

## Summary report on research accreditation

### I. General information

Name of organization	Institute of Geology and Seismology of ASM
Organization type ( <i>to underline</i> )	<b>Research institute</b> High education institution      Ministerial research institute
Research mission of organization	<ul style="list-style-type: none"> <li>• Seismic hazard and risk studies;</li> <li>• Study of mineral resources and protection of geological environment.</li> </ul>
Strategic research direction (s)	Capitalization of human, natural and information resources for a sustainable development
Evaluated period	2005-2009
Web of organization	<a href="http://www.igs.asm.md">www.igs.asm.md</a>

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

Total number of employees	<b>86.2</b>					
Number of scientific researches	<b>26</b>					
Number of researches who possess honorific titles, scientific degrees, scientific and scientific-didactical titles	ASM full members 1	ASM corresp. members	Professor	Associated professor	Dr.hab. 3.4	Dr. (PhD) 10.6
Number of researches involved in international projects	FP7		STCU		Bilateral 1.8	
Number of young researches (under 35 years old)	Dr. (PhD)		PhD students 2.4		Others 13.2	
Financial resources (thousand MDL)	Public budget 2738.5		International projects/grants 351.32		Research contracts 579.3	
Distribution of expenditures (thousand MDL)	Salary 2260.3		Infrastructure development 1020.5		Other 630.9	
Expenditures for infrastructure development (thousand MDL)	Equipments 597.0		IT infrastructure 423.5		Endowment of experimental resorts	
List of 3 basic research methods, installations, technologies (per accredited field)	<ol style="list-style-type: none"> <li>1. Network of seismic stations of Republic of Moldova;</li> <li>2. Gas Chromatography;</li> <li>3. Atomic Absorption Spectrophotometer.</li> </ol>					
List of provided scientific services	Seismic microzonation of urban areas, seismicity of areas for special responsibility constructions; Estimation of seismic conditions of areas with complicated geotechnical conditions; Recommendations for reducing the effects of industrial explosions in quarries on the environment and constructions;					

	<p>Measuring of the amplitude of seismic waves, oscillations of different origin and the localization of their sources;</p> <p>Estimation of the dynamic characteristics of various types of constructions ( buildings, bridges, etc);</p> <p>Estimation of the quality of mineral and potable water by standard methods;</p> <p>Analysis of complex organic compounds (POPs, PAHs, pesticide) in different environments: natural water, waste water, soils, foos etc;</p> <p>Determination of toxic elements (As, Se, Hg, Pb, Cd, Cu, Zn, Ni, Cr, Al, Mn, Fe) in different objects: natural and waste waters, foods, farm products, soils, sediments of waste water, metals and alloys;</p> <p>Scientific support for implementation of the new techniques of use of the local mineral resources.</p>
List of editorial activities	Bulletin of the Institute of Geology and Seismology of the Academy of Sciences of Moldova

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

Institutional projects	2006	2007	2008	2009	2010
	5	5	5	5	5
Projects in the frame of State Programmes	2006	2007	2008	2009	2010
				2	2
Technological transfer projects	2006	2007	2008	2009	2010
			2	2	1
Projects for equipment procurement	2006	2007	2008	2009	2010
				1	
Projects for young researches	2006	2007	2008	2009	2010
			1		
Projects in the frame of bilateral programmes	2006	2007	2008	2009	2010
				1	
International projects/grants	2006	2007	2008	2009	2010
	4	7	5	1	1
List of 3 representative international projects/grants	<ol style="list-style-type: none"> <li>1. NATO SfP 980468 „Harmonization of Seismic Hazard Risk and Reduction in Countries Influenced by Vrancea Earthquakes”.</li> <li>2. „ECOS” AO, GEF Grant Nr. TF055875 “Identification of POPs residuals and mapping of polluted areas”.</li> <li>3. INTAS 05-104 -7584. „Numerical analysis of 3D seismic wave propagation using modal summation, finite elements and finite difference methods”.</li> </ol>				
Research contracts	2006	2007	2008	2009	2010
	3	3	4	4	4
List of 3 representative research contracts	<ol style="list-style-type: none"> <li>1. Evaluation of seismic risk in the territory of Chisinau city. Chisinau Mayoralty, 2006 – 2007.</li> <li>2. Estimations of influence on aquatic system of query “Criva” ICS “Knauf-Gips”, 2008 – 2009.</li> <li>3. Identification of potential geological structures for underground gas storages in territory of Republic of Moldova. S.A. “MoldovaGAZ”, 2010-2011.</li> </ol>				

#### IV. Scientific publications

Total number of publications abroad	Books 10	Chapters in books 2	Journal papers 131
Total number of publications in ISI journals and books	Books 1	Chapters in books 1	Journal papers 47
Total number of publications in the country	Books 10	Chapters in books 1	Journal papers 84
Total number of conference abstracts	International abroad 12	International in the country 34	National 5
List of 5 representative publications (per accredited field)	<ol style="list-style-type: none"> <li>1. ALCAZ V., DRUMEA A., ISICICO E., GHINSARI V., BOGDEVICI O.. Seismic zoning and development methodology for their application in city of Chisinau, Chisinau, „Elena”, 2005, 108p. (in Romanian)</li> <li>2. ZAICENCO A., ALCAZ V. GIS Application for the Assessment of the Seismic Damage of Buildings. NATO Science for Peace and Security Series, E: Human and Societal Dynamics, vol. 52, 2009, p. 29-36.</li> <li>3. ALCAZ V. Основы прогноза сейсмической опасности и сейсмического риска территории РМ, Chişinău, „Elena”, 2007, 230p. (in Russian)</li> <li>4. BOGDEVICI O., CADOCINICOV O., Elimination Of Acute Risks From Obsolete Pesticides In Moldova: Phytoremediation Experiment At A Former Pesticide Storehouse. Short Title: Phytoremediation In Moldova. Application Of Phytotechnologies For Cleanup Of Industrial, Agricultural And Wastewater Contamination. Springer, Nato Book Series, C. Environmental Security, (2009) pp.61-87.</li> <li>5. MORARU C. The karst in the gypsum in northwestern part of the Republic of Moldova , Chişinău, „Elena”, 2007. 187p. (in Romanian)</li> </ol>		
List of 5 citations			

#### V. Innovation outputs

Total number of patents	Registered in the country 1	Registered abroad	Implemented
Total number of new developed methods and technologies	Registered 1	Non-registered 1	Implemented 2
Total number of new scientific products	Registered 3	Non-registered 2	Implemented 5
Total number of scientific outputs for central and local authorities (draft of law, strategies etc.)	12		
Total number of scientific outputs for educational institutions	Handbooks for high education 2	Handbooks for pre-university institutions	Delivered university courses 6

List of 5 representative innovation outputs (per accredited field)	<ol style="list-style-type: none"> <li>1. Map of seismic zonation of the territory of Republic of Moldova.</li> <li>2. Map of microseismic zonation of the territory of Chisinau city.</li> <li>3. Map of seismic risk for Chisinau urban area.</li> <li>4. GIS - methodology for geological data use in urban areas.</li> <li>5. Mapping of ground water of Republic of Moldova.</li> </ol>
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## VI. Major scientific and innovation achievements

Short description of main scientific results and its confirmation (by awards, citations, development of international projects etc.)	<p>The scientific results of the Institute of Geology and Seismology of ASM were published in different scientific magazines, and were citation by colleagues from other country.</p> <p>Alcaz V. 2003 Seismic Hazard Maps of Republic of Moldova: third Generation. – In. Proceedings of conference “Monitoring nebezpečnikh geologichnikh protsesiv ta ekologichnogo stanu seredovischa”, Kiev (Nemchinov Iu.I. 2008. Seismic resistance of buildings and constructions. Kiev 480 p. (in russian))</p> <p>Zaicenco A., Alcaz V., Soil-Structure Interaction Effects on an Instrumented Building. <i>Bulletin of Earthquake Engineering</i>. V.5, No 4, Springer, 2007. pp.533-5471.</p> <p>Hannigan R.E., Bogdevich O., Izmailova D.N., Ogendi G., Selenium in the Different Environment Media of Moldova. <i>Environmental Geoscience</i>. USA, 2006. 13(4): 267-279.</p> <p>Nicoara I. A brief characterisation of the Lower Pontian environments from the Moldavian Platform. <i>Oltenia Studii și Comunicări Științele Naturii</i>, Vol. XXV. Craiova, 2009 p. 383-384. (Lungu A. &amp; Rzebik-Kowalska B. 2011 <i>Faunal assemblages, stratigraphy and taphonomy of the Late Miocene localities in the Republic of Moldova</i>. Krakow, 62 p.)</p> <p>The Map of seismic zoning was introduced like a standard for constructions (published in Monitorul Oficial No 72-74 from 14 mai 2010).</p> <p>The seismic bulletins completed by the staff of the Institute sent to the international seismic centers and use in international data base.</p>				
Number of organization' invited speakers at international conferences	2006	2007	2008	2009	2010
	3	4	3	4	3
Short description of technological transfer and innovation results and its certification by implementation	<ol style="list-style-type: none"> <li>1. In the result of the project 08.168.61T was created geological Data Base of the Chisinau city (scale 1:2000) which has included more than 12000 boreholes. Digital Data Base is necessary for geotechnical investigations of urban area destined for construction. Created data base can be a example for other urban area.</li> <li>2. In the result of the project 08.164.77T was developed the technology for processing of local natural bentonite in order to create sorbents for use in the national economy.</li> </ol>				
Number of defended dr.hab. and dr. theses per year	2006	2007	2008	2009	2010
	1	-	-	-	-

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

- 1) Cross-border project: Romania – Republic of Moldova – Ukraine.
- 2) Cooperation in Black Sea basin:  
Approved project “*Black Sea Earthquake Safety Network*”.

**VIII. Accredited research field “*Regional Geology and Seismology*” and its evaluation by the National Council for Accreditation and Attestation of the Republic of Moldova “good”.**

**IX. Category “B” attributed by the National Council for Accreditation and Attestation of the Republic of Moldova to the organization.**

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

In the period of 2011-2015 the Institute will be conduct research under the strategic directions 02. “Capitalization of human, natural and information resources for a sustainable development” with next major priority:

- 1) Study in order to improve the seismic security;
- 2) Geological and hydrogeological studies in order of effective management of mineral resources and protection of geological environment.

The most important action at this time will be:

- 1) Research and Innovations;
- 2) Schooling of staff;
- 3) Extension of international relations;
- 4) Improvement of publishing activity;
- 5) Development of Logistics;
- 6) Optimization of research activities.