

## Summary report on research accreditation

### I. General information

Name of organization	Institute of Applied Physics of the Academy of Sciences of Moldova
Organization type ( <i>to underline</i> )	<u>Research institute</u> High education institution      Ministerial research institute
Research mission of organization	Elaboration of research priorities and coordination of fundamental and applied research in the field of physics and physical chemistry of condensed mater, atoms and nuclei, optoelectronics, photonics and quantum optics; development of new electrophysical, electrochemical and hydrodynamic methods and high technologies, and their implementation to ensure a sustainable economic development; integration into the European Research Area; training of highly qualified specialists through doctoral and post-doctoral programs.
Strategic research direction (s)	Strategic direction: Nanotechnologies, industrial engineering and new materials Accredited research fields: 1. Physics of condensed mater, atoms, nuclei, material science, photonic and optoelectronic devices; 2. Electro- and thermophysics of transfer processes, technologies for material and food processing.
Evaluated period	2006-2010
Web of organization	www.phys.asm.md

### II. Research capacity (annual average for evaluated period)

Total number of employees	<b>276</b>					
Number of scientific researches	<b>171</b>					
Number of researches who possess honorific titles, scientific degrees, scientific and scientific-didactical titles	ASM full members <b>6</b>	ASM corresp. members <b>2,2</b>	Professor <b>20,4</b>	Associated professor <b>40,9</b>	Dr.hab. <b>30</b>	Dr. (PhD) <b>88,8</b>
Number of researches involved in international projects	FP7 <b>0</b>	STCU <b>33</b>	Bilateral RF – <b>114</b> BF – <b>45</b> UA – <b>22</b> RO – <b>10</b> GE - <b>6</b>	Others INTAS – <b>11</b> CRDF-MRDA – <b>36</b> SCOPES – <b>11</b> NASA/GSFC – <b>3</b>		
Number of young researches (under 35 years old)	Dr. (PhD) <b>11</b>		PhD students <b>17,4</b>		Others <b>54,2</b>	
Financial resources (thousand MDL)	Public budget <b>13002,0</b>		International projects/grants <b>480,2</b>		Research contracts <b>146,1</b>	
Distribution of expenditures (thousand MDL)	Salary <b>8826,2</b>		Infrastructure development <b>1816,5</b>		Other <b>1528,9</b>	
Expenditures for infrastructure development (thousand MDL)	Equipments <b>1312,5</b>		IT infrastructure <b>504,0</b>		Endowment of experimental resorts <b>0</b>	

List of 3 basic research methods, installations, technologies (per accredited field)	<ol style="list-style-type: none"> <li>1. XRD Xcalibur „Oxford Diffraction” diffractometer</li> <li>2. Solar simulator ST 100, installation for measuring optical and electrical properties of materials at low temperatures down to 8 K.</li> <li>3. Computerized optical microscopes XJL-101, Neophot, Amplival, Nanotester PMT-3NI-02 etc.</li> <li>4. Potentiostat-galvanostat instrument PARSTAT2273</li> <li>5. Acousto-hydrodynamic complex for technological testing.</li> <li>6. Cavitation installation for fine dispergation of the bentonite</li> </ol>
List of provided scientific services	<ol style="list-style-type: none"> <li>1. „Setup for galvanomagnetic measurement”, for the Department of Physics of the Lappeenranta University of Technology, Finland</li> <li>2. Development of the experimental basis of the Joint Institute for Nuclear Research, Dubna, Russia, for obtaining intensive beams of heavy ions and polarized nuclei with the purpose of identifying the mixed phase of nuclear matter and investigation of polarized effects in the region of energies up to 9 GeV.</li> <li>3. Development of technologies and experimental installation for processing biological masses of aquatic origin for the “STRELETS” Ltd, Kaliningrad, Russia.</li> <li>4. Provision of experimental cell for the M-0339 “Maxim Starostin” Ship of the Murmansk Commercial Fleet, Russia.</li> <li>5. Theoretical investigation of the dynamics of dense matter formed in nuclear collisions, elaboration and development of theoretical models for the investigated phenomena, and the theoretical assistance for experiments carried out at the Joint Institute for Nuclear Research, Dubna, Russia.</li> <li>6. Provision of services in the field of mechanical characteristics testing of different objects such as metal pipes, sewer pipes from plastics, metallic electrodes, armature, portable extinguishers, bolts and nails, radiators for around 50 economical agents.</li> </ol>
List of editorial activities	<p>Publishing of the journal „Электронная обработка материалов” in Russian and Surface Engineering and Applied Electrochemistry, Alerton-Press Inc., SUA, New York.</p> <p>Editorial activities in the frame of organization of: the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> editions of the International Conference „Materials Science and Condensed Matter Physics” (MSCMP-2006); the 15<sup>th</sup> edition of the International Conference „Physical Methods in Coordination and Supramolecular Chemistry”; the 17<sup>th</sup> Reading in memory of Academician A. Ablov”; the Symposium „Electrical Methods in Material Processing” dedicated to acad. Boris Lazarenko; the NATO Conference ASI "Technological Innovations in Detection and Sensing of Chemical-Biological-Radiological-Nuclear-High Yield Explosive Threats and Ecological Terrorism".</p>

### III. Distribution of number of research projects and themes during evaluated period

Institutional projects	2006 13	2007 13	2008 10	2009 10	2010 10
Projects in the frame of State Programmes	2006 3	2007 7	2008 5	2009 4	2010 4
Technological transfer projects	2006 1	2007 3	2008 1	2009 0	2010 1
Projects for equipment procurement	2006 0	2007 3	2008 0	2009 0	2010 0
Projects for young researches	2006 0	2007 3	2008 5	2009 4	2010 3
Projects in the frame of bilateral programmes	2006 13	2007 13	2008 11	2009 12	2010 14
International projects/grants	2006 14	2007 15	2008 11	2009 10	2010 8
List of 3 representative international projects/grants	<ol style="list-style-type: none"> <li>1. MOP2-3050-CS-03 (2005-2007) Ternary Magnetic Materials for Electron Correlated Technology – Project coordinator dr. hab. Țurcan Vladimir.</li> <li>2. MOE2-2850-CS-06 New bismuth-transition metal coordination compounds as molecular precursors to heterometallic oxide materials - Project coordinator dr. hab. Culiuc Leonid.</li> <li>3. STCU 4034 Development of Random lasers based on porous semiconductor compounds for photonic applications - Project coordinator dr. hab. Ursachi Veaceslav</li> </ol>				
Research contracts	2006 2	2007 3	2008 2	2009 2	2010 3
List of 3 representative research contracts	<ol style="list-style-type: none"> <li>1. Elaboration of the quasi-holographic technology for increasing the protection level of the state mark applied by means of digital holography tools on articles on the basis of precious metals and providing of the instrument for the control of the applied holograms. Project coordinator – dr. V. Abaşchin, beneficiary – State Chamber for Assay Supervision of the Republic of Moldova.</li> <li>2. Elaboration of technological basis with the utilization of electrodes from new materials and the experimental stand ALIER; Elaboration of the business plan concerning the multiplication of the experimental stand ALIER. Project coordinator – m.cor. A Dicusar, beneficiary – “TOPAZ” SA.</li> <li>3. Development of the technology, design, and implementation of the equipment for electrochemical manufacturing of aerodynamic understatement. Project coordinator – m.cor. A Dicusar, beneficiary – “SALUT” Company, Moscow, Russia.</li> </ol>				

### IV. Scientific publications

Total number of publications abroad	Books 3	Chapters in books 8	Journal papers 429
Total number of publications in ISI journals and books	Books 3	Chapters in books 8	Journal papers 730
Total number of publications in the country	Books 7	Chapters in books 2	Journal papers 147
Total number of conference abstracts	International abroad 439	International in the country 497	National 131

List of 5 representative publications (per accredited field)	<p><b>Physics of condensed mater, atoms, nuclei, material science, photonic and optoelectronic devices</b></p> <ol style="list-style-type: none"> <li>1. OSTROVSKY, S.; TOMKOWICZ, Z.; HAASE, W. <i>High Spin Co(II) in monomeric, exchange coupled oligomeric structures: Magnetic and Magnetic Circular Dichroism investigation</i> // Coordination Chemistry Reviews. 2009, vol. 253, p. 2363-2375. (IF - 10.566)</li> <li>2. EUBANK J., KRAVTSOV V., EDDAOUDI M. <i>Synthesis of Organic Photodimeric Cage Molecules Based on Cycloaddition via Metal-Ligand Directed Assembly</i>. Journal of the American Chemical Society <b>129</b> (2007), p. 5820-5821, IF - 7.696</li> <li>3. HEMBERGER J., KRUG VON NIDDA H., TSURKAN V., LOIDL A. <i>Large magnetostriction and negative thermal expansion in the frustrated antiferromagnet ZnCr<sub>2</sub>Se<sub>4</sub></i>. Physical Review Letters <b>98</b> (2007), p. 147203(1-4), IF - 7.072</li> <li>4. URSAKI, V.; ZALAMAI, V.; TIGINYANU, I.; BURLACU, A.; RUSU, E.; KLINGSHIRN, C. <i>Refractive index dispersion deduced from lasing modes in ZnO microtetrapods</i> // Applied Physics Letters. 2009, vol. 95, p. 171101/1-171101/3. (IF - 3.726)</li> <li>5. ABRAAMYAN, Kh.; FRIESEN, A.; KOZHIN, M.; NIKITIN, S.; REZNIKOV, S.; BAZNAT, M.; GUDIMA, K.; LEBEDEV, S.; NAZARENKO, M.; OSOSKOV, G.; SISSAKIAN, A.; SORIN, A.; TONEEV, V. <i>A Resonance Structure in the <math>\gamma\gamma</math> Invariant Mass Spectrum in pC- and dC-Interactions</i> // Physical Review C. 2009, vol. 80, nr. 3, p. 034001/1-034001/18. (IF - 3.124).</li> </ol> <p><b>Electro- and thermophysics of transfer processes, technologies for material and food processing</b></p> <ol style="list-style-type: none"> <li>1. BERIL I.; BOLOGA, M.K. Temperature dependence of the electric conductivity of low conducting organic liquids. <i>Surface Engineering and Applied Electrochemistry</i>. 2010, <b>46</b>(3), 235-236. ISSN 1068-3755 print/ISSN 1934-8002 online. doi: 10.3103/S106837551003007. IF-0,356</li> <li>2. GROSU, F.P.; BOLOGA, M.K.; BOLOGA, A.M. Peculiar features of heat transfer under conditions of electric convection. <i>Surface Engineering and Applied Electrochemistry</i>. 2010, <b>46</b>(4), 324-335. ISSN 1068-3755 print/ISSN 1934-8002 online. doi: 10.3103/S106837551004006X. IF-0,356</li> <li>3. SILKIN, S.A.; PETRENKO, V.I.; DIKUSAR, A.I. Anodic dissolution of electrochemical chromium coatings in electrolytes for electrochemical machining: the dissolution rate and surface roughness. <i>Surface Engineering and Applied Electrochemistry</i>. 2010, <b>46</b>(1), 1-8. ISSN 1068-3755 print/ISSN 1934-8002 online. doi: 10.3103/S1068375510010011. IF-0,356</li> <li>4. BOBANOVA, J.; DIKUSAR, A.; CESIULIS, N.; CELIS, J.-P.; THYNTSARU, N.; PROSYCEVAS, I. <i>Micromechanical and tribological properties of nanocrystalline coating of iron-tungsten alloys electrodeposition from citrate-ammonia solutions</i> // Russian Journal of Electrochemistry. 2009, vol. 45, nr. 8, p. 895-9019. (IF - 0.431)</li> <li>5. TSYNTSARU, N.; BOBANOVA, J.; YE, X.; CESIULIS, H.; DIKUSAR, A.; PROSYCEVAS, I.; CELIS, J.-P. <i>Iron-Tungsten alloys electrodeposited under direct current from citrate-ammonia plating baths</i> // Surface &amp; Coatings Technology. 2009, vol. 203, nr. 20-21, p. 2983-3332. (IF - 1.886)</li> </ol>
List of 5 citations	<p>Citations are given on 11<sup>th</sup> of March 2013</p> <ol style="list-style-type: none"> <li>1. LIU, YL; EUBANK, JF ; CAIRNS, AJ; ECKERT, J; <b>KRAVTSOV, VC</b>; LUEBK, R; EDDAOUDI, M. <i>Assembly of metal-organic frameworks (MOFs) based on indium-trimer building blocks: A porous MOF with soc topology and high hydrogen storage</i> // ANGEWANDTE CHEMIE-INTERNATIONAL EDITION 2007, Vol. 46, nr. 18, p. 3278-3283 –<b>Times Cited in Web of Science: 263.</b></li> </ol>

	<p>2. LIU, YL; <b>KRAVTSOV, VC</b>; LAESEN, R; EDDAOUDI, M. <i>Molecular building blocks approach to the assembly of zeolite-like metal-organic frameworks (ZMOFs) with extra-large cavities</i> // CHEMICAL COMMUNICATIONS 2006, nr. 14, p. 1488-1490 – <b>Times Cited in Web of Science: 220.</b></p> <p>3. CAAIRNS, AJ; PERMAN, JA; WOJTAS, L; <b>KRAVTSOV, VC</b>; ALKORDI, MH; EDDAOUDI, M; ZAWOKOTKO, MJ. <i>Supramolecular building blocks (SBBs) and crystal design: 12-connected open frameworks based on a molecular cubohemioctahedron.</i> JOURNAL OF THE AMERICAN CHEMICAL SOCIETY 2008 Vol. 130, nr. 5, p. 1560-1561 – <b>Times Cited in Web of Science: 139.</b></p> <p>4. LIU, YL; <b>KRAVTSOV, VC</b>; EDDAOUDI, M. <i>Template-Directed Assembly of Zeolite-like Metal-Organic Frameworks (ZMOFs): A usf-ZMOF with an Unprecedented Zeolite Topology.</i> ANGEWANDTE CHEMIE-INTERNATIONAL EDITION 2008, <b>Vol.</b> 47, nr. 44, p. 8446-8449 – <b>Times Cited in Web of Science: 101.</b></p> <p>5. SAVA, DF; <b>KRAVTSOV, VC</b>; NOUAR, F; WOJTAS, L; EUBANK, JF; EDDAOUDI, M. <i>Quest for zeolite-like metal-organic frameworks: On pyrimidinecarboxylate bis-chelating bridging ligands.</i> JOURNAL OF THE AMERICAN CHEMICAL SOCIETY 2008, Vol. 130, nr. 12, p. 3768-3770 – <b>Times Cited in Web of Science: 94</b></p>
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## V. Innovation outputs

Total number of patents	Registered in the country 94	Registered abroad 0	Implemented 5
Total number of new developed methods and technologies	Registered 40	Non-registered 0	Implemented 20
Total number of new scientific products	Registered 36	Non-registered 0	Implemented 0
Total number of scientific outputs for central and local authorities (draft of law, strategies etc.)	0		
Total number of scientific outputs for educational institutions	Handbooks for high education 6	Handbooks for pre-university institutions 0	Delivered university courses 21
List of 5 representative innovation outputs (per accredited field)	<p><b>Physics of condensed mater, atoms, nuclei, material science, photonic and optoelectronic devices</b></p> <ol style="list-style-type: none"> <li>1. Patent No 3895 (2010), Authors: Andrieş Andrei, Bivol Valeriu, Robu Ştefan, Mitcov Dmitrii, Meşalchin Alexei, Prisar Alexandru, Sergheev Serghei, Triduh Ghenadii. Photo- and electron structure-forming information medium.</li> <li>2. Patent No 172 (2009). Authors: Culeac Ion, Iovu Mihail, Nistor Iurie, Andrieş Andrei. Fiber-optical sensor for the registration of infra-red radiation.</li> <li>3. Patent No 3737 (2009) Authors: Simaşchevici Alexei, Şerban Dormidont, Bruc Leonid, Usatii Iurie, Fedorov Vladimir. Bilateral solar cell and process for manufacture thereof.</li> <li>4. Patent No 3327 (2008). Authors: Andrieş Andrei, Buzurniuc Svetlana, Meşalchin Alexei, Robu Ştefan, Verlan Victor. Process for obtaining</li> </ol>		

	<p>photosensitive composite from amorphous chalcogenide semiconductor and organic polymer.</p> <p>5. Patent No 3330 (2008). Authors: Nastas A., Andrieş Andrei, Bivol Victor, Prisacar Alexandru, Triduh Ghenadii. Process for optical information recording.</p> <p><b>Electro- and thermophysics of transfer processes, technologies for material and food processing</b></p> <p>1. Patent No 3924 (2010). Authors: Bologa Mircea, Sprîncean Elvira, Stipurina Tatiana, Bologa Alexandr, Policarpov Albert. Process for whey processing.</p> <p>2. Patent No 168 (2010). Authors: Dicusar Alexandru, Sidelinicova Svetlana. Device for electroplating of inner surfaces of the cylindrical parts of small and medium diameter.</p> <p>3. Patent No 87 (2010). Authors: Parşutin Vladimir, Şoltoian Nicolae, Covali Alexandr, Sidelinicova Svetlana. Inhibitor of steel corrosion in water.</p> <p>4. Patent No 3641 (2009) Authors: Păpenco Andrei, Popova Natalia. Electroplasmolyzer for vegetal raw material.</p> <p>5. Patent No 3808 (2009). Authors: Paramonov Anatolii, Parşutin Vladimir, Paramonov Dmitrii, Covali Alexandr, Agafii Vasile. Installation for electrical metal working</p>
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## VI. Major scientific and innovation achievements

<p>Short description of main scientific results and its confirmation (by awards, citations, development of international projects etc.)</p>	<p><b>Physics of condensed mater, atoms, nuclei, material science, photonic and optoelectronic devices</b></p> <ul style="list-style-type: none"> <li>- Identification of structural transformation in antiferromagnetic frustrated <math>ZnCr_2S_4</math> compound, which consists in consecutive transformation from the cubic <math>Fd3m</math> structure at temperatures higher than 15K to a tetragonal structure with a <math>I41/amd</math> symmetry in the temperature interval <math>7K &lt; T &lt; 14K</math>, and further to a orthorhombic structure with the <math>Imma</math> symmetry at temperatures lower than 7K. These results have a great importance for a deep understanding of physical processes which occur in media with spontaneous magnetization.</li> <li>- Engineering of co-crystals consisting of di- or oxycarbonic acids and pharmaceutical compounds with the goal of modulation of physical properties of drugs such as aspirin, salicylic acid, Para-aminobenzoic acid, caffeine, anti-tubercular and sulphanilamide groups, etc.</li> <li>- Technology for production of laser resonators which includes preparation of semiconductor or dielectric templates and their doping with rare earth and transition metal elements, as well as preparation of ZnO nanostructures with controlled morphology.</li> <li>- Technology for the production of PbS and PbSe nanocrystals characterized by reproducibility, high yield, and the possibility of transformation of the synthesized quatum dots from a hydrophobic state to a hydrophilic one.</li> <li>- Bilateral solar cell with two isotype junctions, the front junction being formed through pyrolytic pulverization of chemical solutions, while the back junction is produced via diffusion of an impurity.</li> <li>- Fiber optic sensor for detection of micro-deformations based on conversion of optical modes in an optical fiber as a result of optical signal intensity modulation under the influence of extern factors such as temperature, pressure, deformation, etc.</li> <li>- Fiber optic method for measuring of infrared radiation based on interference of modes in far field in a multimode optical fiber</li> <li>- Technology for the production of luminescent composites on chalcogenide glasses and organic polymers</li> </ul>
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	<p><b>Electro- and thermophysics of transfer processes, technologies for material and food processing</b></p> <ul style="list-style-type: none"> <li>- Technology for refurbishment of worn machine parts by means of galvanic iron coating</li> <li>- Pilot technological center for refurbishment of agricultural machinery, based on electro-physico-chemical methods of treatment such as spark alloying and plasm-chemical treatment</li> <li>- Technology for galvanization of machine parts by zinc protective coatings.</li> <li>- Technology for producing nanowires by means of electric sparks alloying.</li> <li>- Installation for fine cavitation dispersing of the bentonite designed for the production of a bentonite suspension, which is based on the action of hydrodynamic, acoustical-ultrasound, and/or bi-frequency cavitation for using in wine clearing and deproteination.</li> </ul> <p>Order of Honor – 1 award  Honorary Title “Om Emerit” – 1 award  The Award of the Academy of Sciences of Moldova “Scientist of the year in the field of real sciences” – 1 award  The Award of the Academy of Sciences of Moldova, Ukraine and Belarus – 2 awards  The Award of the Academy of Sciences of Moldova in the field of physics and engineering – 1 award  The Award of the Academy of Sciences of Moldova for young researchers in the field of physics and engineering – 1 award  Medals at exhibitions – 12  Each paper published in the evaluated period has a mean citation index of 3.34.</p>				
Number of organization' invited speakers at international conferences	2006 16	2007 0	2008 7	2009 0	2010 6
Short description of technological transfer and innovation results and its certification by implementation	<ol style="list-style-type: none"> <li>1. Pilot Technology Center for refurbishment of agricultural machine parts. Project coordinator – dr. Mhailov Valentin. Beneficiary – ASELTEH Plant.</li> <li>2. Technology for refurbishment of worn parts with galvanic coatings. Project coordinator – Bobanova Jana. Beneficiary – „Dacia Universal Bulboaca” SA.</li> <li>3. Development of electronic converters of three-phase frequency for the adjustment of asynchronous electrical motors with power up to 2 kW. Project coordinator – dr. Siminel Anotolie. Beneficiary – „Mezon” SA.</li> <li>4. Testing of the production line for concentrated grape juice with the goal of carrying out installation works and commissioning of the plasmolysis chamber with power source. Project coordinator – dr. Pappenco Andrei. Beneficiary – "GRAND-GARANOVSKI" SRL</li> </ol>				
Number of defended dr.hab./dr. theses per year	2006 0/6	2007 1/1	2008 0/3	2009 1/3	2010 0/3

**VII. Present/further involvement in the Seventh Framework Programme (FP7):** specific programmes (Cooperation, Ideas, People, Capacities) of interest and its sub-divisions.

The following projects are actually under implementation:

- Induced electrodeposition of nanostructures as nanowires and nanotubes consisting of cobalt-based multilayers for MEMS applications, FP7-PEOPLE-2009-IIF (Marie Curie Actions), 2013 – 2014
- International cooperative programme for photovoltaic kesterite based technologies, FP7-PEOPLE-2010-IRSES, 2011 – 2015
- Template-assisted deposition of functional materials and devices, FP7-PEOPLE-2009-IRSES, 2011 – 2013
- Tangential Impulse Detonation Engine, FP7-AAT-2012-RTD-L0, Collaborative Project, 2013 -2015

**VIII. Accredited research field and its evaluation by the National Council for Accreditation and Attestation of the Republic of Moldova (very good/good/satisfactory)**

- Physics of condensed mater, atoms, nuclei, material science, photonic and optoelectronic devices – **good**
- Electro- and thermophysics of transfer processes, technologies for material and food processing – **good**

**IX. Category (A/B/C) attributed by the National Council for Accreditation and Attestation of the Republic of Moldova to the organization – category A**

**X. Institutional development actions planned for the next 5 years (maximum ½ page).**

- Development of fundamental research in the field of physics and physical chemistry of condensed mater, quantum optics, atoms and nuclei;
- Applied research in advanced material science, nanotechnologies and nanomaterials, crystal engineering and materials for electronics, photonics, spintronics, optoelectronics, photovolatics, biologic applications and pharmaceuticals;
- Development of new electrophysical, electrochemical and hydrodynamic methods and high technologies, and their implementation in protection against corrosion and wear, refurbishment of machine parts and agricultural machinery, processing of food and other products;
- Further optimization and adjustment of the Institute structure to the implementation of the research priorities, preparation of new institutional projects according to these priorities;
- Fortification of the tendency of increasing the number of young employee scientists of the Institute through the involvement of master students and PhD students in research activities as institute employees and participants in international projects, as well as at the university level through the practice of co-tutelle with outstanding scientists from European research centers;
- Efficient functioning of specialized scientific seminars and specialized scientific councils for doctor and doctor habilitate dissertations;



- Improving professionalism of scientists through organization of permanent scientific seminars with the participation of scientists from other research institutions;
- Maintaining at a high level of operation of the experimental infrastructure of the Institute, inclusively by means of funds from international projects and grants, and formation of experimental units of collective use;
- Undertaking measures for increasing the impact factor of the journal „Surface Engineering and Applied Electrochemistry”, and active participation in editing the Moldavian Journal of Physical Sciences;
- Organization of regular editions of the International Conference „Materials Science and Condensed Matter Physics”
- Exploration of new possibilities for an efficient technology transfer of technologies, methods and installations developed in laboratories. Strengthening the institutional infrastructure for technology transfer, collaboration with AITT, and strengthening links with SME, including those working with food processing and agricultural companies, through technology transfer projects and commercialization of technologies, methods and installations;
- Strengthening international collaboration via promoting bilateral contracts, bilateral projects and international projects in the frame of the Horizon 2020 programme, collaboration with STCU, SCOPES and other foundations.