

NATIONAL INSTITUTE FOR RESEARCH&DEVELOPMENT IN ELECTRICAL
ENGINEERING ICPE-CA



ANNUAL REPORT

for the period January 01 – August 31, 2008

This report is according to Government Decision 551 / 2007

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D 03 JURIDIC OFFICES, HUMANE RESOURCES, INTELLECTUAL PROPERTY, SECRET DOCUMENTS, WORK PROTECTION

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ACTIVITY DOMAIN

- legal assistance;
- human resources keeping;
- assistance in the field of intellectual property;
- account of the secret documents;
- monitoring on work protection.

D 04 QUALITY MANAGEMENT, QUALITY ASSURANCE&TECHNICAL CONTROL, WORKING AND ENVIRONMENT PROTECTION OFFICE

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RESEARCH FIELDS

- monitoring the quality assurance&technical control and environment protection in INCDIE ICPE-CA
- support materials for certification/training in the management systems of the institute managerial staff and operative personnel;
- testing and control system of the environment quality for obtaining of clean technology in the field of magnetic materials;
- clear technologies for recycling the electrical equipment waste;
- services for documentation, information and transfer of technical, economical, juridical information according to UE, in industrial field;
- superconducting materials for applications in electrical engineering;
- superconducting materials on the base of MgB₂

D 05 MARKETING, LINKING TO MASS MEDIA, TECHNICAL LIBRARY

Leader Group: Phys. Ana Maria BONDAR
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FIELD OF ACTIVITY

- standard and electronic (internet) marketing for the institute;
- developing of the INTRANET in the institute with the goal of communication, information and dissemination of the information's;
- developing of the interlinking with other institutes, research networks, to realize partnerships, regional programmes, data bases;
- developing the own base of information through acquisition of books, review subscription;
- organization of scientific events, participation at fairs and exhibitions;
- marketing for promotion of the patents, produces, equipments and services elaborated by the institute

D 06 BRANCH SF. GHEORGHE – BUSINESS AND TECHNOLOGY INCUBATOR
ITA ECOMAT ICPE-CA

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RESEARCH FIELDS

- electrical engineering
- ceramic materials

D 1.1, D 2.1 PROGRAMMES MONITORING. PLANIFICATION

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FIELD OF ACTIVITY

- Monitoring of the research projects
- Monitoring of the direct contracts
- Planning of the incomes/expenditures
- Planification/monitoring of the personal overcharge
- Financial operation
- Elaboration of specific statistics

D 1.2 MULTIFUNCTIONAL METALLIC MATERIALS

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RESEARCH FIELDS

- Conducting metallic materials and sintered composites for industrial applications (ex. contacts with air and vacuum switching);
- Micro and nanocrystalline powders;
- Metallic materials for advanced structural applications;
- Porous metallic materials with directed anisotropy of pores distribution;
- Powders of refractory inter metallic compounds;
- Hydrogen storage materials;
- Soft magnetic materials;
- Heavy alloys with sundry applications;
- Other functional metallic materials;
- Recuperative metallic wastage.

D 1.3 ADVANCED CARBONIC MATERIALS

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RESEARCH FIELD

- Advanced carbonic materials;
- New materials for electronic packaging;
- Active carbon;
- Carbonic materials for terminological applications;
- Advanced materials for electromagnetic shielding
- Materials for fuel cells.

D 1.4 MICRO AND NANOSTRUCTURED MAGNETIC MATERIALS

Leader Group: Dr. Phys. Jenica NEAMȚU
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RESEARCH FIELD

- Magnetic nano-composite materials based on rare earth;
- Hard magnetic materials based on NdFeB with high thermal stability;
- Intelligent materials based on diluted alloys Fe-Cu;
- Microsystems of magnetic multilayer's gigantic magneto resistance effect (GMR) and tunneling dependent on spin (TMR) for spintronic;
- Magnetically nano-particles with structure "core-shell" for applications in medicine and micro-sensors;
- New nano-structured semiconductor materials and diluted magnetically semiconductors;
- Nano-structured multifunctional for sensors and actuators applications;
- Nano composites and microsystems type perovskit magnetic;
- Composite magnetic materials with shielding effect at radio-frequencies, microwaves and protection equipments;
- Recovered materials from waste, with absorption of electromagnetically radiation properties;
- Metallically materials with biomedical applications

D 1.5 GAZO-HYDRO-DYNAMICS

Leader Group: Prof. Dr. Eng. Gheorghe BĂRAN
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RESEARCH FIELDS

- Hydrodynamics and Fluids Mechanics;
- Methods, technologies, instruments, systems and equipment for the protection and the rehabilitation of the environment and the natural capital;
- New and nonconventional technologies for the obtaining, producing and storage of energy.

D 1.6 ADVANCED CERMIC MATERIALS

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RESEARCH FIELDS

- New ceramic materials with applications on modern techniques for energy clean generation- composite ceramic materials with electrochemical properties for combustion piles;
- Oxidic and non oxidic ceramic materials for medical devices and orthopedic surgery;
- Composite ceramic materials with advanced thermo technical properties;
- Modern techniques of separation and filtration of different mediums;
- Fabrication technologies for ceramic materials and products;
- Nonconventional methods for obtaining of nano-structured ceramic materials, with controlled electrochemical properties;
- Integrated technologies for the usage of vitreous SiO₂ for the obtaining of ceramics and composites ;
- Nonconventional methods for the obtaining of ceramic materials with controlled porosity from organic precursors;
- Technological design
- Obtaining of new piezoelectric materials from oxidic ceramic and lead titanate-zirconate group with different admixtures;
- Multifunctional materials from relaxers family for PMN-PT system in different compositions;
- Ceramic materials with high dielectric constants in a high range frequencies;
- Cleaning some ceramic materials by partial substitution of the lead;
- Biomaterials, hydroxide apatite nanopowders, obtained by sol-gel method;
- Development of the technical endowment of the groupe by acquiring of measuring device for piezoelectric and dielectric properties.

D 1.7 POLIMERIC MATERIALS

Leader Group: Dr. Eng. Traian ZAHARESCU
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RESEARCH FIELDS

- Obtaining and characterization of some new polymeric materials;
- New methods, nonconventional, for the obtaining materials or to modification in order to improve their properties;
- New investigation and analysis methods, including, design and execution of adequate equipment, based on luminescence phenomenon's or on other physical-chemical effects;
- Original proceedings for the recycling of some wastages;
- The diagnosis of polymeric materials degradation and estimates regarding the lifetime in different stress conditions.

D 1.9 NEW ENERGY SOUCES GROUP

Leader Group: Eng. Sergiu NICOLAE
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RESEARCH FIELD

- Hydrodynamics and aerodynamics of hydraulic and wind rotors;
- Electric generator actuated by renewable sources for secluded areas.

D 1.10 ELECTROMECHANICAL ENGINEERING GROUP

Leader Group: Dr. Eng. Mircea IGNAT
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RESEARCH FIELDS

- Electromechanical components: multilayer linear piezoelectric micro actuators, magnetostrictive micro actuators, electrothermal micro actuators, electrochemical micro actuators, rotary piezoelectric micromotors;
- Sensors: linear inductive displacement sensor for monitoring of landslides, vibration piezoelectric microsensors,
- Mechanical stress microsensors;
- Electrical machines: synchronous generators of 5kW for wind power plant, asynchronous micromotor with reversed construction, designing of high power synchronic generators;
- Electrotechnical applications of the superconductors;
- Gas sensors (CO, CO₂, NO_x,H).

D 1.11 ELECTROTEHNOLOGIES GROUP

Leader Group: Eng. Carmen LINGVAY
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RESEARCH FIELD

- Materials degradation by corrosion, the control of corrosion in different natural and industrial environments;
- Electromagnetic pollution of the environment, dispersion stray currents;
- Complex systems for electro security and active protection against corrosion of underground metallic pipes;
- System of protection against corrosion and systems of increasing the maintenance and reliability for underground power cables;
- Small-scale manufacturing of some materials and devices for complex electro security and protection system against action by corrosion;
- Technical assistance and consulting in the field of corrosion

D 1.12 VIBRATIONS AND DYNAMIC BALANCING GROUP

Leader Group: Eng. Iuliu POPOVICI
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RESEARCH FIELDS

- Engine and dynamic balancing for rotary pieces;
- Equipment and vibration measurements;
- Computerized stands for measuring, testing and the control of electrical, mechanical and environment parameters;
- Renewable energy.

D 1.13 BIOLOGY

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RESEARCH FIELDS

- Determining the antifungal properties of some products based on creosols, selective demonstrated on some species of molds insulated in new biotopes for the country;
- Controlled method of microorganisms in infrastructures from the subway tunnels;
- Determining the antifungal properties of silver nanopowders included in different materials.

D 2.2 FUNCTIONAL MATERIALS PILOT STATION

Leader Group: Chem. Paula LUNGU
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RESEARCH FIELDS

- Research (contributions at D1.2 group's activities)
- Realization of materials and contacts for commutation in air and vacuum;
- Specific services for tertiary partners

D 2.3 CARBONIC MATERIALS PILOT STATION

Leader Group: Eng. Phys. Iulian IORDACHE
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RESEARCH FIELDS

- Functional characterization: density of current (A/cm^2), voltage dropping $2U_c$ (mV);
- friction coefficient (μ), medium speed of wear (mm/103h);
- Physical characterization of materials;
- Specific services for tertiary partners.

D 2.4 MAGNETIC MATERIALS PILOT STATION

Leader Group: Eng. Nicolae STANCU
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RESEARCH FIELDS

- Magnetic materials with high performances used in electrical machines construction;
- Obtaining of permanent magnets with rare earth and magnetic field concentrators able to allow a maximum transfer of magnetic flux;
- Achievement of magnetic materials and permanent magnets;
- Specific services for tertiary partners.

D 2.5 CERAMIC MATERIALS PILOT STATION

Leader Group: Eng. Georgeta VELCIU
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RESEARCH FIELDS

- Consultancy on the materials and ceramic technologies;
- Materials Characterization;
- Small scale production of ceramic products;
- Thermo treatments in vacuum (max.2700°C), protection atmosphere, under pressure.

D 2.6 LABORATORIES FOR PROCESSING MICROELECTROMECHANIC SYSTEM

Leader Group: Eng. Cristinel ILIE
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RESEARCH FIELDS

- SDV design, models and prototype for used in the research projects;
- Processing microelectromechanic systems.

D 2.7 TECHNOLOGICAL TRANSFER CENTRE

Leader Group: Eng. Ion IVAN
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Fax: (+40-21)346.82.99

RESEARCH FIELDS

- Technological transfer of products and technologies elaborated by INCDIE ICPE-CA ;
- Development of interactive exchange for the practical application through technological transfer of patents, products, equipments and services elaborated by the institute.

D 4.1 CHARACTERIZATIONS AND TESTINGS LABORATORY FOR ELECTROTECHNICAL MATERIALS AND PRODUCTS

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FIELD OF EXPERTISE

- mechanical and physical test
- electrical characteristics test
- magnetic characteristics test
- structural analysis
- microbiological analysis

D 4.2 LABORATORY OF BIOELECTROMAGNETIC COMPATIBILITY

Leader Group: Dr. Phys. Jenica Neamțu
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Fax: (+40-21)346.82.99

RESEARCH FIELDS

- Influence of radiation electromagnetic fields of some electrical device (mobile phones, microwave oven, etc) on living organisms, of magnetic and non-magnetic materials
- Influence of electromagnetic fields on magnetic and non-magnetic materials

D 4.3 LABORATORY FOR DETERMINATION OF THERMAL BEHAVIOR OF THE SOLID PRODUCTS AND MATERIALS BY THERMAL ANALYSIS METHODS

Leader Group: Dr. Eng. Petru BUDRUGEAC
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RESEARCH FIELDS

- thermogravimetry (TG)
- derivative thermogravimetry (DTG)
- differential thermal analysis (DTA)
- differential scanning calorimetry (DSC)
- dilatometry (DIL)
- dynamic mechanical analysis (DMA)

D 4.4 LABORATORY OF ELECTROMAGNETIC COMPATIBILITY – ANECHOIC CHAMBER –

Leader Group: PhD Student Phys. Eros Alexandru PATROI
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RESEARCH FIELDS

- immunity testing for electrical and electronic devices
- development of electromagnetic absorbing materials
- development of micro and nano materials compatible electromagnetic

D 4.5 LABORATORY OF MEMS AND NEMS MEASUREMENTS

Leader Group: Dr. Eng. Mircea IGNAT
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RESEARCH FIELDS

- Measurements of micro and nano displacement;
- Measurements of dynamic parameters for micro and nano actuators;
- Measurements of electromechanical resonance;
- Measurements of surfaces nano roughness (profile diagrams).

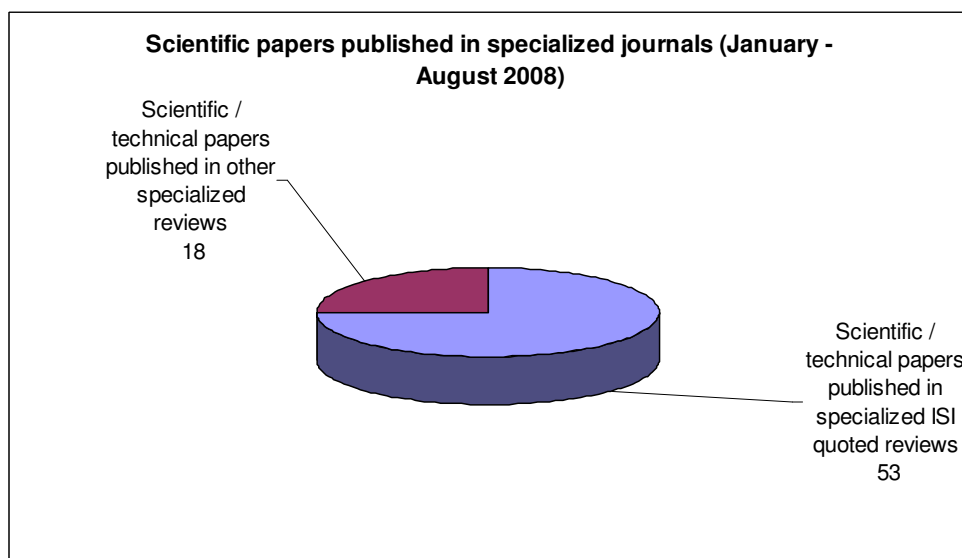
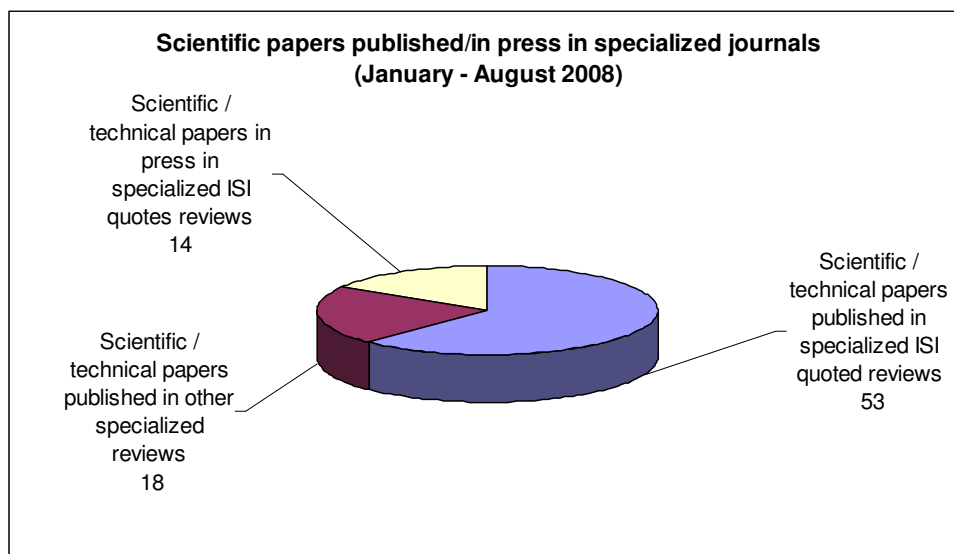
I. SYNTHETIC VIEW OF ECONOMICAL AND FINANCIAL REPORT

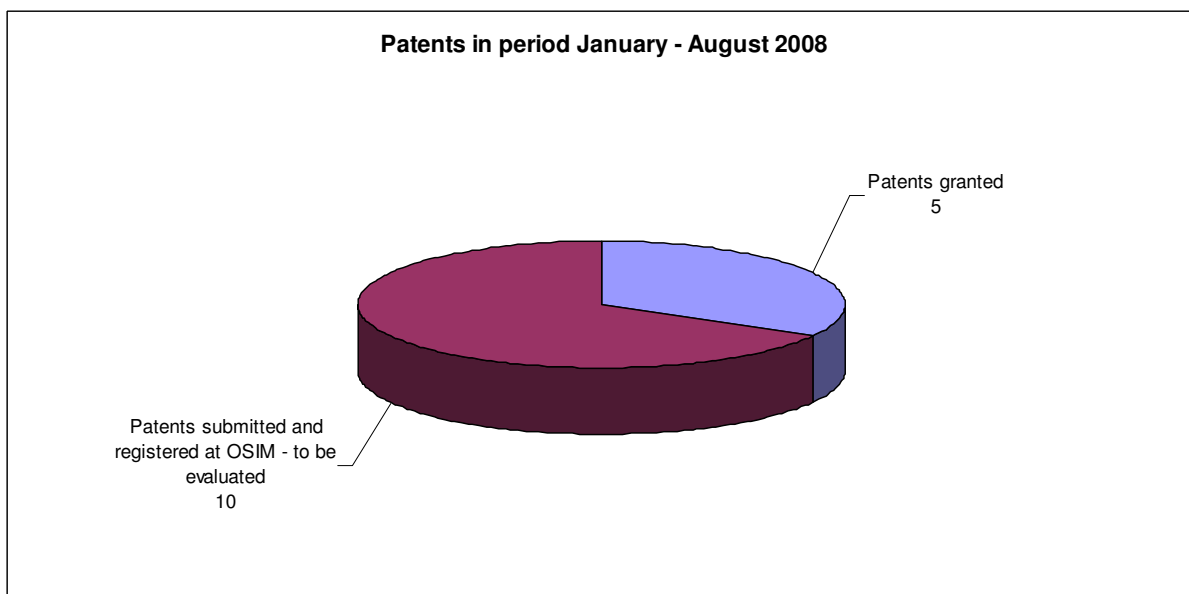
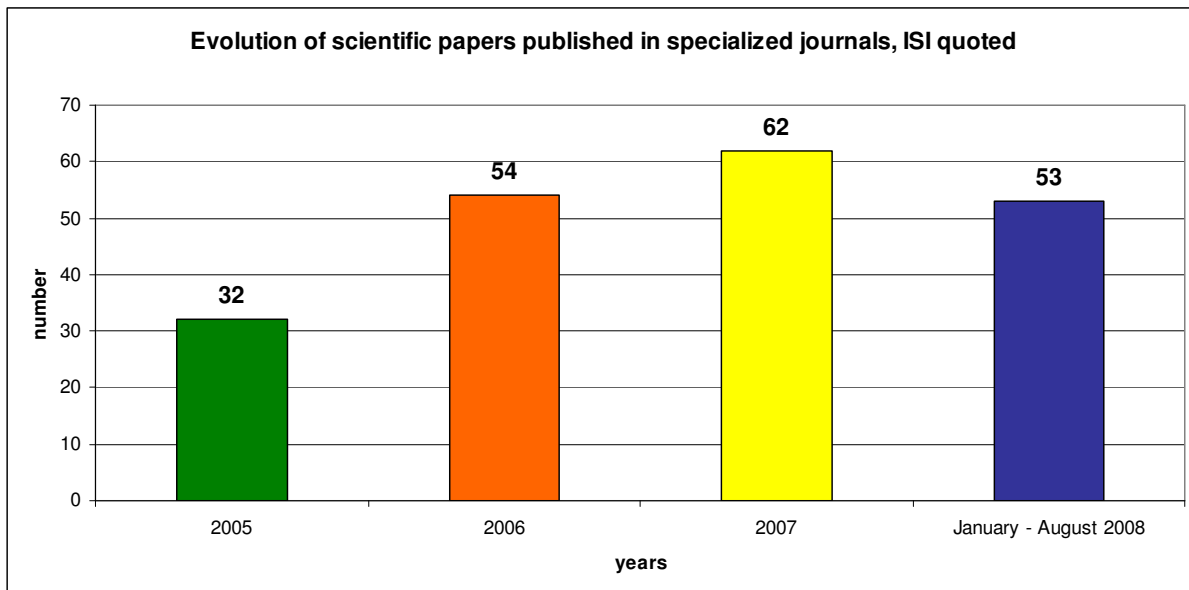
No. Indicator	Indicator	M.U.	Response 31.07.2008
1.	Subscribed capital (last inventory)	Lei	381,108
2.	Turnover	Lei	15,579,306
3.	Profit and loss account	Lei	1,094
4.	Weight of incomes obtained from the following activities are:		
	4.1. research-development, out of which:	%	79.36
	- NPRDI research contracts	%	21.49
	- direct research contracts	%	22.29
	4.2. designing of investment objectives	%	0
	4.3. scientific and technological services	%	0
	4.4. small series manufacture and prototypes	%	0.85
5.	Expenses for:		
	- research-development	%	79.36
	- designing of investment objectives	%	0
	- scientific and technological services	%	0
	- small series manufacture	%	0.85
	- other activities	%	0.54
6.	Capital expenditure (investments)		
7.	Financing of R&D activities:		
	- public financing research	%	97.12
	- companies	%	2.16
	- external financing	%	0.72
	- other sources	%	0
8.	Public financing:		
	- for R&D projects obtained direct, due to institute' profit, or ongoing projects	%	28.92
	- for R&D projects obtains at auction within research programmes NPRDI and CEEX	%	71.08
9.	Social security taxes	% in year total	73,46
		Amount	532.262
10	Liabilities for special funds	% in year total	1.70
		Amount	12.261
11	Taxes	% in year total	24,84
		amount	179.999

Note: For indicator no. 3 – Profit and loss account will be registered according to balance sheet; losses will be marked with minus.

II. Primary performance criteria

No. Crt.	Performance criteria	M.U.	Response	Observations
1.	Scientific / technical papers published in specialized ISI quoted reviews	No.	53	Annex 1
2.	Scientific / technical papers in press in specialized ISI quotes reviews	No.	14	Annex 2
3.	Published books / book chapters	No.	1	Annex 3
4.	Citation in specialized ISI quoted review	No.	2	Anexa 4
5.	Patents granted	No.	5	Annex 5
6.	List with patents submitted and registered at OSIM – to be evaluated	No.	10	Anexa 6
7.	Products and technologies resulted from research activities, based on patents, homologations and own innovations. Prospective studies and technologies and services resulted from research and development activities, ordered by beneficiaries	No.	20	Annex 7





Annex 1

II.1. SCIENTIFIC / TECHNICAL PAPERS PUBLISHED IN SPECIALIZED ISI QUOTED REVIEW¹

1. I. Pincovschi, G. Oprina, F. Bunea, GH. Băran, *Methods for determining flow regimes in bubble columns with fine pore diffusers*, Proceeding of the 5TH International Conference Management of Technological Changes 2007, Alexandroupolis, Greece, August 2007, V. I, ISBN 978-960-8932-1-2 (ISI from 2008)
2. F. Bunea, G. Oprina, GH. Lazaroiu, C.A. Babutanu, I. Pincovschi, *Technical and economical aspects of the new waste water treatment technologies*, Proceeding of the 5TH International Conference Management of Technological Changes 2007, Alexandroupolis, Greece, August 2007, V. I, ISBN 978-960-8932-1-2 (ISI from 2008)

¹ Indexed by Thomson Scientific (former Institute for Scientific Information-ISI) in Science Citation Index Expanded, Social Sciences Citation Index or Arts & Humanities Citation Index.

3. V. Tsakiris, M. Lucaci, L. Leonat, G. Alecu, *Factorii de influenta asupra imbinarii materialelor prin difuziune in stare solida / Influence factor son bonding materials by solid state diffusion*, Revista Romana de Materiale / Romanian Journal of Materials 2008, 38 (2), 89-162, pp.152-156, ISSN 1583-3186
4. G. Hristea, P. Budrugaec, *Characterization of exfoliated graphite for heavy oil sorption*, *Journal of Thermal Analysis and Calorimetry*, Vol. 91 (2008) 3, 817–823
5. G. Telipan, M. Ignat, C. Tablet, V. Parvulescu, *Synthesis, characterization and gas sensing properties of rutile TiO₂ doped with Pt obtained by sol gel method*, *Journal of Optoelectronic and Advanced Materials*, vol. 10, No. 8 (2008), pp.2138-2141
6. G. Telipan, L. Pislaru-Danescu, *Sensor and Apparatus for CO₂ detector with organo-siloxane supramolecular polymer sensitive layer*, *Metalurgia International*, vol. Special Issues, (2008), pp. 22-28. Revista categoria A –ISI CNCSIS, Thomson Scientific Master Journal List letter M, position 400
7. C.Hamciuc, E.Hamciuc, M.Ignat, G.Zarnescu, *Aromatic Polyether imides containing Nitrile Groups*, *High Performance Polymers*, apr.2008, pp.235- 240
8. E.Carpus, M.Ignat, A.Dorogan, E.Visileanu, G.Onose, *Acomplishing of convergente Systems for Mobile Personalised information monitoring*, *Advanced in Science and Technology, Smart Materials*, vol. 60, (2008), pp.95-100
9. M.Ignat, G.Zarnescu, *The Nano and Micromanipulators Based on Magnetic Bacterium*, *Advanced in Science and Technology, Mining Smartness from Nature*, vol.58 (2008), pp. 177-182
10. E.Carpus, M.Ignat, A.Dorogan, *Sensors for textile structure*, *Industria Textila*, nr.3, 2008, pp.104-109
11. S. Jipa, D.A. Mariş, W. Kappel, L.M. Gorghiu, C. Dumitrescu, *Antioxidant properties of dry extracts from selected Lamiaceae herbs as studied by chemiluminescence isothermal method*, *Revista de Chimie*, 59, nr. 1 (2008) p. 145 – 148
12. S. Jipa, W. Kappel, T. Zaharescu, L. M. Gorghiu, C. Dumitrescu, *Activation energy from thermoluminescence of K₂B₄O₇ doped with Cu and Ag*, *Revista de Chimie*, 59, nr. 3 (2008) p. 300
13. S. Jipa, T. Zaharescu, W. Kappel, M. Secu, C.E. Secu, M. Lungulescu, A. Mantsch, *Thermoluminescence of ZnF₂:Mn*, *Journal of Optoelectronics and Advanced Materials*, 10, nr. 3 (2008) p. 554 – 557
14. S. Jipa, *Chemiluminescence applied to air pollutants assessment*, *Journal of Optoelectronics and Advanced Materials*, 10, nr. 4 (2008) p. 762 – 772
15. S. Jipa, T. Zaharescu, W. Kappel, T. Setnescu, M. Lungulescu, R. Olteanu, *Vegetal polyphenols as antioxidants in polymers*, *Journal of Optoelectronics and Advanced Materials*, 10, nr. 4 (2008) p. 837 – 840
16. A.Mihai, T. Zaharescu, S. Jipa, L.A. Silva, C. Oros, *The assessment of thermal and radiation stability of UHMWPE*, *Journal of Optoelectronics and Advanced Materials*, 10, nr. 4 (2008) p. 826 – 829
17. M. Lungulescu, T. Zaharescu, S. Jipa, R. Setnescu, T. Setnescu, *Chemiluminescence study on γ irradiated EPDM/IIR*, *Journal of Optoelectronics and Advanced Materials*, 10, nr. 4 (2008) p. 834 – 836
18. M. Secu, C. E. Secu, S. Jipa, T. Zaharescu, M. Cutrubinis, *High temperature thermoluminescence of Mn²⁺ - doped MgF₂ phosphor for personal dosimetry*, *Radiation Measurements* 43 (2008) 383 – 386
19. T. Zaharescu, S. Jipa, E. D. Popescu, W. Kappel, G. Samoilescu, *Effects of γ irradiation pn PVC/mica electrical insulation*, *Materiale Plastice* 45, nr. 2 (2008) p. 154 – 157

20. T. Zaharescu, S. Jipa, W. Kappel, M. Bumbac, *Radiation stability of poly(ethylenevinylacetate) stabilized with natural extract of rosemary*, OAM-RC, nr. 7/2008
21. Ioana Ion, Wilhel Kappel, Nicolae Stancu, Maria Dumitrache, Silvia Hodorogea, *Protectii anticorozive pentru magneti sinterizati NdFeB*, Revista Romana de Materiale (Romanian Journal of Materials), vol. 38, nr. 2, 2008, pag. 123-129
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48. Angelica Vlad, Maria Cazacu, Grigore Munteanu, Anton Airinei, Petru Budrugeac, *Polyazomethines Derived From Polynuclear Dihydroxyquinones and Siloxane Diamines*, European Polymer Journal, 44 (2008) 2668-2677
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Annex 2

II.3. SCIENTIFIC PAPERS IN PRESS IN SPECIALIZED ISI QUOTED REVIEWS

1. T. Zaharescu, S. Jipa, M. Adrian, P. Supaphol, *Nanostructured isotactic polypropylene – TiO₂ systems*, Journal of Optoelectronics and Advanced Materials, **10**, 225 – 229 (2008).
2. S. Jipa, T. Zaharescu, W. Kappel, C. Dumitrescu, D. A. Mariş, A. Mantsch, M. Lungulescu, *Scavenger capacity of natural phenolics in some selected Labiatae herbs*, Optoelectronics and Advanced Materials, Rapid Communications, 2, 674-678 (2008).
3. E. D. Popescu, T. Zaharescu, S. Jipa, C. Oros, *Dielectric properties of gamma-irradiated PP/TiO₂ nanocomposites*, Materiale Plastice, 45, – (2008).
4. S. Jipa, T. Zaharescu, W. Kappel, L.M. Gorghiu, C. Dumitrescu, *Effect of Dy³⁺ on the thermoluminescence emission of potassium tetraborate*, Journal of Optoelectronics and Advanced Materials
5. S. Jipa, T. Zaharescu, R. Setnescu, E.S. Drăgan, M. V. Dinu, *Thermal and radiochemical degradation of some PAN copolymers*, Material Chemistry and Physics
6. D.A. Mariş, M. Mariş, S. Jipa, T. Zaharescu, W. Kappel, A. Mantsch, M. Lungulescu, *Estimation of the antioxidant activity of flavonoids by isothermal chemiluminescence method*, Journal of Optoelectronics and Advanced Materials
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8. T. Zaharescu, S. Jipa, *Stabilization effect on polypyrrole in γ -irradiated low density polyethylene*, e-Polymers
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12. M. Niculescu, M. Birzescu, Raluca Dumitru, E. Şişu, P. Budrugaec, *Co(II)-Ni(II) heteropolynuclear coordination compound obtained through the reaction of 1,2-propanediol with metallic nitrates as precursor for mixed oxide of spinel type NiCo₂O₄*, Thermochemica Acta (acceptata pentru publicare, publicata online)
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II.4. PUBLISHED BOOKS / BOOK CHAPTERS

1. Gh. Baran, C. Mateescu, C. Babutanu, *Monography „RESULTS AND PERSPECTIVES IN BIOGAS INDUSTRY”*, 200 pag., Editura Printech, august 2008, Chapters 1, 4, 5, 6. – coordinator INCDIE ICPE-CA

Annex 4

II.5. CITATION IN SPECIALIZED ISI² QUOTED REVIEW

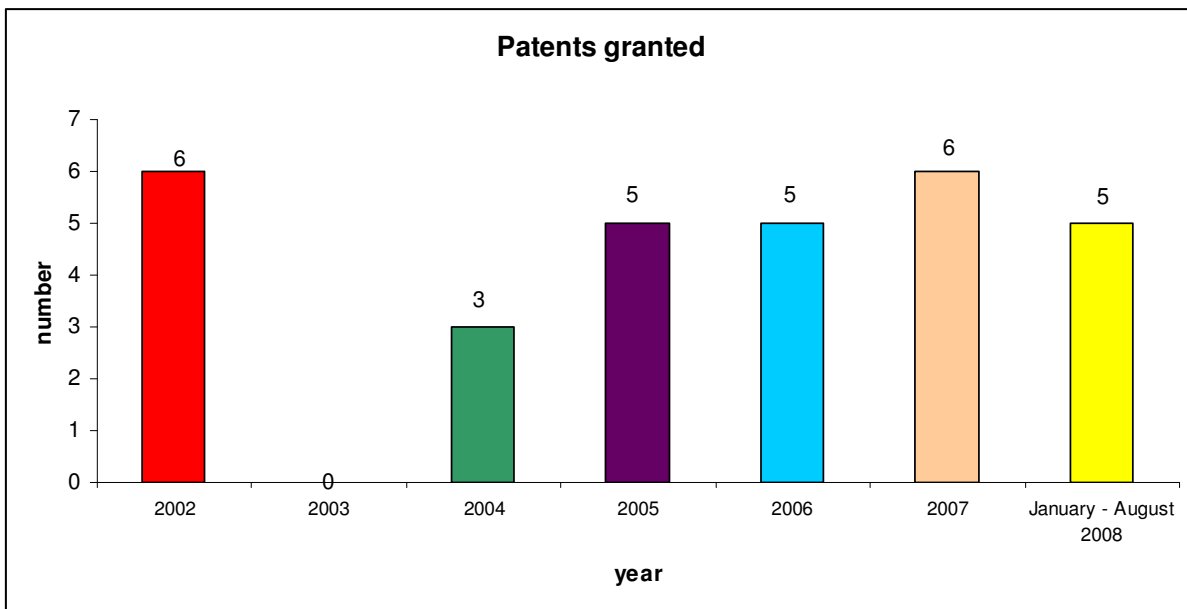
1. Saini P., Jalan R., Dhawan S.K., *Synthesis and characterization of processable polyaniline doped with novel dopant NaSIPA*, Journal of Applied Polymer Science, Volume 108, Issue 3-5, pages 1437-1446, 2008.
2. M. Lillemose, M. Spieser, N.O. Christiansen, A. Christensen and A. Boisen, *Intrinsically conductive polymer thin film piezoresistors*, Microelectronic Engineering, Volume 85, Issues 5-6, pages 969-971, 2008.

Annex 5

II.6. PATENTS GRANTED

1. Dobrin I., Puflea I., *Cooling/heating equipment for cryogenic system to preserve the tissue / biologic organs*, registration no. 121719 / 2008
2. Lingvay I., Lingvay C., *Double device for limiting the high power transitory overvoltage and procedure for processing*, registration no. 121754 / 2008
3. Soare V., Burada M., Kappel W., Ivan I., Codescu M.M., Stancu N., Mitrea S., Bacinschi Z., *Proceeding for obtaining of a NdFeB magnetic alloy and resulting magnet*, registration no. 121793 / 2008
4. Tugulea A., Ignat M., Puflea I., *Microsensor for low magnetic field detection*, registration no. 121753 / 2008 in press
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² Sunt excluse autocitările.

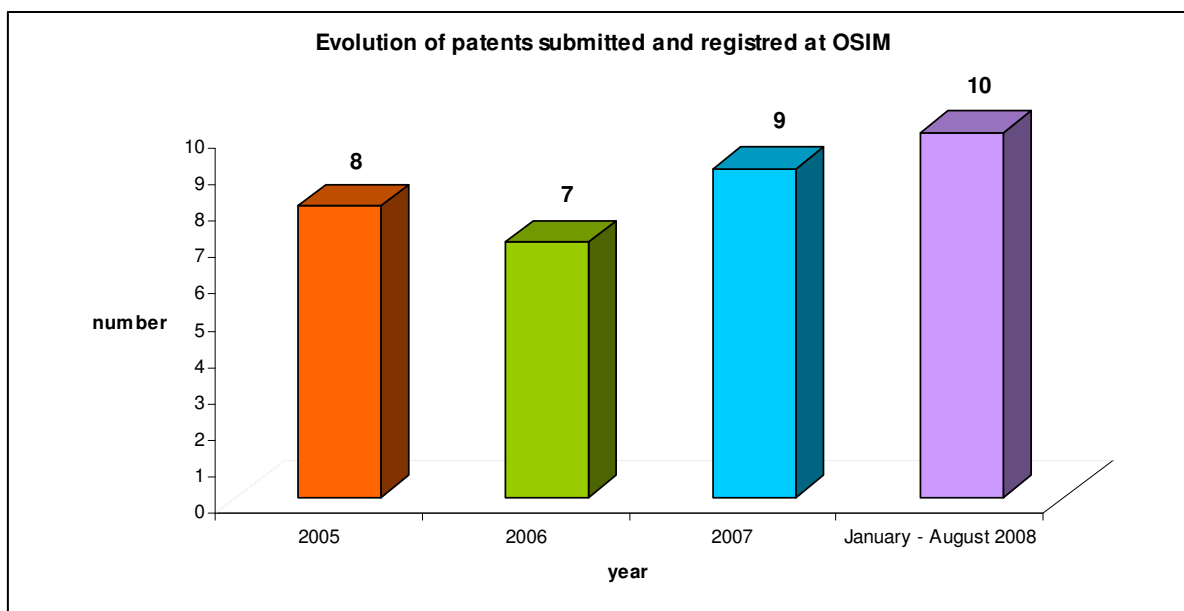


Annex 6

II.7. PATENTS SUBMITTED AND REGISTERED AT OSIM – TO BE EVALUATED

1. Gavrilu St., Lungu M., *Powder mixtures from silver with metallic oxide for conducting materials and processing procedure*, registration no. 00098 / 2008
2. Kappel W., Mihaiescu M., Ilie C., Gavrilu H., Vasile I., *Electrical engines with permanent magnets in special design*, registration no. 00099 / 2008
3. Bara A., Lungu P., *Processing procedure to obtain copper coated graphite*, registration no. 00206 / 2008
4. Petica A., Gavrilu St., Buruntia N., *Processing procedure to obtain silver colloidal solution*, registration no. 00304 / 2008
5. Lingvay C., Lingvay I., *Probe with electrical circuit to measure the concrete resistivity*, registration no. 00304 / 2008
6. Neamtu J., Volmer M. (Univ.Brasov), *Rotary magneto-resistive microsensor*, registration no. 00393 / 2008

7. Farbas N. (ISIM), Chiriac H. (IFT IASI), Popvici I., Cojocaru R. (ISIM), *Non-destructive self-examination computerized system for some ring components from ferromagnetic materials*, registration no. 00394 / 2008
8. Bala C., Kappel W., Potarniche I. (ICPE ACTEL), *Wind electric multipoles generator with permanent magnets in inductor*, registration no. 00540 / 2008
9. Iordache I., Rimbu G.A., Teisanu A., Mirea R., Dumitru I., *Processing procedure of graphitic dipoles plates for fuel cells up to 1KW*, to be evaluated
10. Ignat M., Hristea G., *Humidity sensor*, to be evaluated



Annex 7

II.8. PRODUCTS AND TECHNOLOGIES RESULTED FROM RESEARCH ACTIVITIES BASED ON PATENTS, HOMOLOGATIONS OR OWN INOVATIONS. TECHNOLOGICAL AND PROSPECTIVE STUDIES AND SERVICES RESULTED FROM RESEARCH AND DEVELOPMENT ACTIVITIES ORDERED FROM CUSTOMER

No. crt.	Project Research contract /commercial contract Consumer	Result	Report / delivery term
1.	Contract 7045/2006 – Study of magnetocaloric effect in nanostructured intermetallic and oxidic compounds	Preparation and study of structural, electrical, caloric and magnetical properties of some intermetallic compounds with transition temperatures adjacent to room temperature	11/30/2008

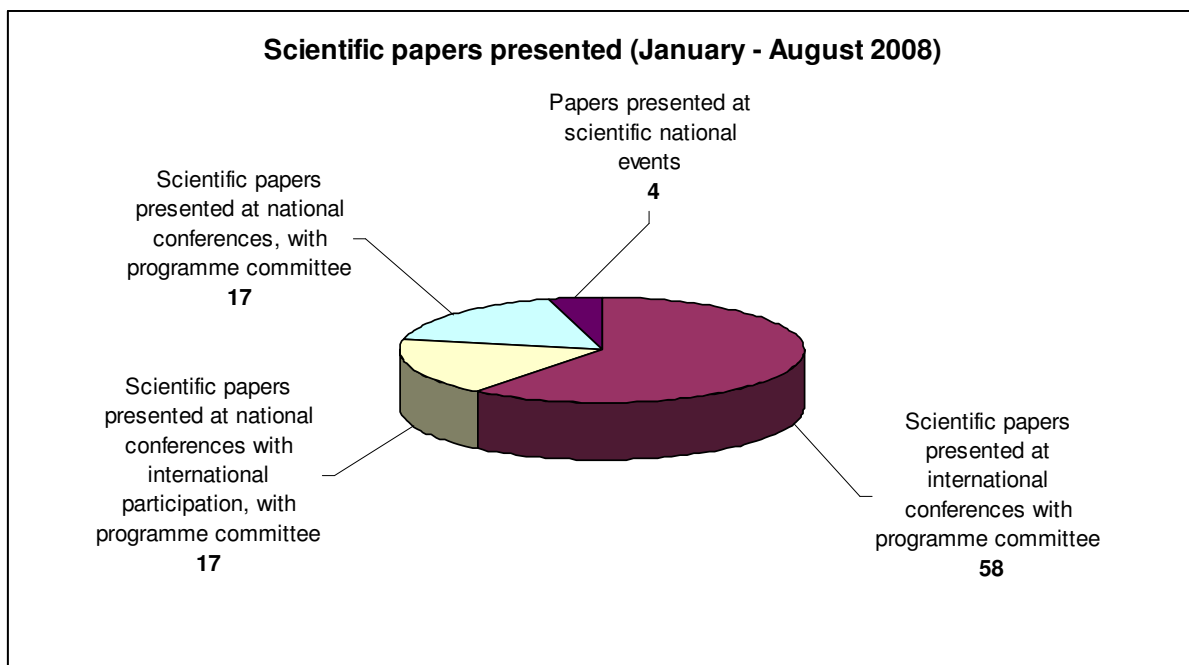
2.	Contract 232/2007 – Ventral symmetric induced flows	Establishing limit conditions specific to proposed problems. Numerical integration of equations Navier-Stokes. Establishing numerical solution.	10/31/2008
3.	Contract 31-041/2007 – New ecological technologies of energetic harness of biodegradable wastes as combustible gases with application at small cleaning stations	Theoretical and experimental laboratory researches.	12/15/2008
4.	Contract X2C17/2006 – Hydroenergetic systems of conversion-storage-distribution of renewable energies, allocated for ecological water transportation in protected aquators	Study regarding to implementation of hydroenergetic systems of conversion-storage-distribution and propulsion for serving complexes of ecological transport in biosphere reservation Danube Delta.	9/5/2008
5.	Contract 7028/2006 – Optical and electrical processes in hybrid nanostructured materials produced by intercalation of two-dimensional crystalline structures	Study by X ray diffraction and electronic microscopy of some hybrid materials produced by intercalation with molecular inorganic and organic species of two-dimensional crystalline materials CdI ₂ , CdCl ₂ , BiI ₃ , AgI	6/30/2008
6.	Contract 136/2006 – Diagnosis and intelligent and active prediction of buildings with resistance structure in complex polluted environment. Beneficiary: SC UTILITAS SRL Cluj-Napoca	Procedure for determination of degradation stage of reinforced concrete structures	8/30/2008
		Procedure for identification and evaluation of corrosion determinants – evaluation of intensity of corrosion accelerator determinants.	
		Procedure for information adaptation regarding to corrosion stage and corrosion determinants.	

7.	Contract 19/2005(4186) - Anisotropic nanocomposites for permanent magnets of high specific magnetic energy	Prototype of anisotropic nanocomposite magnet hardened by exchange interactions	5/15/2008
8.	Contract 56/2006 – Unconventionally ecological biotechnologies of plants treatment with physical fields towards environment preservation	Technical specification elaboration, irradiation device and execution documentation – initial conditions of contract for devices, device execution, demonstration	9/5/2008
9.	Contract 6530/2006 – Technological network for Romania integration in European Network of Nanoelectronics (ENIAC)	Equipments installation / integration in European Network of Nanoelectronics / demonstrative structures execution	12/15/2008
10.	Contract 7044/2006 – Romanian competence promotion in the field of advanced materials with functional gradient	Extension of activities in common and preparing of one technological transfer strategy in the field of materials with functional gradient	6/15/2008
11.	Contract 10/2005 – Innovative degradable architectures, biocompatible and bioactive based on natural and synthetic polymers	Conditioning of obtained materials in potential products and testing	10/1/2008
12.	Contract 18/2005 – Elaboration of one detection system RTL for radiometric monitoring in civilian and military domains for evaluation of gamma and neutronic radiations effects	Promotion of experimental results and solution improvement in different markets	5/15/2008
13.	Contract PN 06-30-01-12/2007 – Elaboration of one unoxidizer complex system based on thermo, photo and radio-protector action of some vegetable polyphenolic compounds with applications in electrotechnics and interfacing domains	Homologation of composition with antiradiation action	11/15/2008
14.	Contract PN 06-30-01-15/2007 – Evaluation of polymeric nanocomposite materials performances in electrical insulations domain	Homologation of dielectric nanocomposite product	8/15/2008
15.	Contract PN 06-30-02-03(03-01)/2006 - Micro-installations of energy conversion from renewable sources (aeolian, solar, biomass) for isolated areas	Optimizing anaerobic fermentation reactor. Improvement of anaerobic fermentation reactor.	11/15/2008

16.	Contract 10/2005 – Polymeric nanostructured composite materials used in environment monitoring	Presentation of experimental model of sensors and functionality demonstration of this. Knowledge transfer. Information dissemination.	2/20/2008
17.	Contract 70/2006 - Concept of undestructive automatic examination of pipes from tubular sheets by turbionar currents method with a nanostructured material sensor	Finishing the execution documentation and optimizing the prototype. Project results dissemination. Demonstration.	9/30/2008
18.	Contract X1C02/2005 – Computerized complex system for checking, diagnosis and final testing of pneumatic brake equipments of railway vehicle in order to improve safety and security in railway transport. Beneficiary: ATELIERELE CFR GRIVITA Bucharest	System validation.	5/31/2008
19.	Contract X2C26/2006 - Stand for testing and computerized diagnosis of buffers of railway vehicle, in order to improving dynamic performances, increasing safety and passengers comfort. Beneficiary: ATELIERELE CFR GRIVITA Bucharest	System validation.	10/31/2008
20.	Contract 6/2005 – Integrated technologies for vitreous SiO ₂ usage for obtaining of ceramics and ceramic composites with advanced properties. Beneficiary: ICPE-CA Microproduction	Experimentations for technology optimization and product execution. Performances evaluation of materials obtained. Elaboration of homologation documentation.	

III. Secondary performance criteria

No. Crt.	Performance criteria	U.M.	Response	Obs.
1.	Scientific (technical) papers published in other specialized reviews, without ISI quotation (class B and B ⁺)	No.	18	Annex 8
2.	Scientific papers presented at international conferences with programme committee	No.	58	Annex 9
3.	Scientific papers presented at national conferences with international participation, with programme committee	No.	17	Annex 10
4.	Scientific papers presented at national conferences, with programme committee	No.	15	Annex 11
5.	Papers presented at scientific national events	No.	4	Annex 12
6.	Models, norms, procedures	No.	122	Annex 13



Annex 8

III.1. SCIENTIFIC PAPERS (TECHNICAL) PUBLISHED IN OTHER SPECIALIZED REVIEWS, WITHOUT ISI QUOTATION (B AND B+ CATEGORY)

1. Baran G., Safta CA, Bunea F., Oprina G., Stages of noises and vibration to a butterfly valve in working with cavitation, U.P.B., Sci. Bull., Series D, Vol. 70, No. 4, p. 15-22, 2008, ISSN 1454-2358
2. M. Florea, Gh. Băran, V. Panaitescu, *About viscous dissipation on the disks of turbomachines rotors*, UPB Sci. Bull., Series D, vol. 70, no. 2, 2008, ISSN1454-2358, p. 85-92
3. Gh. Băran, I. Pincovschi, G. Oprina, F. Bunea, *Performante ale generatoarelor de bule fine*, Revista Hidrotehnica, in press
4. Gh. Băran, V. Pleșca, M. Plesca, *Cavitatia la turbine Francis. Studiu de caz*, Revista Hidrotehnica, in press

5. Georgeta Alecu, Andreea Voina, V. Aldica, Silvia Hodoroagea, Stefania Zamfir, Carmen Mateescu, *Obtaining of the MgB₂ wires and theirs characterization*, Joint International Conference Materials for Electrical Engineering, Mmde 2008, pp. 149-152, ISBN 978-606-521-028-8, June 16-17, 2008, Bucharest, Romania
6. G. Baran, I. Pincovschi, G. Oprina, F. Bunea, C. Mateescu, C. Babutanu, *Hydrogasodynamic applications in environment technologies*, Workshop “2008 priorities for restoration of natural and artificial environment factors”, Sulina, July 9-13, 2008
7. I. Lingvay, C. Lingvay, *Hozzájárulások a polietilén bevonatok öregedésének tanulmányozásához. 1 Polietilénnel bevont csövek korróziós szigetelése és átmeneti ellenállása*, *Studies about ageing of polyethylene insulating layers, 1. The evolution of corrosion and crossing resistance of pipelines covered with polyethylene layers*, *Korróziós figyelő*, 48, 1-2, 2008 pp. 3-6
8. I. Lingvay, P. Budrugaec, *Hozzájárulások a polietilén bevonatok öregedésének tanulmányozásához. 2. A környezet kihatásai és a polietilén szigetelés „öregedése” (szerkezeti károsodásai)*, *Studies about ageing of polyethylene insulating layers. 2. The environmental impact on the ageing of PE insulating layer*, *Korróziós figyelő*, 48, 3, 2008 pp. 45-49
9. M.Lucaci,R. L. Orban, D. Patroi, S. Hodoroagea, I. Bibicu, M. Lungu, *Some aspects regarding the complex alloying of the Ni3Al intermetallic compound with substitutional and interstitial elements*, *Advanced Materials Research*, Vol. 23 (2007) pp. 67-70, online at <http://www.scientific.net>
10. Neamtu, M. Volmer, R.V. Medianu “*Magnetotransport Properties and Tunnel Effect of Thin Film Nano-Structures*” Nanotechnology Conference and Trade Show, June 1-5, 2008, Boston, Massachusetts, U.S.A.
11. J. Neamtu, C.Teodorescu, G. Georgescu, J.Ferré, T. Malaeru, I.Jitaru, *Structural and Magneto-Optical Properties of Co-doped ZnO Thin Films Prepared by Sol-Gel Method*, Nanotechnology Conference and Trade Show, June 1-5, 2008, Boston, Massachusetts, U.S.A
12. J. Neamtu, C.Teodorescu, G. Georgescu, J.Ferré, T. Malaeru, *Structural and magneto-optical properties of ZnO:Co diluted magnetic semiconductors thin films*, Conf. ECOSS-25, Liverpool, UK, July, 2008
13. T. Malaeru, I. Balan, C.Morari, J. Neamtu, G. Georgescu, I.Jitaru, *Precursors for Materials with Electrical Properties*, MSE 2008 Conference, Nürnberg, Germania
14. J. Neamtu, M. Volmer, *Giant Magnetoresistance Multilayer Sensors For High Sensitivity Measurements*, Conf. CEEX Brasov 2008
15. M.Volmer, J.Neamtu, *Electrical and Micromagnetic Characterization of Magnetic Disks and Rings*, SPIN-WORKSHOP, Krakowia, 2008
16. W. Kappel, M. M. Codescu, N. Stancu, J. Pintea, E. Patroi, D. Patroi, *Preparation and Characterisation of Fe-Cu Composites*, Proc. of 5th International Conference „*New Research Trends in Material Science*” ARM - 5, Sibiu (2007) p. 186 – 191
17. W. Kappel, M. M. Codescu, N. Stancu, J. Pintea, E. Patroi, D. Patroi, *Preparation and Characterisation of Fe-Cu Composites*, Proc. of 5th International Conference „*New Research Trends in Material Science*” ARM - 5, Sibiu (2007) p. 247 – 251
18. W. Kappel, M. M. Codescu, N. Stancu, Jana Pintea, Eros Alexandru Patroi - *High Energy Density Magnetic Materials for Electronic Packaging*, 1st Electronics Systemintegration Technology Conference ESTC 2006, Dresda (Germania), 2006, p. 338 – 343, ISBN 1-4244-0553-X

III.2. SCIENTIFIC PAPERS PRESENTED AT INTERNATIONAL CONFERENCES WITH PROGRAMME COMMITTEE

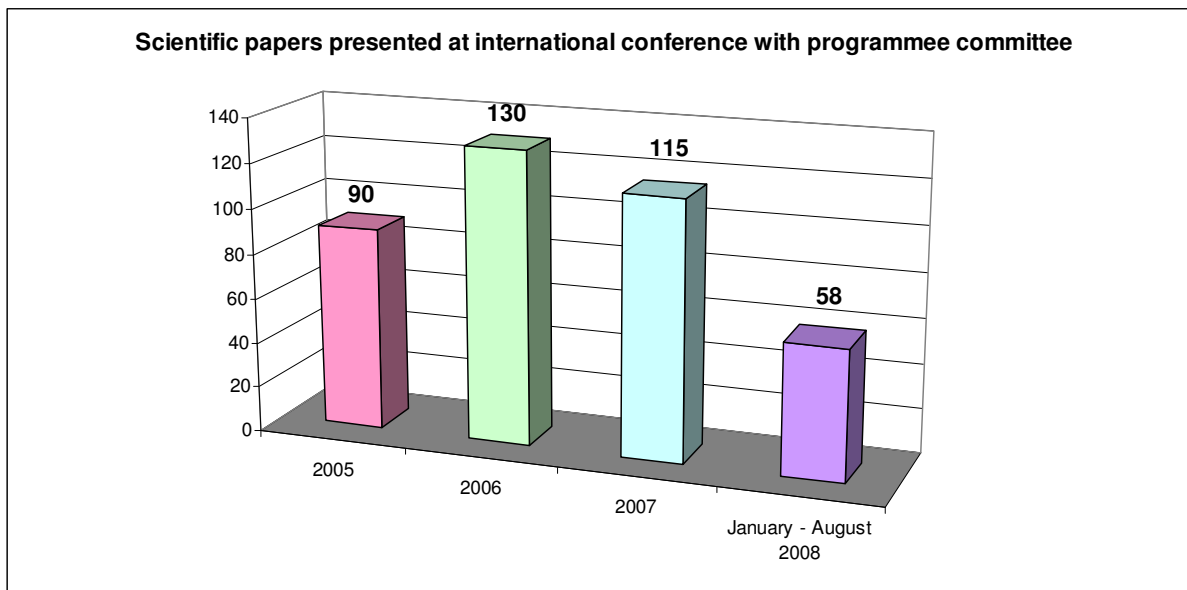
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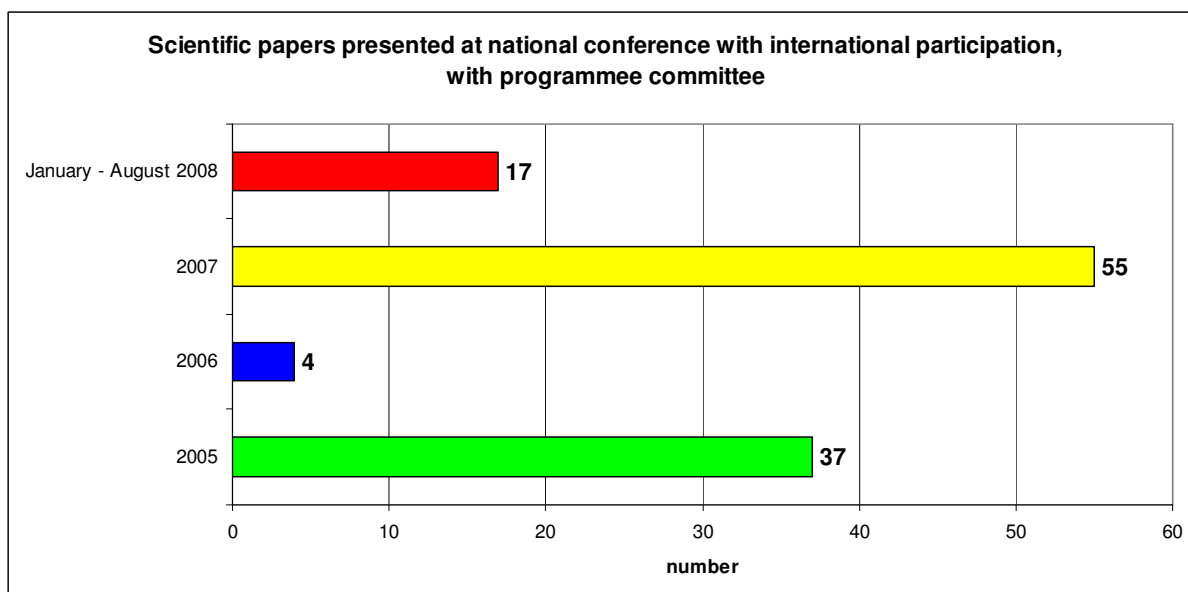
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III.3. SCIENTIFIC PAPERS PRESENTED AT NATIONAL CONFERENCES WITH INTERNATIONAL PARTICIPATION, WITH PROGRAMME COMMITTEE

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2. Georgeta Alecu, Andreea Voina, C.Voina, *Implementation of UE Council Recommendations Regarding the Limiting of Human Exposure to Electromagnetic Fields*, The 2nd Workshop of Bio-electromagnetic Compatibility: Methods of Characterization and Shielding Materials, May 22 – 24, 2008, Curtea de Arges, Romania
3. Andreea Voina, Brandusa Pantelimon, Georgeta Alecu, *Recommended Methods for Measurement and Monitoring of Nitrogen Dioxide Emissions*, International Conference on Chemistry and Chemical Engineering, May 28-30, 2008, Timisoara, Romania
4. I. Ion, C. Banciu, C.M. Mitu, A. Caramitu, N. Stancu, Y. Kovalev, N. Szekely, *“Carbon Composite Materials for EMI Applications Part I. Preparation and Structural Tests”*, The 2nd Workshop of Bio-electromagnetic Compatibility: Methods of Characterization and Shielding Materials, Curtea de Arges, 22-24 mai 2008.
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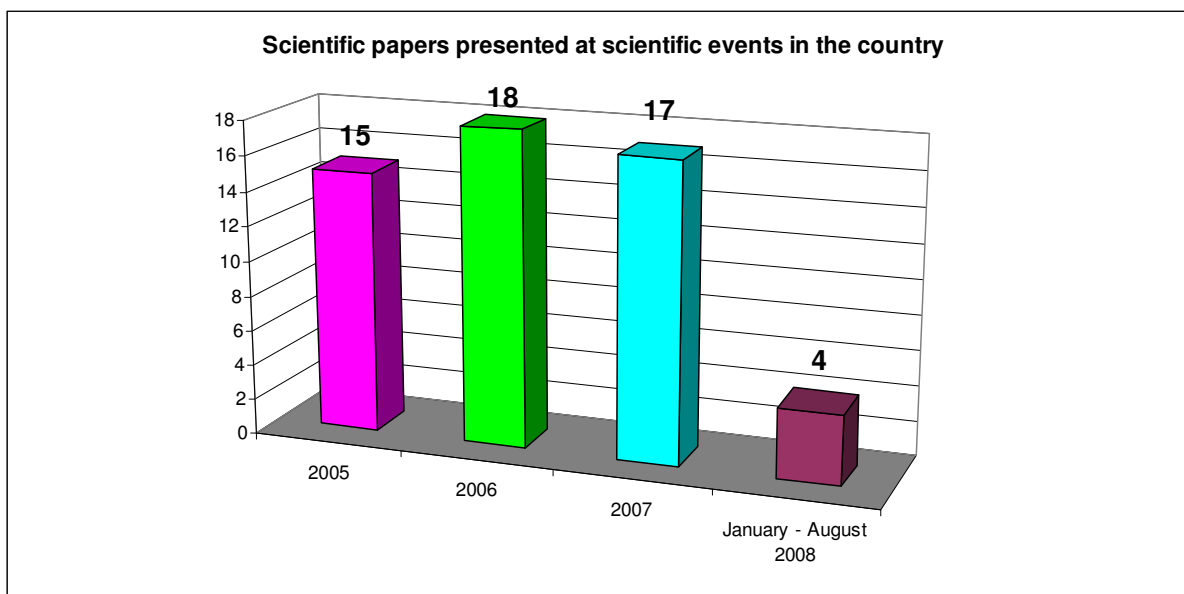
III.4. SCIENTIFIC PAPERS PRESENTED AT NATIONAL CONFERENCES WITH PROGRAMME COMMITTEE

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13. M Lucaci, S. Hodorocea, J. Pintea, V. Tsakiris, D. Cristea, L. Leonat, *Ferromagnetic Fe and Co alloyed NiAl powders*, MmDE 2008, Bucharest, June 16-17, 2008
14. Jana PINTEA, P.V. Notingher, Andreea Pintea, *Piezoelectric composite materials with 2-2 connectivity*, MmDE 2008, Bucharest, June 16-17, 2008
15. E. Enescu, P. Lungu, A. Bratulescu, S. Hodorocea, J. Pintea, D. Patroi, *Magnetic Co-Al₂O₃ thin films*, MmDE 2008, Bucharest, June 16-17, 2008.

III.5. PAPERS PRESENTED AT SCIENTIFIC EVENTS IN THE COUNTRY

1. S. Nicolae, M.D.Marin, F.Sorescu, Ghe. Samoilescu, Ghe. Olaru, Ghe.Mihai Mihaiescu, M.Miu, *O experiență românească în exploatarea unui agregat eolian cu putere instalată de 500 kw*, Forumul Regional al Energiei – FOREN 2008, 15-19 iunie 2008, Neptun, Romania
2. Adela Bara, Cristina Banciu, Ana Maria Bondar, Delia Patroi, *“Electrical Properties of Polimer/Carbon Composites”*, Seminar “Packagingul electronic ecologic”, Sinaia, 25-27 iulie 2008
3. A. Alexandru Teisanu, Iulian Iordache, *“Tendinte actuale in sistemele electronice on board – tehnologia “EMBEDED””*, Seminar “Packagingul electronic ecologic”, Sinaia, 25-27 iulie 2008
4. Iulian Iordache¹; Vasilescu Mirea Radu¹; Petrache Elena¹; Emami Ana¹; Marinescu Andrei²; Stanescu Constantin³, *„Materiale compozite pe baza de cauciuc siliconic folosite pentru ecranare electromagnetica”*, Seminar “Packagingul electronic ecologic”, Sinaia, 25-27 iulie 2008



III.6. NUMBER OF MODELS, NORMS, PROCEDURES ETC.

No. crt	Project / Contract	Results	Month
1.	26/2005(4181) - Doped advanced multifunctional materials with silver nanopowders	8 functional models: <ul style="list-style-type: none"> • a solution of colloidal Ag acquired chemical antimicrobial activity; • a solution of colloidal Ag acquired electrochemical antimicrobial activity; • a composite powder of 	9/19/2008

		<p>the Ag nanoparticles with TiO₂, with antimicrobial activity;</p> <ul style="list-style-type: none"> • a composite powder of Ag nanoparticles of the ZnO with antimicrobial activity; • a composite powder of the Ag nanoparticles with SnO₂, with improved technology, for replacement parts sintered electrical contact; • a powder Ag in the form of flakes for conductive inks; • an electrical contacts sintered ecological type Ag-SnO₂, applications for the devices in electrical engineering commutation of running low-voltage operation with air 	
2.	86/2006(4213) - Nanocrystalline hydrogen storage materials with high performance functional	<p>2 Experimental models of materials shocked by hydrogen with the Mg;</p> <ul style="list-style-type: none"> ○ Mg₇₆Ti₁₂Fe₈Ni₄; ○ Mg₇₆Ti₁₂Fe₄Ni₈; 	9/30/2008
3.	71-116/2007(4244) - Micro / nano functional intelligent materials	<p>4 Models of experimental material effect of shape memory:</p> <ul style="list-style-type: none"> ○ NiAlFe; ○ NiAlCo; ○ NiTiCu; ○ NiTiNb 	12/10/2008
4.	Material storage systems for hydrogen, the energy source of the future PN 06-30-01-02/2006	<p>1 experimental model:</p> <ul style="list-style-type: none"> • a tank hydride 	11/15/2008
5.	Metallic materials porous with structural and functional applications PN 06-30-01-11/2006	<p>2 Experimental models: metallic materials porous Cu, Ni foams</p>	5/15/2008
6.	Compilation of materials by a special technique - the diffusion welding PN 06-30-01-16/2007	<p>2 models experimental metal-metal joints by diffusion:</p> <ol style="list-style-type: none"> 1.Cu/Ag 2.Fe/Cu 	3/15/2008
7.	85/2006(7002) - Research on ecological systems and intelligent transport land-based electric propulsion and combustion Pile	Models of metallic compounds with high efficiency hydrogen storage	8/30/2008

8.	20-1/2005(7018) - New nano-magnetic materials: from the modern processing performance properties	4 Experimental models of dust nanocrystalline: Co; CoNi; Covered with a Co Al ₂ O ₃ ; Covered with a Co Ag	6/30/2008
9.	708/2006(7019) - Materials for hydrogen storage for a compressor heat ultra pure hydrogen for piles fuel and hybrid vehicles	2 models of experimental materials: ○ LaNi _{4,8} Sn _{0,2} ; ○ LaNi _{4,9} Sn _{0,2}	9/15/2008
10.	88/2005(4187) Alternative multifunctional materials with low cost, for piles of combustion with polymer electrolyte (PEMFC) which operates at temperatures higher than 180C	1 Pile functional model of combustion that develop PEMFC power to 200mW/cm ²	10/3/2008
11.	195/2006(4204) - Hybrid system for energy independence on the basis of the photovoltaic / Pile combustion	1 functional model of the hybrid system photovoltaic (PV)-Pile combustion (PC).	9/15/2008
12.	21-034/2007(4234) - How energy integrated with the power of 5kW on piles of combustion	1 Project of the stack of Pile combustion power of 5 kw 1 experimental model of bipolar plate 1 whole experimental model membrane - electrode	12/10/2008
13.	71-001/2007(4240) - Composite structures for the aerospace industry and transport	1 project for the experimental model of the structure of aerospace	8/15/2008
14.	Slicks in polymeric composite system for reducing section effective radar PN 06-30-01-10/2006	10 experimental models of composite materials based on silicon with (graphite, FeSi, pyrite, black smoke) reinforced with metalloid place or place carbon	8/15/2008
15.	58/2007(7025) - Packing system based on magnetic nanofluid for gas	2 models of experimental permanent magnets: ○ AlNiCo ○ NdFeB	8/31/2008
16.	310/2006(7050) - Technology-based nanostructure materials for electrochemical capacitors with double-layer used to store electricity (super condenser)	1 experimental model of electrode material for the active carbon super capacitor 1 Technology Realization of cell super condenser	9/20/2008

17.	760/2006(7051) - System piles of electro oxidation for direct combustion of bio-alcohols (BioDAFC)	1 Model of electrodes for functional Pile alcohol type BiOD AFC which develops power to 150mW/cm^2	11/30/2008
18.	128/2006 - Nano composites magnetic materials for the diagnosis of malignant tumors with magnetic resonance method	3 Patterns of functional magnetic composite Nan granular for diagnosing malignant tumors: $\gamma\text{Fe}_2\text{O}_3/2\text{deoxidglucoza/PVP}$; $\gamma\text{Fe}_2\text{O}_3/2\text{deoxidglucoza/polizaharida}$; Fe / Zaharias	9/20/2008
19.	81-059/2007 - Elements of security with microfiches and ferromagnetic sensor field for applications in electronic detection validation	1 experimental model of composite material of microfiches-ferromagnetic matrix celluloses	6/15/2008
20.	71-127/2007 - Intelligent processing of nano-devices CHECK VALVE type of spin with huge magneto resistance for applications in spintronic	1 Model theory, 1 Model experimental device "CHECK VALVE spin"	12/10/2008
21.	Magnetic materials for actuator magnetostrictive PN 06-30-01-13/2007	1 experimental model of a magnetostrictive material	11/15/2008
22.	7001/2006 - Modeling and Simulation of the dynamic behavior in magnetic materials with properties controlled	2 methods for determining the general characteristics of simulation and magnetization Modelation.	10/31/2008
23.	869/2006 - Computational methods for high performance in modeling and designing materials nonmagnetic	Testing instrument operation and working with artificial intelligence. Develop platform characterization of materials nonmagnetic with RNA based on the work achieved	9/30/2008
24.	875/2006 - Development of numerical models and experimental characterization of magnetic materials with hysteresis	Development of numerical model Preisach vector	8/30/2008
25.	11-51/2006 - New nanostructure semiconductor materials with potential applications in the production of solid gas sensors and steam for environment protection	Achievement and approval at the laboratory of some elements of gas sensors and / or steam from semiconductor materials obtained in previous stages	9/30/2008
26.	81-050/2007 - Textile composite structures for protection systems against electromagnetic radiation	1 experimental model of composite material of microfiches ferromagnetic matrix-textile	6/15/2008
27.	1188/2006 - Morphing Structures for Aerospace applications in construction	Experiments and theoretical research on the determinative structural morphing simplified models	10/15/2008

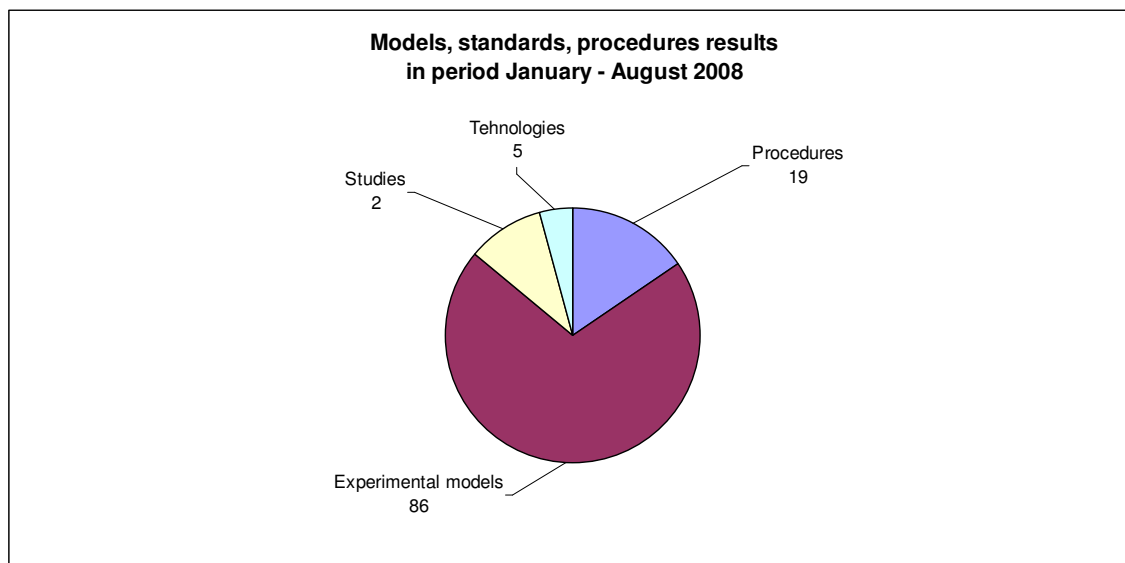
		of modules for wing generated	
28.	279/2006 - Nanostructures of complex materials, metal-semiconductor-dielectric, with quantum efficiency optimized interaction with solar radiation	Presentation and demonstration of the functionality and usefulness of ME Photovoltaic cell with optimized efficiency / solar cell unconventional. Experimental Platform for specialized laboratories / network technology for photovoltaic elements / training	9/20/2008
29.	71-143/2007 - Incandescent ceramic spark plugs for diesel engines	Experimenting deoxidize composite ceramic material used in carrying out incandescent spark plugs and their characterization	7/30/2008
30.	6/2005 - Integration of technologies for use in obtaining SiO ₂ glassy ceramic composites and ceramics, with advanced heat	1 Technology of obtaining material oxide ceramic composite CZ75	5/30/2008
31.	718/2006 - Network of excellence for quality control and environmental factors deducting impact of pollutants in the area of the central and southern Romania	1 experimental model of polymer material recycled with improved compatibility	9/15/2008
32.	11-010/2007 - Devices where millimeters per met materials micro process by laser ablation	Simulation experimental models of structures in areas where CLRH mm	6/15/2008
33.	21-001/2007 - Power hydro pneumatics triggered by waves	1 Project 1 experimental model of central hydro pneumatic triggered by waves	10/30/2008
34.	21-006/2007 - Innovative micro electrical-based renewable resources (wind, and hydraulic) with the beach gear extension of the use of fluids work beyond the usual limits	2 projects 2 models and testing on parts	11/30/2008
35.	4216/2006 - New components and systems nano electromechanical based polymeric materials for actuators and manipulators	2 models of experimental nano actuators and Nan manipulator (in liquid)	10/30/2008
36.	21-022/2007 - Electrical components for central wind power average (200-800kW)	1 Project by: generator with permanent magnets	6/12/2008
37.	21-045/2007 - Generating electrical power between 10 and 200 kW with permanent magnets	1 Project of 10kW generator 1 experimental model	11/30/2008
38.	Research on the achievement of micro robots based micro actuators and electromechanical hybrid micro actions PN 06-30-02-02/2007	2 models and demonstration of micro robots elements micro robotics	11/15/2008

39.	Electrical Machines atypical big powers PN 06-30-02-04/2007	Setting the parameters functional 1 experimental model of single-pole machine	11/15/2008
40.	14/2006 - Modeling and implementation of a conventional component of the fight to generate a pulse electromagnetic block for C4I systems	3 experimental models of systems with electromagnetic impulse	9/30/2008
41.	21-059/2007 - Research on development of environmental technologies on the basis of vibrations induced magnetostrictive in order to reduce the energy that have the effect of global warming	1 Model of functional equipment tension relieving by vibrations, the vibrator magnetostrictive global warming	12/15/2008
42.	71-052/2007 - Computerized measurement and analysis of the profiles run to increase the safety and quality guiding running operation and synthesis of new profiles in railway vehicles	1 Project of the experimental model	12/15/2008
43.	87/2007 - Stand for grinding, characterization and electrical machines attempt to 1500kW used for hauling railway	1 Project of the experimental model	10/15/2008
44.	7002/2007 - System for real-time analysis of risk factors for the environment and public health	1 Method, 1 Project of the experimental model	9/30/2008
45.	110/2007 – Fusible assurance modernization on the basis of optimizing thermal and power in their operation	Design mathematical models for simulation, making the material, Experiments preliminary analysis of data and mathematical models correction	8/30/2008
46.	276/2006 - Glass fluorescent photo sensible for storing 3D information	Presentation and demonstration of the functionality and usefulness of new models / solutions for glass fluorescent photo sensible	9/20/2008
47.	90/2007 - Sustainable technologies and materials for the conservation and restoration of heritage objects of leather, to ensure the viability of cultural heritage and in the Community	Designing, testing and demonstration model experimental protocol for analytic technologies and receptor works for conservation-restoration of museums	11/15/2008
48.	71-147/2007 - Realization of new collagen structures with Biomaterials supra molecular doped with piezoelectric properties of liquid crystals, electrical and magnetic used in Bioengineering	o Material characterization analysis report 3 experimental models: a sensor collagen; o 2 actuator	12/8/2008
49.	91-003/2007 - Log Sacred Arts Community to ensure viability	Material characterization analysis report	10/30/2008

50.	Biomaterials with functional performance for applications in orthopedic surgery PN 06-30-01-07/2006	Innovation experimental model	8/15/2008
51.	X2C37/2006 - The impact of electromagnetic fields on the nature of the entropic ecosystems	Quantifying the impact of electromagnetic fields on the types of ecosystems studied. Methods and procedures to limit the harmful effects. Demonstration, dissemination, definitive research network	9/5/2008
PROCEDURES			
	No./ Name of contract	Name the procedure / process	Deadline teaching
52.	88/2005, 323/2006	The procedure for initial inspection of a pile of burning / stack piles of burning	July-august 2008
53.	88/2005, 323/2006	The procedure before the start of each test Pile combustion / stack piles of burning	July-august 2008
54.	88/2005, 323/2006	The procedure for conditioning before each test Pile combustion / stack piles of burning	July-august 2008
55.	88/2005, 323/2006	The procedure for determining the density of the power curve of the polarization-voltage current to Pile combustion / stack piles of burning	July-august 2008
56.	88/2005, 323/2006	The procedure for testing the efficiency of electric Pile combustion / stack piles of burning	July-august 2008
57.	88/2005, 323/2006	The procedure for testing pressure parameter on the density of power for Pile combustion / stack piles of burning	July-august 2008
58.	88/2005, 323/2006	The procedure for testing the temperature on density parameter Power Pile combustion / stack piles of burning	July-august 2008
59.	88/2005, 323/2006	The procedure for testing stoichiometric influence on the density of fuel for power Pile combustion / stack piles of burning	July-august 2008

60.	88/2005, 323/2006	The procedure for initial inspection of a pile of burning / stack piles of burning	July-august 2008
61.	88/2005, 323/2006	The test procedure stoichiometric of oxidant influence on the power density for combustion Pile / stack piles of burning	July-august 2008
62.	88/2005, 323/2006	The test procedure of the influence of parametric pressure / stoichiometric fuel / fuel composition on the density of power for Pile combustion / stack piles of burning	July-august 2008
63.	88/2005, 323/2006	The test procedure of the influence of parametric pressure / stoichiometric oxidizing the density of power for Pile combustion / stack piles of burning	July-august 2008
64.	88/2005, 323/2006	The test procedure to influence the degree of humidifying the fuel / oxidant the density of power for Pile combustion / stack piles of burning	July-august 2008
65.	195/2006 (4204), 323/2006	The procedure for final inspection	July-august 2008
66.	195/2006 (4204), 323/2006	The procedure for testing the power density of current-voltage curve for the hybrid energy Pile combustion - stack Li-Po batteries.	July-august 2008
67.	195/2006 (4204), 323/2006	The procedure for testing the energy consumption for the hybrid energy Pile combustion - stack Li-Po batteries.	July-august 2008
68.	195/2006 (4204), 323/2006	The procedure for testing the power density of current-voltage curve for the hybrid energy Pile combustion - photovoltaic panel	July-august 2008
69.	PI 01	The procedure for testing the energy consumption for the hybrid energy Pile combustion - photovoltaic panel	July-august 2008
70.	PI 02	Calculation and measuring the power of electromagnetic field emitted by electronic devices	July-08

	TECHNICAL SPECIFICATIONS		
71.	ST 70/2008 - ctr.4186/2005	Permanent-magnet Nano composites isotropic based NdFeB	
72.	ST 71/2008-ctr.4186/2005	Magnetic materials based Nano composites with anisotropic NdFeB induced	
73.	ST 72/2008- ctr.7005/2006	Development tool for model number of Preisach vector	



IV. Scientific events organized by institute

IV.1. INCDIE ICPE-CA organizer

1. Round table **”Researches and results in the field of doped advanced multifunctional materials with silver nanopowders”**, **01.07.2008**, with presentation of paper having the title: „Colloidal silver solutions obtained electrochemical with antimicrobial activity”, headquarters INCDIE ICPE-CA, Splaiul Unirii no. 313, District 3, 030138 Bucharest, Conference Room , floor III, Building M, Bucharest

2. Workshop of bio-Electromagnetic Compatibility: characterization methods and materials protection

Curtea de Arges, 22 – 24 May 2008

Organizers:

INCDIE ICPE – Advanced Researches

Institute of Public Health - Bucharest

Authority of Public Health Arges

Theritorial department Curtea de Arges

with the support of Minister of Education, Research and Youth



3. URB-CORR 7th International Conference „Study and control of corrosion in the perspective of sustainable development of urban distribution grids”

Baile Felix, 25 – 27 June 2008

Organizers:

INCDIE ICPE-A

International Society of Electrochemical – Romanian Department

University POLITEHNICA Bucharest – Faculty of Industrial Chemistry

Technical University Cluj Napoca – Faculty of Electrical Engineering

University of Oradea – Faculty of Electrical Engineering

S.C. ELECTRICA–F.D.F.E.E. Transilvania North S.A. – Cluj-Napoca

Power Design – Cluj Napoca

with the support of Minister of Education, Research and Youth



IV.2. INCDIE ICPE-CA co-organizer

1. International conference “Materials for Electrical Engineering” - MmE, VII-th edition

Bucharest, 16 – 18 June 2008

Organizers:

University Politehnica Bucharest – Faculty of Electrical Engineering

University “A.I.Cuza” – Iasi – Faculty of Physics

INCDIE ICPE-CA

with the support of Minister of Education, Research and Youth

Romanian Society of Magnetic Materials

2. Organizer ROMANIAN ACADEMY – Department of Chemical Sciences – Commission of Thermal and Calorimetry Analyse, 18-th ANNUAL SYMPOSIUM of SCIENTIFIC PAPERS, Bucharest, February 15, 2008

V. INCDIE ICPE-CA attendance at national and international fairs and exhibitions

V.1. International Fairs and Exhibitions

International Technical Fair of Composite Materials

Teheran – Iran
12 – 15.02.2008

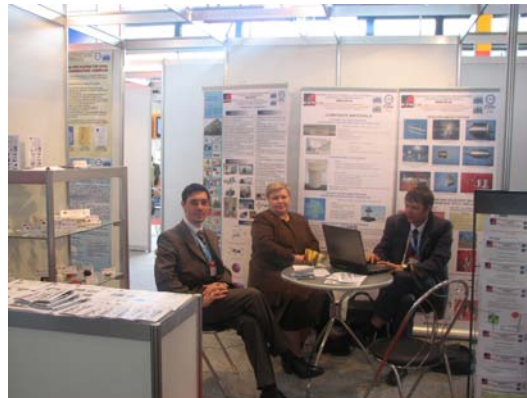


The "36th Salon International Invention Techniques and Products in November"

Geneva – Switzerland
April 2 – 6, 2008

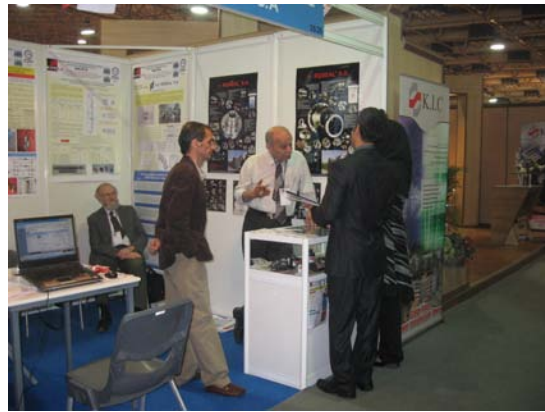
International Industrial Fair HANNOVER MESSE - Germany

Hanover - Germany
April 21 – 24, 2008



IRAN OIL SHOW Fair

Teheran – Iran
April 16 – 20, 2008



The 4-th European Salon of Researches and Innovation

Paris – France

June 5 – 7, 2008



International Salon of Inventors from Croatia – ARCA

Zagreb – Croatia

September 11 – 16, 2008

V.2. NATIONAL FAIRS AND EXHIBITIONS

Fairs organized by National Authority for Scientific Research:

International Salon of Inventions “PRO INVENT”, in the frame of International Technical Fair

April 1 – 4, 2008, Cluj Napoca

Regional Salon for R&D

April 23 – 25, 2008, Slobozia

Regional Salon for R&D

May 8 – 10, 2008, Galati



Regional Salon for R&D

May 15 – 17, 2008, Brasov

Regional Salon for R&D

June 26 – 28, 2008, Timisoara

The 2-nd edition of Regional Salon for R&D

August 27 – 31, 2008, Alexandria

Innovation Caravan

August 29, Valcelele – Calarasi

September 9 – 11, Region 5 West – Timisoara

September 11, Craiova

September 24, Region 3 South – Calarasi

September 25, Slobozia

VI. SCIENTIFIC PERSONALITIES WHICH VISITED OUR INSTITUTE

1. David Reec, Tera View UK
2. Wolfgang Schmiet PVA TePLa Germania
3. Gerhard Liebel PVA TePLa Germania
4. dr.ing. Andres Borusik SKODA
5. Anders Styoland SINTEF Oslo Norvegia
6. Catargyna Ana Grobel SINTEF Oslo Norvegia
7. Paul Cleverley SIEMENS UK
8. Stefan Lewis STENCOAL UK
9. dr. Rudolf Maier IKP Jülich Forschungszentrum
10. dr. Günter hansen IKP Jülich Forschungszentrum
11. dr. Ulf Bechstedt IKP Jülich Forschungszentrum
12. Dr. Ana ARENILLAS Technical University Oviedo, Spain
13. Dr. Bruno POLLET Technical University of Birmingham UK
14. dr. Acram Yoram Netherlands Institute for Radiation Technology, Amsterdam, Netherlands
15. Ehab Mostafa NTRA (National Telecommunication Regulatory Authority) Egypt
16. Adel Abdin Dept. of Communications Engineering, Shorouk Academy, Egypt
17. dr. BAKOS István, Institute of materials and environmental chemistry, Budapest, Hungary
18. DODDEMA J. Frits Vice President of STOPA EUROPE B.V. Netherlands
19. dr. LELÁK Jaroslav Slovak University of Technology, Bratislava
20. dr. ĎURMAN V. Slovak University of Technology, Bratislava
21. Prof. Malgorzata Sopicka Liser – Silesian Technical University
22. Dr.Eng Alberto Fernandez Vicente – Aimen Profesional Association - Spania
23. Seiko Unzalu – Aimen Profesional Association – Spania

24. Dr. Gilbert Decat, VITO – Integrated Environmental Studies, Boeretang– Belgium
25. Prof. Wang Xinlin – CISR - China
26. Prof. Quan Baiyun – Functional Materials Division, Beijing, China
27. Prof. Jun He - Functional Materials Division, Beijing, China
28. Dr. Feng Meng - Functional Materials Division, Beijing, China.

VII. INVITED LECTURES, COURSES AND SEMINARS PRESENTED BY HOSTING SCIENTISTS

1. **Prof. Viacheslav BARSUKOV** *Development of Promised Materials for Electrochemical Power Engineering State of Art and Research Perspectives on Alternative and Renewable Energy Technologies in Ukraine.* Technical University Kiev Ukraine.
2. **Prof. Keith SCOTT** *Electrochemical Technologies for a Hydrogen Economy.* Newcastle University in UK
3. **Prof. Georgios KOKKINIDIS** *Electroless deposition of metal coatings for electrocatalysis of fuel cell reactions. State of Art and Research Perspectives on Alternative and Renewable Energy Technologies in Grece.*
4. **Dr. SZABÓ Sándor** *The Thermodynamics and Corrosion of Weldments* Institute of materials and environmental chemistry, Budapest, Hungary
5. **Dr. SZAMOSI Peter Oliver** *Modern, Environmental Friendly Surface Protection* GRP Plasticorr Kft, Hungary
6. **Dr. PACKA Juraj** *Some Aspects of Using Underground Protectors for PVC Power Cables* Slovak University of Technology, Bratislava
7. **Dr. Luís Adriano M. C. Domingues** *Application of electromagnetic fields computational methods to assess exposure conditions of live line workers on 500 kv transmission lines* CEPTEL – Electric Energy Research Center, Brasil
8. **Dr. Gilbert Decat** *Personal exposimetry for measuring the indoor exposure of children to elf, vlf and rf fields generated by internal and external electromagnetic field source* VITO – Integrated Environmental Studies, Boeretang 200, BE 2400 Mol – Belgium
9. **Dr. Kresimir Malaric** *Survey of temperature distribution inside g-tem cell for investigation of emf biological effects* Faculty of Electrical Engineering and Computing, Croatia

VIII. REPRINTS FROM NEWSPAPERS (INTERVIEWS)

The image shows a screenshot of the website for 'ARGES EXPRES', a newspaper from Argeș, Romania. The page features a navigation menu with links for 'ACTUALITATI', 'POLITIC', 'REPORTAJ', 'ANUNTURI', 'FAPT DIVERS', 'COTIDIAN', 'CACTUS', 'TINERET', 'HOROSCOPI', 'Publicitate electorala', and 'EDITORIAL'. The main content area displays an article titled 'Seminar științific la Sucursala Hidro' by Lavinia Gontog. The article text discusses a scientific symposium held at the Hidrobranch in Argeș, focusing on 'Compatibilitate bio-electromagnetică: metode de caracterizare și materiale de protecție'. It mentions the involvement of the Institute of National Research and Development for Electrical Engineering (INCIE-ICPE) and the participation of European projects. To the right of the article, there is a sidebar with 'Intrebarea zilei' (Question of the Day) featuring a house icon and the 'Arges Expres' logo, and an advertisement for 'mistad GROUP'.

Newspaper “*Arges Expres*”, from May 22, 2008, published an article entitled „*Scientific seminar at Hidro Branch*”.

IX. PROFESSIONAL HIGH REPUTATION

IX.1. Members (including reviewer status) in editorial boards of some reviews (ISI quoted or included in the international data base) or in editorial boards of some international recognized publishers

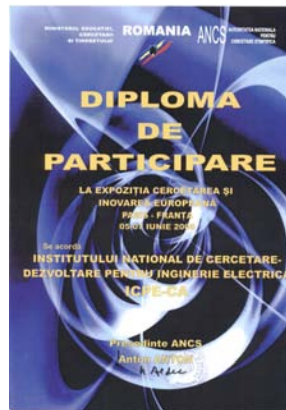
1. Baran Gheorghe, *Journal of Hydrotechnics*
2. Alecu Georgeta, *Revue Roumaine Des Sciences Techniques, Serie Electrotechnique Et Energetique, ISSN: 0035-4066*
3. Budrugeac Petru, *Journal of Thermal Analysis and Calorimetry*
4. Budrugeac Petru, *Polymer Degradation and Stability*
5. Budrugeac Petru, *Thermochimica Acta*
6. Budrugeac Petru, *International Journal of Chemical Kinetics*
7. Budrugeac Petru, *Revue Roumaine de Chimie*
8. Budrugeac Petru, *Solid State Sciences*
9. Radu Orban, *International Journal of Powder Metallurgy/APMI, USA (ISI)*
10. Radu Orban, *Powder Metallurgy Progress/IMRSAS Cosice, Slovakia*
11. Traian Zaharescu, *Journal of Applied Polymer Science USA*
12. Traian Zaharescu, *Journal of Physical Chemistry/Chemical Edition USA*
13. Traian Zaharescu, *Nukleonica Polonia*
14. Traian Zaharescu, *Materiale Plastice Romania*
15. Traian Zaharescu, *Revista de Chimie Romania*
16. Mircea Ignat, *IEEE TUFCE*
17. Mircea Ignat, *IEEE SENSORS*
18. Telipan Gabriela, *IEEE SENSORS*
19. Mariana Lucaci, *Materials Science Forum/Transtech Publications Ltd. Switzerland*
20. Hristea Gabriela, *Journal of Physics and Chemistry of Solids/ Elsevier*
21. Setnescu Radu, *Journal of Applied Polymer Science USA*
22. Setnescu Tanta, *Journal of Applied Polymer Science USA*
23. Iordoc Mihai, *Surface and Interface Analysis*
24. Gimi A. Rimbu, *Process Safety and Environmental Protection, Official Journal of the European Federation of Chemical Engineering, Part B, Vol.85, Issue B5, 2007*
25. Kappel Wilhelm, *Journal of Materials Science*
26. Kappel Wilhelm, *Optical Advanced Materials – RC*
27. Jenica Neamtu, *Romanian Reports in Physics*
28. Jenica Neamtu, *Elsevier Editorial System for Surfaces and Coating Technology*

IX.2. Members in editorial boards of some national recognized reviews (from category B in CNCSIS classification)

1. Kappel Wilhelm, *OAM – RC*

IX.3. International awards obtained by a selection process:

1. Kappel W., Romalo D., Codescu M.M., Stancu N., Pinteau J., Filoti G., Kuncser V., Valeanu C., Tolea F., Schinteie G., Gold medal at International Salon of Inventions, Geneva 2008 for invention „Composites based on Fe-Cu for anisotropic magnetic and obtaining techniques”
2. Kappel W., Mihaiescu M., Ilie C., Lipcinski D., Vasile I., Silver medal at International Salon of Inventions, Geneva 2008 for invention “ Proceed and device for dynamic balancing with coupling and magnetic sustentation”
3. Ignat M., Zarnescu C., Bronze medal at International Salon of Inventions, Geneva 2008, for invention “Rotary piezoelectric micromotor”
4. Diploma of participating at Exhibiton “European Research and Innovation” – Paris – France, 2008



IX.4. National awards

1. Excellence Diploma and Silver Medal at International Salon of Inventions PRO INVENT VI-th edition, 2008, Cluj-Napoca
2. Certificate of Participation at Regional Research Salon 2008 – Slobozia
3. Excellence Diploma at Regional Research Salon 2008 – Timisoara



IX.5. PhD Coordinators: Radu Liviu ORBAN, Petru BUDRUGEAC, Horia GAVRILA, Teodor VISAN, Constantin BALA, Gheorghe BARAN

IX.6. Doctors in Science:

Jipa Silviu, Zaharescu Traian, Setnescu Radu, Setnescu Tanta, Lucaci Mariana, Orban Radu, Tsakiris Violeta, Alecu Georgeta, Culicov Otilia Ana, Caramitu Alina, Hristea Gabriela, Verga Nicolae, Gavrilu Stefania, Lingvay Iosif, Rimbu Gimi, Moisin Ana Maria, Spataru Maria, Ignat Mircea, Budrugeac Petru, Albert Etele, Neamtu Jenica, Baran Gheorghe, Bunea Florentina, Kappel Wilhelm, Codescu Mirela, Gavrilu Horia, Ion Dumitru, Wurm Calin Iulius, Chipara Dorina, Puflea Ion, Visan Teodor, Mihaiescu Ghe. Mihai, Enescu Elena, Stamatiu Ioan, Bondarciuc Ala, Pinteana Jana, Pincovschi Irina, Samoiescu Gheorghe, Ilie Diana, Paslaru Danescu Lucian, Neagu Dumitru, Oprina Gabriela, Malaeru Teodora, Georgescu Gabriela, Patroi Eros Alexandru, Tugulea Andrei, Fluorasu Romulus Cezar, Stefanescu Carmen-Alina, Emandi Ana, Comorosan Sorin, Chirita Ionel.

X. Incomes realized through research contracts in the field which is evaluated (for the evaluated period: 01.01 – 31.08.2008):

X.1. Numbers and values of the international contracts financed from public funds: 2

Valoare 225.366 EUR

X.2. Numbers and values of the national research contracts financed from public funds:

Programme	01.01 – 31.08.2008	
	Nr.	value (RON)
National Programme for RDI - PNCDI	23	5,217,939
National Programme for Excellence Research CEEEX	71	7,693,495
Basic Programme	17	5,375,800
Growing-up programme of industrial products competitiveness	1	111,912
Scientific events	2	19,700
TOTAL	114	18,418,846

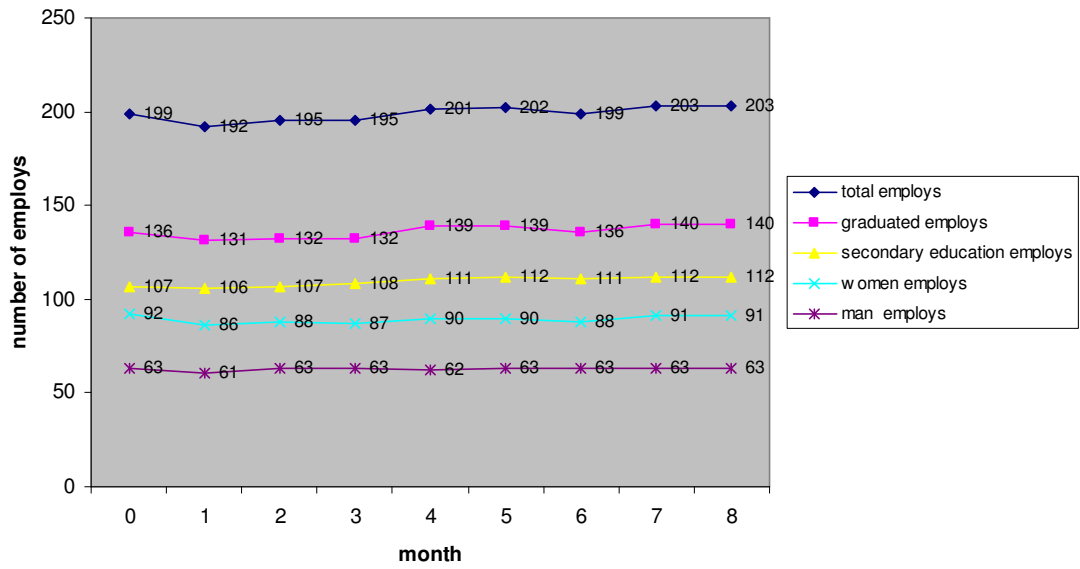
X.3. Value of national research contracts financed from private funds:

7 contracts in amount of 65,193 RON

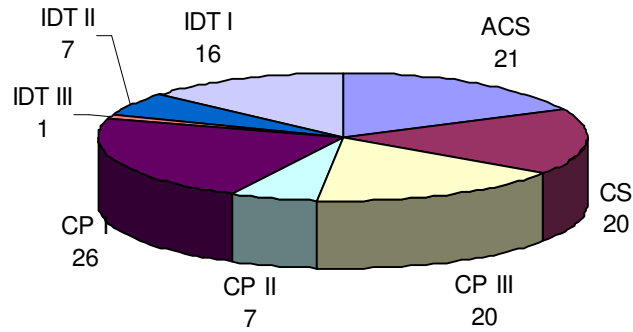
XI. HUMAN RESOURCES IN RESEARCH FIELD**XI.1. Total research staff which make incomes from research-development activity/ whereby doctors in science**

X.0	Total institute staff	203
X.1.0	Total direct research staff / whereby doctors in science	118 / 52
X.1.1.	Senior researchers first degree / doctor in science	42 / 40
X.1.2.	Senior researchers second degree / doctor in science	14 / 8
X.1.3.	Senior researchers third degree / doctor in science	21 / 2
X.1.4.	Junior researcher / doctor in science	20 / 2
X.1.5	Assistant researcher, whereby	21
	Assistant researcher, with master / doctoral studies	14
	Total certified personnel + Assistant researcher with master/ doctoral studies	111
X.1.6.	Total auxiliary employed research staff	13

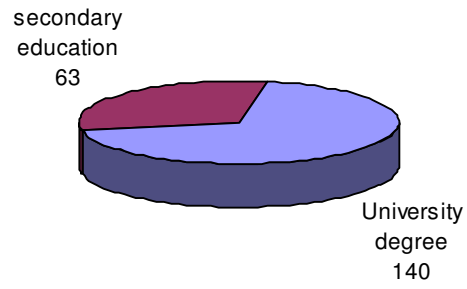
Staff distribution: level of education and gender (between January - August 2008)



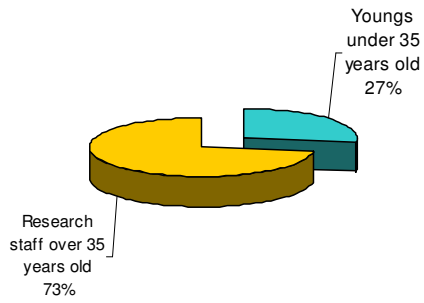
Certified personnel (August 31, 2008)



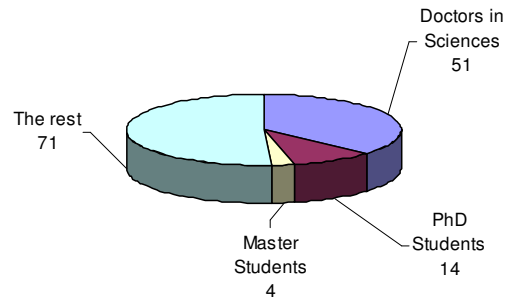
**Balance of university degree and secondary education staff
(August, 31, 2008)**



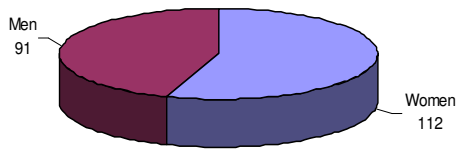
**Age structure of research staff
(131 persons)**



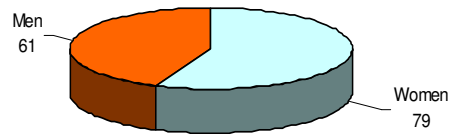
Age structure of university degree staff



Gender distribution



Gender distribution of university degree staff



XI.2. Data referring to human resources improvement

XI.2.1. Number of PhD students and master students in research&development unit: 15 PhD students; 4 master students

PhD Students

No. crt.	Name and forename	Title of PhD Thesis	PhD Coordinating Institute	Date of registering at PhD study
1.	Iordache Iulian	Polymeric composite materials	Faculty of Physics	2007
2.	Mateescu Carmen	Anaerobe ferment procedure of biomass for biogas generation with high energetic value	Faculty of Applied Chemistry and Materials Science	2007
3.	Erdei Remus	Modelling of magnetic circuits based on permanent magnets	Faculty of Electrical Eng.	2007
4.	Negoita Madalina	Modelling of physics processes for intelligent magnetic materials	Faculty of Electrical Engineering	2007
5.	Stoica Victor	Sincron generators with permanent magnets for wind station	Faculty of Electrical Eng.	2007
6.	Leonat Lucia	Nanocomposite materials dopped with silver nanopowders for biomedical applications	Faculty of Physics	2007
7.	Marinescu Virgil	Application of thermal analysis methods for establishing mechanisms of thermo-oxidative thermal degradation and hydrothermics of collagen	Faculty of Chemistry	2007
8.	Manta Eugen	Soft magnetic nanocomposite systems	Faculty of Materials Science and Eng.	2007
9.	Seghianu Radu	Special sincron engines	Faculty of Electrical Eng.	2007
10.	Lungulescu Marius	Contributions at development of composite and nanocomposite materials resistant at action of high energy radiation (ionized, gamma)	Faculty of Chemistry	2007
11.	Mihai Adrian	Induced effects of ionized radiations in polymeric materials used in electrotechnics	Faculty of Chemistry	2007
12.	Marin Marcel Dorian	Electromagnetic phenomena in electric conductors	Faculty of Electrical Engineering	2007
13.	Groza Claudia	Fungus genera implicated in biodegradation of some heritage objects	Faculty of Biology	2007
14.	Florea Mariana	Theoretical and experimental researches for viscous friction on a disc in rotation	University Politehnica of Bucharest, Faculty of Energetics	01.11.2005
15.	Lingvay Carmen	Corrosion of reinforced concrete resistance structures	UPB, Faculty of Applied Chemistry and Materials Science	2007

Master Students

No. Crt.	Name and forename	Graduate year	University/ Faculty	Thesis Title
1.	Catanescu Alexandru	Magnetostrictiv actuators	UPB Faculty of Electrical Eng.	2008
2.	Iorga Alexandru	-	UPB Faculty of Sciences and Materials Engineering	2008
3.	Petrache Elena	Colorants of type nanostructured with controlled optical properties	UPB Faculty of Industrial Chemistry	2008
4.	Balan Ionut	Characterization of electromagnetic shielding	Bucharest University – Faculty of Physics	2008

XI.2.2. Number of PhD thesis developed in research-development unit

No.crt.	Name, forename	Thesis Title	Year when the thesis was sustained
1.	Lungu Magdalena	Contributions regarding the obtaining of new types of AgSnO ₂ electrical contacts	2008
2.	Patroi Eros	Advanced materials for characterization of hard magnetic materials based on rare earths	2008
3.	Malaeru Teodora	Anorganic materials with special electrical properties	2008
4.	Georgescu Gabriela	Oxidic systems from complex precursors. Applications	2008

MASTER GRADUATED 2008

No. Crt.	Name and forename	Graduate year	University/ Faculty	Thesis Title
1.	Szasz Reka	2008	Univ. Lucian Blaga – Faculty of Economic Sciences	Banking guarantees used for expense account warranting in international transactions
2.	Sbarcea Beatrice	2008	Univ. Bucharest – Faculty of Physics	Analyze of lipids films using X-ray diffraction
3.	Hodorogea Silvia	2008	Univ. Bucharest – Faculty of Physics	Rietveld analyze of diffraction patterns obtained on non-consolidation sediments from anoxic area of Black Sea central platform
4.	Manta Eugen	2008	UPB Faculty of Materials Sciences	Materials for electromagnetic shielding

5.	Comanescu Alina	2008	UPB – Faculty of Industrial Chemistry	Advanced methods for characterization of accelerated degradation of biomaterials parchment in polluted environment
6.	Mantsch Adrian	2008	Univ.Bucharest – Faculty of Chemistry	Study of dosimetric characteristic of some new thermophosphor

XII. RESEARCH&DEVELOPMENT INFRASTRUCTURE

XII.1. Research-Development Laboratories:

No. crt	Name of laboratory	Accreditation domain	Observations
1	Laboratory of materials and electrotechnics products characterization and testing	1. Magnetic testing	In course of accreditation
		1.1 Determination of magnetic induction	In course of accreditation
		1.2 Determination of coercive magnetic field	In course of accreditation
		1.3 Determination of specific magnetic energy	In course of accreditation
		1.4 Determination of relative permeability, permanent and reversible	In course of accreditation
		2. Physical testing	In course of accreditation
		2.1 Determination of density	In course of accreditation
		2.2 Qualitative determination of phase	In course of accreditation
		2.3 Linear and angular microdisplacement	In course of accreditation
		3. Mechanical testing	In course of accreditation
		3.1 Determination of Vickers hardness	In course of accreditation
		3.2 Determination of Brinell hardness	In course of accreditation
		4. Environment testing	In course of accreditation
		4.2 Determination of oxygen level	In course of accreditation
		4.3 Determination of sulphates concentration	In course of accreditation
		4.3 Determination of noise level in industrial environment	In course of accreditation
4.4 Determination of O ₂ , CO, CO ₂ , NO, NO ₂ from burnt gas	In course of accreditation		
2	Laboratory of bioelectromagnetic compatibility	1. Determination of electromagnetic field emitted by electrical equipments	In course of accreditation
		2. Determination of electromagnetic field attenuation of electromagnetic shields	In course of accreditation

3	Laboratory of evaluation of materials and products thermal behavior by thermal analysis	1. Thermogravimetric analysis (TG) and determination of derivative of TG (DTG)	In course of accreditation
		2. DTA analysis with TG	In course of accreditation
		3. DSC analysis with TG	In course of accreditation
		4. DSC analysis	In course of accreditation
		5. Expanding analysis	In course of accreditation
4	Laboratory of electromagnetic compatibility – Anechoic Room	1. Electromagnetic compatibility	In course of accreditation
5	Laboratory of micro and nanomechanics testing	2. Determination of specific parameters of surfaces (example: roughness)	In course of accreditation
		3. Determination of specific dynamic parameters of electromechanic components (example: resonance frequency)	In course of accreditation

No. crt.	Laboratory name	Expertise
1.	Quality management, labor and environment protection	Clean technologies, recycling technology, internal audit, quality insurance,
2.	Metallic functional materials	Sintered metallic materials, nano powders, porous materials
3.	Advanced carbonic materials	Advanced carbonic materials, electronic packaging materials, tribological application materials, electromagnetic shielding materials, fuel cells materials
4.	Micro and nano structured magnetic materials	Thin layers for sensors, micro and nano structured magnetic materials for medical analysis.
5.	Gas-hydro-dynamics	Gas-hydro dynamics researches for energy consumption reduction
6.	Advanced ceramic materials	New ceramic materials used in green energy generation – SOFC, ceramic materials for biomedical applications, composite ceramic materials for thermo-technical use, controlled porosity ceramic materials, technologies, new methods to obtain nanstructured ceramic materials with controlled electrochemical properties, new methods to obtain nanstructured ceramic materials with controlled electrochemical properties from organic raw materials.
7.	Polymeric materials processed using IR and photoluminescence	Obtaining and characterization of new materials, new methods of material obtaining, material structure modifying methods for improved characteristics, new investigation methods including own investigation methods based on

		luminescence phenomena or other physical-electrical phenomena, degrading diagnosis for polymeric materials and lifetime evaluation
8.	Dielectric and ferroelectric materials	Research and development of piezo electric components based on Ti-Cu-Pb and also Pb-Nb, for vast frequencies. Nanometric ceramic powders and thin layers obtained using chemical deposition or spin-on deposition
9.	New energy sources	Energy converting plants, wind energy, hydro energy
10.	Non conventional electro mechanic engineering	Micro electro mechanic components, electromagnetic actuators, piezo electric actuators, magnetostrictive actuators, gas and humidity sensors, electromagnets.
11.	Electro technologies	Corrosion research and studies, electrochemical technologies, protection for electromagnetic pollution, underground metallic nets, anticorrosive materials characterization
12.	Dynamic equilibration and vibrations	Electrical and environmental parameters monitoring, dynamic equilibration and mechanical vibrations
13.	Biology	Mycology, antifungal protection, materials biodegradation
14.	Bio-electromagnetic compatibility	Absorbing materials characterization, radiation effects determination on living organisms
15.	Intellectual property, PC, BDS	Documentation in order to preserve original results, technical solutions resulted from research projects, trade marks, intellectual property capitalization using licenses or marks, secret documents protection according to Romanian laws.

XII.2.a. Equipment purchased in 2008

No. Crt.	Equipment	Purchase year	Value (Lei)	Value (Euro)	Financing source
1.	Metallic Cabinet Rack 600X900	2008	2,066.98	580.61	Research contract
2.	Computer Office Intel 440+Microsoft WIN XPRO+Monitor ACER LCD+HP Scanjet G4050	2008	2,613.50	734.13	Research contract
3.	Computer Office Intel 440+Microsoft WIN XPRO+Monitor ACER LCD	2008	2,613.50	734.13	Research contract

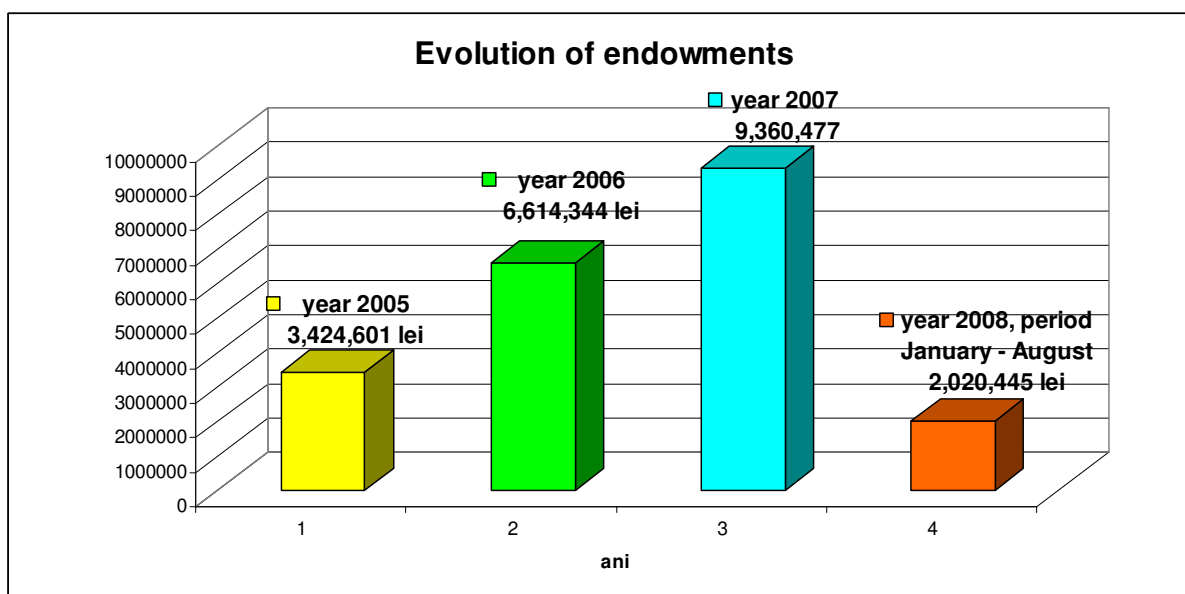
4.	Computer OFFICE INTEL 440+Microsoft WIN XPRO+Monitor ACER LCD+HP SCANJET 5590	2008	4,541.00	1,275.56	Research contract
5.	Computer OFFICE INTEL 440+Microsoft WIN XPRO+Monitor ACER LCD+HP SCANJET 5590	2008	4,541.10	1,275.59	Research contract
6.	Notebook HP 67209 VISTA BUSINESS OEM	2008	3,250.00	912.92	Research contract
7.	Computer INTEL DUAL CORE +monitor 19"LCD+printer HP OFFICE JET K718	2008	5,398.97	1,516.56	Research contract
8.	Invertor for PEM	2008	11,059.71	3,106.66	Research contract
9.	CONTROLLER SMA	2008	6,957.75	1,954.42	Research contract
10.	Photo integrated system	2008	12,937.88	3,634.24	Research contract
11.	Chemical niche with exhaustors WALDNER TA 1800	2008	42,604.78	11,967.63	Research contract
12.	Photovoltaic module 1800V	2008	37,534.01	10,543.26	Research contract
13.	Helix device IBIMASTER 300	2008	2,226.76	625.49	Research contract
14.	DEWAR vessel for liquid nitrogen	2008	5,066.59	1,423.20	Research contract
15.	Microbiologic niche with vertical laminar flux CL.IX	2008	25,140.84	7,062.03	Research contract
16.	NOTEBOOK VW327A01	2008	2,699.98	758.42	Research contract
17.	Data acquisition system	2008	15,000.00	4,213.48	Research contract
18.	Device for mechanical test of the materials model LFM 30KN	2008	273,346.50	76,782.72	Research contract
19.	Plank for reactivities model ARMF-2	2008	2,155.85	605.58	Research contract
20.	Equipment for PH and conductivity determination C860	2008	2,682.34	753.47	Research contract
21.	CROPICO CM5N - equipment for electrical measurement	2008	1,888.53	530.49	Research contract
22.	CROPICO RM8 DECADA - equipment for electrical measurement	2008	2,854.81	801.91	Research contract
23.	RIGOL DG2021 generator of arbitrary functions	2008	4,426.35	1,243.36	Research contract
24.	Spectrometer UV-VIS including detector UV-VIS+integrater sphere+accessory for powders+software	2008	33,260.50	9,342.84	Research contract

25.	Cooling system CRYODYNE	2008	160,973.72	45,217.34	Research contract
26.	Analizer with accesories	2008	236,228.76	66,356.39	Research contract
27.	Mechanical analizer in dynamic regime with accesories	2008	165,500.00	46,488.76	Research contract
28.	Notebook SONY VAIO VGN	2008	6,932.77	1,947.41	Research contract
29.	Computer ASAM KGA 775	2008	3,280.28	921.43	Research contract
30.	Microtom	2008	6,253.22	1,756.52	Research contract
31.	Tank ansambly	2008	5,088.11	1,429.24	Research contract
32.	FLUKE - thermovision room	2008	18,362.44	5,157.99	Research contract
33.	FLUKE – Laboratory digital multimeter +FLUKE TLK probe set	2008	3,298.23	926.47	Research contract
34.	Oscilloscope LCRy0101y23492	2008	15,520.72	4,359.75	Research contract
35.	MATECH LPS505N source with soft	2008	3,491.01	980.62	Research contract
36.	Thermovision room	2008	87,311.37	24,525.67	Research contract
37.	Server INTEL DUAL CORE 32GHZ 2X2GB HDD SO Microsoft WIN XPPRO	2008	6,719.95	1,887.63	Research contract
38.	GLOVE BOX	2008	104,207.85	29,271.87	Research contract
39.	Laboratory planetar mill PM400 with accesories	2008	114,601.31	32,191.38	Research contract
40.	A208 station	2008	7,956.34	2,234.93	Research contract
41.	Accelerometer system type BO3+accesories PCB piezotronic	2008	4,123.80	1,158.37	Research contract
42.	Power source 382280 SA 40V	2008	2,328.56	654.09	Research contract
43.	Drying chamber 53L UFE 400	2008	5,971.44	1,677.37	Research contract
44.	Milling vassel 250ML inox with accesories	2008	8,264.37	2,321.45	Research contract
45.	Device for samples preparing KATANAX K1	2008	53,062.10	14,905.08	Research contract
46.	Resines refrigerator UKV 1850	2008	3,540.25	994.45	Research contract
47.	Equipment for samples immersion METAPRESS+die 30MM	2008	22,649.80	6,362.30	Research contract
48.	Bath for liquid heating/cooling	2008	13,796.10	3,875.31	Research contract

49.	Reductor	2008	1,994.38	560.22	Research contract
50.	Reductor	2008	1,994.38	560.22	Research contract
51.	Printing equipment DUPLO DP-S250	2008	37,040.30	10,404.58	Research contract
52.	Device for gas sensor testing	2008	29,881.69	8,393.73	Research contract
53.	Centrifugal machine UNIVERSAL 320	2008	48,198.85	13,539.00	Research contract
54.	Computer +Licence SO Microsoft WINDOWS VISTA ULTIMATE	2008	12,970.98	3,643.53	Research contract
55.	Megaohmeter digital	2008	6,697.00	1,881.18	Research contract
56.	Vacuum drying chamber with accesories	2008	10,428.43	2,929.33	Research contract
57.	Equipment for samples immersion CAST"NVAC	2008	5,642.98	1,585.11	Research contract
58.	Device for broaching MAMO LEGABIND	2008	33,169.41	9,317.25	Research contract
59.	Welding device TIG	2008	12,426.38	3,490.56	Research contract
60.	Analitic balance 200GX0,1	2008	7,915.58	2,223.48	Research contract
61.	Drying chamber 53 L	2008	4,903.81	1,377.47	Research contract
62.	Drying chamber 53 L UNB400	2008	4,279.19	1,202.02	Research contract
63.	Computer AMD+monitor LG 22"	2008	3,124.00	877.53	Research contract
64.	Computer AMDX2 4800+monitor LG 19"	2008	2,869.00	805.90	Research contract
65.	Analitic balance with 4 decimal + density kit	2008	8,288.83	2,328.32	Research contract
66.	Mobile equipment for vibrations and noise measurement with 8 channels	2008	34,950.30	9,817.50	Research contract
67.	Computer INTEL QUAD CORE 6600	2008	4,617.82	1,297.14	Research contract
68.	Computer INTEL QUAD CORE 6600	2008	4,691.85	1,317.94	Research contract
69.	Computer INTEL QUAD CORE 6600	2008	4,526.29	1,271.43	Research contract
70.	Computer QUARD+printer PHASER 3117+Monitor SAMSUNG 22"	2008	13,646.08	3,833.17	Research contract
71.	Arbitrar function generator RIGOL DG1011	2008	2,749.00	772.19	Research contract
72.	RLC bridge MATECH MT4090	2008	3,328.86	935.07	Research contract
	TOTAL EQUIPMENT		1,866,666.12	524,344.39	

XII.2.b Purchased software in 2008

No. Crt.	Equipment	Purchase year	Value (Lei)	Value (Euro)	Financing source
1.	Program Software de Aplicatii PQA-HIVIEW	2008	6,854.40	1,925.39	Research contract
2.	Software de Comunicare Analiza si Procesare Date Masurate	2008	35,548.70	9,985.59	Research contract
3.	Soft Solid Works 2008+Licenta	2008	34,025.28	9,557.66	Research contract
4.	Soft De Proiectare Pads CR-D	2008	22,490.69	6,317.61	Research contract
5.	Soft Ni Developer Suite CORE	2008	13,980.00	3,926.97	Research contract
6.	Soft Solid CAM3	2008	34,025.28		Research contract
7.	Program Software de Aplicatii PQA-HIVIEW	2008	6,854.40	1,925.39	Research contract
	TOTAL SOFTWARE		153,778.75	1,925.39	



XIII. SOURCES FOR INFORMATION AND DOCUMENTATION FROM SCIENTIFIC AND TECHNICAL PATRIMONY OF THE INSTITUTE

a. Data banks:

- a. patent capitalization
- b. products, equipments, technology transfer;

b. International data banks

- Elsevier international network
- Springer international network
- IEEE international network

c. Materials existing in the library

The total number of titles of Romanian and foreign reviews and books: books 20004 volumes and magazines 1307 titles

New books in the last 3 years

1. Reliability elements, PhD Floarea Baicu
2. IT systems audit and protection, PhD Floarea Baicu
3. Electronic complements – guide of virtual applications, PhD Floarea Baicu
4. Superficial thermal treatments using electron beam, PhD Dumitru Neagu

Documentation in the last 3 years

1. Proceedings book of 6th International Conference-Study and Control of the Perspective of Urban Distribution Grids
2. Journal of Physics nr. 1-2 ;3-4; 5-7; 8-10
3. The First Workshop of Bio-electromagnetic Compatibility:Methods of Characterization and Shielding Materials
4. The Patent,Tool and Engineer of Technological Development-vol. 1; 2

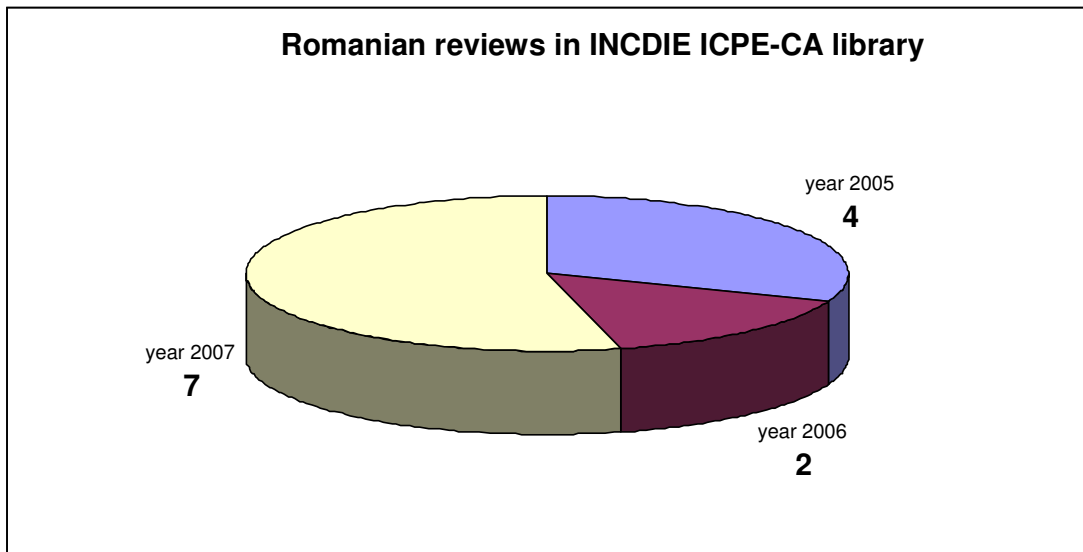
Reviews in library in the last 3 years

1. Physics courier, no. 58-59
2. Journal of optoelectronics and advanced materials, vol. 9 , no. 4,9,10
3. Optoelectronics and advanced materials, vol. 1, no. 4
4. Corrosion and anticorrosive protections, vol. 2, no. 2
5. Instruments and automation, no.4
6. Plastic materials, vol. 44, no. 1,2,3
7. Chemistry magazine, vol. 58

Foreign reviews

1. Biomedical Engineering, IEEE Trans. On
2. Components and Packaging Techn, IEEE Trans.on
3. Device and Materials Reliability, IEEE Trans on
4. Dielectrics and Electrical Insulation,IEEE Trans.on
5. Electromagnetic Compatibility, IEEE Trans on
6. Electron Device Letters, IEEE
7. Electron Devices, IEEE Trans on
8. Electronics Packaging Manufacturing
9. Energy Conversion, IEEE Trans. on
10. Industry Applications, IEEE Magazine
11. IndustryApplications, IEEE Trans.on
12. Information Technology in Biomedicine, IEEE Trans on
13. Intelligent Transportation Systems, Trans.on
14. Journal of Electronic Materials, IEEE TMS
15. Lightwave Technology, IEEE Journal of
16. Magnetism, IEEE Trans.on
17. Medical Imaging, IEEE Trans on

18. Microelectromechanical Systems, Journal
19. NanoBioscience, IEEE Trans on
20. Power Delivery, IEEE Trans. on
21. Robotics & Automation, IEEE Magazine
22. Sensors Journal
23. Ultrasonics, Ferroelectrics and Frequency Control, IEEE Trans.on
24. Vehicular Technology, IEEE Trans.on
25. IEEE Sensors Journal
26. Applied Superconductivity, IEEE Trans. on
27. IEEE Electrical Insulation Magazine
28. Mechatronics, IEEE/ASME Trans. on
29. Robotics, IEEE Trans. on
30. Materials Today
31. Components, Packaging, and Manufacturing Technology Society Newsletters
32. IEEE Antennas & Propagation Magazine
33. Antennas and Propagation IEEE Trans. on
34. Nanotechnology IEEE Trans. on
35. Electrochemical and Solid-State Letters
36. IEEE Microwave Magazine
37. Microwave Theory and Techniques, IEEE Trans. On
38. Advanced Packaging, IEEE Trans.on
39. Electronics Packaging Manufacturing, IEEE Trans.on
40. Reliability, IEEE Trans.on
41. Instrumentation and Measurement Magazine
42. Instrumentation and Measurement IEEE Trans on
43. Power Electronics, IEEE Trans on
44. IEEE Journal of Quantum Electronics
45. IEEE Journal of Solid-State Circuits
46. IEEE Technology & Society Magazine
47. Biomedical Circuits and Systems-Pkg, IEEE Trans on
48. Power Systems, IEEE Trans on
49. IEEE Power & Energy Magazine
50. IEEE Aerospace and Electronics Systems Magazine
51. Aerospace and Electronics Systems, IEEE Trans. on
52. Electronics Packaging Manufacturing, IEEE Trans. On



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