

Summary report on research accreditation

I. General information

Name of organization	Moldova State University
Organization type (<i>to underline</i>)	Research institute <u>High education institution</u> Ministerial research institute
Research mission of organization	<p>Research mission of the Moldova State University is to organize and to performance fundamental and applied scientific research oriented towards obtaining of new knowledge, developing and implementing advanced technologies for the economic, social and spiritual growth of our country.</p> <p>The MSU prepares highly qualified scientific-didactic workers, experts in a wide range of specialties for the area of scientific research and technological development, education, culture, industry and other branches of national economy and public life, destined to ensure a durable economic development of the society, to increase the well-being and the quality of life.</p>
Strategic research direction (s)	<p>1. Consolidation of the State of Law and the use of cultural heritage in the perspective of integration into multicultural and multinational Europe.</p> <p>2. Economic basis of sustainable development and efficient use of human and natural resources.</p> <p>3. Biomedicine and human health.</p> <p>4. Agriculture and industrial biotechnology.</p> <p>5. Nanotechnology, new materials and information technology.</p>
Evaluated period	2006-2010
Web of organization	www.usm.md

II. Research capacity (annual average for evaluated period)

Total number of employees	352,4					
Number of scientific researches	330,8					
Number of researches who possess honorific titles, scientific degrees, scientific and scientific-didactical titles	ASM full members	ASM corresp. members	Professor	Associated professor	Dr.hab.	Dr. (PhD)
	-	4,6	101,6	290,6	87	356
Number of researches involved in international projects	FP7	STCU	Bilateral	Others		
	5	3	25	30		
Number of young researches (under 35 years old)	Dr. (PhD)	PhD students	Others			
	11	20	81			
Financial resources	Public budget	International projects/grants	Research contracts			

(thousand MDL)	11069,9	2666,9	-
Distribution of expenditures (thousand MDL)	Salary 7384,8	Infrastructure development -	Other 3969,8
Expenditures for infrastructure development (thousand MDL)	Equipments 1874,32	IT infrastructure 468,58	Endowment of experimental resorts 500,0
List of 3 basic research methods, installations, technologies (per accredited field)	<ol style="list-style-type: none"> 1. Traditional hydrochemical methods. 2. UV, VIS Spectrophotometry 3. 1H and 13C NMR spectroscopy 4. Spray pyrolytic method 5. Luminescent spectroscopy method. 6. Optoelectronic research methods of energy spectrum 7. Mathematical modeling of images 8. Strict processing methods based on differential equations 9. Heuristic methods for processing 10. Extraction of summary protein 11. Electrophoresis in polyacrylamide gel 12. Plethysmography 13. The questionnaire 14. Content analysis - qualitative analysis of respondents' opinions 15. Examining social documents 16. Focus group method 17. Structured interview 		
List of provided scientific services			
List of editorial activities	<p>The results of the scientific activity during the last 5 years are reflected in monographs, textbooks, methodological materials and scientific articles in national and international reviews, summaries of the communications at various national and international scientific meetings.</p> <p>With contribution of the university staff, the following scientific editions are printed:</p> <ul style="list-style-type: none"> - The scientific review of the State University of Moldova „Studia Universitatis” – 10 issues per year. - The collection of scientific articles of the State University of Moldova. Students work. - Moldoscopie. - National Review of Law. 		

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

Institutional projects	2006 33	2007 33	2008 31	2009 31	2010 31
Projects in the frame of State Programmes	2006 8	2007 10	2008 10	2009 11	2010 8
Technological transfer projects	2006 2	2007 1	2008 -	2009 -	2010 -
Projects for equipment procurement	2006 -	2007 -	2008 2	2009 -	2010 -

Projects for young researches	2006 -	2007 2	2008 6	2009 4	2010 4
Projects in the frame of bilateral programmes	2006 8	2007 8	2008 9	2009 11	2010 9
International projects/grants	2006 28	2007 28	2008 15	2009 10	2010 11
List of 3 representative international projects/grants	<ol style="list-style-type: none"> 1. Development of a stable and high efficiency CdTe solar cells and PV minimodules. SCOPES project – 2006-2008, project coordinator – Tamara Potlog. 2. New bismuth – transition metal coordination compounds as molecular precursors to heterometallic oxide materials. CRDF project – 2007-2009, project coordinator – Aurelian Gulea. 3. In vivo and in vitro proteolysis of 7s and 11s seed storage proteins: functional aspects and structural analysis. CRDF project – 2006-2008, project coordinator – Andrei Shutov 4. Development of Flexible single and tandem II-VI-Based High Efficiency Thin Film Solar Cells. FP-7 project – 2009-2011, project coordinator – Tamara Potlog. 				
Research contracts	2006 1	2007 1	2008 -	2009 1	2010 -
List of 3 representative research contracts	1. Utilization of natural stones in producing materials for building and finishing. Contract coordinator – Anatol Pushneac				

IV. Scientific publications

Total number of publications abroad	Books 23	Chapters in books 32	Journal papers 633
Total number of publications in ISI journals and books	Books -	Chapters in books -	Journal papers 248
Total number of publications in the country	Books 207	Chapters in books 58	Journal papers 2250
Total number of conference abstracts	International abroad 1346	International in the country 810	National 813
List of 5 representative publications (per accredited field)	<ul style="list-style-type: none"> • Mathematical Sciences: Theoretical and Applied Aspects <ol style="list-style-type: none"> 1. Lozovanu, D., Pickl, S. Algorithms and the calculation on Nash equilibria for multi-objective control of time-discrete systems and polynomial-time algorithms for dynamic c-games on networks. //European Journal of Operational Research, Springer, 181(3), 2007, pp. 1214-1232. (IF: 1,627). 2. Lozovanu D., Pickl S. A constructive algorithm for max-min paths problems on energy networks. //Applied Mathematics and Computation, Elsevier. Amsterdam-New York-Boston, 2008, nr. 3, p.136-145. (IF: 1,292). 3. Caraballo T., D. Cheban D. Almost Periodic and Almost Automorphic Solutions of Linear Differential/Difference Equations without Favard's Separation Condition. I //J. Differential Equations, v.246 (2009), p.108-128. (IF: 1,349). 4. Caraballo T., D. Cheban. Almost Periodic and Almost Automorphic 		

Solutions of Linear Differential/Difference Equations without Favard's Separation Condition. II //J. Differential Equations, v.246 (2009), p.1164-1186. (IF: 1,349).

5. Vulpe N., Artes J., Llibre J. Quadratic systems with a polynomial first integral: a complete classification in the coefficient space R^{12} . //J. Differential Equations, 246(2009), p. 3535—3558 (IF: 2.161).

• **Actual Problems in the Field of Computer and Economic Sciences**

1. Магариу Н.А. Некоторые обобщения относительно процесса развития приложений. //Сборник научных работ «Проектирование информационных систем» кафедр ИСЭ и ВСиП СПбГИЭУ. СПб., 2006. –с.145-152.
2. Căpățână Gh., Lica D., Marin V., Micula S., Teodorescu N. Produsul programat MAPLE în matematici. București: Editura BREN, 2005. - 347 p.
3. Bragaru T., Căpățână Gh., Pleșca N., Latul Gh., Cîrhana V., Efros I., Crăciun I., Baban T., Baron Gh. Învățământ la distanță: concept și terminologie. (Ghid de inițiere). / Redactor științific: Căpățână Gh. ISBN 978-9975-70-764-0. /Chișinău: CEP USM, 2008. - 101 p.
4. Gribincea A., Ghioană N., Croitoru N. L'conomie mondiale et relations économiques internationales `a l`aetape actuelle. /Focșani: Andrew, 2006. -204 p
5. Rusu Gh., Donciu A. Economic frauds and some aspects of their control process. Washington: Publishing House, 2006. -165 p.

• **Physics and Engineering of Materials, Nanostructures and Devices**

1. Gosh, S., Bao, W., Nika, D.L., Subrina, S., Pokatilov, E.P., Lau, C.N, Balandin, A.A. Dimensional crossover of thermal transport in few-layer graphene. *Nature Materials*. 2010, 9, 555–558. ISSN: 1476-1122. doi:10.1038/nmat2753 (IF: 29.504).
2. N. Nedeoglo. Investigation of Interaction between Native and Impurity defects in ZnSe. Lapeenranta. Acta Universitatis, Finlanda. - 2007. -4,5 c.a.
3. Devreese J.T., Fomin V.M., Pokatilov E.P. Polarons and Bipolarons.- În: Nanostructures. Part II. Polaron Effects in Nanostructures. Handbook of Semiconductor Nanostructures and Nanodevices. -2006. -Vol 4. - Los-Angeles: American Scientific Publishers, p.339-407.
4. Dmitriev S. Nanodimensional Structures in Gaseous Sensorics: Modeling Aspects. - În: Handbook of Semiconductor Nanostructures and Nanodevices.- 2006.- Vol. 5 - Los-Angeles: American Scientific Publishers, p.421- 445.
5. Devreese J. T., Fomin V. M., Gladilin V. N.; *Effects of the electron-phonon interaction in semiconductor quantum dots*; – ; Handbook of Self Assembled Semiconductor Nanostructures for Novel Devices in Photonics and Electronics, ed. M. Henini, Elsevier/ Butterworth-Heinemann, Amsterdam e.a., 2008, pp. 346-370.; 1,25

• **Chemistry of Materials and Green Technologies**

1. Bulimestru I., Mentre O., Tancret N., Rolle A., Djelal, N., Buryl O L., Cornei N., Popa N., Gulea A. Heterobimetallic Ba–Co aminopolycarboxylate com-plexes as precursors for BaCoO_{3-δ} oxides; towards a one-stage-deposition of cobaltite films. *Journal of Materials Chemistry* (IF: 4.795).

2. Robu Ș., Dragalina G., Rivaton A., Mitcov D., Andrieș I. Photoconductive Organic Materials Based on N-vinylcarbazole Copolymers with higher Alkenes as Recording Media în Photonics // Journal of Non-Crystalline Solids. – 2009, p.1840-1843.
3. Romanciuc L., Gladchi V., Goreaceva N., Bunduchi E., Duca GH. The role of Ecological Chemistry în Pollution Research and Sustainable Development. Springer book. 2009, pp.57-64.
4. I.P.Pozdnyakov, E.M.Glebov, V.F.Plyusnin, V.P.Grivin, E.Bunduki, N.V.Goryacheva, V.Gladki and Gh.G. Duka. Photochemistry of Fe (III) Complex with Glyoxalic Acid în Aqueous Solution // High Energy Chemistry, 2009, Vol.43, No.5, pp.406-409.
5. Самусь Н.М., Чумаков Ю.М., Цапков В.И., Бочелли Г., Симонов Ю.А., Гуля А.П. Координационные соединения кобальта, никеля, меди и цинка с бензоилгидразоном и тиосемикарбазоном 2-бром-3-фенилпропеналя // Журнал Общей Химии. 2008. Т.78. стр.1-7.

**• Biodiversity and Rational Utilization of Bioresources in
Guaranteeing Biological Security**

1. Braudo, E.; Danilenko, A.; Guslyannikov, P.; Kozhevnikov, G.; Artykova, G.; Lapteva, N.; Vaintraub, I.; Sironi, E.; Duranti, M. Comparative effects of limited tryptic hydrolysis on physicochemical and structural features of seed 11s globulins. International Journal of Biological Macromolecules. 2006, **39**, 174-178. ISSN 0141-8130. **(FI: 1,867)**.
2. Morari, D.; Stepurina, T.; Rotari, V. I. Calcium ions make phytohemagglutinin resistant to trypsin proteolysis. J. Agric. Food Chem. 2008. **56** (10), 3764–3771. ISSN 0021-8561. **(FI: 2,562)**.
3. Carchilan, M.; Delgado, M.; Ribeiro, T.; Costa-Nunes, P.; Caperta, A.; Morais-Cecilio, L.; Jones, R.N.; Viegas, W., Houben; A., Transcriptionally active heterochromatin in rye B chromosomes. The Plant Cell. 2007, **19**, 1738-1749, ISSN 1040-4651. **(FI: 9,296)**.
4. Schallau, A.; Kakhovskaya, I.; Tewes, A.; Czihal, A.; Tiedemann, J.; Mohr, M.; Grosse, I.; Manteuffel, R.; Bäumlein, H. Phylogenetic footprints in fern spore- and seed-specific gene promoters. Plant Journal. 2008, **53**, 414-424. ISSN 0960-7412. **(FI: 6,493)**.
5. Shutov, A. D.; Prak, K.; Fukuda, T.; Rudakov, S.V. ; Rudakova, A. S.; Tandang-Silvas, M. R., Fujiwara, K.; Mikami, B.; Utsumi, Sh.; Maruyama, N. Soybean Basic 7S Globulin: Subunit Heterogeneity and Molecular Evolution. Biosci.Biotechnol.Biochem. 2010, **74**(8), 1631-1634. ISSN 0916-8451. **(FI: 1,39)**.

**• Theoretical and Applied Linguistics; History and Theory of
Literature**

1. Dolgan M. Galina Furdui, Bogdan Istru, Nina Josu, Emil Loteanu, Toader Mălai, Timotei Melnic, George Meniuc, Paul Mihnea, Teodor Nencev - În: Dicționarul General al Literaturii Române, București, 2006, vol. III-IV, 1, 35 c.a.
2. Dolgan M. Ion Racul, Barbu Rabei, Agnesa Roșca, Valentin Roșca, Victor Teleucă, Leonid Tuchilatu, Elena Țau, Titu Știrbu, Petru Zadnipru – În: Dicționarul General al Literaturii Române, vol. VII, București, 2009, 1,0 c.a.
3. Dolgan M. Eminescienc, Druțiene, Vierene (O hermeneutică a imaginarului celor mai mari scriitori naționali (Monografie).

	<p>Chişinău: CEP USM, 2008. - 26,0 c.a.</p> <p>4. Dolgan M.(ed.) Fenomenul artistic Ion Druţă. Concepție și elaborare, coordonare și redactare științifică, coautor și responsabil de ediție: acad. Mihail Dolgan. - Chişinău: Tipografia Centrală, 2008. - 68,0 c.a.</p> <p>5. Condrea I. Traducerea din perspectivă semiotică. – Chişinău: Cartdidact, 2006 - 266 p. - 14 c.a.</p> <p style="text-align: center;">• Historical and Cultural Unity and Diversity in Civilizational Processes</p> <p>1. Niculiță I., Zanoci A., Arnăuț T., Habitatul din mileniul I a. Chr. în regiunea Nistrului mijlociu: Siturile din zona Saharna, Chişinău, 2008, 408 pp.</p> <p>2. Petrencu, dr. hab., prof. univ., Basarabia în timpul celui de-al Doilea Război Mondial, Chişinău, 2006. (23 c.a.)</p> <p>3. V. Tomuleț, dr. hab., conf., Cronica protestelor și revendicărilor populației din Basarabia (1812 - 1828), vol. I, II, Chişinău, 2007. (40 c.a.)</p> <p>4. Şarov, dr., conf. univ., Asasinările în masă în RASSM în perioada Marii Terori (1937-1938). Documente desecretizate din arhivele MAI și SIS, Chişinău, 2010. (43 c.a.)</p> <p>5. A.Spinei, Teorii ale categorizării lumi și practici ale comunicării. Compendiu de hermeneutică a relațiilor interpersonale, Iași, 2006.</p> <p style="text-align: center;">• Social, Political and Demographic Sciences – a Support in the Development of the Contemporary Society</p> <p>1. Bulgaru M., Asistența Socială fundamente teoretice și practice. – Chişinău, 2009.</p> <p>2. Bulgaru M., Bulgaru O., Cheianu D., Milicenco S., Oceretnîi A., „Studentul USM – 2009 (barometru de opinie)”. – Chişinău, 2009.</p> <p>3. Политология. Учебник для студентов специальности «Международные отношения». Т.1-2. (Coord. Moşneaga V., Rusnac Gh., Sacovici V., Saca V.) - Chişinău, UNESCO, 2008, 46, 0 c.a.</p> <p>4. Ghidul metodic la modulul Teoria și Istoria Administrației Publice.</p> <p>5. Lavric A., Conflictul din Estul RM: soluții pentru reglementare // Studia Universitatis, Seria științe sociale, CEP USM, Chişinău 2010, Nr. 3 (33). – P. 80-86, 0,60 c. a.</p> <p style="text-align: center;">• The National Law and Judiciary System Associated to the International Standards</p> <p>1. Roşca Nicolae, Baieş Sergiu. Dreptul afacerilor. Vol.II., Chişinău, 2006, 432 p.</p> <p>2. Cojocaru Violeta. Recunoaşterea și executarea hotărîrilor judecătoreşti străine în materie civilă în Republica Moldova. Monografie. Chişinău: CEP USM, 2007, 278 p., 23,3 c.a.</p> <p>3. Negru Boris, Negru Alina, Teoria Generală a Dreptului și Statului, Bons Offices, Chişinău-2006; 520 p. 30 c.a.-manual. Romandaş N., Boişteanu E., Dreptul muncii, Editura Reclama, 10.2007, manual, 32.5 c.a.</p> <p>4. Baieş Sergiu, Roşca Nicolae, Klimov Ala, Pascari Anastasia, Mihailenco Elena Suporturi de curs la: Dreptul civil, dreptul succesoral, dreptul funciar; dreptul muncii; dreptul familiei; Chişinău 2008, 376 p.</p> <p>5. Osmochescu Nicolae, Martîniuc Cristina. Subiecții de drept internațional public contemporan. Monografie. Chişinău, CEP USM,</p>
--	--

	<p>2008, 326 p. 14,5 c.a.</p> <p>• Educational Sciences and Psychology in the Modernization of National Education</p> <ol style="list-style-type: none"> 1. Guțu, V., Proiectarea didactică în învățământul superior, CEP USM, Chișinău, 2007. 2. Șevciuc, M., Didactica universitară: studii și experiențe, CEP USM, Chișinău, 2010. 3. Dandara, O., Proiectarea carierei. Dimensiuni ale demersului educațional, CEP USM, 2009. 4. Muraru, E., Repere conceptuale privind implementarea sistemului de management al calității în învățământul superior din Republica Moldova, CEP UASM; Chișinău, 2009. 5. Kudrițcaia, S., Методика обучения химий, editura ARC, Chișinău, 2007.
List of 5 citations	<ol style="list-style-type: none"> 1. Mariana Bujac, Sergiu Cataranciu, Petru Soltan On the Division of Abstract Manifolds in Cubes Bul. Acad. Științe Repub. Mold. Mat., 2006, no. 2, 29–34 2, Dmitrii Lozovanu, Stefan Pickl Dynamic programming algorithms for solving stochastic discrete control problems Bul. Acad. Științe Repub. Mold. Mat., 2009, no. 2, 73–90. 3. Maria Fonoberova, Dmitrii Lozovanu, “Minimum Cost Multicommodity Flows in Dynamic Networks and Algorithms for their Finding”, Bul. Acad. Științe Repub. Mold. Mat., 2007, no. 1, 107–119. 4. Ghosh, Suchismita; Bao, Wenzhong; Nika, Denis L.; Subrina, Samia; Pokatilov, Evghenii P.; Lau, Chun Ning; Balandin, Alexander A. Dimensional crossover of thermal transport in few-layer graphene Nature Materials, Volume 9, Issue 7, pp. 555-558 (2010). 5. D. L. Nika, E. P. Pokatilov, A. S. Askerov, A. A. Balandin Phonon thermal conduction in graphene: Role of Umklapp and edge roughness scattering (Citations: 18). Journal: Physical Review B - PHYS REV B , vol. 79, no. 15, 2009. 6. D. Nika, E. Pokatilov, Q. Shao, A. Balandin Charge-carrier states and light absorption in ordered quantum dot superlattices (Citations: 1). Journal: Physical Review B - PHYS REV B , vol. 76, no. 12, 2007. 7. E. P. Pokatilov, D. L. Nika, V. M. Fomin, J. T. Devreese, Photonics, Excitons in wurtzite AlGaN/GaN quantum-well heterostructures (Citations: 1). Journal: Physical Review B - PHYS REV B , vol. 77, no. 12, 2008. 8. E P Pokatilov, D L Nika, A S Askerov, N D Zincenco, A A Balandin. The size-quantized oscillations of the optical-phonon-limited electron mobility in AlN/GaN/AlN nanoscale heterostructures (Citations: 1) Journal: Journal of Physics: Conference Series , vol. 92, 2007.

V. Innovation outputs

Total number of patents	Registered in the country 193	Registered abroad -	Implemented -
Total number of new developed methods and technologies	Registered 3	Non-registered -	Implemented -
Total number of new scientific products	Registered -	Non-registered -	Implemented -

Total number of scientific outputs for central and local authorities (draft of law, strategies etc.)	33		
Total number of scientific outputs for educational institutions	Handbooks for high education 244	Handbooks for pre-university institutions 90	Delivered university courses 464
List of 5 representative innovation outputs (per accredited field)	<p style="text-align: center;">• Chemistry of Materials and Green Technologies</p> <ol style="list-style-type: none"> Patent No 4127. Authors: GULEA Aurelian, LOZAN-TIRSU Carolina, TAPCOV Victor. Use of di(m -S)-bis{chloro-[1-(pyridine-2-yl)ethanone-4-methylthiosemicarbazonato(1-)] copper} as substance with antimicrobial activity against <i>Staphylococcus aureus</i>. Patent No 3730. Authors: DIDI Mohamed Amine, AZZOUZ Abdelkrim, SAJIN Tudor, NISTOR Ileana Denisa, CRACIUN Alexandru, URSU Alina. Process for obtaining tetraalkyl ethylene diphosphonates. Patent No 4129. Authors: COVALIOVA Olga, COVALIOV Victor, NENNO Vladimir, CLICHICI Ion. Process for obtaining a vitaminoproteic feed supplement. Patent No 4087. Authors: COVALIOVA Olga, COVALIOV Victor, IVANOV Mihail. Process for chemical-catalytic deposition of metal coatings. Patent No 4055. Author: COVALIOVA Olga Process for softening the mineralized natural water and device for the realization thereof <p style="text-align: center;">• Biodiversity and Rational Utilization of Bioresources in Guaranteeing Biological Security</p> <ol style="list-style-type: none"> Patent No 3752. Authors: BULIMAGA Valentina, EFREMOVA Nadejda, DENCICOV Lidia. Method for determining the superoxidizedismutase activity. Patent No 4108. Authors: BULIMAGA Valentina, RUDIC Valeriu, EFREMOVA Nadejda, DJUR Svetlana, ELENCIUC Daniela, BIVOL Cezara, LOZAN Vasile, BOLOGA Olga. Process for cultivation of cyanobacterium <i>Spirulina platensis</i>. Patent No 2998. Authors: SALARU Victor, SALARU Vasile. Process for presowing treatment of cucumber seeds. Patent No 3620. Authors: BACALOV Iurie, CRIVOI Aurelia. Phytotherapeutic agent for treating diabetes mellitus. Patent No 3780. Authors: RUDIC Valeriu, BULIMAGA Valentina, BIVOL Cezara. Process for cultivation of <i>Dunaliella salina</i> green mucroalga. <p style="text-align: center;">• Physics and Engineering of Materials, Nanostructures and Devices</p> <ol style="list-style-type: none"> Patent No 3888. Authors: CARAMAN Mihail, GASIN Petru, ROBU Stefan. Process for obtaining a photoluminescent nanocomposite from CdS and organic polymers. Patent No 4022. Authors: CORSAC Oleg, CHIRITA Arcadi, JIDCOV Iurii. Device for hologram and interferogram recording on photothermoplastic medium. Patent No 214. Authors: CHIRITA Arcadi, CORSAC Oleg, BULIMAGA Tatiana. Photothermoplastic medium for registration of 		

	<p>optical information</p> <p>4. Patent No 151. Authors: BOTNARIUC Vasile, GORCEAC Leonid, RAEVSCHII Simion, JILIAEV Iurii, FIODOROV Leonid. Process for growth of GaAs epitaxial layers into a horizontal reactor.</p> <p>5. Patent No 3976. Authors: DEMENTIEV Igor, GUTUL Tatiana, GOGLIDZE Tatiana, PETRENKO Petru. .Process for CdS nanocomposite obtaining in polymer matrix</p>
--	--

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>	<ul style="list-style-type: none"> - New spectral methods for determination of copper and cobalt, new substances with advanced antibacterial activity, building blocks for magnetic materials. - The directed synthesis of new complexes of some transition metals with thiosemicarbazones and polyaminopolycarboxylic acids. - Processes, devices for reduction of pollutants emissions: CO, C_nH_m, NO_x by 1.3-3 times; consumption of gas by 10%, gasoline – 15%. - Method for calculation the median of a complex of abstract n-dimensional cubes - Method for determination the fixed elements of abstract varieties. The expected results will lead to finding a fixed point of a lithosphere mobility, which coincides with the intersection of three tectonic plates. - The mathematical models of black-white and color images for quantitative information extraction. - Prototype of a system for Complex Software products and their models evaluation - Formal method for Case Based Reasoning and the reasoning algorithm for generic objects systems - The method for identifying Romanian speech - Device for hologram and interferogram recording on photothermoplastic medium - GaSe, GaTe and InSe single crystals and composites with a 90÷95 % of fullerene - Solar cells of the structure In-p⁺InP-pInP-n⁺CdS – (Ag+Zn) with a generation power of 150 W·m⁻² and efficiency of 14% (AM1) - The theory of the phonon properties and thermal conductivity - Technologies for obtaining biomass of <i>Spirulina platensis</i> rich in iodine, chromium, selenium, iron and antioxidants. - Procedures for obtaining antioxidant preparations: SP - SOD / Phyco - 1 "and" SP - SOD / Phyco - 2 " on the basis of cyanobacterium <i>Spirulina platensis</i> CNM-CB-02 biomass - Method for determining the superoxidodismutase activity - Phytotherapeutic agent for treating diabetes mellitus. - Concept of initial professional training for the first cycle - License studies and second cycle - Master studies based on the studies finality - Methodology of identification of employer's needs - Recommendations for Evaluation of the formation programmes at the
---	--

	institutional level <u>Awards</u> Youth Municipal Award in the field of Science, technique, literature and art – 17 winners Academy of Sciences of Moldova Award for scientific papers – 2 winners Academy of Sciences of Moldova Award for scientific papers of young researchers – 4 winners Youth National Award – 4 winners				
Number of organization' invited speakers at international conferences	2006 26	2007 27	2008 30	2009 18	2010 26
Short description of technological transfer and innovation results and its certification by implementation					
Number of defended dr.hab. and dr. theses per year	2006 35	2007 43	2008 52	2008 27	2010 38

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

Currently at MSU is conducting research activities in the frame of the FP7 project – “Development of Flexible single and tandem II-VI-Based High Efficiency Thin Film Solar Cells”, FP-7 project – 2009-2011, project coordinator – Tamara Potlog.

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

- Mathematical Sciences: Theoretical and Applied Aspects – **good**
- Actual Problems in the Field of Computer and Economic Sciences – **good**
- Physics and Engineering of Materials, Nanostructures and Devices – **good**
- Chemistry of Materials and Green Technologies – **very good**
- Biodiversity and Rational Utilization of Bioresources in Guaranteeing Biological Security – **good**
- Theoretical and Applied Linguistics; History and Theory of Literature – **good**
- Historical and Cultural Unity and Diversity in Civilizational Processes – **good**
- Social, Political and Demographic Sciences – a Support in the Development of the Contemporary Society – **good**
- The National Law and Judiciary System Associated to the International Standards – **good**
- Educational Sciences and Psychology in the Modernization of National Education – **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).

Actions related to the institutional development for the next five years include:

- development of informational technologies;
- permanent updating of web page of MS;
- increasing the rating of scientific journals edited at MSU;
- development of the innovative infrastructure and promoting technology transfer projects;
- promoting international projects;
- development of the technical endowment for research;
- strengthening connections between research & education, research & economic;
- increasing the number of publications in journals with ISI impact factor;
- increasing the number of contracts with local and foreign businesses;
- engagement young people in research, development and innovation activities;
- increase the level of teaching the young people through PhD and post PhD studies.