

## **LIST OF PATENTS 2010-2015**

### **1. PATENT OSIM NR. RO101011-B1 / 30.12.2015**

**TITLE RO/EN:** Procedeu de obtinere a unor concentrate de muscovit din pegmatite feldspatice / MUSCOVITE CONCENTRATE FROM FELDSPAR PEGMATITES PRODUCTION METHOD

**INVENTOR(S):** IUGA ALEXANDRU-IULIU, MORAR ROMAN, CUGLESAN IOAN, DASCALESCU LUCIAN-DORU, NEAMTU VASILE, POP DUMITRU-MITICA, VRANNAI STEFAN, SOOS MANEA CAROL, TIMBUS RADU, RANCA POMPILIU, BOLBA REMUS, MURESAN NICOLAE, KISS IOSIF, TOMESCU VALENTIN

**ABSTRACT:** A muscovite concentrate is obtd. from a granular material, a by prod. of processing feld-spathoid pegmatite. This material contains over 50% muscovite, spangles, quartz impurity feldspar and wood. A proposed technical soln. for the redn. of adhesive forces involves heating the material at 300-400 deg.C in an oven. Following classification in two stages and redn. of surface humidity at 150 deg.C sepn. is carried out in a three directional intensive electric field.

### **2. PATENT OSIM NR. RO127385-B1 / 30.10.2015**

**TITLE RO/EN:** Minigriper compliant cu actuator piezoelectric / COMPLIANT MINIGRIPPER WITH PIEZOELECTRIC ACTUATOR MEANT FOR PRECISE MANIPULATION OF VARIOUS SIZE OBJECTS

**INVENTOR(S):** NOVEANU SIMONA, CSIBI IOSIF VENCEL, MANDRU DAN, NOVEANU DAN CRISTIAN, LUNGU ION

**ABSTRACT:** The invention relates to a compliant minigripper (1) with piezoelectric actuator (2) meant for the precise manipulation of various size objects, in applications specific to fine mechanics. According to the invention, the minigripper (1) is conceived as a monoblock structure, with some flexible couples (3) obtained by thinning the section of some symmetrically arranged kinematic elements (4) in the structure, the compliant minigripper body (1) containing ten flexible couples (3) which transmit the movement and the force, by the elastic deformation of the material they are made of, by means of the kinematic elements (4), at the outlet of the piezoelectric actuator (2), to some fastening elements (5) which carry out the manipulation, by modifying the geometric shape of the flexible couples (3) (elliptical, rectangular, parabolic, circular or rectangular with various transition radii), selecting the material that the compliant minigripper (1) is made of (steel, brass, polymethylmethacrylate, polytetrafluoroethylene etc.) as well as by the variation of the supply voltage of the piezoelectric actuator (2), there being ensured a wider range of dimensions of the objects to be manipulated as well as the use thereof in various media.

### **3. PATENT OSIM NR. RO129538-B1 / 30.09.2015**

**TITLE RO/EN:** Dispozitiv de control si reglare a pozitiei sculelor cu suprafete elicoidale / DEVICE FOR SHARPENING TOOLS WITH HELICAL SURFACES, PLACED ON THE TABLE OF A SHARPENER WITH ABRASIVE DISCS

**INVENTOR(S):** VUSCAN GHEORGHE IOAN, MICACIU ALEXANDRU

**ABSTRACT:** The invention relates to a device used for sharpening tools with helical surfaces, placed on the table of a sharpener with abrasive discs. According to the invention, the device consists of a main shaft (2) whereon the tool (1) to be sharpened is fixed, the main shaft (2) passes through a ball bearing (4) inside which there is fixed, by hooping, a profiled ring (5) which is in contact with the main shaft (2), the ball bearing (4) being fastened in a box (6) which is integral with a shaft (7) of a worm gear (11), on the shaft (7) there being mounted a spring disk (8) and a pressure bearing (9) fixed in the bore hole of an upper plate (10), the worm gear (11) mounted with a wedge on the shaft (7) gears with a worm (12), at the end of a worm shaft (13) there being placed a handle (15) for gearing the worm (12), by actuating the handle (15), the worm (12) gears with the worm gear (11) which by rotation inclines the box (6) together with the ball bearing (4) under an inclination angle which coincides with the inclination angle of the screw of the tool (1) thus defining the helical walk of the tool (1), the tool (1) being driven by actuating a hand wheel (3) in one sense or another, alternately, the tool (1) performing a rotary-translation movement under an abrasive disk (16) placed at the angle.

#### 4. PATENT OSIM NR. RO128980-B1 / 30.09.2015

**TITLE RO/EN:** Dispozitiv de acoperire preventiva a interiorului pieselor tubulare de dimensiuni mari / DEVICE FOR PREVENTIVELY LINING THE INTERIOR OF HOLLOW PIECES OF LARGE SIZES

**INVENTOR(S):** VUSCAN GHEORGHE IOAN, CIGAN VLAD

**ABSTRACT:** The invention relates to a device used for painting or preventively lining the interior of some hollow pieces of large sizes. According to the invention, the device comprises a support plate (11) whereon there is fastened an electric motor (1) and a reducer (3), the movement being transmitted from the electric motor (1), through the reducer (3), to a case (8) provided with bevel gears, through a bevel gear (2), on the case (8) there being mounted three telescopic legs (9) having, at the ends, a inclinable friction wheel (6), the feeding movement being performed due to a propeller with three arms which come in contact with a hollow semi-finished product (12) by means of the friction wheels (6) which axially displace the entire assembly, the adjustment of the propeller inclination angle being carried out both manually, and by means of a step-by-step electric motor (7), some air, oxygen and acetylene sources being connected to a supplying sleeve (10), in a tank (4) there being stored paint or powders for the preventive lining, which are entrained by an air jet, on the interior surface of the hollow semi-finished product (12) through an atomizer (5) which performs a helical movement together with the case (8).

**5. PATENT OSIM NR. RO129228-B1 / 28.08.2015**

**TITLE RO/EN:** Procedeu de obtinere a unui material compozit fonoabsorbant / SOUNDPROOFING COMPOSITE MATERIAL COMPRISES FIR SAWDUST GRAINS AND POLYURETHANE FOAM

**INVENTOR(S):** TIUC ANCUTA ELENA, RUSU TIBERIU, NEMES OVIDIU

**ABSTRACT:** The invention relates to a soundproofing composite material and process for preparing the same. The claimed material comprises 70...80% fir sawdust grains having a humidity of 9.3...10.4% and a density of 0.035...0.039 g/cm<sup>3</sup> and 20...30% polyurethane foam, the percentage being expressed by weight. The claimed process consists in vigorously mixing the polyol and isocyanate components in a ratio of 100:70 for 5...8 s, at the room temperature, afterwards adding fir or beech sawdust grains, the resulting mixture is poured into a mould and it is maintained for 30...45 min for the reaction completion, wherefrom there results a material having a density of 0.14...0.17 g/cm<sup>3</sup>, a compressive strength of 0.03...0.07 N/mm<sup>2</sup>, a thermal conductivity of 0.039...0.083 W/m.K and an acoustical absorption coefficient alpha within the range 0.55...0.95 in the frequency range of 1000...6300 Hz.

**6. PATENT OSIM NR. RO128093-B1 / 29.05.2015**

**TITLE RO/EN:** Procedeu de obtinere a placilor din materiale compozite polimerice armate cu fibre / PROCESS AND DEVICE FOR MAKING PLATES OF POLYMERIC COMPOSITE MATERIALS REINFORCED WITH FIBERS

**INVENTOR(S):** BERE PETRU PAUL, BERCE PETRU, NEMES OVIDIU, BALC NICOLAE

**ABSTRACT:** The invention relates to a process and a device for making plates of polymeric composite materials such as polyester, epoxy, phenolic, vinylester resins or other polymers, reinforced with fabrics made of glass fibers, carbon fibers, aramidic fibers and the like. According to the invention, the process consists in laying the composite material (3) in non-polymerized condition onto the surface of a plane mould (2), coating the same with a plastic foil (4), pressing the composite material (3) onto the mould (2) by means of a pressing device with cylinders (5) which removes the excess of composite material (3) towards the mould edges so that, by reducing the volume of composite material (3) under the plastic foil (4), there is formed a vacuum pressure which presses the composite material (3) during the entire polymerization process, and, in the end, the resulting plate of composite material is removed from the mould and the plastic foil (4) is eliminated. According to the invention, the device comprises a roller working table (1) whereon there moves the plane mould (2) with the composite material (3) covered with the plastic foil (4) and a pressing device with cylinders (5).

**7. PATENT EPO NR. EP2444209-B1 / 22.04.2015**

**TITLE RO/EN:** Metoda de generare a topologiei robotilor paraleli reconfigurabili cu actuatori verticali / METHOD FOR GENERATION OF KINEMATICAL STRUCTURES FOR RECONFIGURABLE PARALLEL ROBOTS WITH VERTICAL ACTUATORS, INVOLVES DETERMINING NUMBER OF PRISMATIC- SPHERICAL-UNIVERSAL KINEMATIC CHAINS BASED ON DESIRED NUMBER OF DEGREES OF FREEDOM

**INVENTOR(S):** BRISAN CORNEL, HILLER MANFRED

**ABSTRACT:** The method involves knowing the number of degrees of freedom of the robot. The number of prismatic- spherical-universal (PSU) kinematic chains is determined based on the desired number of degrees of freedom. The number of the prismatic - spherical - rotational (PSR) kinematic chains is determined. The conditional expression relating the robot and kinematic chains is satisfied. The reconfigurability of the structures is assured by the utilization of the mounting dimensions between the elements that form all the kinematic chains.

**8. PATENT OSIM NR. RO127399-B1 / 30.03.2015**

**TITLE RO/EN:** Beton cu agregate din deseuri de sticla / CONCRETE COMPOSITION USED FOR CONSTRUCTION, COMPRISES PORTLAND CEMENT, SUPERFINE SILICA, GLASS POWDER, RIVER AGGREGATES, CRUSHED AND SCREENED GLASS AGGREGATE, WATER, AND SUPERPLASTIFYING ADDITIVE

**INVENTOR(S):** MAGUREANU CORNELIA, CORBU OFELIA CORNELIA

**ABSTRACT:** The invention relates to a concrete composition for constructions. According to the invention, the composition consists of 15.91% Portland cement, 1.99% superfine silica, 3.97% fine glass powder, 32.55...36% river aggregates having sizes of up to 4 mm and 37...39.79% crushed and screened glass aggregate having a grain size of 4...16 mm, 5.39% mixing water and 0.40% superplastifying additive.

**9. PATENT OSIM NR. RO127825-B1 / 27.02.2015**

**TITLE RO/EN:** Procedeu de separare a feldspatului de cuarț din minereurile pegmatitice / PROCESS FOR SEPARATING QUARTZ FELDSPAR FROM PEGMATITE ORES, INVOLVES CRUSHING AND WET GRINDING PEGMATITE ORE, REMOVING MICA BY GRAVITY SCREENING, DRAINING ORE IN FILTERING BED, CONDITIONING WITH HYDROFLUORIC ACID, AND SEPARATING

**INVENTOR(S):** VADAN DUMITRU, MORAR ROMAN, VADAN IOAN, SUARASAN ILIE, GOREA MARIA, VADAN MARIA

**ABSTRACT:** The invention relates to a process for separating quartz feldspar from pegmatite ores. According to the invention, the process consists in crushing and wet grinding a pegmatite

ore until a grain size of 0.25 mm is reached, after which the mica is removed by gravity screening, the ore is drained in filtering bed until a humidity of 10% is reached, then is dried to a humidity of 0.2%, is conditioned with hydrofluoric acid, after which the product is subjected to separation in an induction magnetic field 1.4...1.6 T and finally is separated in electrostatic field to obtain quartz with a SiO<sub>2</sub> content of at least 98% and a Fe<sub>2</sub>O<sub>3</sub> content of up to 0.08% and feldspar with a Fe<sub>2</sub>O<sub>3</sub> content of up to 0.55%.

#### **10. PATENT OSIM NR. RO128500-B1 / 30.01.2015**

**TITLE RO/EN:** Beton autocompactant fara adaosuri minerale / SELF-COMPACTING CONCRETE (C 50/60) WITHOUT MINERAL ADDITIONS, MEANT FOR PRECAST ELEMENT MANUFACTURING

**INVENTOR(S):** IOANI ADRIAN MIRCEA, SZILAGYI HENRIETTE, MIRCEA CALIN RADU GRIGORE

**ABSTRACT:** The invention relates to a concrete composition for the precast/precompressed elements manufacturing. According to the invention, the composition consists of 510 kg of cement, 920 kg of river sand with a particle size of up to 4 mm, 230 kg of coarse river aggregate, 492 kg of coarse river aggregate having the particle size of 8...16 mm, 5.61 kg of super-plastifier of polycarboxylic type and 199 kg of water.

#### **11. PATENT OSIM NR. RO128581-B1 / 30.12.2014**

**TITLE RO/EN:** Motor cu reluctanta comutata cu autoventilatie interna la rotor / MACHINE WITH COMMUTED RELUCTANCE MOTOR, WITH INTERNAL ROTOR SELF-VENTILATION CONSISTS OF A STATOR MADE OF ELECTROTECHNICAL STEEL SHEETS FORMING EIGHT STATOR POLES

**INVENTOR(S):** RUBA MIRCEA, FODOREAN DANIEL

**ABSTRACT:** The invention relates to a commuted reluctance motor, with internal rotor self-ventilation. According to the invention, the motor consists of a stator (1) made of electrotechnical steel sheets forming eight stator poles and an electric circuit (2) consisting of four phases, each phase comprising two coils wound around the salient poles located diametrically opposed, and a rotor (3) located inside the stator (1), also made of electrotechnical steel sheets, between every two consecutive salient poles of the rotor (3) there being located some elements (4) made of non-magnetic material, uniting the margins of the poles at the two extreme ends of the rotor (3), said elements (4) being arranged slantwise, being twisted in such a manner as to ensure a perfect alignment with the margins of the rotor poles, at the extremities of rotor (3), said elements (4) acting as an internal fan which, together with the rotor (3) movement ventilates the stator windings, forcing the warm air around the windings to get out, being replaced with cold air from outside.

#### **12. PATENT OSIM NR. RO127706-B1 / 30.09.2014**

**TITLE RO/EN:** Metoda securizata de comunicatie intre dispozitive fixe si mobile / SECURED SYSTEM AND METHOD OF COMMUNICATION BETWEEN FIXED AND MOBILE DEVICES

**INVENTOR(S):** ASTILEAN ADINA, FOLEA SILVIU, AVRAM CAMELIA, HULEA MIHAI, MIRON RADU FLORIN, LETIA TIBERIU STEFAN, CIUPAN EMILIA

**ABSTRACT:** The invention relates to a secured system and method of communication between fixed and mobile devices based on fingerprints. The claimed system comprises one or more emitting subsystems (1) and a receiving subsystem (2) which consists of a distributed application server connected to the Internet, the secured information transmission between these subsystems (1 and 2) being based on the use of wireless or wired communication technology, each emitting subsystem (1) comprising: a fingerprint reader (FPS), provided with a storage and processing unit enabling the communication by Bluetooth, Wi-Fi or GPRS, a device (GPS) which communicates with the fingerprint reader (FPS) and a mobile terminal (MT), embedding GPRS technology or a computer (PC), the connection to the receiving subsystem (2) being carried out by means of the mobile terminal (MT) or the computer (PC). The claimed method provides the emission and the reception of an encrypted message by using an encrypting algorithm with a symmetrical key and limited duration, the symmetrical key being generated by the use of the information resulting by reading the fingerprint of participants in a communication session and the information concerning the position thereof, and the authentication is carried out according to a protocol also implying, besides the user's fingerprint and position, the identity codes of the entities involved in the communication system and the number of the communication session between the involved users.

### 13. PATENT OSIM NR. RO125433-B1 / 30.07.2014

**TITLE RO/EN:** Dispozitiv pentru ambutisare cu asistare hidraulica / HYDRAULICALLY ASSISTED METAL SHEET DRAWING DEVICE COMPRISES A BODY SUPPORTING A DIE HAVING AN ACTIVE PLATE AND A CENTERING RING, WHERE THE BODY IS PROVIDED IN THE CENTRAL PART WITH A CAVITY

**INVENTOR(S):** ACHIMAS GHEORGHE, COMSA DAN-SORIN, LAZARESCU LUCIAN, ACHIMAS SORIN, CECLAN VASILE ADRIAN

**ABSTRACT:** The invention relates to a metal sheet drawing device, meant to be used for reducing the thickness of walls by a combined mechanic and hydraulic process. According to the invention, the device comprises a body (1) supporting a die (2) having an active plate (3) and a centering ring (4), the body (1) being provided in the central part with a cavity (5) wherein oil is accumulated and the working pressure is reached, and with an orifice (6) wherethrough the oil intake is performed, the deformation of the blank (9) being achieved by using the punch (10) which presses on the blank through the active plate (3), the drawing thereof being thus achieved.

**14. PATENT OSIM NR. RO127398-B1 / 30.04.2014**

**TITLE RO/EN:** Procedeu de obtinere a betoanelor de ultra-inalta performanta / VERY HIGH PERFORMANCE CONCRETE COMPRISES CEMENT, VERY FINE SILICA POWDER, FINE QUARTZ SAND, SHORT STRAIGHT METAL FIBRES, METAL FIBRES WITH BENT ENDS, SUPERPLASTICIZING POLYCARBOXYLIC ADDITIVE AND WATER

**INVENTOR(S):** MAGUREANU CORNELIA, CORBU OFELIA CORNELIA, SOSA IOAN, SZILAGYI HENRIETTE, HEGHES BOGDAN HOREA

**ABSTRACT:** The invention relates to a concrete composition and to a process for preparing the same. According to the invention, the composition comprises 1 CEM I 62.5 R cement mass unit and the following components expressed as units from the cement amount: 0.25...0.27 units of very fine silica powder; 0.44...0.46 units of fine quartz sand having a grain size of 0...0.7 mm; 0.15...0.17 units of fine quartz sand having a grain size of 0.4...1.4 mm; 0.09...0.095 units of short straight metal fibres, 0.09...0.095 units of metal fibres with bent ends, 0.065 units of superplasticizing polycarboxylic additive of the IV-th generation, 0.15...0.17 units of water. The process claimed by the invention consists in mixing the materials in the dry state in a forced draft mixer for 2 min, after which the water is admixed together with the plasticizer and they are mixed for 8 min and at the end there are admixed the metal fibres while stirring, thereby resulting a concrete composition to be poured into formworks, dismantled and subjected to thermal treatment.

**15. PATENT OSIM NR. RO88149-B1 / 28.02.2014**

**TITLE RO/EN:** Mecanism de rotatie oscilant pentru roboti industriali / OSCILLATING ROTATOR FOR INDUSTRIAL ROBOT - CONSISTS OF HELICOIDAL PLUNGER LOCATED IN PERFORATED SLEEVE ASSEMBLY AND COOPERATING WITH STEPPED ELECTRIC MOTOR

**INVENTOR(S):** POP I. IOAN, ISPAS VIRGIL, ISPAS VIOREL

**16. PATENT OSIM NR. RO127480-B1 / 30.01.2014**

**TITLE RO/EN:** Tija centromedulara autoblocanta / SELF-LOCKING INTRAMEDULLARY NAIL FOR OSTEOSYNTHESIS, HAS CENTRAL CORE WITH INTERNAL SHAFT AND MULTIPLE TUBULAR MODULES, INSERTED INTO OUTER ROD, WHERE ONE OF MODULES IS FIXED ON INTERNAL SHAFT

**INVENTOR(S):** COSTE CAMILIO VICTOR, GROZAV SORIN DUMITRU

**ABSTRACT:** The invention relates to an intramedullary nail used in the intramedullary osteosynthesis with closed focus. According to the invention, the nail comprises an outer rod (1) wherein there is inserted a central core (7) consisting of an internal shaft (8) and several tubular

modules (9 and 10) provided with some indents (13), a module (9) being fixed on the internal shaft (8) and a module (10) being freely placed on the internal shaft (8), between the indents (13) being placed some screws (6) by means of which the fixation relative to the bone is carried out by a rotation motion of the internal shaft (8) of the central core (7). USE - Self-locking intramedullary nail for use in osteosynthesis. DESCRIPTION OF DRAWING(S) - The drawing shows a sectional view of a self-locking intramedullary nail.

#### **17. PATENT OSIM NR. RO127534-B1 / 30.12.2013**

**TITLE RO/EN:** Procedeu de obtinere a structurilor de sustinere celulara si materiale compozite destinate ingineriei tesuturilor / PROCESS FOR PREPARING CELL SUPPORTING STRUCTURES AND COMPOSITE MATERIALS MEANT FOR TISSUE ENGINEERING

**INVENTOR(S):** POPA CATALIN, CONT LIANA, DINDELEGAN GEORGE, SIMON VIORICA, BRIE IOANA, PAVEL CODRUTA, CANDEA VIOREL

**ABSTRACT:** The present invention relates to a process for directly preparing cell supporting structures by electrospinning, carried out with an installation comprising a square-shaped or an octagonal-shaped collector made of austenitic steel, having on the edges a lattice of slits whereon there is alternately placed, on both faces, a unidirectional or bidirectional arrangement of yarns of absorbable nature representing the matrix. The matrix and the yarns are made of different bioabsorbable polymers ensuring an optimal bioerosion duration and an optimal duration for maintaining the mechanical strength of the resulting membranes. From the thus resulting composite membranes there can be manufactured tubes for 3D tissue growth by bonding on template with the dissolved matrix polymer.

#### **18. PATENT OSIM NR. RO125337-B1 / 30.10.2013**

**TITLE RO/EN:** Metoda pentru determinarea modulului de elasticitate longitudinal al materialelor / METHOD FOR DETERMINING VALUE OF LONGITUDINAL ELASTIC MODULUS OF MATERIAL INVOLVES CREATING IMPULSE BY BODY OF MASS, DETERMINING TEST SAMPLE BY SOME HELICAL SPRINGS AND SUPPORTING RETURN PLATE

**INVENTOR(S):** ARGHIR MARIANA

**ABSTRACT:** The invention relates to a method for determining the value of the longitudinal elastic modulus of a material. According to the invention, the method consists in taking over 40...60% of the impulse created by a body (4) of a mass (M), launched from a height (h), determined above a test sample (1) by some helical springs (6) supporting a return plate (5) and mounted on a rest plate (8), the test sample (1) taking over 20...30% of the impulse value, while the rest of it is taken over by the helical springs (6) through the further compression thereof.



**19. PATENT OSIM NR. RO126255-B1 / 30.09.2013**

**TITLE RO/EN:** Motor electric trifazat cu reluctanta comutata tolerant la defecte / MODULAR FAULT-TOLERANT ELECTRIC MOTOR COMPRISING NINE MODULES ASSEMBLED OF STEEL SHEETS AND REINFORCED BY MEANS OF NON-MAGNETIC RODS, ON THE YOKES OF MODULES THERE ARE WOUND SOME COILS

**INVENTOR(S):** RUBA MIRCEA, SZABO LORAND

**ABSTRACT:** The invention relates to a modular fault-tolerant electric motor, operating on the principle of minimal magnetic reluctance, which consists of a stator (1) comprising nine modules (2) assembled of steel sheets and reinforced by means of non-magnetic rods (3), on the yokes of modules (2) there are wound some coils (4), the modules being magnetically insulated by some non-magnetic spacers (5) which also ensure the required angular shift from one another, and by means of other frontal non-magnetic spacers (11), the modules are insulated with respect to some shields (9) which comprise some rolling bearings (10) wherein there rotate a shaft (7) of a rotor (6).

**20. PATENT OSIM NR. RO125014-B1 / 28.06.2013**

**TITLE RO/EN:** Compozitie pentru placi, panouri si tavane casetate usoare / COMPOSITION FOR LIGHT POROUS SOUND-ABSORBING AND HEAT INSULATING PANELS, PLATES AND COFFERED CEILINGS

**INVENTOR(S):** ARGHIR MARIANA, UNGUR PATRICIA, UNGUR PETRU, MIHAILA STEFAN, PAFUCAN TEODOR

**ABSTRACT:** The invention relates to a composition for sound absorbing and heat insulating building elements used in civil and industrial buildings. According to the invention, the composition comprises moulding alpha plaster, micronized calcite, dehydrated lime, white cement, expanded polystyrene or expanded perlite beads, set retarders, oxide powders and dyestuffs.

**21. PATENT OSIM NR. RO127090-B1 / 30.01.2013**

**TITLE RO/EN:** Robot modular autopropulsat / MODULAR INSPECTING AND EXPLORING ROBOT COMPRISING PLURALITY OF MODULES FOR CHECKING OPERATION STATE OF INTERNAL WALL OF PIPES WITHIN GAS GRIDS, SEWAGE SYSTEMS OR PIPELINES FOR CIRCULATION OF OTHER GASEOUS OR LIQUID MEDIA

**INVENTOR(S):** TATAR MIHAI OLIMPIU, ALUTEI ADRIAN, CIREBEA CLAUDIU IOAN

**ABSTRACT:** The invention relates to a robot comprising a plurality of modules for checking the operation state of the internal wall of pipes within gas grids, sewage systems or pipelines for the circulation of other gaseous or liquid media. According to the invention, the robot comprises at least one passive module which consists of a cylinder (11) provided at its ends with two covers (10) in which there are cut some holes through which some supply cables pass, its motion being ensured by two groups of three wheels (8) mounted within some suspensions with adjustable travel on the radial direction, each of them consisting of some rods (6) supporting a wheel (8) movable inside a cylinder (3), a compression spring (5) being mounted between them and a fork of the rod (6), where the rods (6) are provided with through holes with the centres placed on a generatrix, wherethrough a bolt (4) can get in/out, the suspensions being fixed to some support elements (1) detachably assembled with the covers (10).

## **22. PATENT OSIM NR. RO126271-B1 / 28.12.2012**

**TITLE RO/EN:** Robot chirurgical / SURGICAL ROBOT COMPRISES A POSITIONING MODULE WITH THREE DEGREES OF MOBILITY, A POSITIONING MODULE WITH FIVE DEGREES OF MOBILITY WHICH SUPPORTS A SURGICAL INSTRUMENT WITH THREE DEGREES OF MOBILITY AND ACTIVE MOTION

**INVENTOR(S):** PLITEA NICOLAE, PISLA DOINA LIANA, VAIDA LIVIU CALIN, GHERMAN BOGDAN GEORGE

**ABSTRACT:** The present invention relates to a surgical robot comprising a positioning module (1) with three degrees of mobility, a positioning module (31) with five degrees of mobility which supports a surgical instrument (32) with three degrees of mobility and active motion, by means of an active or passive cardan couple (2), there being also provided the embodiment that, for complex interventions, a system of surgical robots may be used, said system comprising a central robot (57) with an orientation module (1) with three degrees of mobility, and two robots (58) and (59), respectively, provided with orientation modules (31) with five degrees of mobility and a surgical instrument (32), in which the central robot (57) conducts a laparoscope or a video camera and robots (58) and (59) carry out functions specific to surgeon hands.

## **23. PATENT OSIM NR. RO126456-B1 / 29.11.2012**

**TITLE RO/EN:** Metoda de germinare a semintelor cu radiatii infrarosii / 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

**INVENTOR(S):** COMAN MIRELA

**ABSTRACT:** The invention relates to a method for seed germination. According to the invention, the 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, after which the seedlings may be transferred to the field.

#### **24. PATENT OSIM NR. RO125756-B1 / 29.11.2012**

**TITLE RO/EN:** Instalatie de retinere a dioxidului de carbon si a dioxidului de sulf din gazele reziduale / PROCESS FOR THE INTEGRATED RETENTION OF SULPHUR DIOXIDE AND CARBON DIOXIDE FROM RESIDUAL GASES

**INVENTOR(S):** HOTEA VASILE

**ABSTRACT:** The invention relates to a process for retaining sulphur dioxide and carbon dioxide from residual gases. According to the invention, the process consists, in a first stage, in treating the residual gases with a solution of sodium carbonate for SO<sub>2</sub> absorption, followed, in a second stage, by CO<sub>2</sub> adsorption on zeolite volcanic tuff, wherefrom there result residual gases having limit values of sulphur dioxide and carbon dioxide for being discharged into the atmosphere. The claimed installation consists of a reservoir (2) for preparing the sodium carbonate solution, a buffer reservoir (3) wherefrom a barrel exhausting pump (7) transfers the sodium carbonate solution to a centrifugal scrubber (1) with sprinkling nozzles, wherefrom the washing solution flows out into a reservoir (4), and a pump (8) carries out the recycling thereof into the scrubber (1), then the washing solution, containing sodium sulphite and bisulphite, in the stirrer reservoir (4) is heated in order to convert the sulphite into bisulphite and then transferred to a tilting crystallizer in order to separate the crystallized sodium bisulphite, the gases from which SO<sub>2</sub> has been retained come out from the centrifugal scrubber (1) and are led to two CO<sub>2</sub> adsorption columns (6) which are natural zeolite filters, and then are discharged into the atmosphere through some electrovalves (9), in a dispersion flue (10), the installation being also provided with a computerized operation system (11).

#### **25. PATENT OSIM NR. RO123490-B1 / 29.11.2012**

**TITLE RO/EN:** Sistem fara fir, pentru telemasurarea inclinatiei / WIRELESS SYSTEM FOR REMOTE MEASURING OF INCLINATION OF OBJECT IN VERTICAL PLANE OF PLACE

**INVENTOR(S):** MUNTEANU RADU , MOGA DANIEL, IVAN DUMITRU MIRCEA, DOBRA PETRU, MUNTEANU RADU ADRIAN, MOGA ROZICA GABRIELA, VELEA LUCIAN MARIUS

**ABSTRACT:** The invention relates to a wireless system for measuring the inclination of an object in respect of the vertical plane of the place, the system being carried out on a hardware platform which achieves the measurement of gravity acceleration on three orthogonal directions, using a 3D acceleration sensor (9), for the conversion of said acceleration values into angles relative to

the direction and sense of the gravity acceleration vector  $g$  there being used an A/D controller (4), based on a computing algorithm implemented with a microcontroller processing unit (2), the measured values being then communicated via an RF transceiver interface (3), to a mobile acquisition unit (7) which displays/stores the measured values and communicates the same to some computing equipments (8), such as PC or PDA, the system being power supplied from an accumulator ACC (6), by means of a management block MA (5) having the function of charging control and monitoring of the charge state of the accumulator ACC (6), the so obtained data being then transmitted to the microcontroller processing unit (2) for being interpreted and then remotely communicated to the acquisition unit (7).

## **26. PATENT OSIM NR. RO123479-B1 / 28.09.2012**

**TITLE RO/EN:** Aruncator pneumatic pentru matrite de injectat / PNEUMATIC EJECTOR FOR INJECTION MOLD, COMPRISES CYLINDER, PISTON WITH ROD FIXED BETWEEN COVER AND GUIDING BUSHING, CUSHIONING SPRING AND SOME SEALING RINGS

**INVENTOR(S):** HARAGAS SIMION, TUDOSE LUCIAN MIRCEA, POP DUMITRU OVIDIU

**ABSTRACT:** The invention relates to a pneumatic ejector employed in the construction of injection moulds for plastics with a view to automatically removing pieces from the moulds. According to the invention, the pneumatic ejector comprises a cylinder (1), a piston (2) with a rod (3) fixed between a cover (4) and a guiding bushing (5), a cushioning spring (6), some sealing rings (7, 8, 9, 10 and 11), where the pressurized air supply of the two cylinder chambers is made through a channel (a) cut into the cover (4) and through another channel (b) cut into the cylinder (1), the channel (a) being supplied with pressurized air for the ejection stroke through a channel (a1) and the channel (b) being supplied with pressurized air for the return stroke through a channel (b1).

## **27. PATENT OSIM NR. RO123447-B1 / 30.05.2012**

**TITLE RO/EN:** Senzor potentiometric pe baza de ionofor porfirinic cu selectivitate inalta pentru argint / POTENTIOMETRIC SENSOR BASED ON PORPHYRIN IONOPHORE WITH HIGH SELECTIVITY TO SILVER

**INVENTOR(S):** FAGADAR-COSMA EUGENIA LENUTA, VLASICI DANA, PICA ELENA MARIA, COSTISOR OTILIA, COSMA VIORICA, OLENIC LILIANA, BIZEREA OTILIA

**ABSTRACT:** The invention relates to a potentiometric sensor for measuring the concentration of silver in liquid samples of various origins and to a process for carrying out the same. According to the invention, the sensor has a body (1) provided with a lid (2) and at the opposite end of the lid (2) there is a conductive copper support (3) which is attached to the body (1) with epoxy resin and on one face of the support (3) there is attached a central wire (6) of the connection cable,

while on the other face of the support (3) there is formed a membrane (4), selective to Ag<sup>+</sup>, made of polyvinyl chloride (PVC), plastified with diethylhexyl sebacate (DOS), wherein there is included a composition which contains an ionophore, namely 5,10,15,20-tetrakis-(3-hydroxyphenyl) porphyrine and a lipophilic additive, tetrakis(4-chlorophenyl) potassium borate, the mass ratio PVC:porphyrine:DOS:additive being 33:2:66:1.

#### **28. PATENT OSIM NR. RO123425-B1 / 30.04.2012**

**TITLE RO/EN:** Procedeu de obtinere a pulberii de compusi intermetalici IrAl si IrAl<sub>3</sub> si tinta de iradiere pentru gamagrafie industriala obtinuta din aceasta / PROCESS FOR PREPARING THE POWDER OF IrAl AND IrAl<sub>3</sub> INTERMETALLIC COMPOUNDS AND IRRADIATION TARGET FOR INDUSTRIAL GAMMAGRAPHY OBTAINED THEREWITH

**INVENTOR(S):** CARLAN PAULA, CHICINAS IONEL

**ABSTRACT:** The invention relates to a process for preparing sinterable powders of IrAl and IrAl<sub>3</sub> intermetallic compounds meant to be used for obtaining irradiation targets for sources. The process claimed by the invention is a process of mechanical alloying of Ir and Al granules by crushing the same in a stainless steel ball planetary mill, under a protective argon atmosphere. The ball volume : material volume ratio is 20 : 1 at an enclosure filling degree of 35%, the milling time for forming the IrAl compound is 8 h and the milling time for forming the IrAl<sub>3</sub> compound is 28 h. The resulting irradiation target exhibits uniform dispersion of the activable element and reduced self-shielding factor.

#### **29. PATENT OSIM NR. RO125006-B1 / 30.09.2011**

**TITLE RO/EN:** Compozitie pentru pansamente si corsete ortopedice usoare si poroase / COMPOSITION FOR DRESSINGS AND LIGHT AND POROUS ORTHOPAEDIC CORSETS

**INVENTOR(S):** ARGHIR MARIANA, UNGUR PATRICIA, UNGUR PETRU, MIHAILA STEFAN, LEZEU IOAN

**ABSTRACT:** The invention relates to a composition for dressings and orthopaedic corsets used in orthopaedy, for fixing the limbs or other parts of the osseous system of human body in case of fractures and luxation. According to the invention, the composition consists of: pottery plaster, white cement, expanded polystyrene granules or expanded pearlite and tartaric acid, as setting retarder.

#### **30. PATENT OSIM NR. RO123245-B8 / 29.04.2011**

**TITLE RO/EN:** Procedeu de obtinere a tuburilor poroase prin rulare cu strat elastic a tablelor sinterizate / PROCESS FOR MAKING POROUS TUBES BY THE ROLLING WITH ELASTIC LAYER OF SINTERED SHEET METAL

**INVENTOR(S):** VIDA-SIMITI IOAN, CIUPAN CORNEL

**ABSTRACT:** The invention relates to a process for making a plain or profiled tube-shaped piece of sintered porous sheet metal, by rolling the sheet metal about a roller, using an element coated with an elastic layer. According to the invention, the process consists in using a rigid roller (1) having the diameter corresponding to a tube, and a satellite roller (2) having a larger diameter than the rigid roller (1), covered with an elastic element (3), which performs a planet motion about the rigid roller (1), the planet motion of the satellite roller (2) being composed of a rotation about an axis of the rigid roller (1) and a rotation about its own axis, the elastic element (3) being made of rubber, polyurethane or another elastic material, a support (4) ensuring the position adjustment between the two rollers (1 and 2) and the pressure adjustment relating to the pressing corresponding to the deformation of the porous material, the porous sheet metal (5) being deformed by its passing between the rigid roller (1) and the elastic element (3) of the satellite roller (2).

### **31. PATENT OSIM NR. RO123261-B8 / 29.04.2011**

**TITLE RO/EN:** Sistem de monitorizare a incarcarii progresive a membrului inferior in recuperarea posttraumatica / SYSTEM FOR MONITORING THE PROGRESSIVE LOADING OF A LOWER LIMB IN POST-TRAUMATIC REHABILITATION

**INVENTOR(S):** MUNTEANU RADU, MOGA DANIEL, NEAGA FLORIAN CLAUDIU, PETREUS DORIN, DUMITREAN RADU MIHAI, MUNTEANU MIHAI, VLADAREANU LUIGE

**ABSTRACT:** The invention relates to a system for monitoring the progressive loading of a lower limb and measuring the pressure force at the sole level within a post-traumatic rehabilitation process, said system comprising a network of elastic chambers (CE1, CE2, CE3) located at the level of the lower limb sole under three anatomic areas of maximal pressure of the patient's sole, said chambers communicating through a tubing (T) coupled to a pressure transducer (SP) which detects the current maximal pressure and transmits it to a control and measuring unit (BM) where it is converted into a digital value by a conversion circuit (A/D) then it is transformed into a force value by means of a calibration algorithm implemented on a processing unit (Microcontroller) of the measuring unit and compared with the threshold values stored in the memory of the measuring unit (BM), a warning device (AAL) generating acoustic and light signals when the maximal value of the force measured in a programmed period of time exceeds the pre-established threshold value, the values of various parameters (Tmas, Fs, FP, D) stored in the non volatile memory of the processing unit (Microcontroller) being read or modified by a wireless communication with the measuring unit (BM) by means of an interface (IR) implemented by a

Transceiver unit (RF), the supply of the monitoring system being carried out by components belonging to the supply unit (A), an accumulator (ACC) and a charging device (I).

### **32. PATENT OSIM NR. RO122986-B1 / 28.05.2010**

**TITLE RO/EN:** Circuit de cuplaj fara contact / CONTACTLESS COUPLING CIRCUIT FOR PROCESSING INFORMATION AND PERFORMING INFORMATION EXCHANGE BETWEEN THEM AND TRANSDUCERS SERVING

**INVENTOR(S):** MUNTEANU RADU IOAN, MOGA DANIEL, MUNTEANU RADU ADRIAN, MUNTEANU MIHAI STELIAN

**ABSTRACT:** The invention relates to a contactless coupling circuit, meant to supply the systems for processing information and performing the information exchange between them and the transducers serving them, according to the invention, the coupling circuit consisting of two sub-circuits, an independent information processing sub-circuit (S1), which provides the energy supply of the contactless coupling circuit and a dependent information processing sub-circuit (S2) connected to a transducer serving a certain application. The independent information processing sub-circuit (S1) consists of a central unit (UC1), a controlled oscillator with programmable frequency (OCFP), a current control stage (ECC), a unit (BA) for supplying the independent information processing sub-circuit (S1), being magnetically connected, by means of a first coil (B1) with the dependent information processing sub-circuit (S2), which comprises, for this purpose, a coil (B2), a voltage stabilizing and rectifying block (RST) as well as a central unit (UC2), which performs the information exchange with the mentioned transducer, the useful and control signals being passed through some modulator/demodulator and conversion blocks (M/DC1 and M/D C2) and then circulated, between the two information processing sub-circuits (S1 and S2) by means of two infrared emission/reception blocks (BERI1 and BERI2), one for each of the mentioned information processing sub-circuits (S1 and S2).

### **33. PATENT OSIM NR. RO122976-B1 / 28.05.2010**

**TITLE RO/EN:** Sistem si procedeu pentru masurarea indirecta a masei obiectelor aflate in miscare / SYSTEM FOR INDIRECTLY MEASURING MASS OF OBJECTS IN MOTION COMPRISES CENTRAL PROCESSING UNIT WITH SET OF INTERFACES FOR CATCHING AND TAKING OVER IMAGES

**INVENTOR(S):** MUNTEANU RADU IOAN, MOGA DANIEL, MUNTEANU RADU ADRIAN, MUNTEANU MIHAI STELIAN

**ABSTRACT:** The invention relates to a system for indirectly measuring the mass of the objects in motion, by using software applications for the aquisition and processing of visual information, for control and for user interface, system comprising a central processing unit (UC), provided with a set of interfaces (I1...In) towards the devices (CA1, CA2...CAN) for catching and taking over

images and an interface (IM) towards a system for monitoring (M1) the environment where to there are coupled the sensors (S1...Sn) providing information on the environment wherein the objects are displaced, the processing unit (UC) having optionally an interface (IC) towards a control subsystem (C1) coupled to some execution elements (ACT1, ACT2...ACTn), from the analysis of the information received and the extraction of the values of the objects geometrical characteristics and the interpolation based on the built transfer surface, with the masses of the determined bodies, there being obtained the indirectly measured mass value (mI) of the visualized object.

#### **34. PATENT OSIM NR. RO122932-B1 / 30.04.2010**

**TITLE RO/EN:** Stand experimental termic cu comanda controlata a perturbatiilor / EXPERIMENTAL STAND WITH THERMAL ENCLOSURES COMPRISES ADJACENT ENCLOSURES, PRINCIPAL ENCLOSURE, ELEMENTARY ENCLOSURES, ELECTRICAL RESISTOR, SUPPLY UNIT AND TEMPERATURE TRANSDUCER

**INVENTOR(S):** ISOC DORIN, IGNAT AURELIAN DOREL

**ABSTRACT:** The invention relates to an experimental stand with thermal enclosures, meant for practical works and laboratory research studies on conducting technical processes of complex dynamic properties. According to the invention, the experimental stand comprises some adjacent enclosures (I1, I2, I3 and I4) of which one is a principal enclosure (I1), and the others are elementary enclosures (I2, I3 and I4) formed by means of some removable walls (5, 6 and 7), each enclosure being separately heated by an electrical resistor (R1, R2, R3 and R4), by means of a supply unit (UCT1, UCT2, UCT3 and UCT4), the temperature of each enclosure being measured by a temperature transducer (TT1, TT2, TT3 and TT4), while the control of the supply units (UCT1, UCT2, UCT3 and UCT4) is achieved by a central control unit (UC) which also controls a resistor (R5) located inside a guide body (G), where a turbine (T) of a fan driven by an electric motor (M) blows air which enters the enclosures by some slot covers (C1, C2, C3 and C4) located at the top part of the enclosures.

#### **35. PATENT OSIM NR. RO122822-B1 / 26.02.2010**

**TITLE RO/EN:** Motocompresor / MOTOR-COMPRESSOR USED IN EG.MINING EQUIPMENTS COMPRISES BASE BODY WHERE MOTOR AND COMPRESSOR ENCLOSURES ARE SEPARATED INTO ENCLOSURES, DRIVING CYLINDER WITH JACKET, VALVES, INJECTOR, INTAKE AND COMPRESSION VALVE AND PISTON

**INVENTOR(S):** CARNARU STELIAN COSMIN

**ABSTRACT:** The invention relates to a motor-compressor meant to function as such or in batteries, in various applications, such as mining equipments, rock drills etc. According to the



invention, the motor-compressor has a more simple construction by the fact that, inside the base body (1), the motor and compressor enclosures are separated into three enclosures (a, b, c) representing the very same volume, such that the first enclosure (a) which is the driving enclosure, has a driving cylinder provided with a jacket (2), a pair of valves (3 and 4), and an injector (5), the third extreme enclosure (c) is compressing and has a jacket (6) and a pair of valves, an intake valve (7) and a compression valve (8), a piston (9, 10) slide in each of the two extreme enclosures (a, c), the two pistons being coaxially rigidly connected with a common rod (11) provided in the middle enclosure (b).

**36. PATENT OSIM NR. RO122790-B1 / 29.01.2010**

**TITLE RO/EN:** Senzor potentiometric nitrit-selectiv / NITRITE-SELECTIVE POTENTIOMETRIC SENSOR FOR MEASURING NITRITE CONCENTRATION IN SAMPLES OF VARIOUS ORIGIN

**INVENTOR(S):** VLASICI DANA, PICA ELENA MARIA, FAGADAR-COSMA EUGENIA LENUTA, BIZEREA OTILIA, COSTISOR OTILIA, COSMA VIORICA

**ABSTRACT:** The invention relates to a nitrite-selective potentiometric sensor for measuring nitrite concentration in samples of various origin such as environmental pollution samples, food control samples, scientific research samples. According to the invention, the sensor has a body made of polyvinyl chloride bar, which is provided, at its lower part, with a nitrite-selective membrane, formed directly on a copper tablet, the membrane being based on plasticized polyvinyl chloride with o-nitrophenyl octyl ether (O-NPOE) which has embedded the Co(III)-tetraphenylporphyrin ionophore (CoTPPCI) and trioctylmethyl-ammonium chloride (TOMACI) as lipophilic additive.