dogs did not present any profound sensitivity, it was noticed that through an intense physiotheraphy program they regained a certain gait with the help of reflexes, the so called “spinal walk” (SW). It’s kind of a miracle that some dogs with severe spinal cord injuries learn to walk, even though their legs can’t communicate with their brain. Dogs with irreversible thoracolumbar lesion undergoing intensive physiotherapy treatment can acquire spinal walking. Younger age and light weight are positively associated with the development of SW gait. For succesfull results the most important parammeter was the number of days that have passed since the traumatism ocurred, no significant improvements being obtain in injuries older than 30 days.
Domain	

University of Agronomic Sciences and Veterinary Medicine of Bucharest

Organization	**USAMV Bucharest**
Patent / patent application title	**SUSTAINABLE VALORIZATION OF BY-PRODUCTS FROM MEDICINAL AND AROMATIC PLANTS INDUSTRY INTO VALUE-ADDED PRODUCTS**
Authors	**MILEN I. GEORGIEV**
Patent / patent application N°	
Description	The main objective of SuSMAPWaste project is the development of *green* technologies for obtaining a fibrous support material from oleaginous plants waste, enriched with a *penta-component formula* with *multi-target effect*(antioxidant, probiotic and detoxifying) from medicinal and aromatic plants waste, for *human consumption.* The project is going to develop tools, methodologies and processes for the valorization of wastesthrough an *integrated bio approach,* using advanced biotechnological methods. Research and innovation actions are focused on the valorization of natural compounds with multi-target effect, which are essential for the development of a circular bio - economy and for the smart and efficient use of green resources. Obiectivul principal al proiectului este dezvoltarea tehnologiilor verzi de obținere a unui material suport fibros din deșeuri de plante oleaginoase, îmbogățit cu o *formulă penta - component* cu *efect multiplu* (antioxidant, probiotic și detoxifiant) din deșeuri de planteme dicinale și aromatice, pentru consumulu man.
Domain	Bioeconomy

Technical University “Gheorghe Asachi” of Iasi Lost Steps Hall and Aula

INVENTICA 2016 – Visit to The Palace of Culture of Iași

Universities from MOLDOVA

Technical University of Moldova

Organization	**Technical University of Moldova**
Patent / patent application title	**MODELING CLOTHES FORM FROM FELTED MATERIALS**
Authors	**OLGA SUGAC OLESEA, PLUGARU**
Patent / patent application N°	
Description	These clothing items represent original eco-friendly models, made by felting wool fiber, which assured increased consumption properties of the obtained garments. In the process of designing these felted items some special drafting and modeling methods were used, as well as different embellishment techniques. Produsele de îmbrăcăminte reprezintă modele de autor ecologice realizate în tehnica de împîslire din fibre de lîna, ce a asigurat proprietățile de consum sporite ale modelelor obținute. În elaborarea modelelor au fost utilizate metodele specifice de modelare a formelor vestimentare din materiale împîslite cu folosirea diferitor tehnici de garnisire a acestor materiale.
Domain	Textile products and technologies, confections and design.

Organization	**Technical University of Moldova**
Patent / patent application title	**DEVICE FOR MEASUREMENT OF THE MICROWIRE CORE DIAMETER AND THE GLASS COATING THICKNESS BY USING THE OPTICAL TRANSPARENCY PHENOMENA.**
Authors	**DOROGAN VALERIAN; ZAPOROJAN SERGIU; MUNTEANU EUGENIU; LARIN VLADIMIR; PAVEL VICTOR.**
Patent / patent application N°	MD 941 Z/ 2016.03.31, MD 942 Z. / 2016.03.31
Description	The device include using two collimating sets with visible light and two collimating sets with of ultraviolet light, which include: light-emitting lens, collimating lens, optical shutters of rectangular or oval shapes, focusing lens for the light photo-detectors. The measuring method is based on light flows attenuation by microwire in the way as there are generated photocurrents ofvarious values, depending on the microwire coat thickness and core diameter. The device include blocks of differential amplification which amplifies and filter the photocurrents, creates electrical signals with various voltage values, are converted into digital values used by the calculation unit for calculation of the core diameter and the microwire coat thickness. Dispozitivul constă în utilizarea a două ansambluri de colimare pentru lumină vizibilă şi două ansambluri de colimare pentru lumină ultravioletă, care includ: emiţătoare de lumină, lentile colimatoare, obturatoare optice de formă dreptunghiulară sau ovală, lentile de focalizare a luminii pe foto-detector.
Domain	Electricity and electronics.

Organization	**Technical University of Moldova**
Patent / patent application title	**DEVICE OF CONTROL AND MAINTENANCE OF THE THERMAL REGIME IN STRATIFICATION INSTALLATIONS.**
Authors	**DOROGAN VALERIAN; ZAPOROJAN SERGIU; MUNTEANU EUGENIU; SECRIERU VITALIE; DOROGAN ANDREI.**
Patent / patent application N°	
Description	The device is consisted of a temperature sensor and a block for controlling the heater. The device operation is based on temperature measurement of substitute soil and control of low voltage heater. Thus, the overheat of trees grafting region is excluded and the maintenance dynamics of the treatment temperature is provided. The device is manufactured based on ATmega microcontroller and a DS18B20 digital sensor. It is equipped also with a keyboard with Q-touch technology. It tracks the break and shortcuts for the heater circuit with light and sound alert signal output. It offers the possibility of autonomous operation or as a part of a local network. Dispozitivul conţine un traductor de temperatură şi un bloc de comandă cu încălzitorul. Funcţionarea dispozitivului se bazează pe măsurarea temperaturii compusului care înlocuieste solul şi comanda cu încălzitorul de tensiune joasă. Astfel, este exclusă supraîncălzirea zonei altoirii pomilor şi este asigurată o dinamică prestabilită a temperaturii de tratament. Este confecţionat în baza unui microcontroler din familia ATmega şi traductor de temperatură digital DS18B20, conţine un panou de comandă asamblat prin metoda Q-touch.
Domain	Electricity and electronics.

Organization	**Technical University of Moldova**
Patent / patent application title	**EXCITONIC POLARITONS IN $ZNAS_2$ NANOCRYSTALS.**
Authors	**N.N. SÎRBU, V.V. URSAKI, A.V. DOROGAN. V.V. DOROGAN**
Patent / patent application N°	
Description	The proposed method of high resolution spectroscopy gives the possibility to study the spectral dependencies of ordinary and extraordinary dispersion of refractive index for $ZnAs_2$ crystals in the region of excitonic transitions. The method permits to estimate the magnitudes of electrons $m_c^* = 0.10m_0$ and holes $m_{v1}^* = 0.89m_0$ effective masses. It was observed the change of holes mass m_{v1}^* from $1.03m_0$ down to $0.55m_0$ with temperature change from 10K up to 230K. The fundamental states and parameters of C and D excitons, which are formed by the V_3 - C_1 and V_4 - C_1 zones, had been determined. Metoda spectroscopiei de rezoluție înaltă propusă oiferă posibilitatea studiului dependențelor spectrale ale dispersiei ordinară și extraordinară a indicelui de refracție pentru cristalele $ZnAs_2$ în regiunea tranzițiilor excitonice. Metoda permite estimarea valorilor maselor efective ale electronilor $m_c^* = 0.10m_0$ și golurilor $m_{v1}^* = 0.89m_0$. S-a observat schimbarea masei golurilor m_{v1}^* de la $1.03m_0$ până la $0.55m_0$ la modificarea temperaturii de la 10K până la 230K. Au fost determinate stările fundamentale și parametrii excitonilor C și D, care sunt formați de către zonele V_3 - C_1 și V_4 - C_1.
Domain	Electricity and electronics.

Organization	**Technical University of Moldova**
Patent / patent application title	**PROCESS FOR THE PRODUCTION OF FRUIT AND BERRY JAM AND MARMALADE WITH PROGRAMMED TASTE.**
Authors	**D. PALADI, P. TATAROV**
Patent / patent application N°	MD-123
Description	The process, according to the invention, includes preparation of the mixture of raw material, sucrose and gelling agent and boiling mixed in quantities providing the obtaining of a taste, expressed in sweet taste degree units, constituting, respectively, for the sour-sweet taste 15.0...16.0, sweet-sour taste 16.0...17.5 and sweet taste 17.6...22.0 units, at the same time the quantities of raw material and sucrose are calculated depending on the prescribed content of soluble dry substances in the finished product, which is determined by using the elaborated formula. Procedeul, conform invenţiei, include pregătirea amestecului din materie primă, zaharoză şi agent de gelificare şi fierberea, totodată materia primă şi zaharoza se amestecă în cantităţi care asigură obţinerea unui gust, exprimat în unităţi ale gradului de gust dulce, care constituie, respectiv, pentru gustul acru-dulciu 15,0...16,0, dulce-acriu 16,0...17,5 şi dulce 17,6...22,0 unităţi, totodată cantităţile de materie primă şi zaharoză se calculează în funcţie de conţinutul prestabilit de substanţe uscate solubile în produsul finit, care este determinat utilizând formula elaborată.
Domain	Food products and technologies – food bio-security.

Organization	**Technical University of Moldova**
Patent / patent application title	**DEVICE FOR CLEANING EXHAUST GAS FROM SOOT PARTICLES OF INTERNAL COMBUSTION ENGINE**
Authors	**PETROV OLEG, MANOLI ILIE DÂNTU SERGIU, BEIU ILIE**
Patent / patent application N°	a 20170048
Description	The device comprises: a) a semi-spherical receiving chamber 6 and a confusor 8 for centrifugal separation of liquid and solid fractions from incomplete combustion; b) a high voltage pulse source with a negative crown electrode 11 for ionizing fluids and solid exhaust fractions; c) sedimentation chamber 1 for collecting liquid and solid fractions on the metal electrode strip 2 and contacting them with nitrogen dioxide and atomic oxygen; d) reservoir with cleaning liquid 17 and atmospheric valve 18 and nozzle neck 9 for spraying a cleaning fluid into the exhaust gas stream and cleaning the precipitation of the electrode 2; e) an exhaust gas recirculation valve 15 in the lower part of the settling chamber 1 for blowing the liquid jet gas stream to clean the liquid and solid fractions of the precipitation chamber 1 through the engine exhaust gas recirculation line Internal combustion in the combustion chamber.
Domain	Automobiles and road security

Organization	**Technical University of Moldova**
Patent / patent application title	**SUN SYSTEM GUIDANCE OF PHOTOVOLTAIC PANELS**
Authors	**BOSTAN ION, DULGHERU VALERIU, BOSTAN VIOREL, DUMITRESCU CĂTĂLIN, CIOBANU RADU, CIOBANU OLEG, COZMA ION**
Patent / patent application N°	B.I. nr. 4419, 2016.12.31.
Description	The invention relates to the thermal power plants without fuel burning and CO_2 production, namely to plants for solar energy conversion into electrical energy. The photovoltaic station include a group of panel with solar cells, and only one mechanism for automatic sun orientation.
Domain	

Organization	**Technical University of Moldova**
Patent / patent application title	**AEOLIAN TURBINE WITH HORISONTAL AXLE**
Authors	**BOSTAN VIOREL, BOSTAN ION, DULGHERU VALERIU, DUMITRESCU CĂTĂLIN, CIOBANU RADU, CIOBANU OLEG, GUŢU MARIN**
Patent / patent application N°	BI 4487 (MD), 2017.05.31 ; BI 1127 Y, 2017.02.28.
Description	To increase the conversion efficiency of wind energy at speeds *V=10-15 m/s* a wind rotor with inclined blades has been designed.
Domain	

Organization	**Technical University of Moldova**
Patent / patent application title	**WAVE ENERGY CONVERSION SYSTEM**
Authors	**BOSTAN VIOREL, BOSTAN ION, DULGHERU VALERIU, DUMITRESCU CĂTĂLIN, CIOBANU RADU, CIOBANU OLEG**
Patent / patent application N°	Decision of patent accordance nr. 8563. Nr deposit 2017-0015; Data deposit 10.02.2017.
Description	The wave energy conversion system includes articulated arms with floating bodies and cylinders of an axial hydromotor. The ends of the rods interacting with the inclined flange of a plank. When floating bodies are lifted by the waves, the rods of the shafts act on the platform, driving it into a precessional movement that turns into rotation of the rotor shaft of the electric generator.
Domain	

Organization	**Technical University of Moldova**
Patent / patent application title	**MODERN BOOK EDITIONS FOR CHILDREN WITH INTEGRATED MAGNETIC "PUZZLE"**
Authors	**VIORICA CAZAC, CRSITINA POPA.**
Patent / patent application N°	
Description	Injection into the wall of digestive tract through fibrogastroduodenoscope of suspension of nanoparticles of gallium nitride with 50 nm in diameter. After injection of nanoparticles in the muscle layer of duodenal wall occurs their activation through ultrasonic field transmitted from the body surface using a piezoelectric transducer powered from a generator of electrical signals with variable amplitude and frequency. Acted under the influence of ultrasonic field less than 1s, nanoparticles are polarized with electrically stimulation muscle contraction occurs with moving of alimentary bolus through the digestive tract. Metod contribute to miniinvawasive treatment of gastrointestinal tracts diseas, deterninated by motilities disturbances. Prezenta invenţie constă în injectarea suspensiei de nanoparticule de nitrura de galiu cu diametru de 50 nm cu ajutortul fibrogastroscopului în tunica musculară a duodenului. Ulterior, au fost stimulate cu ajutorul unui transductor piezoelectric de pe suprafaţa anterioară a abdomenului, cu unde electrice de diferită amplitudă şi frecvenţă. Nanoparticulele polarizate stimulează contracţiile muşchilor intestinali favorizând deplasarea bolului alimentar pe traiectul tractului digestiv. Metoda contribuie la tratamentul miniinvazivă a maladiilor tractului digestiv, care au ca substrat etiologic dereglarea motilităţii lui.
Domain	Medicine - Health Care

Organization	**Technical University of Moldova, Technical University Ghe. Asachi of Iasi and „Davitex Neo" SRL**
Patent / patent application title	**ADAPTED CLOTHING FOR BABY BORN PREMATURELY**
Authors	**VICTORIA DANILA, MARCELA IROVAN, STELA BALAN, ANTONELA CURTEZA**
Patent / patent application N°	1724
Description	Adaptive clothing is designed to meet the specific needs of carrier groups, and through artistic, constructive and technological solutions it is perfectly suited to the anthropomorphological characteristics of the wearer and the conditions of use by facilitating the process of dressing-undressing and wearing the required medical care procedures. The proposed solution is part of strategies to increase the efforts of medical institutions and parents to increase the chances of survival and rehabilitation of preterm babies. Adaptive clothing products for premature babies also provide psychological and moral support to parents through the child's outwardly groomed look, by the use of dimensionally and morphologically adapted products. Îmbrăcămintea adaptivă este proiectată în corespondență cu cerințele specifice ale grupurilor de purtători, iar prin soluțiile artistice, constructive și tehnologice este perfect adaptată caracteristicilor antropomorfologice ale purtătorului și condițiilor de utilizare prin facilitarea procesului de îmbrăcare-dezbrăcare și purtare, a procedurilor de îngrijiri medicale necesare.
Domain	Textile products and technologies, confections and design Health and Biomedicine

Organization	**Technical University of Moldova**
Patent / patent application title	**PROMOTIONAL CATALOGUE OF THE CLOTHING WITH A DRESSING ROOM**
Authors	**VIORICA CAZAC, NICOLETA COLESNIC, LUCIA ADASCALIȚA**
Patent / patent application N°	
Description	Elaboration presents a catalogue of promotion of national brands specialised in the trade of the vestments with the interactively integrated component in the catalogue called the "dressing booth" that helps to choose and match the clothing products as a whole by colour, texture, drawing, dimensional features. "Dressing booth" giving the buyer the opportunity to know the color range, the range of sizes, the compatibility analysis of the products when they are set up in clothing sets offers numerous benefits materialized in time savings, efforts, on-line purchase. Elaborarea prezintă un catalog de promovare a brand-urilor naţionale specializate pe comercializarea ţinutelor vesimentare cu componenta interactivă integrată în catalog întitulată „cabina de probă” care ajută la alegerea și potrivirea produselor de îmbrăcăminte în ansamblu după culoare, textură, desen, caracteristici dimensionale, etc. Cabina de probă care oferă cumpărătorului posibilitatea de cunoaștere a gamei cromatice, gamei de mărimi, analiza compatibilității produselor la constituirea lor în ansambluri vestimentare oferă numeroase beneficii materializate în economie de timp, eforturi, cumpărare la distanță.
Domain	Design and Printing Technology

Academy of Sciences of Moldova

Organization	**Institutul de Energetică**
Patent / patent application title	**CARCASE PENTRU SERE**
Authors	**BURCIU VITALIE, BERZAN VLADIMIR, SIT MIHAIL, ANISIMOV VLADIMIR, BURCIU ANDREI**
Patent / patent application N°	876 si 877
Description	The frame for greenhouse comprises vertical posts (1), rigidly mounted on a base (5), a roof (2) and walls (4), connected to the ground and the roof (2). In the upper part of the posts (1) or at the ends thereof are rigidly fixed devices (3) for lifting and lowering the roof (2), made with screw pairs. At the lower ends of the devices (3) are horizontally fixed plates, on which is fixed the roof (2). The walls (4) are made with the possibility of their folding. Carcasa pentru seră conţine stâlpi verticali (1), montaţi rigid pe o fundaţie (5), un acoperiş (2) şi pereţi (4), uniţi cu solul şi acoperişul (2). În partea de sus a stâlpilor (1) sau la capetele lor sunt fixate rigid dispozitive de ridicare-coborâre (3) a acoperişului (2), executate cu cupluri elicoidale. La capetele de jos ale dispozitivelor (3) sunt fixate orizontal nişte plăci, pe care este fixat acoperişul (2). Pereţii (4) sunt executaţi cu posibilitatea plierii lor.
Domain	The inventions relates to agriculture, namely to frames for greenhouses, used in farms, as well as in individual farms.

Organization	**Institute of Power engineering**
Patent / patent application title	**REGULATOR DE FAZĂ TRIFAZAT CU TRANSFORMATOR**
Authors	**LEV CALININ, ZAITEV DMITRII, MIHAI TIRSU, IRINA GOLUB**
Patent / patent application N°	MD 4397 issued on 31.08.2016
Description	The invention relates to electricity, and can be used for directing active power flows in branches of transmission and distribution networks. The controller contains a three-core magnetic circuit, each core of which has a primary winding and a secondary winding with the same number of coils as well as a control winding with a switching mechanism under load with mobile grounded contacts. The ends of the primary windings are connected to the ends of the secondary windings and to the beginning of the control windings by a three-phase double-ended switch for changing the direction of the phase shift angle. Invenţia se referă la electroenergetică, şi poate fi utilizată pentru dirijarea fluxurilor de putere activă în ramurile reţelelor electrice de transport şi distribuţie. Regulatorul conţine un circuit magnetic cu trei miezuri, pe fiecare miez al căruia sunt amplasate câte o înfăşurare primară şi una secundară cu acelaşi număr de spire, precum şi câte o înfăşurare de reglare cu un mecanism de comutare sub sarcină cu contacte mobile legate la pământ.
Domain	Power flow control in transport network

Organization	**Institute of Power engineering**
Patent / patent application title	**MICROINVERTER FOR PHOTOVOLTAIC PANELS**
Authors	**ERMURACHI IURIE, BERZAN VLADIMIR, MORARU LARISA**
Patent / patent application N°	MD 842 Z
Description	The microinverter includes a filter capacitor, two frequency capacitors and two transistors connected to each other in series. The capacitor and transistor circuits are connected in parallel with the PV source. The common nodes of the capacitors and transistors are connected of the primar winding of the high frequency transformer with the air gap. The secondary coil is connected with an inductance. The micro-inverter further includes a filter capacitor connected in parallel to this inductance by two transistor connected in reverse. Load or AC network is connected with the microinverter via of the filter of superior harmonics. Microinvertorul include un condensator de filtrare, două condensatoare de frecvenţă și două tranzistoare conectate între ele în serie. Circuitele condecatoarelor și tranzistoarelor sun conectate în parallel cu sursa PV. Nodurile de conexiune ale condensatoarelor şi tranzistoarelor sunt conectate cu primarul transformatorului de frecvenţă înaltă executat cu întrefier. Bobina secundară este conectată cu o inductanţă. Micro-invertorul mai include un condensator de filtrare conectat în paralel cu inductanţa aceasta prin doi tranzistori conectați în contrafază.
Domain	Sursele de energie regenerabilă

Organization	**Institute of Power engineering**
Patent / patent application title	**ALTERNATING CURRENT-TO-DIRECT CURRENT VOLTAGE CONVERTER**
Authors	**ERMURACHI IURIE, BERZAN VLADIMIR, ERMURACHI IURIE**
Patent / patent application N°	MD 1040 Z.
Description	The converter contains three branches connected in parallel. The first branch consists of a transistor and a bridge rectifier, connected in series. The bridge terminals are connected in parallel with the AC source and of the filter of superior harmonics. The second branch consists of a capacitor. The third branch consists from the a diode and a transistor, connected in series. The converter contains a high frequency transformer, the ferromagnetic core is made with an air gap. The primary coil is connected at the transistor connection point and the first branch rectifying bridge. Another output connects to the diode and transistor connection point of the third branch. The secondary coil is connected in series with a transistor. Parallel to this circuit is connected of the filter of superior harmonics and the load. Convertorul conţine trei ramuri, conectate în paralel. Prima ramură este formată dintr-un tranzistor şi o punte de redresare, conectate în serie. La bornele punţii sunt conectate în paralel sursă de curent alternativ şi filtrul armonicilor superioare.
Domain	În instalații de sudare electrică, ca sursă de alimentare a computatoarelor, sistemelor de iluminat cu LED, în industrie.

Organization	**Institute of Chemistry,** **Institute of Microbiology and Biotechnology,** **Institute of Applied Physics**
Patent / patent application title	**2,3-butandione-bis((iso)nicotinoylhydrazone)-tris-aqua)iron(III) nitrates monohydrate as stimulators of the synthesis of proteolytic enzymes in the mycelial fungus cultivation of the strain *Fusarium gibbosum CNMN FD 12***
Authors	**BULHAC ION, DESEATNIC-CILOCI ALEXANDRA, CUBA LIUBA, TIURINA JANETTA, BOUROSH PAULINA, DRAGANCEA DIANA, CLAPCO STELIANA**
Patent / patent application N°	a.2016 0073, 2016 06 22
Description	**The essence of the invention consists in** synthesis of new coordinative compounds of iron(III) with Schiff bases, obtained by condensation between 2,3-butandione and nicotinic or isonicotinic acid hydrazide and their biological properties – capacity to act as stimulators of enzymogenesis in fungal strain *Fusarium gibbosum CNMN FD 12* – producer of proteases, cellulases, xylanases. Coordinative compounds are characterized by pentagonal bipyramedal structure; a molecule of Schiff base and one water molecule constitute the equatorial plane, 2,3 -butandione-bis (isonicotinoylhydrazone)-tris-aqua)iron(III) nitrate monohydrate **(I)** or 2,3 -butandione-bis(nicotinoylhydrazone)-tris-aqua)iron(III) nitrate monohydrate **(II)** and two water molecules lie in the axial coordination sites.
Domain	Microbiological industry

Organization	**Institute of Microbiology and Biotechnology**
Patent / patent application title	**LYOPROTECTIVE AND LONG-TERM STORAGE MEDIA *FOR STREPTOMYCES* STRAINS**
Authors	**CHISELITA OLEG, BURTEVA SVETLANA, BIRSA MAXIM, RUDIC VALERIU**
Patent / patent application N°	MD 4473, B1, 2017.03.31; MD 4474, B1, 2017.03.31, 0083/2016, 0084/2016.
Description	The invention deals with utilization of cyanobacterial extracts as lyoprotectants for lyophilization and long-term storage of *Streptomyces* strains mentained in collection. The utilization of extracts of amino acids and oligopeptides (1) and sulfated polysaccharides (2) from *Spirulina platensis* (Nordst) Getil CNMN-CB-02, as lyoprotectant in composition of medium gelatine 2,5%+glucose 7,5 % (control), enhance viability of strains after lyophilization and long-term storage by 18,4-38,0 and 20,5-39,8 %, respectively in comparison with control, in fuction of concentration. These results will contribute to essential eficientization of conservation and storage methods of microorganisms in collection work. Invenţia se referă la utilizarea extractelor cianobacteriene în calitate de lioprotectori pentru liofilizarea şi păstrarea de lungă durată a tulpinilor de *Streptomyces* în colecţie. Utilizarea extractelor de aminoacizi şi oligopeptide (1) şi polizaharide sulfatate (2) din *Spirulina platensis* (Nordst) Getil CNMN-CB-02, ca lipoprotectanţi în compoziţia mediului gelatină 2,5% + glucoză 7,5%, sporeşte viabilitatea tulpinilor după liofilizare şi păstrare de lungă durată.
Domain	Biology - agronomy - horticulture – zoo-technologies

Organization	**Institute of Electronic Engineering and Nanotechnology "D. GHITSU"**
Patent / patent application title	**THE METHOD OF CULTIVATION OF *RHIZOPUS ARRHIZUS* CNMN FD 03 MICROMICETE STRAIN – PRODUCERS OF LIPASE**
Authors	**CILOCI ALEXANDRA, TIURINA JANETTA, GUŢUL TATIANA, CLAPCO STELIANA, BIVOL CEZARA, LABLIUC SVETLANA, DVORNINA ELENA, DVORNICOV DMITRII**
Patent / patent application N°	2016 0124, 2016 11 09
Description	The method for the submerged cultivation of the fungal strain *Rhizopus arrhizus* CNMN FD 03, which involves the inoculation of the sterile nutrient medium with the suspension of spores of the culture grown for 30 days on the oblique surfaces of malt-agar and the cultivation under continuous stirring at the temperature of 28-30ºC for 48 hours; characterized by the fact that prior to the inoculation the inoculum is treated with nanoparticles of iron oxide - Fe_3O_4 with dimension of 70 nm, in the concentration of 0,005-0,010%. The technical result of the invention consists in increasing of lipases biosynthesis by the strain *Rhizopus arrhizus* CNMN FD by 312,5 – 330,5% (around 3,1-3,2 fold). Procedeu de cultivare submersă a tulpinii de fungi *Rhizopus arrhizus* CNMN FD 03 – producătoare de lipaze care include pregătirea suspensiei de spori a culturii de 30 zile, crescută pe suprafeţe înclinate de malţ-agar, inocularea ei pe un mediu nutritiv şi cultivarea la temperatura de 28...30ºC timp de 48 ore, caracterizat prin aceea că suspensia de spori înainte de inoculare se tratează cu nanoparticule de Fe_3O_4.
Domain	Microbiological industry

„Nicolae Testemiţanu" State University of Medicine and Pharmacy of the Republic of Moldova

Organization	**„Nicolae Testemiţanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**NEW SULPHANILAMIDES**
Authors	**PRISACARI VIOREL, TAPKOV VICTOR, BURACIOVA SVETLANA**
Patent / patent application N°	MD 2831
Description	New group of organic compounds from sulfanilamide class with low toxicity and evidenced bactericide activity to a large spectrum of Gram-positive and Gam-negative microorganism. The presented compounds possess bactericidal activity to the Gram-positive and Gam-negative bacteria being of about 2…9 times more, than the prototype (traditional sulfanilamides). The toxicity of the presented compounds is >2000 mg/kg and belongs to the class of compounds with low toxicity. Grup nou de compuși organici din clasa sulfanilamidelor cu toxicitate joasă și cu activitate antibacteriană pronunțată față de un spectru larg de microorganisme grampozitive și gramnegative. Compușii organici prezentați sunt de 2-9 ori mai activi în comparație cu sulfanilamidele clasice.
Domain	Medicine and veterinary medicine

Organization	**„Nicolae Testemițanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**ASSESSING THE SEVERITY OF ACUTE PELVIC INFLAMMATORY DISEASE**
Authors	**CERNEŢCHI OLGA, CAUŞ CĂTĂLIN, CAUŞ NATALIA, RAILEAN LUDMILA, ILIADI TULBURE CORINA, OSTROFEŢ CONSTANTIN**
Patent / patent application N°	Certificate of registration of authorship SAIP (AGEPI). Series OŞ MD nr. 5383, 01 .08. 2016
Description	The method consists: evaluating the patients using the MIL score (clinical manifestations + imaging data + laboratory data) is aimed at determining the severity of the acute pelvic inflammatory disease (APID) and at optimizing the medical and surgical conduct as well. Benefits: This mathematical score sums up three parameters: clinical Manifestations, Imaging data and Laboratory data (MIL), which then establishes the degree of severity (mild, moderate and severe). A MIL score (table) value of up to 15 indicates a mild form of APID; values between 16 to 28 point to moderate clinical form of APID and a score greater than 29 indicates the presence of a serious form of APID. Fields of application: medicine, particularly gynecology, surgery. **Metoda constă în:** evaluarea pacientelor la internare în staţionar prin scorul MIL (manifestări clinice+date imagistice+date de laborator) ce are scopul de a stabili severitatea bolii inflamatorii pelvine acute și de a optimiza conduita medico-chirurgicală.
Domain	Medicine - Health Care - Cosmetics

Organization	**„Nicolae Testemițanu" State University of Medicine and Pharmacy of the Republic of Moldova, Laboratory of Tissue Engineering and Cells Cultures**
Patent / patent application title	**CORNEA INCISION DEVICE**
Authors	**ADRIAN COCIUG, VIOREL NACU, OLGA MACAGONOVA**
Patent / patent application N°	MD 1048
Description	The invention relates to medicine, in particular to ophthalmology, and can be used for cornea incision. The cornea incision device comprises an outer tube (1), made of stainless steel of a length of 45 mm, an inner diameter of 18 mm and a wall thickness of 1 mm, and an inner tube (6), disposed coaxially inside the outer tube (1), made of stainless steel of a length of 50 mm, an inner diameter of 17 mm and a wall thickness of 1 mm. The outer tube (1) comprises an operating end (2), made at an angle of 45°, and on which equidistant are made three slots (10), of a depth of 0.2 mm, a length of 15 mm, a width of 2.5 mm, and with protrusions (13) thereon, of the size of 0.2 mm, mounted transversely at a distance of 5 mm from the operating end (2) of the tube (1), for fixation of ophthalmological blades (5), and an opposite end (9), made smooth, at the same time on the inner part of the outer tube (1) wall, at a distance of 10 mm from the end (9), is made an internal thread (7).
Domain	Ophthalmology, regenerative medicine and stem cell field, histology.

Organization	**„Nicolae Testemițanu" State University of Medicine and Pharmacy of the Republic of Moldova, Laboratory of gastroenterology**
Patent / patent application title	**METHOD FOR DIAGNOSIS OF GASTROESOPHAGEAL REFLUX DISEASE**
Authors	**DUMBRAVA VLADA-TATIANA, LUPAŞCO IULIANNA, GRIBINIUC ANATOLIE, VENGHER INNA**
Patent / patent application N°	1094 / anul 2016
Description	The invention relates to medicine, in particular to gastroenterology and could be used for gastroesophageal reflux disease diagnosis. Invention consists in: that the clinical examinationis carried out, administration of 20 mg (RS)-2-([4-(3-methoxypropoxy)-3-methylpyridin-2-yl]-methylsulfinyl)-1H-benzo[d]imidazole, per os, and clinical evaluation after 24 hours with symptoms assessment, such as retrosternal pain, regurgitations, their duration and expression, factors that improve and/or deteriorate them, the symptoms impact on the quality of life, by assigning points for each symptom. In case the total score is up to 53, the disease absence is determined, if 53 or more – the diagnosis of gastroesophageal reflux disease is set. Invenţia se referă la medicină, în special la gastro enterologie şi poate fi utilizată pentru diagnosticare a bolii de reflux gastroesofagian.
Domain	Medicine, especially in gastroenterology.

Organization	**„Nicolae Testemițanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**METHOD FOR PLASTY OF INFECTED TISSULAR DEFECT IN THE CALCANEAN REGION WITH VASCULARIZED FLAP**
Authors	**VEREGA GRIGORE, FEGHIU LEONID, RUDEI MIHAIL, FEGHIU ANA MARIA**
Patent / patent application N°	MD 1047/2017.01.31
Description	The invention relates to medicine, in particular to traumatology and orthopedics, and can be used for plasty of infected tissular defect in the calcanean region with vascularized flap. Summary of the invention consists in that it is performed the Doppler graphical examination to detect the projections of perforated musculocutaneous vessels of the posterior tibial artery, are removed the devitalized tissues in the defect region, is performed a longitudinal cutaneous incision on the posteromedial surface of the leg, behind the rear edge of the tibia to detect the perforated vessels, after determining the dimensions of the defect it is prepared a flap, which includes soft tissues, including a portion of the deep fascia, and a bone graft from the tibia of a dimension of 2 x 5 cm with the perforated vessel, then the flap is rotated by 180° with the bone fragment located in the calcaneum defect and is fixed with the help of 1…2 screws, the Achilles tendon is sutured to the bone fragment, then the wound is sutured in layers, is drained and is applied a plaster immobilization.
Domain	Medicine/Orthopedic surgery

Organization	**„Nicolae Testemițanu" State University of Medicine and Pharmacy of the Republic of Moldova[1]** **Technical University of Moldova, Republic of Moldova[2]**
Patent / patent application title	**METHOD FOR STIMULATING THE MOTILITY OF THE GASTROINTESTINAL TRACT**
Authors	**VLADIMIR HOTINEANU[1], ANATOL SCORPAN[1], ANATOL CAZAC[1] , ION TIGHINEANU[2] , VEACESLAV POPA[2], FIODOR BRANIŞTE[2]**
Patent / patent application N°	MD 4307 C1 / Patent application No.: 05.31/2015
Description	Injection into the wall of digestive tract through fibrogastroduodenoscope of suspension of nanoparticles of gallium nitride with 50 nm in diameter. After injection of nanoparticles in the muscle layer of duodenal wall occurs their activation through ultrasonic field transmitted from the body surface using a piezoelectric transducer powered from a generator of electrical signals with variable amplitude and frequency. Acted under the influence of ultrasonic field less than 1s, nanoparticles are polarized with electrically stimulation muscle contraction occurs with moving of alimentary bolus through the digestive tract. Metod contribute to miniinvawasive treatment of gastrointestinal tracts diseas, deterninated by motilities disturbances. Prezenta invenţie constă în injectarea suspensiei de nanoparticule de nitrura de galiu cu diametru de 50 nm cu ajutortul fibrogastroscopului în tunica musculară a duodenului.
Domain	Medicine - Health Care

Organization	**“Nicolae Testemitanu” State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**METHOD FOR TREATING SENILE CATARACT**
Authors	**JERU ION**
Patent / patent application N°	MD 1017
Description	The invention relates to medicine, in particular to a method used in ophthalmology and can be used for treating patients with senile cataract. According to the invention, the method consists in that it is carried out the local anesthesia, is treated the operative field, is used the blepharostat, is carried out a non-invasive corneal incision which corresponds to 10 00 and 1300 o’clock, is opened the anterior chamber at the level of 1100 o'clock, is introduced sterile air into the anterior chamber, is carried out the marking of the anterior capsule, is introduced a viscoelastic agent in the anterior chamber, is carried out the anterior capsulorhexis, is removed the nucleus, is performed the lavage of lens masses, is implanted the intraocular lens to the posterior chamber, is sutured the cornea, is restored the anterior chamber and is sutured the conjunctiva, and subconjunctivally is introduced an antibiotic and a corticosteroid preparation, at the same time upon implantation of the intraocular lens the upper leg of the lens is positioned on the iris, and the lower leg and the optical part are positioned under the iris. Invenţia se referă la medicină, în special la o metodă utilizată în oftalmologie şi poate fi aplicată pentru tratamentul pacienţilor cu cataractă senilă.
Domain	Medicine, in ophthalmology

Organization	**„Nicolae Testemițanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**DEVICE FOR THE TREATMENT OF PELVIC RING INJURIES WITH VERTICAL DISPLACEMENT**
Authors	**KUSTUROVA ANNA, KUSTUROV VLADIMIR**
Patent / patent application N°	MD 1081/2016
Description	The device comprises two pelvic supports in the form of plates bent at an angle of 90-110°, provided with fixing elements. In the middle part of the first support a head assembly of vertical reposition is vertically mounted. At the end of an arm of the first support a rear assembly of vertical reposition is vertically installed. Advantages: easy to use in pelvic ring injuries in order to stabilize the pelvis, the restoration of the shape and integrity of the pelvic ring in polytrauma patients, does not restrict patient mobility. It greatly facilitates doctor's work in repositioning of caudal or cranial displacement of the pelvis, decreases period of rehabilitation in patients. Dispozitivul conţine două suporturi pelviene în formă de plăci îndoite sub un unghi de 90-110º, dotate cu elemente de fixare. În partea de mijloc a primului suport este montat vertical un nod anterior de repoziţionare verticală. La vârful unui braţ al primului suport este instalat vertical un nod posterior de repoziţionare verticală.
Domain	Medicine

Organization	**„Nicolae Testemițanu" State University of Medicine and Pharmacy of the Republic of Moldova, Laboratory of Tissue Engineering and Cells Cultures**
Patent / patent application title	**METHOD OF ENHANCING OF THE CELLULAR ADHESIVENESS OF THE DECELULARIZED LIVER MATRIX**
Authors	**JIAN MARIANA, NACU VIOREL, COBZAC VITALIE, PALADI CONSTANTIN, PANTEA VALERIANA**
Patent / patent application N°	Decision No.8721, 2017.05.15
Description	The invention relates to regenerative medicine and tissue engineering, and can be used in medicine and biotechnology, namely as a device for collagen sponges cross-linking, in order to create the resistance to intracorporeal agressive factors of which acts on the graft after implantation. The advantages of claimed device are his composition of a hermetically closed container wich hold inside a mesh with many small holes through which pass without difficulty the glutaraldehyde vapors and allow a effective cross-linking of collagen, excluding in that way direct contact of glutaraldehyde solution and the biological material and formation of glutaraldehyde polymer, which is retained in the sponges and are difficult to remove. Invenţia se referă la medicina regenerativă și ingineria tisulară, şi poate fi utilizată în domeniul medicinei și a biotehnologiei, anume în calitate de dispozitiv pentru reticularea spongiei de colagen, cu scopul creării rezistenţei la factorii interni, agresivi ai organismului ce acționează asupra spongiei după implantare.
Domain	regenerative medicine, tissue engineering

Organization	**„Nicolae Testemițanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**CHELATES COMPLEXES OF COOPER (II) – INHIBITORS OF GROWTH AND MULTIPLICATION OF FUNGI AND YEASTS MICELIARI**
Authors	**PRISACARI VIOREL, DIZDARI ANA, SAMUSI NINA, TSAPCOV VICTOR, GULEA AURELIAN**
Patent / patent application N°	MD 2325
Description	The invention relates to a group of coordination compaunds hidrazonati class of copper (II), wich show pronounced antifungal activity against yeasts fungus miceliari. Activity of fungal complexes prevails of 1,6 – 51,2 times on structural analogue – nistatina activity. Invenția se referă la un grup de compuși hidrazonați de cupru (II) care prezintă activitate antifungică pronunțată împotriva fungilor miceliari de drojdii. Activitatea antifungică a complexelor de cupru este mai înaltă de 1,6 - 51,2 ori în comparație cu activitatea analogică a nistatinei.
Domain	Medical and veterinary Pharmaceutical industry

Organization	**"Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**POLIMERIC MATERIAL WITH ANTIBACTERIAL PROPERTIES**
Authors	**PRISACARI VIOREL, ROBU ȘTEFAN, DUCA GHEORGHE, FILIP VITALIE**
Patent / patent application N°	MD 4399
Description	The invention relates to a polymeric material with pronounced antibacterial properties to a broad spectrum of gram-positive and gram-negative microorganisms with low toxicity and prolong action. It can be used to obtain antibacterial preparations with low toxicity and expanding the time of action in the body. Invenția se referă la un material polimeric cu proprietăți antibacteriene pronunțate la un spectru larg de microorganisme grampozitive si gramnegative cu toxicitate joasă și acțiune prolongată. Poate fi utilizat în obținerea preparatelor antibacterine cu toxicitate joasă și majorarea timpului de acțiune în organism.
Domain	Medicine and veterinary medicine

Organization	**"Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**METHOD FOR ASSESSING THE RISK OF SEVERE CARDIOVASCULAR AUTONOMIC NEUROPATHY IN TYPE 1 DIABETES MELLITUS**
Authors	**CRISTINA RIZOV, CONSTANTIN JUCOVSCHI**
Patent / patent application N°	No. 1021/2015
Description	The method consists in assessing the risk of severe cardiovascular autonomic neuropathy (CAN) in type 1 diabetes, according to the clinical examination, with the following parameters determination: form of diabetic retinopathy (RD), degree of diabetic nephropathy (ND), visualacuity (AV), dyspnea on exertion (DE), sweating (T), irritability (I), orthostatichy potension (HO), headache (C) and calculation of discriminant function (F) according to formula: $F=8,709+0,850\times RD+0,783\times ND+3,199\times AV+1,482\times DE-3,372\times T+1,5127\times I-2,167\times HO+1,700\times C$. Where $F> 0$ prognosis is unfavorable, and $F <0$ favorable prognosis. Metoda constă în aprecierea riscului de neuropatie autonomă cardiovasculară (NAC) severă în diabetul zaharat de tip 1, conform examenului clinic şi paraclinic cu stabilirea următorilor parametri: forma retinopatiei diabetice (RD), stadiul nefropatiei diabetice (ND), acuitatea vizuală (AV), dispneea de efort (DE), transpiraţia (T), iritabilitatea (I), hipotensiunea ortostatică (HO), cefaleea (C).
Domain	Medicine, especially in endocrinology.

Organization	**“Nicolae Testemitanu” State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**METHOD FOR PREDICTINGTHERISK OF APPEARANCE OF CARDIOVASCULAR AUTONOMIC NEUROPATHY IN TYPE 1 DIABETES MELLITUS**
Authors	**CRISTINA RIZOV, LORINA VUDU, VALERIU REVENCO, CONSTANTIN JUCOVSCHI, MIHAIL RIZOV**
Patent / patent application N°	No. 1046/2015
Description	The method consists in predicting the occurrence of cardiac autonomic neuropathy (CAN), in the base of clinical examination in which is collected data on diabetes duration (DD), diabetic ketoacidosis frequency (CAD) and diabetic nephropathy severity (DN) and discriminant function (F) is calculated according to the formula: F=-4,972+1,767×ND+1,530×CAD+0,078×DD. Where F>0 prognosis is unfavorable, and F <0 favorable prognosis. Metoda constă în pronosticarea apariţiei neuropatiei autonome cardiace, în baza examenului clinic, în cadrul căruia se colectează datele anamnestice privind durata diabetului zaharat (DD), frecvenţa cetoacidozelor (CAD) şi gradul de severitate a nefropatiei diabetice (ND).
Domain	Medicine, especially in endocrinology.

Organization	**"Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**METODĂ DE TRATAMENT AL ATACULUI MIGRENOS LA PACIENȚII CU MIGRENĂ EPISODICĂ**
Authors	**ȘCERBATIUC CRISTINA, BENDELIC EUGEN, MOLDOVANU ION**
Patent / patent application N°	MD 1018 / 2015
Description	The invention relates to medicine, particularly to neurology and can be used for the treatment of migraine attacks in patients with episodic migraine. Migraine crisis is often accompanied by autonomic dysfunction (nausea, vomiting), because of this, oral administration of drugs is impossible, while parenteral administration is accompanied by certain difficulties. At the onset of the first warning signs of headache, the patient instilled 1 drop of Timolol 0.5% (ophthalmic solution) in both eyes. **Advantage of the method:** ✓ The convenience of administration 0.5% Timolol (ophthalmic drops) during the migraine prodrome or migraine access contribute to halting or reducing headache intensity ✓ Simplifying of the initial method of treatment, with decreasing risk of drug adverse reactions ✓ It is much cheaper, more convenient and more accessible for patients
Domain	Medicine/Ophthalmology

Organization	**"Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**METHOD FOR DETERMINING THE TOTAL CONTENT OF ANSERINE AND CARNOSINE IN BIOLOGICAL MATERIAL**
Authors	**TAGADIUC OLGA, GUDUMAC VALENTIN**
Patent / patent application N°	MD 4398/2014
Description	**The invention consists in** that the protein-free extract obtained by treatment of the sample with a solution of Tween-20/-80, and homogenized in a solution of sulphosalicylic acid, and the sediment is removed by centrifugation. The protein-free extract is treated with a solution of NaOH, which containes triethylamine or acetylcholine, stirred for 5 min, followed by sequentially adding of a solution of orthophthalic aldehyde, and a solution of HCl. After 30-60 min the absorption at 640 nm was measured. The total content of anserine and carnosine is calculated by calibration curve. The advantage of this method is the possibility of dipeptide determination in different materials with accuracy, specificity and reproducibility significantly higher, compared with existing methods.
Domain	**Applications:** medicine, veterinary medicine, zootechnics, food industry. Histidine dipeptides - carnosine and anserine possess strong antioxidant properties, they effectively annihilate toxic products of lipid peroxidation and minimizes meat food rancidity. Quality of meat products is directly proportional to the content of carnosine and anserine in muscle tissue.

Organization	**"Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**METHOD FOR TREATING LOWER EXTREMITY VARICOSE VEINS DILATION**
Authors	**AUTHORS: RADU TURCHIN, VICTOR MAZNIUC, GHEORGHE GUZUN, SERGHEI SUMAN, LUDMILA CHIROȘCA**
Patent / patent application N°	MD-1064
Description	Combined therapy method for the treatment of varicose veins of the lower limbs consists of a diet without animals products for one month. Sinultaneously, a mixture of 4-6herbs selected according to the associated pathologies is indicated. Two weeks after the administration of the herbs, girudotherapy in combination with acupuncture in the meridian points of spleen/pancreas, liver and kidneys is performed. Benefits: the natural origin of all the components; less time needed for the treatment and a decrease in relapses. Girudotherapy-simple technique, accessibility, can be recommended as a treatment alternative in the practice of the health system. Metoda constă în combinarea mai multor tipuri de terapii în tratamentul bolii varicoase al membrelor inferioare: se indică o dietă fără produse de origine animală, timp de o lună.
Domain	Medicine, especially in surgery

Organization	**“Nicolae Testemitanu” State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**METHOD FOR TREATING LOWER ESOPHAGEAL SPHINCTER INCOMPETENCE.**
Authors	**UNGUREANU SERGIU, FOSA DOINA , GLADUN NICOLAE, ȘIPITCO NATALIA , LEPADATU CORNELIU**
Patent / patent application N°	MD 1082
Description	The invention relates to medicine, particularly to surgery and can be used for treating patients with lower esophageal sphincter incompetence. Summary of the invention consists in that it is performed the general anesthesia, is placed the patient in the supine position with the lower limbs in abduction and antiTrendelenburg, is installed the pneumoperitoneum, are introduced the working instruments, are mobilized the crura of diaphragm, is created a retroesophageal window with abdominization of the terminal part of the esophagus. It is performed the crurography and calibration of the newly created esophageal opening by introduction into the lumen of the esophagus of an orogastric tube of 20 Fr, then it is performed the fundoplication. At the level of the lower esophageal sphincter, above the fundoplication roller, are fixed 2 electrodes with exteriorization of their wires in the epigastric region and are connected to a pulse generator, is performed the revision of the operative zone, are removed the working instruments, is eliminated the pneumoperitoneum and are sutured the postoperative wounds in layers. On the 3rd day of the postoperative period is performed the electrical stimulation in the mode of 6 pulses/min, with a pulse duration of 375 ms and a current strength of 5 mA, and the duration of the procedure is 15 minutes.
Domain	Invenția se referă la medicină, și în particular la chirurgie și poate fi aplicată în tratamentul chirurgical al pacienților cu incompetența sfincterului esofagian inferior.

Organization	**"Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**METHOD FOR TREATMENT OF GINAT HIATAL HERNIA**
Authors	**UNGUREANU SERGIU, FOSA DOINA, GLADUN NICOLAE**
Patent / patent application N°	MD 1034
Description	The invention relates to medicine, particularly to surgery and can be used for treating patients with giant hiatal hernia. Summary consists in that it is carried out the general anesthesia, is laid the patient in the supine position with the inferior limbs in abduction and anti-Trendelenburg, is created the pneumoperitoneum, by means of trocars are introduced 4 working instruments, are mobilized the crura of diaphragm, is formed a retroesophageal window with abdominization of the terminal part of the esophagus and reposition of the herniary contents from the mediastinum into the abdominal cavity, is performed the posterior crurorаphy by applying sutures in the form of a double loop with thread passage through the hypotrofied crus of diaphragm by double fixation to it, is carried out the calibration of the newly created esophageal aperture, is introduced into the lumen of the esophagus an orogastric tube of 20 Fr, the last crurorаphy suture is carried out 1 cm from the wall of the esophagus, is performed the fundoplication, the revision of the operative zone, are removed the working instruments, is eliminated the pneumoperitoneum and are sutured the postoperative wounds in layers.
Domain	Invenția se referă la medicină, și în particular la chirurgie și poate fi aplicată în tratamentul chirurgical al pacienților cu hernie hiatală gigantă.

Organization	**"Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova**
Patent / patent application title	**METHOD FOR TREATING ESOPHAGEAL DIVERTICULUM**
Authors	**UNGUREANU SERGIU, GLADUN NICOLAE, FOSA DOINA, TOMA ALEXANDRU, RUSU SERGIU**
Patent / patent application N°	MD 1104
Description	The invention relates to medicine, particularly to surgery and can be used for surgical treatment of patients with esophageal diverticulum. Summary of the invention consists in that the patient, in a position of right or left lateral decubitus depending on the location of the diverticulum, is performed the lateral thoracotomy with the detection of esophageal diverticulum, is dissected the oro-gastric tube, is opened the diverticulum sac up to its cervix, is circularly sectioned the submucosal layer, after which in the lower part of the esophageal diverticulum, ipsilaterally, from its cervix is performed the longitudinal myotomy of the esophageal muscles for a distance of 1,5-2 cm, then mechanically is sutured the mucosa of the esophagus, followed by excision of the diverticulum sac, is performed the mioraphy with application of separate sutures, is covered with pleura this area with the control of hemostasis, is performed the revision and drainage of the thoracic cavity with a drain of 24 Fr and is performed the thoracoraphy.
Domain	Invenția se referă la medicină, și în particular la chirurgie și poate fi aplicată în tratamentul chirurgical al pacienților cu hernie diverticul esofagian.

Moldova State University

Organization	**Moldova State University**
Patent / patent application title	**PROCESS FOR AIR PURIFICATION FROM SULPHURETED HYDROGEN.**
Authors	**VASILE GUTANU**
Patent / patent application N°	Patent MD 4400
Description	The process, according to the invention, provides for the passage of air containing sulphureted hydrogen through a column with strongly basic polymer anionite in Cl^- form, modified with compounds of Bi(III), with the rate of 1 L/min, at the same time the anionite is modified by treatment with a solution of 0.016 M $Bi(NO_3)_3$ with pH 0.25…0.35, in the ratio of 1:50, at the temperature of 55°C for 5.5 hours. The process can also be used to purify natural gasesfromsulfurcompounds. Procedeul, conform invenţiei, prevede trecerea aerului ce conţine hidrogen sulfurat printr-o coloană cu anionit polimeric puternic bazic în formă Cl^- , modificat cu compuşi de Bi(III), cu viteza de 1 L/min, totodată anionitul este modificat prin tratarea cu soluţie de 0,016 M $Bi(NO_3)_3$ cu pH-ul 0,25…0,35, în raport de 1:50, la temperatura de 55°C timp de 5,5 ore. Procedeul poate fi utilizat şi la purificarea gazelor naturale de decompuşisulfuroşi.
Domain	The processcanbe applied in the field of human protection (making the anti-gas mask) and in the energy and chemical industry.

Organization	**Moldova State University** **Research and Innovation Institute**
Patent / patent application title	**PROCEDURE FOR THE GROWTH OF THE N^+-P-P^+INP STRUCTURE BY HVPE METHOD FOR SOLAR CELLS**
Authors	**VASILE BOTNARIUC, PETRU GAŞIN, LEONID GORCEAC, ANDREI COVAL, BORIS CINIC, SIMION RAIEVSCHI**
Patent / patent application N°	A 2016 0074
Description	The invention relates to semiconductor technology and can be used especially in devices for converting solar radiation into electricity. The growth process of the structure, which includes the deposition of the pInPepitaxiallayer on the p^+InPsurface with the crystallographic orientation (100), the disorientation of 3 ... 5° in the direction (110) and the concentration of the electrical carrier ofis 1-3*10^{18} cm^-.The growth process of the epitaxial layer n+InP and the deposition of the ohmic contacts is based on the fact that then$^+$InPlayer is growing as a result of the gaseous corrosion of the reactor and the pInPepitaxiallayer. The advantage of the growth process consists in creation of the n+InP layer in the n+-p-p+InP structure following the corrosion of the reactor and the pInPepitaxiallayer, which allows to increase the energy parameters of the photovoltaic devices. Invenţia se referă la tehnologia semiconductorilor şi poate fi utilizată în special la dispozitive de conversie a radiaţiei solare în energie electrică.
Domain	Energy and environmental protection

Organization	**Moldova State University**
Patent / patent application title	**PROCESS FOR GENERATING NITROGEN COMPOUNDS**
Authors	**VASILE GUTANU**
Patent / patent application N°	MD 4460
Description	Summary of the invention consists in that a process for generating nitrogen compounds is proposed, which provides for the barbotage of atmospheric air through a reactor comprising a cross-linked ionic polymer with high-basic functional groups AB-17(Cl) and $Ga_2(SO_4)_3$ or $In_2(SO_4)_3$ solution, with the concentration of 0.010…0.015 g/L and pH 1.9…2.1, in the presence of sodium or potassium chloride with the concentration of 0.030…0.042 mol/L, and subsequently through alkalized water, at a temperature of 0…25°C, for 8…12 hours. Invenţia constă în aceea că se propune un procedeu de generare a compuşilor de azot, care prevede barbotarea aerului atmosferic printr-un reactor care conţine polimerul ionic reticulat cu grupe funcţionale puternic bazice AV-17(Cl) şi o soluţie de $Ga_2(SO_4)_3$ sau $In_2(SO_4)_3$, cu concentraţia de 0,010…0,015 g/L şi pH-ul 1,9…2,1, în prezenţa clorurii de sodiu sau de potasiu cu concentraţia de 0,030…0,042 mol/L, şi consecutiv prin apă alcalinizată, la temperatura de 0…25°C, timp de 8…12 ore.
Domain	The process can be applied in the chemical industry.

Organization	**Moldova State University** **Scientific Research Laboratory "Phycobiotechnology"**
Patent / patent application title	**TECHNOLOGIES OF BIOACTIVE SUBSTANCES OBTAINING FROM SPIRULINA BIOMASS AND THE USE OF SOME ALGAL PREPARATIONS IN APICULTURE**
Authors	**VALENTINA BULIMAGA, VALERIU RUDIC, MARIA PISOVA, LILIANA ZOSIM, SVETLANA DJUR,TATIANA CHIRIAC, ION TODERAŞ, ION BUZU, VALENTINA CEBOTARI, VALERIU BOGDAN, AURELIAN GULEA**
Patent / patent application N°	4191, 4360, 476
Description	There have been developed 2 technologies for obtaining of natural pigments from the biomass of cyanobacteria *Spirulinaplatensis:* 1) phycocyanin and 2) mixoxantophyll. The first product is obtained as a 1.5% solution of phycocyanin, purity (A620 / A280 = 3.0). The 2nd pigment – mixoxanthophill crystals with antioxidant activity. The 3rd product is a protein extract for feeding *Apismellifera* bee families. The process includes feeding of the bees in the spring with a 1% mixture of *Spirulinaplatensis* biomass extract solution and 50% sugar syrup.
Domain	The blue natural pigmentphycocyanin with antioxidant, antimicrobial, hematopoietic and anti-aging and skin regeneration effects and myxoxanthophyll as antioxidant are recommended for food, medicine and cosmetics application. The spirulinaproteic extract is used as feed supplement in apiculture.

Organization	**Moldova State University, Department of Physics and Engineering**
Patent / patent application title	**PROCESS FOR PREPARING A ZnPc SCHOTTKY DIODE BY DROP CASTING METHOD**
Authors	**VADIM FURTUNA, DUMITRU DUCA, TAMARA POTLOG**
Patent / patent application N°	A 20160129, dated 24.11.2016
Description	The invention relates to the technology of preparing a Schottky diode-based on organic semiconductorzinc phtalocyanine (ZnPc) that can be used to convert solar energy into electricity.Theproblem solved by this invention is the obtaining of Schottky diodes by solution processes with photovoltaic parameters of open circuit voltage and current density higher than in the case when obtained with thermal vacuum evaporation [1]. In addition, this method is harmless to body and environment, much cheaper and exclude working with toxic substances. Invenţia se referă la tehnologia de producere a unui anumit tip de diodă Schottky pe bază de semiconductor organic(ftalocianina de zinc, ZnPc) ce poate fi utilizată pentru conversia energiei solare în energie electrică. Procedeu de obținere a diodei Schottky pe bază de ZnPc, care include solubilizarea ftalocianinei de zinc, sonificarea acestei soluții, doparea ulterioară a ei și depunerea soluției obținute peste substratul de ITO, prin metoda picaturii sau metoda centrifugarii.
Domain	Energy and environmental protection

Organization	**Moldova State University** **Research and Innovation Institute**
Patent / patent application title	**THE TRILOGY: INNOVATION SYSTEM OF MOLDOVA STATE UNIVERSITY**
Authors	**MARIAN JALENCU, ANGELA NICULITA, FLORENTIN PALADI, TATIANA BULIMAGA, MIHAELA BALMUS-ANDONI**
Patent / patent application N°	
Description	The trilogy includes three papers dedicated to the innovative USM system: 1. Sistemul inovativ al Universității:intraprenoriatul mediului universitar (pe exemplul Universității de Stat din Moldova) 2. Development of innovative strategies at the Moldova State University 3. Tehnologiile inovaționale ale Universității de Stat din Moldova. The trilogy is dedicated to innovation national and regional systems emphasize the importance of universities, as well as the potential mechanisms by which they can stimulate innovative activities. One of the most important transfer channels is given by the educational function of the Universities and by their contribution to the preparation of labor force. Also, the universities can strengthen the absorption of the private sector and, implicitly, performances related to research and innovation. These papers highlights the main roles of universities within the innovation systems and brings the arguments, which claim the necessity of universities cooperation – the business environment at national and international level.
Domain	Innovative management and technology transfer

Organization	**Moldova State University**
Patent / patent application title	**NEW ANTIMICOTIC AGENTS AGAINST *CANDIDA ALBICANS***
Authors	**AURELIAN GULEA, DORIN ISTRATI, IRINA USATAIA, VASILE GRAUR, VICTOR TSAPKOV, ELENA ZARICIUC, VALERIU RUDIC**
Patent / patent application N°	Nr. 4452, 4402, 4258
Description	New thiocarbamide derivatives with high antifungal activity against *Candida albicans*have been obtained using the directed synthesis methods.These compounds exhibit antifungal activity against *Candida albicans* that exceeds 114–4.3 times analogous characteristics of the prototype. They can be used in medicine and veterinary medicine for the prevention and treatment of mycoses. Noi derivaţii de tiocarbamidă cu activitate antifungică împotrivă *Candida albicans* au fost obţinuţi utilizând metodele de sinteză dirijată. Aceşti compuşi manifestă activitate antifungică faţă de *Candida albicans* care depăşeşte de 114-4,3 ori caracteristicile analoage ale prototipului. Compuşii propuşi pot fi utilizate în medicina şi medicina veterinară pentru prevenirea şi tratamentul micozelor.
Domain	Medicine, veterinary medicine, pharmaceutics

Organization	**Moldova State University,** **Scientific Research Laboratory "Phycobiotechnology"**
Patent / patent application title	**CYANOPHYTE ALGAE *CYLINDROSPERMUMLICHENIFORME* (BORY) KÜTZ. – A NEW BIOTECHNOLOGICALOBJECT**
Authors	**ALINA TROFIM, VASILE ŞALARU,** **LILIANA ZOSIM, VICTOR ŞALARU**
Patent / patent application N°	Patent MD 4334
Description	The blue-green algae *Cylindrospermumlicheniforme* (Bory) Kütz– a source of biologically active substances, containing proteins –30.52-38.40%; lipids – 19.34-20.90%; carbohydrates – 28.84-30.57% is proposed. Microalgae can be used in various biotechnology areas. The fields of application: microbiological industry, agriculture as a plant growth biostimulator, and cosmetology. Se propune tulpina *Cylindrospermum licheniforme* (Bory) Kütz. în calitate de sursă de substanţe biologic active, care conţine proteine – 30,52%-38,40%; lipide – 19,34%-20,90%; glucide – 28,84%-30,57% şipoate fi utilizată în diverse aplicații biotehnologice. Domeniile de aplicare a biomaseide *Cylindrospermum licheniforme* (Bory) Kütz., sunt: industria microbiologică, agricultură în calitate de biostimulator de creştere a plantelor, cosmetologie etc.
Domain	The fields of application in the microbiological industry, in agriculture as a plant growth biostimulator, in cosmetology.

Organization	**Moldova State University**
Patent / patent application title	**N-(DIMETHYLPHENYL)-2-(2-HYDROXYBENZYLIDENE)-HYDRAZINECARBOTHIOAMIDES – NEW ANTIFUNGAL INHIBITORS**
Authors	**AURELIANGULEA,YULIANOLTU, TATIANAGUTU, VICTORTSAPKOV**
Patent / patent application N°	Nr. 4452, 4194
Description	New biologically active coordinative compounds of nickel have been obtained using the directed synthesis method. These compounds exhibit antifungal activity against *Candida albicans* that exceeds 6.4-1.1 times analogous characteristics of nystatin used in medicine for treatment and prophylaxis of fungal infections. They can be used in medicine and veterinary medicine for the prevention and treatment of mycoses. Noi compuşi coordinativi ai nichelului cu activitate biologică au fost obţinuţi utilizând metodele de sinteză dirijată. Aceşti compuşi manifestă activitate antifungică faţă de*Candida albicans* care depăşeştede 6.4-1.1 ori caracteristicile analoage ale nistatinei care este folosită în medicină pentru tratare şi profilaxie infecţiilor micotice. Compuşiipropuşi pot fi utilizate în medicina şi medicina veterinară pentru prevenirea şi tratamentul micozelor.
Domain	Medicine, veterinary medicine, pharmaceutics

Organization	**Research and Innovation Institute of the State University of Moldova, *Chisinau*** **The National Institute for Research and Development in Chemistry and Petrochemistry *Romania, Bucharest***
Patent / patent application title	**UTILIZATION OF CO_2 FROM METHANOGENIC PROCESSES AND ENZYMATIC DIGESTION OF BIOMASS: INTEGRATED INNOVATIVE SOLUTIONS**
Authors	**VICTOR COVALIOV, OLGA COVALIOVA, SANDA VELEA, ANA MARIA GALAN**
Patent / patent application N°	MD4372;MD 4389; MD 4418; MD 4130
Description	Complex innovative approachis presented on preventing the large-scale CO_2emissions resulted from biomass methanogenic digestion and spirit fermentation. Newelaborationsareaimed at CO_2utilization for micro-algae cultivation and animal feed production. Reacting with electrolytichydrogen, $CO_2$is transformed into biomethane, with 92-95% contents in biogas and caloric value 8000 kcal/m^3. Transformation intensification of CO_2 into $CH_4$is due to hydrogen dosing and using of natural phyto-catalysts. Electrochemical generation of hydrogen from water is costsaving because of new 3D-electrodes application. This essentially decreases carbon dioxide contents in biomass digestion products, rises biogas caloricity, reducing the emissions impacts on environment. Este prezentată abordarea complexă inovaţională privind prevenirea emisiilor pe scara largă a CO_2 de la procesele digestive metanogeneși de la fermentarea alcoolică.
Domain	Ecological chemistry, energy efficiency, agro-industrial wastes treatment

„Alecu Russo" Bălți State University

Organization	**„Alecu Russo" Bălți State University**
Patent / patent application title	**METHOD OF DETECTING MHD WAVES BY HIGHLIGHTING EFFECTS PRODUCED BY THEM**
Authors	**VALERIU ABRAMCIUC**
Patent / patent application N°	
Description	The proposed method aims to experimentally detect in real time the occurrence in the F and E regions of the terrestrial ionosphere of plasma disturbances caused by the action of magneto-hydrodynamic waves (Alfvén waves) generated in the magnetically conjugate region by the solar terminator. We describe (1) the description of Alfvén waves generation processes, (2) their propagation along the magnetic field lines, (3) the interaction with the plasma from the magnetically conjugate region of the ionosphere, and (4) the formation of irregularities. Methods (1) for the experimental detection of the effects associated with the Alfvén waves, (2) data processing, and (3) interpretation of the results have been developed. The effectiveness of the method was tested using several experimental databases.
Domain	Plasma Physics, Geophysics, Telecommunication Systems

Organization	**„Alecu Russo" Bălți State University**
Patent / patent application title	**CONTINUOUS ACCELERATION OF ELECTRONS IN AIR AT NORMAL ATMOSPHERIC PRESSURE USING MULTICHANNEL ELECTRODES**
Authors	**TOPALĂ PAVEL, HÎRBU AREFA, OJEGOV ALEXANDR, BEȘLIU VITALIE**
Patent / patent application N°	MD a 2013 0052, 2013.07.25
Description	The invention relates to the application of special construction electrodes to the continuous acceleration of electrons in air under laboratory conditions at normal atmospheric pressure for pulsed electric discharge plasma formation. It is proposed to use two electrodes made of separate discharge channels, thus increasing the intensity of the electric field in the gap by two times. As a result, the discharge time exceeds by 2000 times the electron movement time in the field. Invenția se referă la aplicarea electrozilor de construcție specială la accelerarea continuă a electronilor în aer în condiții de laborator la presiunea atmosferică normală pentru obținerea plasmei descărcărilor electrice în impuls. Se propune utilizarea a doi electrozi alcătuiți din canale de descărcare separate, astfel mărind intensitatea câmpului electric în interstițiu de 2 ori. În rezultat timpul descărcării depășește de 2000 de ori timpul mișcării electronului în câmp.
Domain	Metallurgy and material science

Organization	**„Alecu Russo" Bălți State University**
Patent / patent application title	**THE EXCITEMENT OF SILICONE GLASS COMPONENTS MOLECULES IN WEAK AND NON-HOMOGENEOUS MAGNETIC FIELDS**
Authors	**TOPALĂ PAVEL, HÎRBU AREFA, OJEGOV ALEXANDR, BEȘLIU VITALIE**
Patent / patent application N°	MD a 2013 0050, 2013.07.25
Description	The invention relates to the application of weak and non-homogeneous magnetic fields for the purpose of polyphotonic excitation of the molecules of silicone glass components. For the creation of these fields, a supply scheme is applied which causes vibration excitation of molecules in spectrum region of 740-780 cm^{-1}, followed by polyphotonic absorption and, as a result, obtaining secondary visible radiation. Invenția se referă la aplicarea câmpurilor magnetice slabe și neomogene în scopul excitării polifotonice a moleculelor componentelor sticlelor silicioase. Pentru crearea acestor câmpuri se aplică o schemă de alimentare, care provoacă excitarea vibrațională a moleculelor în regiunea spectrului 740-780 cm^{-1}, urmată de absorbția polifotonică și, ca rezultat, obținerea radiației vizibile secundare.
Domain	Metallurgy and material science

Organization	**„Alecu Russo" Bălți State University**
Patent / patent application title	**METHOD FOR SURFACE ADHESION DECREASING OF THE CONJUGATED PARTS BY APPLYING PULSED ELECTRIC DISCHARGE MACHINING**
Authors	**TOPALĂ PAVEL, BEȘLIU VITALIE, OJEGOV ALEXANDR, HÎRBU AREFA**
Patent / patent application N°	MD 4184
Description	The method proposed in the invention involves surface machining of the conjugated parts by pulsed electric discharge under subexcitation regime using graphite electrode tool. At graphite film deposition to assemblies by polyurethane gluing the adhesion between conjugated surfaces decreases by about 40% compared to untreated surfaces; when using graphite films in threaded assemblies located in a medium (at high temperatures or chemically active solutions), the stick effect was not detected; it has been industrially shown that the adhesion of the glass mass to the glass molding form poansons reduces, which leads to the increase of piece durability. Metoda propusă în invenție presupune prelucrarea suprafețelor pieselor conjugate prin descărcări electrice în impuls, în regim de subexcitare, cu electrod-sculă din grafit. La depunerea filmelor de grafit pe ansambluri prin încleiere cu adeziv poliuretanic aderența dintre suprafețele conjugate se micșorează cu circa 40% în comparație cu cele netratate prin descărcări electrice în impuls.
Domain	Metallurgy and material science

Organization	**„Alecu Russo" Bălți State University**
Patent / patent application title	**THE COMBINED PROCESS OF IMPROVING PHYSICAL AND CHEMICAL PROPERTIES OF INDUSTRIAL GLASSWARE**
Authors	**VASILEŞARAGOV, GALINA CURICHERU**
Patent / patent application N°	Patent RU. No. 2035419 C1. No. 14 / 20.05.95
Description	The essence of the developed technique:in manufacturing conditions, glass containers (bottles, jars and flasks) have been treated with fluorine–containing gaseous reagents (hydrogen fluoride, difluorodichloromethane and difluorochloro-methane) without dealkalizationand subsequently subjected to the influence of constant magnetic field. Glassware underwent the following treatment regimes: temperature – between 500 and700 ^{0}C, vector's magnitude of magnetic induction - up to 0.25 T, duration – between 1 and 8 s, volume fraction of gas (gas volume vs. container capacity) about 0.1 %. As a result of thiscombined treatment, the chemical stability of glass increases tenfold, mechanical strength - by 20-40 %,microhardness - by 10-20 %, thermal stability - by 5-10 %. Esenţa procedeului elaborat: în condiţii de fabricare ambalajul din sticlă (butelii, borcane şi flacoane) a fost tratat cu reagenţi gazoşi ce conțin fluorură (fluorură de hidrogen, difluordiclormetan și difluorclormetan) fără fenomenul dezalcalinizării şi supus acţiunii câmpului magnetic constant.
Domain	Chemistry and chemical industry

Organization	**„Alecu Russo" Bălți State University**
Patent / patent application title	**THE PROCESS OF IMPROVING MECHANICAL PROPERTIES AND THERMAL STABILITY OF GLASS CONTAINERS**
Authors	**VASILE ŞARAGOV, ION OLARU, MARIANA AGACHI**
Patent / patent application N°	Patent RU. No. 2040496 C1. No. 21 / 27.07.95
Description	The essence of the developed technique: in manufacturing conditions, glass containers (bottles, jars and flasks) were subjected to the influence of impulse magnetic field. Parameters of glass treatment are as follows: temperature – between 500 and 600 ^{o}C, duration – between 1 and 8 s, vector's magnitude of magnetic induction - up to 0.15 T, magnetic field strength – 0.064 MA/m, duration of an impulse - 25 μs, pulses follow at a frequency of 1 - 10 Hz. Thermomagnetic treatment of glassware increased their mechanical strength by 40 %, microhardness - by 15 % and thermal stability - by 10 %. Esenţa procedeului elaborat: în condiţii de fabricare ambalajul din sticlă (butelii, borcane şi flacoane) a fost supus acţiunii câmpului magnetic în impuls. Parametrii tratării sticlei sunt: temperatura – de la 500 la 600 ^{0}C, durata – de la 1 la 8 s, valoarea modulului vectorului inducţiei magnetice – până la 0,15 T, intensitatea câmpului magnetic – 0,064 MA/m, durata impulsului - 25 μs, frecvenţa de repetare a impulsurilor – de la 1 la 10 Hz. Tratarea termomagnetică a produselor din sticlă sporeşte rezistenţa mecanică cu 40 %, microduritatea - cu 15 % şi stabilitatea termică - cu 10 %.
Domain	Chemistry and chemical industry

Organization	**„Alecu Russo" Bălți State University**
Patent / patent application title	**INTENSIFICATION OF DEALKALIZATION OF GLASSWARE WITH GASEOUS REAGENTS**
Authors	**VASILE ŞARAGOV, ION BURCOVSCHI**
Patent / patent application N°	379 C2. BOPI No. 1 / 31.01.96.
Description	The essence of the developed technique: in laboratory and manufacturing conditions, glassware have been treated with mixtures of different gaseous reagents (CHF_2Cl + SO_2, CHF_2Cl + NO_2, CF_2Cl_2 + SO_2, SO_2 + HCl etc). Treatment regimes of glassware in gaseous media in manufacturing conditions are: temperature – between 500 and 800 °C, duration - 1 s, volume fraction of gaseous reagent (gaseous reagent volume vs. container capacity) between 0.05 and 0.10 %. After the treatment, the chemical stability of glass increases tenfold, mechanical strength - by 20-40 %, microhardness - by 10-20 %, thermal stability - by 5-10 %. Esenţa procedeului elaborat: în condiţii de laborator şi de fabricare produsele din sticlă au fost tratate cu amestecuri din diferiţi reagenţi gazoşi (CHF_2Cl + SO_2, CHF_2Cl + NO_2, CF_2Cl_2 + SO_2, SO_2 + HCl, etc). Regimurile tratării produselor din sticlă în mediile gazoase în condiţii de fabricare sunt: temperatura – de la 500 la 800 ^{0}C, durata – 1 s, partea de volum al reagentului gazos pentru un produs alcătuieşte de la 0,05 la 0,10 % din volumul lui. După tratare stabilitatea chimică a sticlei sporeşte de zeci de ori, rezistenţa mecanică - cu 20-40 %, microduritatea - cu 10-20 %, stabilitatea termică - cu 5-10 %.
Domain	Chemistry and chemical industry

The State Agrarian University of Moldova

Organization	**The State Agrarian University of Moldova**
Patent / patent application title	**PROCESS FOR INCREASING THE GROWTH *RATE* IN BROILER CHICKENS**
Authors	**CAISIN LARISA, VRANCEAN VASILE, ANTON VLADIMIR, EREMIA NICOLAE, BIVOL LUDMILA**
Patent / patent application N°	s 2016.11.18
Description	The invention relates to poultry, namely to a process for rearing broilers. Process for increasing the broiler, which provides feeding them during the initiation, growth and completion of 14 days each, and feed containing, in mass %: corn - 49.3, wheat - 12.7-13.7, soybean meal - 22.2, sunflower meal - 6.1, soybean oil - 2.5, premix - 2.0, chalk - 2.7, feather meal - 1.5-2.5; in the period of rising: corn - 49.1, wheat - 22.0, soybean meal - 13.5-14.5, sunflower meal - 7.0, soybean oil - 1.2, premix - 2.0, chalk - 2.7, feather meal - 1.5-2.5; in the period finishing: corn - 49.1 wheat - 23.0, soybean meal - 15.0-16.0, sunflower meal - 4.5 soybean oil - 1.2, premix - 2.0, chalk - 2.7, feather meal - 1.5-2.5, while using feathers meal obtained by fermentation and extrusion. Invenţia se referă la avicultură, şi anume la un procedeu de creştere a puilor broiler. Procedeu, conform invenţiei, prevede furajarea puilor broiler pe parcursul perioadelor de iniţiere, creştere şi finisare, câte 14 zile fiecare.
Domain	Agriculture and Food Industry

Organization	**The State Agrarian University of Moldova**
Patent / patent application title	**THE METHOD OF BEE FEEDING**
Authors	**EREMIA NICOLAE, MODVALA SUSANA, ZAGAREANU ANDREI, CAISÎN LARISA, NARAEVSCAIA INA**
Patent / patent application N°	MD, no. 812 Z 2015.04.30
Description	The invention relates to beekeeping, particularly to bees feeding. Method is based on bees feeding that includes using of sugar syrup of 50%, and a feed additive in the quantity of 1 liter of mixture for one bee family, in the evening over each 10-12 days, beginning with the first days of April till the beginning of the main harvest. At the same time the feed additive contains in mass (%) no less than: humate of sodium / potassium – 0.1, extract / yeast autolysate– 10.0, lactic acid – 5.0, beta glucan– 5.0, the rest is water and it is added in the sugar syrup in the quantity of 1.5-4.5 ml / l of syrup. Invenţia se referă la apicultură, în special la un procedeu de hrănire a albinelor. Procedeul, conform invenţiei, include hrănirea albinelor cu un amestec din sirop de zahăr de 50% şi un aditiv furajer în cantitate de 1,0 l de amestec la o familie de albine, seara, peste fiecare 10-12 zile, începând din primele zile ale lunii aprilie până la începutul culesului principal. Totodată, aditivul furajer conţine, cel mult, în % mas.: humat de sodiu/potasiu 0,1, extract/autolizat de drojdii 10,0, acid lactic 5,0, beta-glucan 5,0, apă restul şi se adaugă în siropul de zahăr în cantitate de 1,5-4,5 ml/lde sirop.
Domain	Beekeeping

Organization	**The State Agrarian University of Moldova**
Patent / patent application title	**PROCESS FOR FEEDING PIGS**
Authors	**CAISIN LARISA, DANILOV ANATOLIE, DONICA IOV, CEBAN VITALIE, EREMIA NICOLAE, COVALENCO ALEXEI, CARPINCIC VALERIU, SNITCO TAISIA**
Patent / patent application N°	MD 991 Z 2016.08.31
Description	The invention relates to livestock, in particular to a process for feeding pigs. The process, according to the invention, provides for the feeding of pigs with combined feed with addition of a feed additive, comprising strains of *Lactobacillus acidophilus* with a titer of $2x10^9$ CFU/g *Lactobacillus plantarium* with a titer of $1x10^9$ CFU/g, *Lactobacillus fermentum* with a titer of $5x10^9$ CFU/g and *Bifidobacterium bifidum* with a titer of $3x10^9$ CFU/g, and adsorbant comprising, in mass %: extruded wheat bran – 10, bentonite – 25, vermiculite – 25, polygorskite clay – 30, acidifier – 5 and yeast autolysate – 5,0 where in the feed additive is added in an amount of 0,5 kg and the adsorbent of 4,0 kg to 1000 kg of combined feed. Invenţia se referă la zootehnie, şi anume la un procedeu de hrănire a sunelor. Procedeul conform invenţiei, prevede hrănirea suinelor cu un nutreţ combinat cu adăugarea unui aditiv furajer, ce conţine tulpini de *Lactobacillus acidophilus* cu un titru de $2x10^9$ UFC/g *Lactobacillus plantarium* cu un titru de $1x10^9$ UFC/g, *Lactobacillus fermentum* cu un titru de $5x10^9$ UFC/g şi *Bifidobacterium bifidum* cu un titru de $3x10^9$ UFC/g, precum şi a unui adsorbant.
Domain	Agriculture and Food Industry

Organization	**The State Agrarian University of Moldova**
Patent / patent application title	**METHOD OF BEEKIPING**
Authors	**EREMIA NICOLAE, ZAGAREANU ANDREI, CAISÎN LARISA, MODVALA SUSANA, ROTARU ILIE, NARAEVSCAIA INA**
Patent / patent application N°	MD no. 848 Z 2015.07.31
Description	The invention relates to beekeeping, in particular to the process of bee colonies raising. Beekeeping method includes bee feeding with a mixture of sugar syrup 50% and 50….200 mg/L of feed additive, in the quantity of 0.5…..1.0 L for the bee family, in the evening, every, 6-12 days from the first days of April until the beginning of the main harvest, at the same time the feed additive, contains in mass (%):Lactobacillus acidophilus with a titer of $1x10^8$ CFU/g – 10, Lactobacillus plantarum with a titer of $1x10^8$ CFU/g – 10, Lactobacillus bulgaricus with a titer of $1x10^8$ CFU/g – 10, Enterococcus (Streptococcus) faecium with a titer of $1x10^7$ CFU/g – 4.5, Bifidobacteriumbifidum with a titer of $1x10^8$CFU/g – 10, and pectin – 10, yeast extract – 25, lactulose – 0.5, lecithin – 20. Invenţia se referă la apicultură, în particular la un procedeu de creştere a albinelor. Procedeul, conform invenţiei, include hrănirea albinelor cu un amestec din sirop de zahăr de 50% şi 50-200 mg/l de aditiv furajer, în cantitate de 0,5-1,0 l la o familie, seara, odată la 6-12 zile, din primele zile ale lunii aprilie până la începutul culesului principal.
Domain	Beekeeping

Organization	**The State Agrarian University of Moldova**
Patent / patent application title	**PROCESS FOR FEEDING PIGS**
Authors	**CAISIN LARISA, VRANCEAN VASILE, EREMIA NICOLAE, HAREA VASILE, GROSU NATALIA, BIVOL LUDMILA, BUSEV VITALIE, SNITCO TAISIA**
Patent / patent application N°	MD 1044 Z 2017.01.31
Description	The invention relates to animal husbandry, namely to a process for feeding pigs. The process, according to the invention, provides feeding of pigs in the period of rearing with combined feed comprising, in mass. %: corn – 24,65, barley – 30,0, wheat – 10,0, sozbean oil meal – 5,0, soybean extrudate – 6,0, wheat bran – 6,0, fish meal – 5,0, vitamin-mineral premix – 2,5, salt – 0,35, chalk – 0,5, in the amount of 0,7...1,0 kg/head/day, and in the period of fattening with combined feed comprising, in mass. %: corn – 31,0, barley – 26,0, wheat – 24,0, soybean oil meal – 15,0, vitamin-mineral premix – 2,5, salt – 0,5, chalk – 1,0 in the amount of 2,0...2,5 kg/head/day. Procedeu de creştere a productivităţii porcinelor, constă in elaborarea unui procedeu de furajare a porcinelor în perioda de creştere cu nutreţuri combinate echilibrate, cu un conţinut de componenţa sa în %: în perioda de creştere – porumb 24,65; orz 30,0; grâu 10,0; mazăre 10,0; şrot de soia 5,0; tărăţe de grâu 6,0; fainâ de peşte 5,0; premix 2,5, sare 0,35, cretă 0,50 cu concentraţie de proteină brută de 15,03% şi energia metabolică de 12,46Mj.
Domain	Agriculture and Food Industry

Organization	**The State Agrarian University of Moldova**
Patent / patent application title	**METHOD OF NURSE BEE FEEDING**
Authors	**EREMIA NICOLAE, ZAGAREANU ANDREI, CAISÎN LARISA, MARDARI TATIANA, MODVALA SUSANA, SARÎNELEA, EREMIA IGOR**
Patent / patent application N°	MD nr. 878 Z 2015.09.30
Description	The invention relates to beekeeping, in particular to the process of bee feeding. The process of nurse bee feeding includes using the sugar syrup 50% with addition of 50….200 mg/L of feed additive daily from the day of frame introduction with transferred larvae to the nurse family until larvae capping, at the same time the feed additive contains in mass %:Lactobacillus acidophilus with a titer of $1x10^8$ CFU/g – 10, Lactobacillus plantarum with a titer of $1x10^8$ CFU/g – 10, Lactobacillus bulgaricus with a titer of $1x10^8$ CFU/g – 10, Enterococcus faecium with a titer of $1x10^7$ CFU/g – 4.5, Bifidobacteriumbifidum with a titer of $1x10^8$CFU/g – 10, and pectin – 10, yeast extract – 25, lactulose – 0.5, lecithin – 20, bee feeding is performed in the quantity of 1.0 L to the family in the first day from the day of frame introduction with the transferred larvae and using 0.5 L in the rest of the days. Invenţia se referă la apicultură, în special la un procedeu de hrănire a albinelor doici. Procedeul, conform invenţiei, include administrarea albinelor doici a unui sirop de zahăr de 50% cu adaos de 50-200 mg/l de aditiv furajer, zilnic, din ziua introducerii ramei cu larve transvazate în familia de albie doici până la căpăcirea botcelor.
Domain	Beekeeping

Organization	**Academia de Stat de Medicină Veterinară din Republica Belarusă** **Institutul de Crecetări Ştiinţifice în Veterinărie Experimentală din Republica Belarusă** **The State Agrarian University of Moldova**
Patent / patent application title	**TREATMENT PROCESS OF RAHNOENTOMOZY AND NEMATODES IN PIGLETS AND CALVES**
Authors	**IATUSEVICI A., SAMSONOVICI V., SUBBOTIN A., CRASOCICO P., EREMIA N., CAHANOVICI A., SUBBOTINA I.**
Patent / patent application N°	MD no. 1013 Z 2016.10.31
Description	The invention relates to veterinary medicine, in special to treatment process the ofarahnoentomozies and nematodes in piglets and calves. The process according to the invention includes the administration of a remedy in piglets or calves, that contains, in mass%: concoction containsaversectin C, that contains 40% of lactulose and polyethylene glycol 400, at the same time remedy is administered twice in a dose of 0.1 ml per 1 kg of body weight, using dry food, with an interval of 24 hours. Invenţia se referă la veterinarii, şi anume la un procedeu de tratare a arahnoentomozelor şi nematodozelor la purcei şi viţei. Procedeul, conform invenţiei, include administrarea purceilor sau viţeilor a unui remediu ce conţine, în % masă: preparat de aversectin C conţinând 40% lactuloză şi polietilenglicol 400, totodată remediul se administrează, în doze de 0,1 ml la 1 kg de greutate corporală, cu hrna uscată, de două ori cu un interval de 24 ore.
Domain	Veterinary Medicine

Organization	**The State Agrarian University of Moldova**
Patent / patent application title	**METHOD OF HONEYBEES RISING**
Authors	**EREMIA N., CHIRIAC A., IVANOVA R., MAŞENCO N., PĂTRUICĂ S., MODVALA S., SARÎ N.**
Patent / patent application N°	MD no. 1078 Z 2017.05.31
Description	The invention relates to beekeeping, namely to a process of bees rearing. The present invention includes bees feeding with a mixture of 50% sugar syrup and a preparation which containing 80 ... 90% steroid glucose 3-O-[β-D-glucopyranosyl (1-2)]-[β-D-glucopyranosyl (1-3)]-[β-D-glucooiranozil (1-4)]-β-D-galactopyranoside [(25R)-5α-furostan-2α, 3β, 22α, 26-tetraol]-26-O-β-D-glucopyranoside in an amount of 2.0 l of mixture per family, twice with an interval of six days in autumn and 1.0 mixture per family over every 10 ... .12 days in spring since the first days of April until the beginning of the main harvest. At the same time, the preparation of sugar syrup is added in an amount of 10 ... 100 mg / l of syrup. Invenţia se referă la apicultură, şi anume la un procedeu de creştere a albinelor. Procedeul, conform invenţiei, include hrănirea acestora cu un amestec din sirop de zahăr de 50% şi un preparat ce conţine 80-90% de glicozidă steroidică 3-O-[β-D-glucopiranozil (1-2)]-[β-D-glucopiranozil (1-3)]-[β-D-glucopiranozil (1-4)]-β-D-galactopiranozide [(25R)-5α-furostan-2α, 3β, 22α, 26-tetraol]-26-O-β-D-glucopiranozidă, în cantitate de 2,0 l de amestec la o familie, de două ori, cu un interval de 6 zile toamna şi 1,0 l de amestec la o familie peste fiecare 10-12 zile primăvara.
Domain	Beekeeping

Organization	**The State Agrarian University of Moldova**
Patent / patent application title	**BEE FEEDING PROCESS**
Authors	**EREMIA N., KRASOCIKO P., CHIRIAC A., ZAGAREANU A., SARÎ N.**
Patent / patent application N°	MD no. 0045, 2017.03.31
Description	The invention relates to beekeeping, particularly to the feeding of bees. The process of bee feeding includes their feeding with a mixture of 50% sugar syrup and 1.0 l of mixture per bee family in the evening, over every 10 ... 12 days, from the first days of April until the beginning of the main harvest. At the same time the nutritional stimulant contains at most, in % mas: pollen - 75,98, milk powder - 15,20, sugar powder - 7,60, nutritional additives "Bionorm P" - 0,61 and "Bilaxan "- 0.61 and all it is added to sugar syrup in the amount of 10 g to 2.5 ... 3.0 liters of sugar syrup. Invenţia se referă la apicultură, în particular la hrănirea albinelor. Procedeul de hrănire a albinelor, include hrănirea acestora cu un amestec din sirop de zahar de 50% şi un stimulent nutriţional în cantitate de 1,0 l de amestec la o familie de albine, seara, peste fiecare 10-12 zile, începând din primele zile a lunii aprilie până la începutul culesului principal. Totodată stimulentul nutriţional conţine, cel mult, în % mas.: polen (ghemotoace) – 75,98, lapte prof – 15,20, pudră de zahăr – 7,60, aditivii nutriţionali „Bionorm P” – 0,61 şi „Beloxan” – 0,61 şi se adaugă în siropul de zahăr în cantitate de 10 g la 2,5-3,0 litri sirop de zahăr.
Domain	Beekeeping

Organization	**The State Agrarian University of Moldova**
Patent / patent application title	**METHOD OF BEEKEEPING**
Authors	**EREMIA N., CHIRIAC A., CAISÎN L., IVANOVA R., MAŞCENCO N., CATARAGA I., EREMIA I.**
Patent / patent application N°	**0060, 2017.05.10**
Description	The invention relates to beekeeping, particularly to a method of beekeeping. The method of beekeeping includes feeding them with a mixture of 50% sugar syrup and natural bioregulator at a dose of 30 .... 120 mg / l, and the use of the process is carried out in the evening, during autumn time for the filling of food reserves for winter, it is used two times 1.5...3.0 l and during spring time from the early days of April until the beginning of the main harvest. One liter per family is used every 10... .12 days. Invenţia se referă la apicultură, în particular la un procedeu de creştere a albinelor. Procedeul de creştere a albinelor, include hrănirea acestora cu un amestec din sirop de zahar de 50% şi un bioregulator natural în doză de 30....120 mg/l, iar utilizarea procedeului se efectuează, seara, în perioada de toamnă la completarea rezervelor de hrană pentru iernare de două ori câte 1,5....3,0 l şi primăvară din primele zile a lunii aprilie până la începutul culesului principal câte un litru la o familie odată la 10….12 zile.
Domain	Beekeeping

SERBIA

Represented by

University of Belgrade

Organization	**University of Belgrade, Faculty of Agriculture / GAIA LIFE RESOURCES, Prague, Czech**
Patent / patent application title	**TERRA FOSTER –PLANT BIOSTIMULATOR**
Authors	**VLADAN PESIC**
Patent / patent application N°	1 /one/
Description	• One product for all plant types; • Natural multi-funkcional all-in-one product (substitutes 3 other classic products for organic agricultural produce like fertilizer, soil health improvement and pest protection product); • Gel-structured concentrate made of natural minerals (zeolite, calcium, magnesium, and zink); • Logistics adventage (4-6 Lit. per 1 Ha depending on the plant type); • Easy to use (mixed with water); • Increases yield from 15-60% (depending on the plant type); • Saves water for 2-3 times; • Organic product (enables organic certification of the crops).
Domain	

VIETNAM

Represented by

Tran Phu Major High School

Organization	**Tran Phu Major High School**
Patent / patent application title	**SYNTHESISING NEW DERIVATIVES FROM ZERUMBONE AND EVALUATING THEIR APPLICATION IN CURING CANCERS**
Authors	**BUI DO MINH QUAN, LE MINH NGOC, NGUYEN TUONG VAN, NGUYEN THE SON**
Patent / patent application N°	
Description	Converting zerumbone to new derivatives by combining it with several amines in order to improve its bioavailibility and anticancer properties. Successfully synthesising new derivativesfrom zerumbone with high yieldand stable efficiencyto distribute to medication in curing cancers. New derivatives of zeumbone have impressive biological activites on human cancer cell lines, stronger than those of original compound.
Domain	Chemistry and chemical industry

Organization	**Tran Phu Major High School**
Patent / patent application title	**SALINITY OBSERVING SYSTEM IN AQUACULTURE PONDS**
Authors	**NGUYEN NGOC TAM ANH, NGUYEN HIEN THAO CHI, VU DINH HUNG, NGUYEN TUONG VAN**
Patent / patent application N°	
Description	A novel automatic system which can observe, control and give advance warning on salinity to help users control saltwater intrusion and reduce the damages caused by salinity to the environment and aquaculture. A low-cost and advance system which will help users solve the salinity problem automatically.
Domain	Environment – ecology, ecological management, environmental protectionand monitoring

Organization	**Tran Phu Major High School**
Patent / patent application title	**MIND HAND – A COMPREHENSIVE SOLUTION SUPPORTS TWO-WAY COMMUNICATION FOR THE DEAF MUTE**
Authors	**NGUYEN HIEN THAO CHI, TRAN THI TRANG NGAN, VU DINH HUNG**
Patent / patent application N°	
Description	MIND HAND solution supporting communication includes a wrist device and an application which can identify sign language running on the basis of Android operating system. MIND HAND app can convert ***from sign language to speech*** and ***from speech to text***. After converted from speech to text, it will send the data to the wrist device via Bluetooth. MIND HAND device has three main functions: receiving data from MIND HAND app on the mobile phone then displaying text on the screen; identifying and classifying some audio signal sources in order to provide appropriate instructions and warnings to help users become more active in personal and family care; displaying real time clock. Our project's aim succeeded in building bridges for easier communication between the deaf mute and the community, helping them improve the quality of their lives.
Domain	Telecommunication

INVENTICA 2016

INVENTICA 2016

Institutes from ROMANIA

National Institute for Research and Development in Mine Safety and Protection to Explosion – INSEMEX Petrosani

Organization	**INSEMEX Petroşani**
Patent / patent application title	**STAND FOR CONDITIONINGELECTRICAL / NON-ELECTRICAL DETONATORS TO HYDROSTATIC PRESSURE AND TEMPERATURE**
Authors	**EDWARD GHEORGHIOSU, EMILIAN GHICIOI, DRAGOŞ VASILESCU, ATTILA KOVACS, ILICI ŞTREFAN, ILIE – CIPRIAN JITEA**
Patent / patent application N°	a 2014 00735
Description	The invention relates to the realization of a stand where the means of initiating explosives for civil use, namely electric / nonelectric detonators be subjected for 48 hours, water pressure and temperature at preset values, according to the regulations. Invenţia se referă la realizarea unui stand în care mijloacele de iniţiere a explozivilor de uz civil şi anume capsele detonante electrice / neelectrice să fie supuse timp de 48 h, la presiune hidrostatică şi temperatură, la valori prestabilite, conform reglementărilor în domeniu
Domain	Laboratory testing to check the pressure influence under temperature conditions on electric / non-electric detonators used as means of initiating explosives.

Organization	**INSEMEX Petroşani**
Patent / patent application title	**FAST SEALING SYSTEM FOR UNDERGROUND MINING WORKS**
Authors	**GHICIOI EMILIAN, CONSTANTIN LUPU, DORU CIOCLEA, ION TOTH, SORIN CONSTANTIN BURIAN, ARTUR GEORGE GĂMAN, MIHAELA PĂRĂIAN, MARIA PRODAN, JEANA IONESCU**
Patent / patent application N°	a 2013 00197
Description	The invention relates to thedevelopment of a system for fast sealing underground miningworks in order to guide air into those underground mining works located in the proximity of areas in which occurred explosion or fire type events and which have to be insulated with priority and celerity in order to minimize the risk for the initiation of a new explosion or of new coal self-ignition processes (in the insulated area) or against the input of toxic / flammable gases released within the insulated perimeter / mining work into mining works which have to dispose of uncontaminated fresh air. Invenţia se referă la realizarea unui sistem de închidere rapidă pentru lucrările miniere subterane pentru a dirija aerul în acele lucrările miniere subterane, aflate în proximitatea zonelor in care s-au produs evenimente de tip explozie sau incendiu şi care trebuie izolate cu prioritate şi celeritate în vederea minimizării riscului iniţierii unor noi explozii, sau a unor procese de autoaprindere a cărbunilor (in zona izolată), sau a pătrunderii de gaze toxice/inflamabile, degajate in perimetrul/zona minieră izolată, în lucrările în care trebuie să fie aer proaspăt necontaminat.
Domain	Mining Industry

Organization	**INSEMEX Petroşani**
Patent / patent application title	**METHOD FOR DETERMINING THE FUNCTIONAL PARAMETERS IN THE MAIN VENTILATION STATION AFTER AN EXPLOSION PHENOMENON**
Authors	**DORU CIOCLEA, GEORGE ARTUR GĂMAN,CONSTANTIN LUPU, EMILIAN GHICIOI, ION GHERGHE, NICOLAE IANC, ADRIAN MATEI, NICOLAE VLASIN**
Patent / patent application N°	a 2014 00842
Description	Method for determining of functional parameters at the main ventilation station after an explosion phenomenon is based on total network setting ventilation resistance and determination the functional parameters of active fan in post-event conditions. For this, first we identify the vulnerable areas to explosion phenomena. After this step it is established the minimum gradient of pressure loss in the ventilation network. At the level of vulnerable areas to explosion phenomena it is applied the explosion pressure in relation to the intensity phenomenon. Metoda de determinare a parametrilor funcţionali la nivelul staţiei principale de aeraj după producerea unui fenomen de explozie, are la bază stabilirea rezistenţei totale a reţelei de aeraj şi determinarea punctului de funcţionare post eveniment al ventilatorului activ. Pentru aceasta mai întâi se stabilesc zonele vulnerabile la producerea fenomenelor de tip explozie.
Domain	Mining Industry

Organization	**INSEMEX Petroşani**
Patent / patent application title	**SOURCE OF SHORT RECTANGULAR PROGRAMMABLE CURRENT IMPULSES FOR TESTING THE COMPONENTS OF SAFETY BARRIERS FROM WITHIN LOW CURRENT INSTALLATIONS LOCATED IN AREAS WITH EXPLOSION HAZARD**
Authors	**MARIUS DARIE, SORIN CONSTANTIN BURIAN, JEANA IONESCU, TIBERIU CSASZAR, LUCIAN MOLDOVAN, IOAN COSMIN COLDA, ADRIANA ANDRIŞ, BOTAR DANIELA**
Patent / patent application N°	a 2014 00943
Description	The invention relates to the development of a source of short rectangular programmable current impulses for testing the components of safety barriers from within low current installations located in areas with explosion hazard and the methodology for calculating its usage parameters. Inventia se referă la realizarea unei surse de impulsuri scurte dreptunghiulare programabile de curent pentru încercarea componentelor barierelor de securitate din cadrul instalaţiilor de curenţi slabi din spaţile cu pericol de atmosferă explozivă şi a metodologiei de calcul a parametrilor de utilizare a acesteia.
Domain	Explosion proof

Organization	**INSEMEX Petroşani**
Patent / patent application title	**A METHOD FOR DETERMINING THE DISPERSION OF THE GAS IN THE WORKING SAFTER AN EXPLOSION PHENOMENON**
Authors	**DORU CIOCLEA, GEORGE ARTUR GĂMAN, CONSTANTIN LUPU, EMILIAN GHICIOI, ION GHERGHE, CORNELIU BOANTĂ, EMERIC CHIUZAN, DOREL TAMAS**
Patent / patent application N°	a 2014 00952
Description	The invention relates to a method for determining the dispersion of the gas in the workings after an explosion phenomenon. The exploitation of underground coal systems are used for mining vertical, inclined and horizontal part of the opening, preparation and exploitation of deposits, which make up the network of workings of a mine and showing a high degree of complexity and can reach lengths cumulative tens of kilometers. Invenția se referă la o metodă de determinare a dispersiei gazelor la nivelul abatajelor după producerea unui fenomen de explozie. La exploatarea subterană a cărbunilor se utilizează sisteme de lucrări miniere verticale, înclinate, și orizontale cu rol de deschidere, pregătire și exploatare a zăcămintelor, care formează rețeaua de lucrări miniere a unei exploatări miniere și care prezintă un grad de complexitate ridicat, putând atinge lungimi cumulate de zeci de kilometri.
Domain	Mining Industry

Organization	**INSEMEX Petroşani**
Patent / patent application title	**METHOD FOR THE RESTORATION OF A VENTILATION NETWORK AFFECTED BY AN EXPLOSION ON THE BASIS OF CRITICAL PATHS**
Authors	**DORU CIOCLEA, GEORGE ARTUR GĂMAN, CONSTANTIN LUPU, EMILIAN GHICIOI, ION GHERGHE, EMERIC CHIUZAN, CRISTIAN TOMESCU, CORNELIU BOANTĂ, MARIUS ŞUVAR, VLAD PĂSCULECU**
Patent / patent application N°	a 2015 00163
Description	The invention relates to a method for the restoration of a ventilation network affected by an explosion on the basis of critical paths, which is based on the determination of the successive stages of restoration of the ventilation on the ventilation circuits affected by explosion on the basis of the critical pathways. Invenţia se referă la o metodă de restabilire a unei rețele de aeraj afectate de o explozie pe baza traseelor critice, care are la bază determinarea etapelor succesive de restabilire a aerajului la nivelul circuitelor de aeraj afectate de explozie, pe baza traseelor critice.
Domain	Mining Industry

Organization	**INSEMEX Petroşani**
Patent / patent application title	**INTEGRATED SYSTEM FOR SIMULTANEOUS MEASUREMENT OF FLAME FRONT PROPAGATION AND PRESSURE WAVE VELOCITIES IN CASE OF EXPLOSIONS**
Authors	**EMILIAN GHICIOI, GEORGE ARTUR GĂMAN, LUPU CONSTANTIN, SORIN BURIAN, MIHAELA PĂRĂIAN, MARIA PRODAN, DAN SORIN GABOR, VLAD PĂSCULESCU, NICOLAE VLASIN, ANDREI SZOLLOSI–MOTA, MARIUS ŞUVAR, IRINA VASILICA NĂLBOC**
Patent / patent application N°	a 2015 00739
Description	The invention relates to an integrated system for simultaneous measurement of flame front propagation and pressure wave velocities in case of air-flammable gas explosion striggered in the cylindrical shock tube, equipped with optical and pressure transducers, in order to study their behaviour depending on the concentration, on the ignition sources and on the propagation distance, respectively for establishing the deflagration or detonation characteristics. Invenţia se referă la un sistem integrat de măsurare simultană a vitezelor de propagare a frontului flăcării şi a undei de presiune în cazul exploziilor amestecurilor aer-gaze inflamabile în tubul de şoc cilindric echipat cu traductori optici şi de presiune, în vederea studierii comportamentului acestora în funcţie de valoarea concentraţiei, de tipul sursei de iniţiere şi al distanţei de propagare.
Domain	Explosion proof

Organization	**INSEMEX Petroşani**
Patent / patent application title	**A METHOD FOR IDENTIFYING OF THE VENTILATION CRITICAL CONSTRUCTION AT THE LEVEL OF COMPLEX VENTILATION NETWORK.**
Authors	**DORU CIOCLEA, NICOLAE IANC, GEORGE ARTUR GĂMAN, CONSTANTIN LUPU, EMILIAN GHICIOI, ION GHERGHE, FLORIN RĂDOI, ADRIAN MATEI, CORNELIU BOANTĂ**
Patent / patent application N°	a 2016 00391
Description	The invention relates to a method for identifying critical to the Expansion construction of a complex network of ventilation. The exploitation of underground coal mining systems are used for showing a high degree of complexity and can reach lengths accumulated tens of kilometers and in some cases more than a hundred kilometers. Associated mining systems have networks with the role of vehicular ventilation air flow rates of major using special ventilation systems. Invenţia se referă la o metodă de identificare a construcțiilor de aeraj critice la nivelul unei rețele complexe de aeraj. La exploatarea subterană a cărbunilor se utilizează sisteme de lucrări miniere care prezintă un grad de complexitate ridicat, putând atinge lungimi cumulate de zeci de kilometri iar în anumite cazuri peste o sută de kilometri. Asociat sistemelor de lucrări miniere avem reţelele de aeraj cu rol de vehiculare a unor debite de aer importante cu ajutorul sistemelor de ventilare speciale.
Domain	Mining Industry

Organization	**INSEMEX Petroşani**
Patent / patent application title	**EXPERIMENTAL SET-UP FOR THE DETERMINATION OF THE EXPLOSION LIMITS OF FLAMMABLE LIQUIDS VAPOURS**
Authors	**MARIA PRODAN, GEORGE ARTUR GĂMAN, EMILIAN GHICIOI, CONSTANTIN LUPU, DORU CIOCLEA, VLAD MIHAI PĂSCULESCU, DAN GABOR, NICOLAE IOAN VLASIN, ADRIAN JURCA, ANDREI SZOLLOSI - MOTA, IRINA NĂLBOC, MARIUS CORNEL ŞUVAR**
Patent / patent application N°	a 2016 00750
Description	The invention relates to an experimental set-up for the determination of the explosion limits of flammable liquids vapors, namely the lower explosion limit (LEL) and the upper limit of explosion (LSE). The equipments from the experimental set-up allow the recording of several processes: the explosion pressure, the vaporization of the liquid, the homogeneous air-vapor mixture and the combustion, that take place in a controlled temperature vessel at the boiling point of the liquid.
Domain	Knowing these explosion limits is useful for the development of technical and organizational explosion protection measures for the industrial activities in which are processed, stored or used flammable liquids that can create potentially explosive atmospheres

Organization	**INSEMEX Petroşani**
Patent / patent application title	**TEST BENCH FOR IMAGERYRESEARCH OF GAS EXPLOSIONS**
Authors	**NICOLAE – IOAN VLASIN, GEORGE ARTUR GĂMAN, EMILIAN GHICIOI, CONSTANTIN LUPU, VLAD MIHAI PĂSCULESCU, GHEORGHE DANIEL PUPĂZAN, MARIA PRODAN, ANGELICA NICOLETA CĂLĂMAR, DORU CIOCLEA, IRINA NĂLBOC, MARIUS CORNEL ŞUVAR, GHEORGHE - DANIEL FLOREA**
Patent / patent application N°	a 2016 00788
Description	The invention relates to a test bench for imagery research of air-flammable mixtures explosions, providing the possibility to record the ignition and evolution of the combustion phenomena (flame front development) using a high-speed camera (over 30000 fps) using a fully transparent parallelepipedic explosion chamber, with dimensions up to 110 x 8 x 8 cm, interlaced in a special assembly of plane mirrorswith maximum dimensions of 140 cm, which are controlled mechanically deformed horizontally and vertically in order to obtain the focal length for using the Schlieren technique (optical visualization of the boundary between various densities of fluids), with a cylindrical incandescent lightsource, with internal pressure monitoring, with the initiation of the explosion using an electrical spark (inductive or capacitive). Invenţia se referă la un stand pentru cercetarea imagistică a exploziilor amestecurilor aer-gaze inflamabile, care permite înregistrarea fenomenelor de aprindere și evoluție a combustiei (dezvoltarea frontului de flacără) cu ajutorul unei camere de mare viteză.
Domain	Explosion proof

National Institute for Earth Physics - INCDFP

Organization	**INCDFP**
Patent / patent application title	**SEISMIC WARNING SYSTEM AND INFORMATION**
Authors	**AILENEI ADRIAN GEORGE, IONESCU CONSTANTIN, TOADER VICTORIN EMILIAN, STANILESCU ARGEL, DASCALU AUREL, CROITORU VIOREL**
Patent / patent application N°	121355
Description	The invention relates to a seismic information and warning system which can be used for the prevention of accidents, explosive or fire-risk enterprises, gas, petroleum or other flammable gas distribution companies, refineries, hospitals, performance rooms, chemical plants, transport companies (railway, subway), people wishing to be informed about major seism. The system consists of a network of vibration sensors installed in the epicenter area whose signals are transmitted by radio to a data acquisition center that generates the alarm signal to the recipient before the dangerous seismic waves reach the target that is wanted alarmed. Inventia se refera la un sistem de informare si avertizare seismica, cu ajutorul caruia pot fi anuntate in scopul prevenirii unor accidente. Sistemul consta intr-o retea de senzori de vibratie instalati in zona epicentrala ale caror semnale se transmit, prin radio,catre un centru de achizitie date, care genereaza semnalul de alarma catre beneficiar inainte ca undele seismice periculoase sa ajunga la obiectivul care se doreste alarmat.
Domain	Security, protection,safety,disasters

COMOTI – Romanian Research and Development Institute for Gas Turbines

Organization	**COMOTI**
Patent / patent application title	**TUN SPAȚIAL CU LUMINĂ CONCENTRATĂ DESTINAT PROTECȚIEI PĂMÂNTULUI CONTRA ASTEROIZILOR, PENTRU ALIMENTAREA CU ENERGIE SUPLIMENTARĂ A NAVELOR SPAȚIALE, STAȚILOR ORBITALE, SATELIȚILOR, PENTRU CURĂȚAREA SPAȚIULUI DE DEȘEURI ȘI PENTRU TERRAFORMAREA ALTOR PLANETE SAU SATELIȚI NATURALI DIN SISTEMUL SOLAR**
Authors	**CONSTANTIN SANDU, VALENTIN SILIVESTRU, DAN BRASOVEANU, OCTAVIAN ANGHEL**
Patent / patent application N°	A 2015 00639/04.09.2015
Description	The invention reffers to a cannon with concentrated light placed in space in circumsolar orbit that collects, concentrate and directs solar light to asteroids that can enter on collision trajectories with Earth, or to spacecraft, orbital stations, satellites for additional energy supply, or to the space debris from Earth's orbit for their disposal or to the surfaces of planets and natural satellites for their terraformation. As a function of the application, the light concentrated by this cannon can be several times up to several thousand times more intense than the solar radiance on the Earth's orbit.
Domain	Spatial / Space

The National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest

Organization	**ICECHIM Bucharest**
Patent / patent application title	**COMPOSITION FOR PAPER DEACIDIFICATION, PROCESS TO OBTAIN IT AND METHOD FOR ITS APPLICATION**
Authors	**RODICA-MARIANA ION, SANDA MARIA DONCEA**
Patent / patent application N°	EP2626464
Description	The present invention relates to a new chemical composition comprising hydroxyapatite nanoparticles suspended in carboxymethyl cellulose solution (50%: 50%) in isopropyl alcohol as solvent, this composition being used for deacidification of paper by annihilation of paper acid pH = 4.5 to alkaline pH = 7.2. The suspension of hydroxyapatite nanoparticles in carboxymethylcellulose in isopropyl alcohol solution may be sprayed onto the surface of acidic paper. The paper treatment with nanoparticles is not followed by the carbonation of the applied reagents and there is no risk of the alkaline paper deposit disappearing and the acidity of the paper reappears.
Domain	Conservation and restoration of document's paper

Organization	**ICECHIM Bucharest**
Patent / patent application title	**PASTE-GEL FOR DESULFURISATION OF CALCAREOUS STONE SURFACES AND PROCESS FOR PREPARING AND APPLYING THE SAME**
Authors	**RODICA MARIANA ION, NELU ION, IOANA RALUCA ŞUICĂ-BUNGHEZ**
Patent / patent application N°	RO131218
Description	The invention relates to a composition based on mineral filler and hydroxyapatite for the preservation and restoration of limestone matrix surfaces by the retention of sulphates resulting from the presence of sulfur-based substances in the atmosphere, including sulfur dioxide (SO_2), resulting from the continuous use of fuels in industrial and domestic activities. The advantage of this method is that it only removes sulfate ion while releasing calcium ions to the original stone. There is a retransformation of hydrated calcium sulphate from the surface of stone monuments, in calcium carbonate with the restoration of the original structures. Invenţia se referă la o compoziţie pe bază de argilă minerală filosilicatică şi hidroxiapatită pentru conservarea şi restaurarea suprafeţelor cu matrice calcaroasă (cretă) prin retenţia sulfaţilor rezultaţi datorita prezenţei în atmosferă a substanţelor pe bază de sulfprintre care şi dioxidul de sulf ($S0_2$).
Domain	Conservation and restoration of the stone monuments surface

National Research and Development Institute for Energy – ICEMENERG Bucharest

Organization	**ICEMENERG Bucharest**
Patent / patent application title	**NANOCOMPOSITE EPOXY COMPOSITION**
Authors	**ADRIAN ANDREI ADAM, LUCIA-ELENA LACATUSU**
Patent / patent application N°	
Description	The invention relates to nanocomposite insulating composition used in the construction and reconditioning of electric power equipment without heat treatment, resistant to high voltage, mechanical, thermal, electrical shocks and chemical attack from the operating environment Brevetul prezinta o compozitie electroizolanta nanocompozita utilizata in constructia si reconditionarea echipamentelor electroenergetice care reticuleaza la temperatura ambianta si este rezistenta la tensiuni inalte, socuri mecanice, termice, elctrice si la atacul chimic din mediul de functionare.
Domain	Energy

Organization	**ICEMENERG Bucharest[1], Polytechnic University of Bucharest[2]**
Patent / patent application title	**METAL STRUCTURES FOR PULVERIZED COAL CERAMIC CHANNEL PROFILING IN ORDER TO ACHIEVE LOW NOX STEPPED COMBUSTION**
Authors	**ADAM ADRIAN ANDREI[1]; MANDREAN CRISTIAN[1]; BARBIERU ION[1], NEGREANU GABRIEL [2]; PISA IONEL[2]; OPREA[2]; MIHAESCU LUCIAN[2].**
Patent / patent application N°	Patent pending OSIM
Description	The invention concerns a combustion plant with pulverized coal slotted ceramic burners introducing the pulverized lignite combustion technology in steps in order to reduce the NOx concentration. The metal structure mounted in the ceramic channels includes iron sheet bands for directing the coal dust from the upper openings of the four modules of the burner laterally and to the ceiling. The coal dust from the other two sides of the coal dust channel is directed by the secondary air pipes 2 and 3. Thus, the coal dust and secondary air intake into the above mentioned slots are done by extending the respective channels against the burner front plan. This construction achieves an intake and combustion in steps both for the fuel and for the combustion air, observing the air-gas dynamics concept requirements for low NOx emissions.
Domain	Cazane energetice pe carbune; Solutie in premiera pentru Romania

National Research and Development Institute for Soil Science, Agro-chemistry and Environment - ICPA Bucharest

Organization	**ICPA Bucharest**
Patent / patent application title	**COMPLEX LIQUID FERTILIZER WITH ANTI-CHLOROSIS PROPERTIES, FOR PREVENTING AND TREATING NUTRITIONAL DEFICIENCIES, PROCESS FOR OBTAINING AND METHOD FOR APPLYING THE SAME**
Authors	**CIOROIANU TRAIAN MIHAI, DUMITRUMIHAIL, SÎRBU CARMEN EUGENIA**
Patent / patent application N°	RO 128921 B1 / 30.03.2015
Description	The invention relates to a liquid fertilizer with anti-chlorosis properties, for preventing and treating nutritional deficiencies, to a process for obtaining and a method for applying the same. According to the invention, the fertilizer consists of: total nitrogen 25.72...101.3 g/l, phosphorus 20.56...60.82 g/l expressed as P_2O_5, potassium 24.51...53.46 g/l expressed as K_2O, iron 10.12...24.22 g/l, zinc 0.16...0.95 g/l, copper 0.04...0.56 g/l, magnesium 0.66...4.96 g/l, manganese 0.03...0.50 g/l, boron 0.25...0.73 g/l, sulphur 13.04...31.63 g/l, organic substances 125.45...258.42 g/l. As claimed by the invention, the method for applying the liquid fertilizer consists in using the product in viticulture and fruit farming by spraying. Invenţia se referă la un îngrăşământ lichid cu proprietăţi anticlorozante, de prevenire şi tratare a carenţelor nutriţionale, la un procedeu de obţinere şi la o metodă de aplicarea acestuia.
Domain	Agriculture

Organization	**ICPA Bucharest**
Patent / patent application title	**EXTRARADICULAR FERTILIZER, PROCESS FOR PREPARING IT AND METHOD FOR APPLYING THE SAME**
Authors	**SOARE MARIA, CIOROIANU TRAIAN MIHAI, DUMITRU MIHAIL, SÎRBU CARMEN EUGENIA, MĂRIN NICOLETA**
Patent / patent application N°	RO 127400 B1 / 28.12.2012
Description	According to the invention, the fertilizer consists of 100.8...130.8 g/l of total nitrogen, of which 80.4...120.6 g/l of amidic nature, 5.1...10.2 g/l of nitric nature, 5.1...10.2 g/l of ammonia nature, 40.6...60.3 g/l of phosphoric anhydride, 35.2...51.4 g/l of potassium oxide, 7.5...20 g/l of protein organic substances, 0.2...0.3 g/l of iron, 0.04...0.1 g/l of zinc, 0.05...0.1 g/l of copper, 0.1...0.2 g/l of boron, 0.05...0.2 g/ of magnesium, 0.05...0.15 g/l of manganese, 0.57...0.73 g/l of sulphur, pH of 5.8...6.8. The claimed method consists in spraying the fertilizer on the plants as a 0.5...2% aqueous solution, in an amount of 250...1500 l/ha. Fertilizantul conform invenţiei este constituit din 100,8...130,8 g/l azot total, din care 80,4...120,6 g/l de natură amidică, 5,1...10,2 g/l de naturănitricăşi 5,1...10,2 de natură amoniacală, 40,6...60, 3 g/l pentaoxid de fosfor, 35,2...51,4 g/l oxid de potasiu, 7,5...20 g/l substanţe organice proteice, 0,2...0,3 g/l fier, 0,04...0, 1 g/l zinc, 0,05...0,1 g/l cupru, 0,1...0,2 g/l bor, 0,05...0,2 g/l magneziu, 0,05...0,15 g/l mangan, 0,57...0, 73 g/l sulf, sub formă de soluţie apoasă cu un pH de 5,8...6,8.
Domain	Agriculture

Organization	**ICPA Bucharest**
Patent / patent application title	**NPK TYPE EXTRARADICULAR FERTILIZER WITH HUMIC SUBSTANCES, PROCESS FOR OBTAINING AND METHOD FOR APPLYING THE SAME.**
Authors	**CIOROIANU TRAIAN MIHAI, SÎRBU CARMEN EUGENIA, DUMITRU MIHAIL**
Patent / patent application N°	RO 127894 B1 / 30.04.2014
Description	According to the invention, the fertilizer comprises 55.6...165.69 g/l total nitrogen, 32.41...70.2 g/l phosphorus pentoxide, 30.92...58.4 g/l potassium oxide and microelements consisting of copper, zinc, iron, manganese and magnesium, completely chelated with disodium salt EDTA, boron, sulphur and 23.65...35.89 g/l of organic substances of which 8.04...20.09 g/l of humic substances. The method for the application of the fertilizer consists in administering an aqueous fertilizer solution with a concentration of 0.01...25%, in an amount of 200...10000 l/ha, depending on the fertilizer type, crop and vegetation stage. Invenţia se referă la un fertilizant, la un procedeu de obţinere a acestuia şi la o metodă de aplicare. Fertilizantul conform invenţiei conţine 55,6...165,69 g/l azot total, 32,41...70,2 g/l pentoxid de fosfor, 30,92...58,4 g/l oxid de potasiu şi microelemente constând din cupru, zinc, fier, mangan şi magneziu, complet chelatizate cu sare adisodică a EDTA, bor, sulf şi 23,65...35,89 g/l substanţe organice, din care 8,04...20,09 g/l substanţe humice. Metoda de aplicare a fertilizantului constă în administrarea unei soluţii apoase de fertilizant, cu concentraţie de 0,01...25%, încantitate de 200...10000l/ha.
Domain	Agriculture, Rehabilitation of degraded soils

Organization	**ICPA Bucharest**
Patent / patent application title	**FERTILIZER WITH HUMIC SUBSTANCES, PROCESS FOR PREPARING THE SAME AND METHOD OF APPLICATION**
Authors	**SÎRBU CARMEN EUGENIA, CIOROIANU TRAIAN MIHAI, DUMITRU MIHAIL**
Patent / patent application N°	RO 127192 B1 / 29.03.2013
Description	According to the invention, the fertilizer comprises 0.9...47.2 g/l of total nitrogen, 1.0...66.6 g/l of phosphorus, 6.9...57 g/l of potassium, 9.0...19.8 g/l of humic organic substances, 0.20...0.62 g/l of iron, 0.19...0.3 g/l of zinc, 0.19...0.36 g/l of copper, 0.12...0.25 g/l of boron, 0.26...0.32 g/l of magnesium, 0.15...0.37 g/l of manganese, 1.8...3.3 g/l SO3, having a pH of 6.8...8.4. The claimed method consists in spraying the fertilizer on the plants as a 0.5...2% aqueous solution, in an amount of 250...1500 l/ha, depending on the crop and the vegetation stages of plants. Îngrăşământul conform invenţiei conţine 0,9...47,2 g/l azot total, 1,0...66,6 g/l fosfor, 6,9...57 g/l potasiu, 9,0...19,8 g/l substanţe organice humice, 0,20...0,62 g/l fier, 0,19...0,3 g/l zinc, 0,19...0,36 g/l cupru, 0,12...0,25 g/l bor, 0,26...0,32 g/l magneziu, 0,15...0,37 g/l mangan, 1,8...3,3 g/l SO3, având un pH de 6,8...8,4. Metoda de aplicare constă in pulverizarea pe plante a fertilizantului sub formă de soluţie apoasă 0,5...2%, încantitate de 250...1500 l/ha, înfuncţie de cultură şi fazele de vegetaţie a plantelor.
Domain	Agriculture, Rehabilitation of degraded soils

Organization	**ICPA Bucharest**
Patent / patent application title	**EXTRA-ROOT FERTILIZER WITH PROTEIN HYDROLYSATES, PROCESS OF PREPARATION AND METHOD OF APPLICATION**
Authors	**CIOROIANU TRAIAN MIHAI, SÎRBU CARMEN EUGENIA, DUMITRU MIHAIL**
Patent / patent application N°	RO 126939 B1 / 29.03.2013
Description	The claimed fertilizer comprises 4.42...17.76 g/l total nitrogen, of which 0.04...0.18 g/l ammonia nitrogen, 0.001...0.01 g/l phosphorus pentoxide as organic phosphorus, 0.01...8.57 g/l potassium oxide, 22.19...98.12 g/l collagen hydrolysate, 0.32...3.01 g/l iron, 0.12...1.02 g/l zinc, 0.14...1.02 g/l copper, 0.24...0.51g/l boron, 0.17...2.31 g/l magnesium, 0.14...0.667 g/l manganese, 4.08...29.59 g/l SO3 having a pH between 5.4...6.8.The claimed method consists in spraying the fertilizer on the plants as a 0.25...2% aqueous solution, in an amount of 250...1500 l/ha, depending on the crop and the vegetation stages of plants. Invenţia se referă la un fertilizant extraradicular, la un procedeu pentru obţinerea acestuia şi la o metodă de aplicare. Fertilizantul conform invenţiei cuprinde 4,42...17,76 g/l azot total, din care 0,04...0,18 g/l azotamoniacal, 0,001...0,01 g/l pentaoxid de fosforcafosfor organic, 0,01...8,57 oxid de potasiu, 22,19...98,12 g/l hidrolizat de colagen, 0,32...3,01 g/l fier, 0,12...1,02 g/l zinc, 0,14...1,02 g/l cupru, 0,24...0,51 g/l bor, 0,17...2,31 g/l mageziu, 0,14...0,667 g/l mangan, 4,08...29,59 g/l SO3, având un pH 5, 4...6,8.
Domain	Agriculture

Organization	**ICPA Bucharest**
Patent / patent application title	**COMPLEX FERTILIZER WITH HUMIC SUBSTANCES AND METHOD OF APPLICATION**
Authors	**SÎRBU CARMEN EUGENIA, CIOROIANU TRAIAN MIHAI, DUMITRU MIHAIL**
Patent / patent application N°	RO 129938 B1 / 2016
Description	The claimed fertilizer comprises 152.2...271.8 g/l total nitrogen, of which 139.4...147.2 g/l as amide, 6.2...66.9 g/l as ammonia and 0...65.5 g/l nitrate, 10...35 g/l phosphorus pentoxide, 5...40 g/l potassium oxide, the microelements iron, copper, zinc, magnesium, manganese, boron, sulphur as SO3 in a concentration of 5.5...28.3 g/l and 12.8...22.7 g/l organic substances of which 3.3....10 g/l humic substances. The claimed method consists in that the product is administered as an aqueous solution of a concentration of 0.1...10 % in an amount of 200...10 000 l/ha, in 2...3 treatments. Fertilizantul conform invenţiei este constituit din 152,2...271,8 g/l azot total, din care 139,4...147,2 g/l sub formă amidică, 6,2...66,9 g/l amoniacală şi 0...65,5 g/l nitrică, 10...35 g/l pentaoxid de fosfor, 5...40 g/l oxid de potasiu, microelementele fier, cupru, zinc, magneziu, mangan, bor, sulf, ca SO3 înconcentraţie 5,5...28,3 g/l, şi substanţe organice 12,8...22,7 g/l, din care 3,3...10 g/l substanţe humice. Metoda conform invenţiei constă în aceea că produsul se administrează sub formă de soluţie apoasă de concentraţie 0,1...10%, în cantitate de 200...10.000 l/ha, în 2...3 tratamente.
Domain	Agriculture, Rehabilitation of degraded soils

„Petru Poni" Institute of Macromolecular Chemistry	
Organization	**„Petru Poni" Institute of Macromolecular Chemistry**
Patent / patent application title	**PROCEDURE AND COMPOSITIONS FOR THE PREPARATION OF NOVEL CELLULOSE-BASED HYDROGELS**
Authors	**DIANA CIOLACU**
Patent / patent application N°	PatentNo. RO 122780 B1 PatentNo. RO 123143 B1 Patent Demand No. RO 126831 A2
Description	The group of inventions(RO 122780, 123143 and 126831 A2) presents a two-step procedure consistingin dissolving cellulose in an alkaline solution,without/with further mixing with different polyssacharides, followed by the chemicalcrosslinking with epichlorohydrin. The obtained materials presents high swelling degrees, a dimensional stability, a good mechanical strenghtand may be potential candidates for biomedical and pharmaceutical applications. *Acknowledgements* This work was supported by a grant of the Romanian National Authority for Scientific Research and Innovation, CNCS – UEFISCDI, project number PN-II-RU-TE-2014-4-0558. Grupul de invenții (RO 122780, 123143 și 126831 A2) prezintă un procedeu în două etape constând în dizolvarea celulozei într-o soluție alcalină, fără/cu o amestecare ulterioară cu diferite polizaharide, urmată de o reticulare chimică cu epiclorhidrină.
Domain	- medical - pharmaceutical

Organization	**„Petru Poni" Institute of Macromolecular Chemistry**
Patent / patent application title	**PROCEDURE AND COMPOSITIONS FOR THE PREPARATION OF NOVEL TWO-COMPONENT LIGNIN-BASED HYDROGELS**
Authors	**DIANA CIOLACU, GEORGETA CAZACU**
Patent / patent application N°	Patent No.RO 127173 B1 Patent Demand No. RO 128998 A2
Description	The development of various green materials from lignin, which is most often considered as waste, is of prime interest from environmental and economic points of view. The group of inventions (RO 127173 şi 128998 A2) presents the preparation method of new cross-linked hydrogels based on lignin and natural or synthetic polymers, by using epichlorohydrin, as a cross-linker.Also, it is established the nature of matrices and the composition which determined the superabsorbent properties of the hydrogels. Different applications of these hydrogels are in the biomedical field, especially asdrug delivery devices. *Acknowledgements* This work was supported by a grant of the Romanian National Authority for Scientific Research and Innovation, CNCS – UEFISCDI, project number PN-II-RU-TE-2014-4-0558.
Domain	- medical - pharmaceutical

Institutes from MOLDOVA

National Centre of Public Health

Organization	**National Centre of Public Health, Academy of Sciences of Moldova.**
Patent / patent application title	**THE METHODOLOGICAL MONITORING OF THE NATURAL SOURCES OF RADON (^{222}RN) AND EVALUATION OF THE RADIOLOGICAL RISK TO THE EXPOSED POPULATION.**
Authors	**COREȚCHI LIUBA, BAHNAREL ION, URSULEAN ION, APOSTOL ION, PLAVAN IRINA, COJOCARI ALEXANDRA, VÎRLAN SERGHEI.**
Patent / patent application N°	5478 of 07/10/2016.
Description	The invention represents the radiometric investigations and especially the methodology for determining the radon concentrations and its progeny indoor, in soil and water. It described the calculating methods of the internal and external gamma dose and the radiological risk of exposed population. This paper is intended for institutions and scientific/practical public health organizations to assess the level of exposure of the population and the workers exposed to ionizing radiation. Invenția se referă la investigaţii radiometrice, în special metodologia de determinare a concentraţiilor de radon şi descendenţilor acestuia în încăperi, sol şi apă. Un rol important se atribuie metodelor de calculare a dozelor *gama* externe şi interne şi a riscului radiologic pentru populaţia expusă.
Domain	The control and surveillance of the population exposure to ionizing radiation, including radon.

Organization	**National Centre of Public Health, Academy of Sciences of Moldova.**
Patent / patent application title	**BIODOZIMETRY OF THE EXPOSURE AT THE IONIZING RADIATION BY MICRONUCLEUS METHOD.**
Authors	**LIUBA COREȚCHI, ALEXANDRA COJOCARI, ION BAHNAREL**
Patent / patent application N°	Nr.5379, of 09/06/2016.
Description	The invention relates to the field of medicine, in particular to processes for the evaluation of the cytogenetic mutation by micronucleus test under the conditions of stressogenic factors, including increased ionizing radiation conditions. The work is intended for cytogenetic investigations in biodozimetry and includes methodology for determining the cellular reaction to the action of ionizing radiation by determining the number of micronuclei. This presents a express method, estimating the level of patient exposure to stressogenic factors, including ionizing radiation within limited time, useful as a screening test in case of nuclear accident/incident. Invenția se referă la medicină, în special la tehnologia efectuării investigaţiilor citogenetice în biodozimetrie şi stabilește metodologia de evaluare a reacţiei celulare la acţiunea radiaţiilor ionizante prin determinarea numărului de micronuclee. Este o metodă rapidă (expres), care permite estimarea nivelului de expunere a pacientului la factorii stresanţi, inclusiv la radiaţii ionizante în termen limitat, fiind utilă şi în calitate de test-*screening* în caz de accident/incident nuclear.
Domain	Evaluation of the exposed patients to ionizing radiations in real time.

Organization	**National Centre of Public Health, Academy of Sciences of Moldova**
Patent / patent application title	**THE MONITORING OF IONIZING RADIATION SOURCES.**
Authors	**COREȚCHI LIUBA, BAHNAREL ION, URSULEAN ION, COJOCARI ALEXANDRA, PLĂVAN IRINA; VÎRLAN SERGHEI**
Patent / patent application N°	Nr. 5599 from 13.04.2017.
Description	The invention relates to radiological investigations in particular to techniques for detecting ionizing radiation, including determining the concentrations of natural radionuclides: ^{226}Ra, ^{90}Th, ^{238}U and ^{40}K; Environmental pollution indicators: ^{90}Y, ^{134}Cs, ^{137}Cs, ^{90}Sr, ^{210}Po, ^{210}Pb, etc. by spectrometric, radiochemical and radiometric methods. The paper is intended for the institutions of the Public Health Supervision Service, including specialists, who perform radioactivity investigations: the hygienists, the students and the residents of the Public Health Faculty who are studying the Hygiene of Radiation at the stage of university/postgraduate education. Invenția se referă la investigații radiologice în special la tehnici de detectare a radiațiilor ionizante, inclusiv determinarea concentrațiilor radionuclizilor naturali: ^{226}Ra, ^{90}Th, ^{238}U și ^{40}K; indicatorilor de poluare a mediului: ^{90}Y, ^{134}Cs, ^{137}Cs, ^{90}Sr, ^{210}Po, ^{210}Pb etc. prin metode spectrometrice, radiochimice și radiometrice.
Domain	Determination the concentrations of the natural radionuclides: ^{226}Ra, ^{90}Th, ^{238}U și ^{40}K; by the spectrometric, radiochemical and radiometric methods.

Organization	**National Center of Public Health**
Patent / patent application title	**RHIZOPUS STOLONIFER FUNGI STRAIN FOR BIODEGRADATION OF COBALT AND NICKEL COMPOUNDS.**
Authors	**COREŢCHI LIUBA,PLAVAN IRINA, BAHNAREL ION**
Patent / patent application N°	Decision of patent application no. 8667 of 2017.03.17
Description	The invention relates to Biotechnology and Environmental protection. The novelty consists in developing a new biotechnological process to reduce the risk of environmental pollution, based on the use of non-pathogenic microorganisms. It is proposed fungi *Rhizopus stolonifer* 67 CNMN-FD-18, which possesses the biodegradation of toxic compounds of cobalt and nickel. Invenția se referă la Biotehnologie și Protecția mediului. Esenţa invenţiei constă în elaborarea unui procedeu biotehnologic nou de reducere a riscului de poluare a mediului ambiental, în baza utilizării microorganismelor nepatogene. Se propune funga ***Rhizopus stolonifer 67*** **CNMN-FD-18**, ce posedă proprietăți de biodegradare a compuşilor toxici ai cobaltul și nichelul.
Domain	Biotechnology, Environment protection.

Organization	**National Center of Public Health**
Patent / patent application title	**IMMUNE STATUS ASSESSMENT PROCESS**
Authors	**COREŢCHI LIUBA, BAHNAREL ION, SPÎNU CONSTANTIN**
Patent / patent application N°	2667 C2 MD A 61 B 5/145
Description	The invention relates to the field of medicine, in particular to processes for the evaluation of the immune status under the conditions of stressogenic factors, including increased ionizing radiation conditions. There is provided a process for the individual assessment of the immune status in patients exposed to radiostresogen factor, according to the correlation of sum of the populations of T-lymphocytes, including correlation of TCD4+ (T-helper lymphocytes) and TCD8+ (T-suppressor lymphocytes) populations to the TCD3+ (pan T-lymphocytes) x 100, investigated by using of imunofluoriscent imunoterapy or the biphenotypic method. The technical result consist in increasing of individual assessment of immune status in patients exposed to radiostresogen factor with detection of the correlation between expression of tension index of immune response and manifestation of clinical pathologies. Invenția se referă la domeniul medicinii, în special la procedee de evaluare a statusului imun în condiții stresogene, inclusiv în condiții de expunere la radiații ionizante. Se propune un procedeu pentru evaluarea individuală a statusului imun la pacienții expuși la factorul radiostresogen.
Domain	Medicine, Immunology

Organization	**"NicolaeTestemitanu" State University of Medicine and Pharmacy of the Republic of Moldova, National Center for Public Health**
Patent / patent application title	**PNEUMONIA COMUNITARĂ ȘI AFECȚIUNILE RESPIRATORII RECURENTE LA COPII**
Authors	**ALA DONOS, CONSTANTIN SPINU**
Patent / patent application N°	OS 5645 from 15.05.2015
Description	The monograph includes original results in line with those outlined in the profile literature, evolutionary, pathogenetic, immunological, morphological, diagnostic and morphological aspects of the management and recovery of children suffering from acute respiratory disease groups, recurrences in community-based pneumonia of viral, bacterial or mixed genesis. The diagnosis with molecular biology techniques, the criteria for selecting the treatment of recurrent respiratory disorders during the acute and recovery period, with the purpose of correcting the etiopathogenetic and immunological disorders, are thoroug hlyexposed. An important place in the presented work is the viral infection prophylaxis carried out in the context of WHO, ECDC and CDC recommendations. Monografia include rezultate originale de rând cu cele expuse în literatura de profil privind aspecte clinico-evolutive, patogenetice, imunologice, morfopatologice, de diagnostic management și recuperare a copiilor bolnavi din grupele de risc care manifestă afecțiuni respiratorii acute, recurențe în pneumonia comunitară de geneză virală, bacteriană sau mixtă.
Domain	Monograph is dedicated for interested medical doctors, residents and students of medicine faculty

Organization	**National Center of Public Health**
Patent / patent application title	**IGIENA MUNCII LUCRĂTORILOR GOSPODĂRIILOR ȚĂRĂNEȘTI**
Authors	**GRIGORE FRIPTULEAC, IURIE PÎNZARU**
Patent / patent application N°	Seria OȘ nr. 5626 din 05.05.2017
Description	The work belongs to a new research direction in labour hygiene, interrelation between risk factors and state of health the peasants of the peasant households. For the Republic of Moldova it is demonstrated the existence of some specific peculiarities in the socio-demographic structure of the members of peasant housegolds, working conditions, behavioral indices, health, medical care. The investigation subjects are the evaluation of demographic peculiarities of peasant household' workers, their access to medical care; studying and evaluation of peasant household' workers health, studying and hygienic evaluation of peculiarities of occupational environment; evaluation of interrelations between indices of health and risk factors, elaboration of preventive measures. Lucrarea aparține unei direcții noi de cercetări în igiena muncii, evaluării relațiilor dintre factorii de risc și indicii de sănătate în rîndul țăranilor gospodăriilor țărănești. Ea vine să demonstreze existența unor particularități specifice pentru Republica Moldova în structura socio-demografică a membrilor gospodăriilor țărănești: condițiile de muncă, indicii comportamentali, stare de sănătate, asistența medicală.
Domain	Este destinată specialiștilor în sănătatea publică: medicilor igienişti, medicilor de familie, managerilor în medicină etc.

Organization	**National Center of Public Health**
Patent / patent application title	**EVALUAREA TOXICOLOGICĂ RAPIDĂ DE LABORATOR A ARTICOLELOR POLIMERICE, PE CULTURA CELULARĂ TETRAHYMENA PYRIFORMIS**
Authors	**IURIE PÎNZARU**, **ELENA JARDAN, RAISA SÎRCU**, **ALA OUATU**
Patent / patent application N°	Seria OȘ nr. 5567 din 07.03.2017
Description	Methodical guidelines establish methodology for research in toxicology in order to determine the toxic properties of polymeric articles (plastics materials that come into contact with food and non-food products, toys and toys, textile articles, medical-sanitary objects) on cell culture *Tetrahymena pyriformis*. In premiere, guidelines include step-by-step procedures to rapidly perform matrix impact assessment on living biological organisms. The use of unicellular culture / infusorians provides complex characteristics of the hazard level and allows the classification of the polymeric articles toxicity in accordance with unification standards. Overall, this scientific work is done to ensure safety of products and to protect human health. Indicațiile metodice stabilesc metodologia cercetărilor de toxicitate în vederea determinării proprietăților toxice ale articolelor polimerice (materiale din mase plastice ce vin în contact cu produsele alimentare și nealimentare, jocuri și jucării, articole din materiale textile, obiecte cu destinație medico-sanitară) pe cultura celulară *Tetrahymena Pyriformis*.
Domain	Toxicology, infusorians, health

Organization	**National Center of Public Health**
Patent / patent application title	**DEZVOLTAREA TOXICOLOGIEI EXPERIMENTALE ÎN REPUBLICA MOLDOVA**
Authors	**IURIE PÎNZARU**, **GHEORGHII ȚURCANU**, **RAISA SÎRCU**, **ELENA JARDAN, TATIANA MANCEVA**
Patent / patent application N°	Seria OȘ nr. 5566 din 17.02.2017
Description	The first monograph in the field of origin and development of toxicology and chemical safety in the Republic of Moldova wich is focused on the evaluation of chemical risk factors and their determinants for public health is presented. The retrospective analysis of the documents and the information on the results of the original scientific researches and the achievements of various scientific projects in the field of toxicology in the past and present with the toxicological-hygienic assessment of chemical substances is described. Future activities will aim to minimize exposure to chemicals and ensure a high level of health protection against the chemical risks. Este o primă monografie în domeniul originii și dezvoltării toxicologiei și securitatea chimică în Republica Moldova axată pe evaluarea factorilor riscului chimic și a determinanților lor pentru sănătatea publică. Este prezentată analiza retrospectivă a documentelor și informația privind rezultatele cercetărilor științifice originale și realizările diverselor proiecte științifice ce țin de domeniul toxicologiei din trecut și prezent cu evaluarea toxico-igienică a mai multor substanțe chimice.
Domain	Toxicology, chemical safety, environment

Organization	**National Center of Public Health**
Patent / patent application title	**GHID PENTRU AUTORITĂȚILE PUBLICE LOCALE. ACȚIUNI COMUNITARE ÎN MENȚINERE A SĂNĂTĂȚII PUBLICE.**
Authors	**IURIE PÎNZARU**
Patent / patent application N°	Seria OȘ nr. 5627 din 05.05.2017
Description	The paper provides detailed information on the different situations faced by local public authorities in daily work, contains guidance for correct and timely orientation in the many public health problems in the territory with the targeting and implementation of measures to protect and strengthen the public health in the community. An analysis of the public health determinants, hazards and public health emergencies is presented. A particular role in the present work belongs the issues of informing and training local public authorities in the field of public health functioning, of correct application of the legislation as well as ensuring of public health and the role of local public authorities in their realization. Lucrarea furnizează informaţii detaliate privind diferite situații cu care se confruntă primarii și consilierii locali în activitatea cotidiană, conține îndrumări pentru orientare corectă și oportună în multitudinea problemelor de sănătatea publică existente în teritoriu cu direcționarea și realizarea măsurilor de ocrotire și fortificare a sănătății populației din comunitate. Este prezentată analiza factorilor determinanți ai sănătății populației, hazardurilor și urgențelor de sănătate publică.
Domain	Ghidul este destinat funcționarilor din administrația publică locală.

Organization	**National Center of Public Health**
Patent / patent application title	**”GRIPA: MĂSURI DE SUPRAVEGHERE, CONTROL ȘI RĂSPUNS”, CHIȘINĂU, 2017, 264P.**
Authors	**CONSTANTIN SPINU, IURIE PINZARU, PETRU SCOFERTA, IGOR SPINU, LUMINITA SUVEICA, ALA DONOS, ALIONA SERBULENCO , GHEORGHITA STEFAN, ALINA DRUC**
Patent / patent application N°	
Description	The results obtained during the conduct of this study allowed to highlight the clinical, epidemiological and virological particularities of the evolution of epidemic process by influenza during the pandemic and interepidemic period-important elements used subsequently in improving the national surveillance and response system to influenza adjusted to there quirements to WHO, CDC and ECDC. Thanks to optimization in line with the strategies of international organizations nominated the local surveillance system was integrated in European supervisory networks EuroFlu / Tessyand global FluNet. Rezultatele obținute pe parcursul realizării acestui studiu au permis de a evidenția particularitățile clinico-epidemiologice și virusologice de evoluție a procesului epidemic prin gripă în perioadele pandemică și interepidemică elemente importante utilizate ulterior în perfecționarea sistemului național de supraveghere și răspuns la gripă ajustat la exigențele OMS, CDC și ECDC.
Domain	Monograph is dedicated for interested medical doctors, residents and students of medicine faculty

Organization	**National Center of Public Health**
Patent / patent application title	**HEPATITIS C IN GROUPS WITH HIGH RISK OF INFECTION**
Authors	**CONSTANTIN SPINU, OCTAVIAN SAJEN, IURIE PINZARU, IGOR SPINU, LUMINITA SUVEICA, SVETLANA CEBOTARI, ANGELA ROȘCA, TATIANA RABA**
Patent / patent application N°	OS Num. 5625 from 05.05.2017
Description	In the monograph are presented current data on: epidemiology, diagnosis, clinical, treatment and prophylaxis of viral hepatitis C. The results of the original research carried out by the authors on the epidemiological, virological, treatment and prophylaxis of this infection are reflected in high-risk groups of infection, including medical personnel, hemodialysis patients and injecting drug users. Overall, this monograph is of particular significance in the conditions of relatively high morbidity by viral hepatitis C in the Republic of Moldova and falls within the strategies, tactics and tasks set out in the National Program for combating viral hepatitis B, C and D for the years 2017-2021. În monografie sunt prezentate date actuale despre: epidemiologia, diagnosticul, clinica, tratamentul și profilaxia hepatitei virale C. Sunt reflectate rezultatele cercetărilor originale efectuate de către autori privind particularitățile epidemiologice, virusologice, de tratament și profilaxie a acestei infecții.
Domain	Monograph is dedicated for interested medical doctors, residents and students of medicine faculty

Organization	**National Center of Public Health**
Patent / patent application title	**TREATMENT OF HERPES SIMPLEX VIRUSES ACYCLOVIR RESISTANT**
Authors	**CONSTANTIN SPÎNU , IGOR SPÎNU, LUDMILA BÎRCA, PETRU SCOFERȚA, ALA DONOS, SERGIU BOLOGA, STELA CORNILOV, LUMINIȚA SUVEICĂ**
Patent / patent application N°	AGEPI, Republic of Moldova, Patent Nr. 995
Description	The problem solved by the present invention developed an original mode of treatment of acyclovir-resistant herpes infection, defects in the enzyme thymidinekinase (TK-) which includes a key differentiating strains of the herpes virus HSV ½ (TR +) and (TR-) at thestage of primary examination of the patient (within 12-24 hours), which enables to change the algorithm from the start of treatment. Following to this distinction, the acyclovir substitute in the second day of treatment with product antiviral action thymidinekinase-independent human interferon recombinant α-2b, that favoring a beneficial evolution of pathological process faster recovery of patients and reduce the duration of clinical and paraclinical manifestation. Problema pe care o rezolvă invenția prezentată se reduce la elaborarea unui modul original de tratament al infecției herpetice aciclovir-rezistente.
Domain	At the level of medical institutions in the country

Organization	**National Center of Public Health**
Patent / patent application title	**METHOD OF DONATED BLOOD TESTING FOR MARKERS OF HEPATITIS VIRUS B**
Authors	**CONSTANTIN SPINU, OCTAVIAN SAJEN, IURIE PINZARU, SVETLANA CEBOTARI, IGOR SPINU, CRISTINA JOSANU, VICTOR PANTEA**
Patent / patent application N°	AGEPI, Patent MD 975Z 2016.07.31, Rep. Of Moldova
Description	The method of donated blood testing for markers of hepatitis B include the testing of donated blood for antigen HbsAg, antibodies AntiHBc summary and AntiHBs, characterized in that the known method is supplemented with a step of testing of donated blood AntiHBs-positive with titer higher than 100 IU/l for HBV DNA marker, if the result is negative the blood for transfusion is validated, if the result is positive of HBV DNA, then the blood is suspended from use. This method prevents the transmission of occult hepatitis B by blood transfusion and ensure the highest possible level of security.
Domain	The National Blood Transfusion Center

Organization	**National Center of Public Health**
Patent / patent application title	**THE METHOD OF ISOLATING AND STUDYING INFLUENZA VIRUSES**
Authors	**CONSTANTIN SPÎNU, PETRU SCOFERȚA, SPÎNU IGOR, IURIE PÎNZARU, ALA DONOS, LUMINIȚA SUVEICĂ, ALIONA SERBULENCO, ALINA DRUC**
Patent / patent application N°	AGEPI, Republic of Moldova, Nr. deposit 1457 din 22.02.2016
Description	It is using the method proposed in the existing algorithm to identificate and study the strains of influenza virus A (H1N1) isolates in Moldova including phylogenetic analys is conducted jointly with the Institute Francis Crick, London by applying the techniques of sequencing showed occurrence in the population of this virus two subclaide 6B (6B1 and 6B2) with some substitutions website of HA antigen located to the website of receptor binding (S84N, S162N, K163O and 1216N). The substitution ofS162N replacing amino acids at positions D222Y and D222N made possible by the action of sliding virus specific antibodies agains tthe virus tropism and increased lower respiratory tract epithelial cells, thus enabling the development of severe viral pneumonia.
Domain	National Center for influenza virus

INVENTICA 2016

INVENTICA 2016 - Awards Ceremony

INDIVIDUALS

SODINEX LLC , Rusia

Organization	**Kuban State Technological University**
Patent / patent application title	**VEHICLE RECUPERATOR EQUIPPED WITH FLYWHEEL AND ELASTIC ELEMENTS**
Authors	**VOYNA A., BEREJNOY S., KAPLYHIN A.**
Patent / patent application N°	RU 2616460 C1
Description	The recuperator can be used in ground vehicles to reduce fuel consumption by recuperation of braking energy. The recuperator device contains flywheel for accumulation of angular kinetic energy, as well as elastic elements in the form of torsion springs that allow accumulating potential energy of elastic deformation. The recuperator feature is original two-flow scheme of energy accumulation and recovery, which allows accumulating mechanical energy during recuperative braking and then using it to start and accelerate the vehicle. The device is able to accumulate sufficient amount of mechanical energy, while having acceptable dimensions and weight, which allows using it on various vehicles - cars and trucks, buses, etc. The fuel economy by using the recuperator reaches up to 30%. **Advantages** Simultaneous application of flywheel and elastic elements allows efficiently recuperating the braking energy in wide range of speeds, which is especially important when driving in conditions of heavy urban traffic.
Domain	terrestrial, fluvial, maritime and aeronautical transport

Organization	**Kuban State Technological University**
Patent / patent application title	**PISTON MACHINE**
Authors	**SOKOLOV A.**
Patent / patent application N°	RU 2016139921, 10.10.2016
Description	The design of fundamentally new axial piston machine is proposed here. Its design is based on motion transformer with longitudinal closed spiral groove and ball support guides, which is also designed and patented. The piston machine is four-cylinder machine with two double-acting pistons. At that the pistons, simultaneously performing rotational and reciprocating motions, are the main design elements of the transformer, which transforms their motions into rotational motions of the drive shaft, or vice versa, it transforms rotational motions of the drive shaft into rotational and reciprocating motions of the pistons. The pistons serve as valve, which provides the supply of working medium to the cylinders or its displacement from them according to the specified cycle. **Advantages:** - absence of idle strokes of pistons, low hydromechanical and mechanical losses - high efficiency; possibility of obtaining high rotation torques; - absence of piston pressure on cylinders walls - no wear; dynamic balance of pistons - minimal vibration; - low pulsation of working medium; maximum compactness and low material consumption; - design simplicity and manufacturability, and, consequently, low cost; - ease of installation.
Domain	mechanics and machine industry

Organization	**Kuban State Technological University**
Patent / patent application title	**OIL SEPARATION UNIT. OIL SEPARATION METHOD**
Authors	**KOPELEVICH L.**
Patent / patent application N°	RU 2593626 C1, 2585636 C1
Description	The method for oil separation and the design of fundamentally new separator for oil separation is proposed here. The proposed method of oil separation allows reducing energy costs for pre-heating oil before separation by using the energy released in the separation unit. The separation unit design is fundamentally new device constructed on the principle of combining the working part of the separator drum and the rotor of the separation unit electric motor. It contains the devise for using the energy released by the stator core and winding for partially heating of separation product. Fundamentally new design of the separation unit for oil separation allows partially using the heat generated by the stator winding and core and the separator rotor drum for partial heating of the separation product. The use of the proposed method of oil separation based on fundamentally new design of the separation unit allows creating new oil separation process. **Advantages:** - increase of oil separation energy efficiency; - reduction of weight and dimensional parameters of the unit; - reliability of the separation unit; - intensification of oil separation process. **Application :** oil-extracting industry related to oil refining
Domain	mechanics and machine industry

Organization	**Kuban State Technological University**
Patent / patent application title	**BAST FIBER COTTONIZING LINE**
Authors	**RIZHOV A., KONOVALOV V., GOLUBEV A., USHEROVICH E., LUKANIN E., EGOROV D., PAVLYUCHENKO E., SICHEVOY D., NOVIKOV E., BEZBABCHENKO A.**
Patent / patent application N°	RU 2016130334, 25.07.2016
Description	The bast fiber cottonizing line includes a bale opener, a scribbling machine, a machine for roll unwinding, a cutting machine and an intermediate scribbler, situated in a successive order. After the scribbling machine, the rolled bast fiber strips with the increased linear density are cut in the cutting machine after roll unwinding in the machine for roll unwinding, and obtained fiber is further processed in the intermediate scribbler in bulk, but not as a strip. **Advantages** Flexible, high-capacity line with low energy and metal consumption for production of high-purity cottonized fiber using different bast fiber (short bast fiber, short hemp, jute, homogenous bast and hemp fiber) for the purpose of further processing in the production of the textile, clothing and footwear industry, medical and other industry. **Application:** textile, clothing and footwear industry, medical and other industry.
Domain	industrial equipment and units

Organization	**Kuban State Technological University**
Patent / patent application title	**INFORMATION TECHNOLOGIES IN THE STATE ADMINISTRATION**
Authors	**PANIN I.**
Patent / patent application N°	
Description	The monograph is devoted to methods and means of increasing the effectiveness of public administration by using the new information technologies. The work presents the basis for use of document and information systems in the sphere of the state administration. It describes the process of development of materials and methods in the state services informational support, from electronic document management systems to an electronic government. Due to the pronounced lag in readiness to the electronic government development (as reported by The United Nations E - Government Survey, Russia – 27th, Romania – 64th place in the world according to the UN index), this work could render the great practical assistance in use of the information technologies in the public authorities.
Domain	

Organization	**Kuban State Technological University**
Patent / patent application title	**NATURAL GAS LIQUEFACTION METHOD**
Authors	**PIRALISHVILI SH., SOKOLOVA A.**
Patent / patent application N°	RU 2587734 C1
Description	The invention is offered that allows to improve the quality of the mains natural gas liquefaction process which uses its excess pressure downstream the compressor with the help of the vortex tube with secondary flow. In the same operating conditions, the liquid gas output can increase the condensate yield according to the mass flow by 1.7 times as compared with the Linde process, and by 1.4 times as compared with the known utilizing schemes on the basis of the initial Linde process. **Advantages** The waste energy (excess pressure) utilization is implemented with useful product (liquid gas) production at the compressor output before gas supply in the consumer's mains. **Application :** gas transmission stations, gas distributing plants, cryosystems, cryogenics.
Domain	energy and unconventional energy sources

Organization	**Kuban State Technological University**
Patent / patent application title	**MODULE ALL-TERRAIN VEHICLE**
Authors	**SUTIAGIN A., GOLUBEV V.**
Patent / patent application N°	RU 167865 U1
Description	The invention is designed for crossing of land and water obstacles and also for public road travel. **Advantages** The invention advantage lies in its modular structure which includes, without limitation, a transmission with reduced weight, a manual gearbox and also pontoon module thereby increasing the design workability with respect to maintainability and making it possible to move across a water obstacle. **Application:** the module all-terrain vehicle can be used in agriculture, in natural and anthropogenic emergency situations and in military.
Domain	terrestrial, fluvial, maritime and aeronautical transport

Organization	**Kuban State Technological University**
Patent / patent application title	**OSTEOPOROSIS TREATMENT METHOD IN WOMEN WITH POSTMENOPAUSE AGAINST THE BACKGROUND OF ADIPOSITY**
Authors	**IDRISOVA M., ESEDOVA A.**
Patent / patent application N°	RU 2017109363, 20.03.2017
Description	The object of invention is to reduce frequency of osteopenic abnormalities (osteopenia and osteoporosis) in women with adiposity in postmenopausal period, to improve the quality of life of women with adiposity. The nature of invention is to assign the continuous combined menopausal hormonotherapy in the form of the certain medication regimen with administration of Angeliq Micro (17β-estradiol 0.5 mg. + drospirenone 0.25 mg.) in conjunction with Calcium-D3 Nycomed Forte containing 10 mkg. of cholecalciferol (400 ME). The positive effect is favorable evolution of clinical presentation, stabilization of mineral turnover rate, statistically significant favorable evolution of the bone resorption and bone formation biochemical markers in conjunction with the densitometry results indicating the bone mineral density increase. **Advantages:** provides significant improvement of all anthropometric measurements (weight loss, body mass index reduction) and reduces waist measurement and hip; on the part of the cardiovascular system – significant drop of the systolic pressure after 3 months, drop of the diastolic pressure at the 6th month of the treatment;favorable evolution of the lipid exchange rate (significant decrease of the total cholesterol, atherogenic fractions of lipoproteins and increase of antiatherogenic fractions).
Domain	medicine-pharmacy-cosmetics

Organization	**Kuban State Technological University**
Patent / patent application title	**MACULAR OEDEMA COMBINATION THERAPY METHOD**
Authors	**MAGOMEDOVA M., ALIEV A.-G., ALIEV A., ZAKIEVA S., MIKAILOVA M.**
Patent / patent application N°	RU 2015152431, 07.12.2015
Description	The object of invention is to improve the treatment efficiency, to reduce frequency of intravitreal injection of neoangiogenesis inhibitors, to provide stable improvement of vision acuity, to reduce the risk of side effects related to the photodynamic therapy delivery. The method of combined therapy is performed in three stages: 1 - introduction of prolonged corticosteroid diprospan in the subtenon space; 2 **-** laser coagulation of the retina after 10-15 days, LCR by the lattice type is performed for the macular edema treatment; 3 - intravitreal administration of bevacizumab after 15-20 days. **Advantages** Combination therapy of the patients with macular oedema provides: - sustained improvement of vision acuity (by a mean of 0.45 in 60 % of cases); - reduction of macular oedema in short time (in 70 % of cases); - reduced risk of neovascular complication development. The offered method is notable for complexity and nosotropic orientation of the therapy, provides increased efficiency of the patient functional rehabilitation.
Domain	medicine-pharmacy-cosmetics

Organization	**Belgorod State National Research University**
Patent / patent application title	**SINGLE JUNCTION SOLAR CELLS BASED ON SILICON CARBIDE AND NITRIDE NANOLAYERS**
Authors	**ZAKHVALINSKII V., PILYUK E., VELASKES G.R., SIMASHKEVICH A., BRUK L.**
Patent / patent application N°	RU 2568421 C1, 2532857 C1, MD 4339 B1 2015.03.31
Description	Single junction solar cell includes p-silicon substrate of p-type silicon Si (100) preliminarily treated with HF acid. The layer of n-type film with thickness of 4-5 nm, consisting of mixture of nanocrystalline and amorphous silicon nitride mixed with silicon nitride of nanocrystalline structure, is located on the upper side of the substrate. It is deposited by magnetron deposition in argon using solid target Si3N4. Electrical contacts are formed by the method of magnetron deposition. At that the contacts on the upper side of the element are made of Ag in the form of comb. Electrical rear contact located on the back side of the substrate Si(100) is made of Ag or Cu. The novelty is that nanosized silicon carbide or nitride layer creates potential barrier on the silicon surface, separating the charge carriers, and simultaneously it plays the role of passivation and antireflective layer. This layer can also perform protective function due to its chemical and mechanical properties.
Domain	Patent domain: energy and unconventional energy sources

Organization	**Belgorod State National Research University**
Patent / patent application title	**METHOD OF NEURO-FUZZY SELECTION OF INTERPACKET GAP VALUES AT DATA TRANSMISSION BY SOURCE NODES OF WIRELESS SELF-ORGANIZING NETWORK**
Authors	**KONSTANTINOV I., LAZAREV S., POLSHCHYKOV K., POLSHCHYKOVA O.**
Patent / patent application N°	RU 2017612135
Description	Adequate selection of values of delay between packets transmission by source nodes is required to increase the efficiency of data delivery in wireless self-organizing network. The method of neuro-fuzzy selection of interpacket gap values at data transmission by source nodes of wireless self-organizing network allows providing the correspondence between current values of the intensity of data transmission by source nodes and current values of channel capacity available for transmission of corresponding data flows. The developed method is new scientific and technical solution in the field of packet data transmission implemented in networks with dynamic topology. **Advantages:** The use of this method allows reducing the number of retransmissions and average time of transmitting the data flow of given volume in wireless self-organizing network. This is achieved by adequate selection of interpacket gap values in wireless self-organizing network, the implementation of which provides the correspondence between current values of the intensity of data transmission by source nodes and current values of channel capacity available for transmission of corresponding data flows.
Domain	telecommunication

Organization	**Belgorod State National Research University**
Patent / patent application title	**DEVICE FOR PRODUCT SEALING IN LIQUID MEDIUM**
Authors	**TAGIROV D., KAIBYSHEV R., SLOBODA V.**
Patent / patent application N°	RU 92820 U1
Description	The device and method of product sealing is based on that the product placed in liquid medium, which is located in the cavity of the product sealing device and heated to predetermined temperature, T, is exposed to predetermined pressure, P, by means of movable piston-type device with several parts, including metal sealing element. At that the cavity with liquid medium is sealed by deformation of one of piston parts characterized in that the cavity with liquid medium is sealed by plastic deformation of sealing element under applied pressure at temperature, T*, where T* is temperature of sealing element, taking into account its gradient with respect to liquid medium temperature, the value of which depends on the design features of sealing device and conditions of this method implementation. At that the sealing element deformation is realized due to the impact of other piston parts made of the material with higher elastic modulus and plastic deformation resistance compared with the sealing element material. The main idea of the invention (device and technology) is the use of conventional stamping equipment instead of special gas static presses for GIP.
Domain	automobiles and road security

Organization	**Vologda State University**
Patent / patent application title	**WASTEWATER TREATMENT SORBENT**
Authors	**SOKOLOV LEONID**
Patent / patent application N°	RU 2560436 C1, 2579400 C1
Description	The natural products and the products after their processing are used as sorbents: wood ash appeared after burning of disintegrated wood processing wastes with the certain chemical composition is used for wastewater treatment from oil products; the sorbent consisting of the sediment appeared during reactant treatment of natural waters with aluminum coagulants, and montmorillonite loam is used for wastewater treatment from ammonium and phosphate ions. Calcium and magnesium compounds composing the sorbents allow to use the sorbent chemosorption properties together with physisorption. The sorbent usage results in simplification and cost reduction of waste water treatment and aftertreatment from natural and industrial pollution with reduction of residual concentration of these components to the standard values. **Advantages:** it is not necessary to wash sorbents, low cost, flexibility, sorbents are used with simple equipment, sorbents can be disposed using resource-saving, resource-replacing and environmental safe methods. **Application:** arrangement of waste collection and disposing; pollution liquidation activity; water and sanitation.
Domain	environment-ecology, ecological management, environmental protection and monitoring

Organization	
Patent / patent application title	**FUNCTIONAL ADAMANTANES AS UNIVERSAL PLATFORM FOR ORGANIC MATERIALS AND PHYSIOLOGICALLY ACTIVE SUBSTANCES**
Authors	**KONSHIN V., LUPANOVA I., SPESIVAYA E., KONSHINA D.**
Patent / patent application N°	RU 2612956 C1, 2549902 C1, 2549901 C1
Description	Adamantane frame is a part of the structure of many drug substances, for example, antiviral drug remantadin, antiparkinsonian drug amantadin, series of psychostimulants, axiolitics and immunotropic drugs, and also it forms the basis of polymeric materials with unique thermal and mechanical characteristics. We developed production methods for adamantanes with the functional groups on the basis of the available raw material according to the reactions complying with the requirements of the green chemistry which allow to synthesize the compounds with reactive groups, which can be used at designing of organic materials with significant physical characteristics and physiologically active substances. **Advantages** Methods of synthesis of functional adamantanes are implemented using atom-sparing reactions and non toxic catalysts which can be recycled and reused and are characterized by the higher yield of the base product as compared with the similar methods where expensive and dangerous in handling reagents are used. **Application:** fine organic synthesis
Domain	chemistry and chemical industry

Organization	
Patent / patent application title	**GAS-DIFFUSION HYDROGEN ELECTRODE FOR AIR-HYDROGEN FUEL CELL**
Authors	**PETRIEV I., DZHIMAK S., BOLOTIN S. FROLOV V., BARISHEV M.**
Patent / patent application N°	RU 168869 U1, 143793 U1
Description	The gas-diffusion hydrogen electrode for air-hydrogen fuel cell (FC) is developed consisting of the porous nickel base on which the active mass is applied in the form of the thin palladic film serving as a diaphragm. At that, the both sides of the diaphragm are coated by a layer of nanosized metallic powder chemisorbing hydrogen out of palladium black resulting in increased overall rate of hydrogen transfer and, as a consequence, in better electrical characteristics of the for air-hydrogen fuel cell due to the energy degradation of chemosorption rate-controlling step activation on the gas side and rise of electrowinning rate on the electrolytic side. The composite target is developed for production of electrodes by the magnetron deposition. The target consists of palladium and silver plates with different area ratio. **Advantages**: The designed solid full-metal palladium sponge gas-diffusion electrodes and FCs on their basis are provided to replace FCs with solid polymeric ion-exchanger membrane. This allows to use the liquid alkaline or acid electrolyte in FCs and, at that, to divide reliably the reagents on the electrodes, to prevent the porous electrode from soaking, to improve the electrolytic conductivity and to eliminate the issue of the high contact resistance on the electrode/electrolyte border.
Domain	energy and unconventional energy sources

Organization	
Patent / patent application title	**ANYWALKER**
Authors	**RYADCHIKOV I., SECHENEV S., SINITSA S., NIKULCHEV E., VOLKODAV P., USMANOVA A., ALOTAKI A., PRUTSKIY A., DANILOV A., SHUTKIN I., PUZANOVSKIY K., MAMELIN Y., SVIDLOV A., BESSMELNYTSIN S.**
Patent / patent application N°	RU 160949 U1, 164528 U1
Description	Ultra-mobile chassis for robot assistants. AnyWalker is a device that is able to move in any kind of environment, to open doors, to overcome stairs, thresholds and obstacles of any configuration. Such characteristics as small size, maneuverability and multi-purpose supports allow to use AnyWalker in everyday life as a service robot assistant able to perform any operations in different life circumstances, which are not easy to cope with for robots (for example, uneven and narrow spaces, obstacles). The robot can be used both in service and personal robotics, as well as an educational platform for teaching mechanics, programming , cybernetics and theory of management of various systems, processes and objects. **Advantages:** AnyWalker is a robot stabilization platform. It consists of three flywheels placed in orthogonal planes that creates the single center of mass.
Domain	electricity and electronics

Organization	**JSC «AVERS»**
Patent / patent application title	**ELECTRICAL POWER GENERATOR OF NEW GENERATION**
Authors	**GRACHEV V., GRACHEV A.**
Patent / patent application N°	
Description	The autonomous power unit generates the electrical potential by letting the cyclic magnetic field created by the installed magnets pass through the static coils and using the interaction between the electron energy levels and the magnetic fields. Controlled and commensurate interaction between the magnetic field created by the generator and the electronic shells of environment atoms on resonant frequencies allows to accumulate the energy from charged particles. The magnetic fieldis regulated by the pulse ceramics, as the magnetic current flows at resonant frequency along the ferrite conductors and through the static coils, finally creating a great electric potential in the coil blocks. So far we have a 110 W laboratory specimen that generates 220 V and 0.5 A current. **Advantages:** has no analogues - this is a new generation of electrical power generators which is capable of producing the electric power for welfare needs and industry without any mechanical rotation and accumulators; 50 kW power unit will make an electric engine as powerful as 68 hp; 100 kW– 136 hp; 300 kW – 408 hp; weight of the power units varies in wattage from 0.5 kg up to 15 kg; dimensions, max 500x300x800; guaranteed service life – at least 20 years.
Domain	energy and unconventional energy sources

Organization	**JSC «AVERS»**
Patent / patent application title	**NICOTINE AND DRUGS ADDICTION PREVENTION AND THERAPY UNIT**
Authors	**GRACHEV V., GRACHEV A.**
Patent / patent application N°	
Description	A compact laboratory unit is made with an antenna capable of generating low-strength radio signals with pulse-code modulation similar to the signals used by human brain to control the “stimulation system”. The impact on the patient is carried out in the period of viewing the telecast or lecture for 8-10 minutes. The angle of impact is 45°. The unit is able to delite memory from the "incentive system" of the brain areas responsible reminding to smoke or take a narcotic substance. **Advantages:** has no analogues
Domain	medicine-pharmacy-cosmetics

S.C. DFR Systems S.R.L.

Organization	**S.C. DFR Systems S.R.L.**
Patent / patent application title	**VERTICAL SETTLER**
Authors	**GABRIEL PETRESCU, BOGDAN NĂSĂRÎMBĂ-GRECESCU, IOANA CORINA MOGA**
Patent / patent application N°	129628/30.09.2016
Description	The proposed vertical settler is used in the final stage of wastewater treatment, for the final separation of solids from the water. Settling is attached to a DAF unit. Efficient removal of the suspended solids can be done in two ways: heavy suspensions settle to the bottom of the vertical settling, and the "light" suspensions are stuck to the air micro-bubbles and are ascended to the free surface. Vertical decanter gives an efficiency of removal of suspended solids without using chemicals that help form the floc sludge and without the use of electricity-consuming equipment. Decantorul vertical este utilizat in treptele finale ale stațiilor de epurare a apelor uzate, pentru eliminarea suspensiilor solide. Decantorul este atașat unui sistem de flotație cu aer dizolvat. Eliminarea eficientă a suspensiilor solide are loc în două moduri: suspensiile solide “grele” se sedimentează la partea inferioară a decantorului, iar suspensiile “ușoare” se alipesc la micro-bulele de aer și sunt ridicate la suprafața apei, de unde sunt eliminate sub formă de spumă.
Domain	Engineering - Environmental Protection

PROCESS INNOVATION NUCLEUS S.R.L. – Anton Ficai

Organization	**PROCESS INNOVATION NUCLEUS S.R.L. – Anton Ficai**
Patent / patent application title	**METHOD FOR PRODUCING NANOPOWDERS AND VARIOUS ELEMENT ISOTOPES AT NANOPOWDER LEVEL**
Authors	**VOLDEMARS BELAKOVS, NICOLAE COSTACHE, GEANINA SILVIA NABANU, CONSTANTIN-BRĂDUŢ RĂDUCANU**
Patent / patent application N°	EP 2 790 857
Description	The patented invention relates to a method for producing nanopowder by pulverizing an input material to nanopowder level, said method comprising the steps of: - mixing said input material with at least one alkali metal catalyst; - melting the mixture of said input material and said at least one alkali metal catalyst; - processing the resulting alloy in the presence of oxygen and water for pulverizing said input material into nanopowder; - removing said at least one alkali metal catalyst from the nanopowder. Based on said method, the research and development of an industrial scale equipment for producing nanopowders is currently taking place.
Domain	Nanotechnology

Romanian Inventors Forum

Organization	**Romanian Inventors Forum**
Patent / patent application title	**ECOLOGICAL MOUTHWASH**
Authors	**KAMEL EARAR, ANDREI VICTOR SANDU, MĂDĂLINA NICOLETA MATEI, ION SANDU, IOAN GABRIEL SANDU**
Patent / patent application N°	Pending 2017
Description	The invention refers to an ecological mouthwash made of 100% natural ingredients. It has no side effects and can be used by pregnant woman or children.
Domain	Cosmetic - Medicine

Organization	**Romanian Inventors Forum**
Patent / patent application title	**ARTIFICIAL HALLOCHAMBER**
Authors	**SANDU ION, CANACHE MARIA, ŞTIRBU CĂTĂLINA MIHAELA, ŞTIRBU ILIE CĂTĂLIN, SANDU ANDREI-VICTOR, CHIRAZI MARIN, VASILACHE VIORICA**
Patent / patent application N°	RO126283, RO126284, RO126285 / 2016
Description	The inventions relates to 3 types of artificial halo chamber for multiple users. According to the invention, the halo chamber consists of a dry chamber with ionized windows with UV filters, provided on the door wall with a blower with reversed action wherein there is placed a fan, which, through a cellulose textile material achieves the suction of the air into the chamber, conditioned at a relative humidity of 60...65% and a temperature of 20...22°C, and sends it to the discharge zone where can be a heat exchanger. Inventiile se refera la 3 tipuri de halocamere/saline artificiale pentru utilizatori multipli. Aceasta utilizeaza o camera uscata cu ferestre ionizate si filtre UV. Temperatura este pastrata intre 20 si 22C, respectiv umiditatea relativa de 60...65%. In interiorul camerelor se afla diafragme din material textil cu granule de sare (ce pot fi dopate cu Ki, MgCl, CaCl si altele). Prin diafragme cu ajutorul unui ventilator se sufla aer in vederea obtinerii in camera a concentratiei dorite de particule de sare.
Domain	Health

Almir Karabegović, CROATIA

Organization	**Almir Karabegović**
Patent / patent application title	**SPIRAL FOR MARES**
Authors	**ALMIR KARABEGOVIĆ**
Patent / patent application N°	
Description	The spiral for mare is copper plated V-shaped tension spring, which is inserted into the uterus of the mare. After insertion into the uterus, the spiral returns into its original form. The advantage of invention is that it is very successfulin treating inflammation of the uterus without the use of products for rinsing and disinfection, antibiotics and other medicines that have a range of additional adverse side effects, and are not as effective as spiral. Treatment of inflammation of the uterus of mares.
Domain	

SURYA BUANA MALANG, INDONESIA

Organization	**Surya Buana Malang Indonesia**
Patent / patent application title	**FANTASTIC NATURAL HEALTH DRINK**
Authors	**MARDIYAH JUSUF HASAN MANSOOR, SRI ISTUTI MAMIK**
Patent / patent application N°	WOXXX12345 / Patent application No. XXXX/2010
Description	Meanwhile the drink that is intended to accompany when relax usually refers to coffee, tea, juice, syrup or carbonated beverage as well as alcoholic. One of the ideas and innovations actually can be created a fantastic drinks, make healthy and be able to control alcohol consumption and smoking habits by an easy and healthy way. An innovation by extracting the red ginger (as warmers, reliever cough, accelerating blood circulation), cardamom (lozenges), pandan leaves (freshener flavor), brown sugar (low-calorie sugar), cloves and cinnamon (accelerating nervetensity) and lemongrass (accelerating blood circulation) then it may be created a complete and fresh drinks. The drink is much more delicious rather than alcoholic drinks and cigarettes, and also it can give function in every situation without damaging vital organs and not intoxicate.
Domain	Agriculture and Food Industry

CANDYLIPZ LLC, CANADA

Organization	**CandyLipz LLC.**
Patent / patent application title	**CANDYLIPZ XTREME LIP SHAPER® SYSTEM: LIP ENLARGEMENT DEVICE FOR ENHANCED BEAUTY AND HEALTHY WELL-BEING**
Authors	**THIENNA HO**
Patent / patent application N°	9,119,758 and D739,083 (US Patent No.)
Description	CandyLipz lip plumper creates fuller lips using 3,500-year-old Chinese “cupping” method known as air suction with a built-in advanced lip-shaper technology which allows the lip plumper to shape, contour, and instantly enhance the appearance of lips beautifully while also enabling biological maintenance of “lips age” with long-lasting shape helpful for retaining youthful lips for elders and also those people with oddly-shaped lips, smoke lines, and drooping mouth corners.
Domain	

Innovation Initiative Co-operative Inc., CANADA

Organization	**Innovation Initiative Co-operative Inc.**
Patent / patent application title	**VERSACRYL: HEAT - SENSITIVE, THERMO-ELASTIC MULTI - PURPOSE DENTURE ACRYLIC**
Authors	**BOB HUYBRECHTS**
Patent / patent application N°	2,111,789 Canadian Patent No.
Description	An innovative acrylic adjustable by heat from warm water, the biocompatible intraoral thermo-elastic acrylic material has received regulatory approval from Health Canada as well as FDA Approval and CE Mark in Europe. It can be used in any dental appliance for patients to adjust their own customized fit with enhanced comfortability. It can be used to produce repeatable thermos-relines, replace metal clasps on partials and create sublingual wings to stabilize denture forms.
Domain	Medicine

Blessed Products of Asia Co., Ltd., THAILAND

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

Union of Inventors of MAROC

Organization	**Union of Inventors of Maroc**
Patent / patent application title	**MULTIVIEW SCREEN**
Authors	**Majid EL BOUAZZAOUI**
Patent / patent application N°	PCT/MA14/000051
Description	This device will help people to watch different video sources simultaneously on the same screen, where each person can watch one video source depending on his point of view in relation to this screen. This device can be used in existing video displays and don't require any special wearable glasses or any other viewing accessories. Applications: TV screen, iPad, Billboard advertising, Concert screens, etc.
Domain	Information Technology and Communication

University Perlis of MALAYSIA

Organization	**Universiti Malaysia Perlis**
Patent / patent application title	**SN-CU TRANSIENT LIQUID PHASE DIE-BONDS FOR HIGH-POWER ELECTRONIC DEVICES**
Authors	**MOHD ARIF ANUAR MOHD SALLEH, RITA MOHD SAID, NORAINIZA SAUD**
Patent / patent application N°	**P1201100849**
Description	TLP bonding or commonly termed as Solid Liquid Interdiffusion (SLID) process is a method that enable a solder joint to be processes at a lower temperature while still resulting in the formation of a joint with a higher re-melting point. The TLPS offers various processing advantages over conventional sintering including rapid densification, lower sintering or bonding temperatures, reduce microstructural coarsening, void free interface and reduce cost by avoiding the use of expensive pre-alloyed powders. The TLPS bonding material can either be in a preform or solder paste form. Normally, solder paste results in better wettability on substrates compared to preform solders. Among many different soldering alloy system, Cu/Sn is become the most widely studied lead-free soldering systems. In this work, Sn-Cu lead-free solder paste was used as solder material due to the relative simplicity of Cu/Sn system and the resulting reaction products responsible for the metallurgical bonding
Domain	Information Technology and Communication

Research Projects

Organization	**UNIVERSITY POLITEHNICA OF BUCHAREST**
Patent / patent application title	**CELLULOSE FIBERS FUNCTIONALIZATION IN ORDER TO DESIGN THE PROPERTIES OF THE FINITE PRODUCTS**
Authors	**DENISA FICAI, ECATERINA ANDRONESCU, ANTON FICAI, LAURENȚIA ALEXANDRESCU, MARIA SONMEZ, DOINA CONSTANTINESCU**
Patent / patent application N°	**Research Project**
Description	These results are part of an ongoing project realized under the PTE – Transfer to Economic Agent funded by UEFISCDI. The project is devoted to modify the surface of the cellulose based fibers by titanates and aluminates and further capitalize these natural, functionalized fibres by compounding them with recycled polymers in order to obtain finite products for various applications. The natural fibres modification is done according to two different routes using adequate precursors: titanium butoxide and aluminum chloride. The deposition route is very important for both precursors, the morphology of the obtained functionalized fibres being strongly altered but also the adhesion of the oxide nanoparticles onto the cellulose materials.
Domain	Chemistry and Chemical Industry

Organization	**'Gheorghe Asachi' Technical University of Iasi, Romania**
Patent / patent application title	**"MATRIX OF KNOWLEDGE FOR INNOVATION AND COMPETITIVENESS IN TEXTILE ENTERPRISES", ACRONIMTEXMATRIX**
Authors	**MIRELA BLAGA, CRISTIANA ISTRATE, RODICA HARPA, CRISTINA PIROI, DORIN DAN**
Research Project	2016-1-RO01-KA202-024498
Description	The knowledge matrix for innovation is an innovative concept for the quantification of the intangible assets of the enterprises, such as: innovation strategy/culture, informational resources, training methodology, relationships portfolio, IP rights. Their identification and improvement for a textile enterprise is of utmost importance for their competitiveness and capacity to implement innovation. The matrix developed within the EU TexMatrix project includes 52 factors grouped in criteria and elements. The elements of the KMI represent the prerequisites a textile enterprise uses in order to fulfil its objectives. The conditions establish the resources, while both are conditioning the activities and the results. "Matricea de cunoștințe pentru inovare" este un concept inovator pentru evaluarea activelor intangibile ale întreprinderilor, cum ar fi: cultura inovării, drepturile de proprietate intelectuală, reputația firmei, portofoliul de relații, resursele informaționale, metodologia de formare.
Domain	Textile companies

Organization	**The National Institute for Research & Development in Chemistry and Petrochemistry – ICECHIM Bucharest**
Patent / patent application title	**INNOVATIVE APATITIC MATERIALS WITH ENHANCED ANTIMICROBIAL ACTIVITY FOR BUILDING MATERIALS AND CULTURAL HERITAGE CONSERVATION (HAPENGCULT)**
Authors	**RADU CLAUDIU FIERASCU, IRINA FIERASCU, ADRIANA MOANTA**
Research Project	PN-III-P2-2.1-PED-2016-0198
Description	The main goal of the project is the development of an innovative and versatile solution (consisting of hydroxyapatite derivatives) that could be applied either by incorporation into the building material or by surface spraying. From the project will emerge new approaches to an increasing problem, respectively the microbial loading of various buildings and stone. These solutions will be viable for multiple applications related to their use for new buildings with special requirements related to microbiological loading, for consolidation of cultural heritage constructions and for protection of stone artefacts against environmental factors (acidic rain) and biodeterioration. Principalul obiectiv al proiectului este dezvoltarea unei soluții inovatoare și versatile (pe bază de derivați de hidroxiapatită), soluție care va putea fi aplicată fie prin încorporarea în materialul de construcție sau prin pulverizare de suprafață.
Domain	Eco-nano-technologies and advanced materials

Organization	**ALECU RUSSO BALTI STATE UNIVERSITY, SA MOLDAGROTEHNICA, ACADEMY OF SCIENCES OF MOLDOVA**
Patent / patent application title	**DESIGN AND PRODUCTION OF CST-4 CULTIVATOR DESIGNED FOR SOIL PROCESSING BY STRIP-TILL TECHNOLOGY**
Authors	**OJEGOV ALEXANDR, PODUREAC VASILE, GAVDIUC ION**
Research Project	Technology Transfer Project, Patent no. RU 2492607, 2013.09.20
Description	CST-4 cultivator designed for soil processing using Strip-till technology is used for soil cultivation for crops sown at a distance of 45-70 cm. The technology provides stubble work in strips with 25 cm wide at a depth of 20-45 cm, and the space between the strips remains unprocessed. Simultaneously with soil work, CST-4 cultivator can be equipped with a fertilizer system for managing fertilizer in solid or liquid state. The remaind vegetal rests keep moisture in the soil. Thus, less technical equipment is training, with less fuel consumption and less personnel for operation. Cultivatorul CST-4 destinat pentru lucrarea solului după tehnologia Strip-till se foloseşte pentru lucrarea solului pentru culturi însămânțate la distanţa de 45-70 cm. Tehnologia prevede lucrarea mirişţii în fâșii cu lăţimea de 25 cm la o adâncime de 20-45 cm, iar spaţiul dintre fâșii rămâne absolut nelucrat. Concomitent cu lucrarea în fâșii a solului, cultivatorul CST-4 poate fi dotat cu sistem de fertilizare pentru administrarea îngrăşămintelor în formă solidă sau lichidă.
Domain	Industrial equipment and units

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