

ISTC in Armenia



On the occasion of
the Golden Medal of Honor Award
of the National Academy of Sciences of Armenia

ISTC Executive Director Introduction

It is my great pleasure to accept on behalf of the International Science and Technology Center, the Golden Honorary Medal of the National Academy of Sciences of Armenia.

This is an award that ISTC values as one of the highest accolades the organization received during its 16 years of existence.

Personally, of course, I am honored to lead ISTC at this time, but all of us know that successful work in science is best carried out in true partnership and is built with time and trust. The award of the Honorary Medal is, I believe, recognition of such a partnership and such a relationship between Armenia and ISTC.

In Armenia and beyond, the National Academy of Sciences of the Republic of Armenia is a scientific and engineering center with the highest reputation that it has rightfully earned since 1935.

The President of the National Academy of Sciences, Academician Radik Martirosyan, has been especially supportive of our work together and the Center and its Governing Board are truly grateful. Academician Martirosyan was an Honoured Speaker at ISTC's 15 Year Celebration last year in Moscow and it was a great pleasure to meet with him again in Yerevan at the award ceremony.

Academician Martirosyan was also instrumental in obtaining recognition of our partnership from the Prime Minister of the Republic of Armenia, Tigran Sarkisyan, and his words, which we deeply value, appear in our current Annual Report. If I may quote the Prime Minister "ISTC played a positive role for Armenia and we managed to preserve a major part of our scientific potential thanks to it". This recognition is vital to an organization such as my own.

ARMENIA AND ISTC

Since 1995, when the first Armenian project was launched, ISTC has funded 163 science projects to a total value of 38.6 million USD.

This total also includes 22 partner projects funded by international governmental and private entities. And it is through these projects that Armenian scientists and experts have been able to work in full partnership with scientific colleagues from Germany, UK, USA and many other countries.



Armenia has been actively involved in ISTC's Commercialization Program, which aims to take Armenian high-technology to the marketplace to create financial benefits and sustainable jobs in the country. To date, two innovation initiatives have been successfully implemented in Armenia for a total amount of \$840,000 and this will lead to the creation of 84 permanent jobs for scientists and researchers in Armenia.

This is, however, just a start in terms of the commercialization of innovation when we consider the skills, strengths and excellence of Armenian science and scientists, coupled with the country's commitment to becoming an innovation leader.

To mention just a few of the recent Armenian success stories that ISTC is proud to be associated with and which appear in the pages to follow:

The creation of a natural hazards prevention system for the Southern Caucasus and Central Asia;

The use of amino acids in the search for more effective drugs; and

The supply of sapphire crystals to meet industrial and international demand.

- And there are many more initiatives that are under development.

The sample of projects that appear in this book offer the tangible evidence of how ISTC, through the creation of genuine partnerships, supports new opportunities for scientists in Armenia; the Center has assisted with the modernization of the country's research infrastructure and brought Armenian scientists into contact with their peers and colleagues elsewhere in the world, all of whom have been as equally impressed with the quality of science in the country. Moreover, funded research has led to many high-level publications and is the subject of discussion at many international scientific conferences. The business

skills of scientists are also being further developed as they attend training courses run by ISTC in a range of practical areas vital in today's international world.

ISTC itself began its activities 15 years ago in Armenia. And it is clear that many of the scientific challenges we now face differ from those of 15 years ago. For example, while health and environmental issues have always been of concern, with the rapidly changing world in which we live today such issues can rapidly assume a global dimension. We have seen this in the spread of global epidemic threat, such as avian and swine flu, or with the international consequences of a single volcano erupting in Iceland.

Today, the world faces more global challenges and threats than ever faced before. The science that needs to bring the solutions for example to establish low carbon economies is complex, requires substantial funding and pooling of the best expertise worldwide. Nowadays: we need more multilateral scientific cooperation, not less.

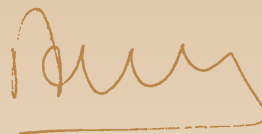
Armenia itself has undergone and is still undergoing rapid changes. Science, Technology and Innovation are vital to further economic and social progress. I consider it our common task to further strengthen the research performance, promoting innovation and knowledge

transfer. The task is thereby to attract young people to scientific work. We have organized special competitions for young scientists, and during September 2010 - for the first time - a special summer school exactly to serve this purpose. I look forward to developing initiatives, such as the summer school, with the National Academy of Sciences of Armenia in the years to come.

In introducing this book of ISTC projects I would like to sincerely thank the Armenian Government and the Armenian scientists, engineers and heads of institutes for the many years of successful work that we have undertaken together. I recognize that our Branch Office in Yerevan has also played a crucial role in bringing forward the valuable research activities taking place in Armenia and I would like to pay special tribute to their contribution and dedication.

Armenian President Sargsyan, has recently stated: "We believe that Armenia's greatest resource is its intellectual capacity. Not only the intellectual potential of the citizens of Armenia, but of the Armenian people worldwide". I am personally very proud that ISTC is playing its part by working alongside the people of Armenia in the realization of the country's vast potential and its vital contribution to scientific progress.

Adriaan van der Meer
ISTC Executive Director



ISTC Project
#A-1418

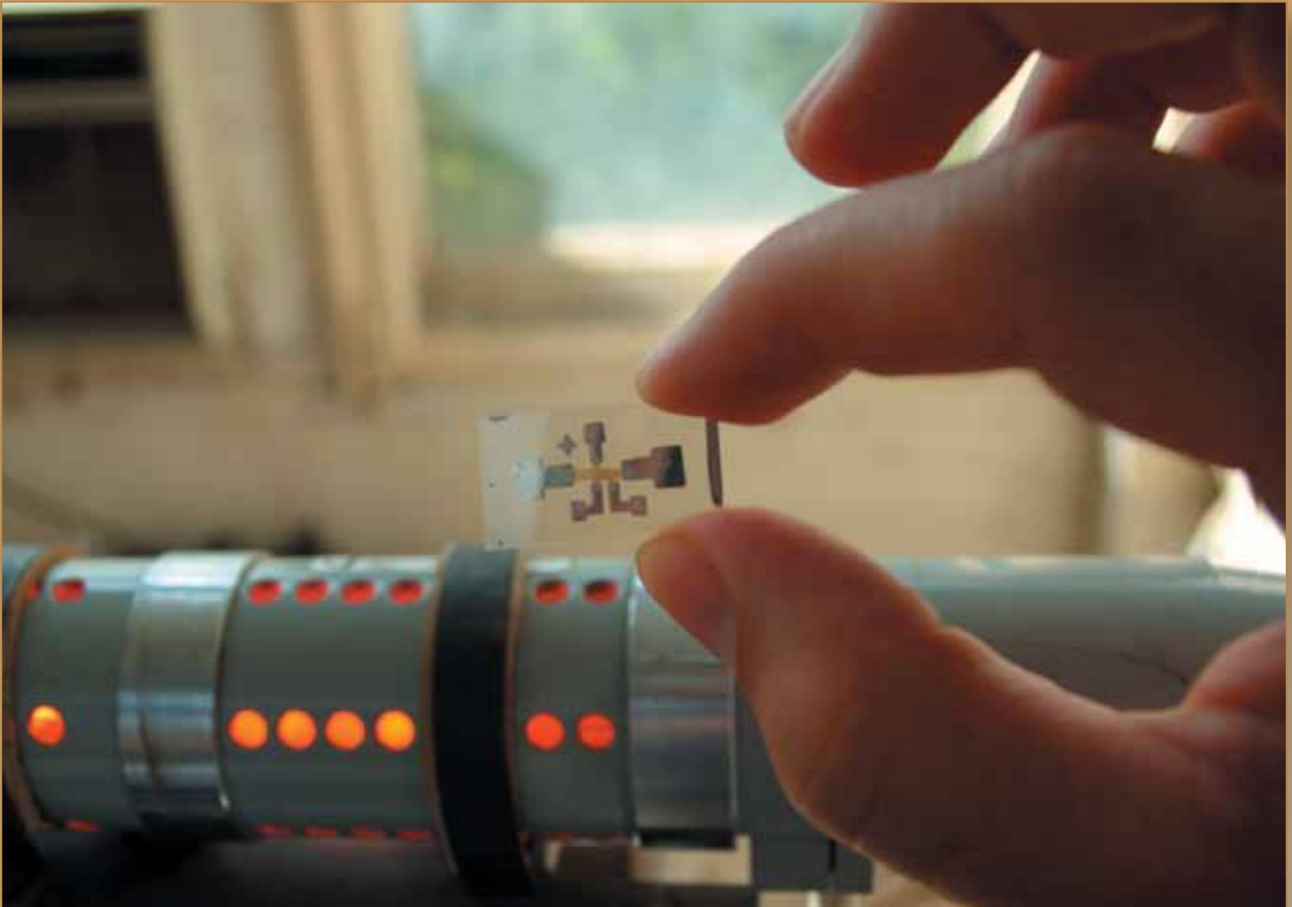
Natural Hazards Prevention System in the South Caucasus and Central Asia



Leading Institute	Scientific Foundation “International Center Garni”, Yerevan
Science Collaborator	Universite Montpellier II, France Ecole et Observatoire des Sciences de la Terre, France Lawrence Livermore National Laboratory, USA Massachusetts Institute of Technology (MIT) Cambridge, USA National Observatory of Athens, Greece New England Research Inc., USA Universita Degli Studi di Bari, Italy
Allocated Funds	\$615,000

ISTC Project
#A-1675

Transparent Conductive Nanomaterials for Solar Cells



Leading Institute	Institute of Radiophysics and Electronics, Ashtarak-2
Science Collaborator	Ernst Moritz Arndt University, Germany Marenstrum Institute of Technology, Spain National Institute for Material Physics, Romania Sheffield Hallam University, UK Technical University Gh. Asachi Iasi, Romania University Nova de Lisboa, Portugal University of Aveiro, Portugal University of Southampton, UK
Allocated Funds	\$400,000

ISTC
Commercialization
Project
II-073

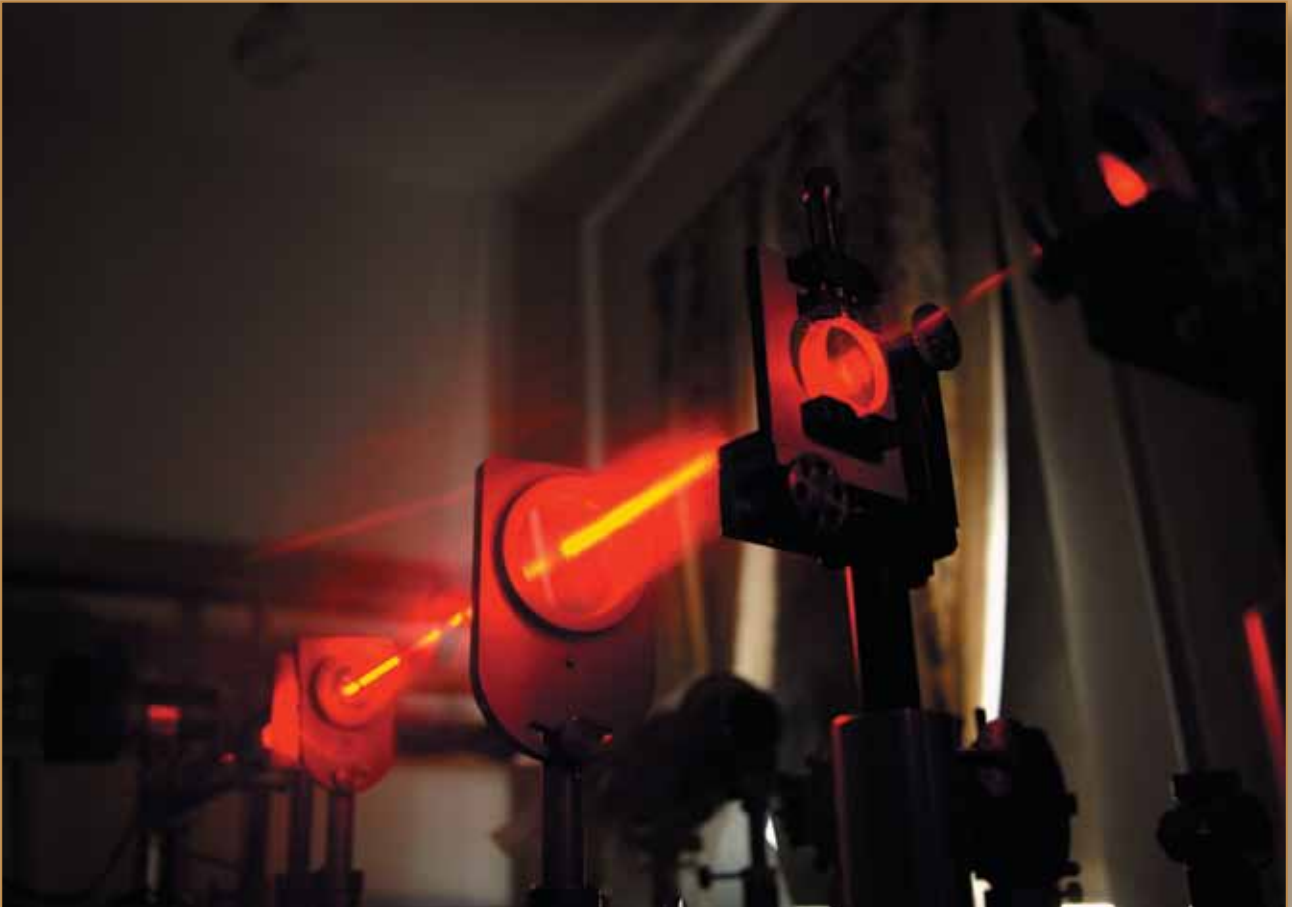
Using Amino Acids in the Search for More Effective Drugs



Leading Institute	Institute of Biotechnology, Yerevan
Allocated Funds	\$425,000

ISTC project
#A-1517

Engineering 2D and 3D Holographic Gratings for Photonic Crystals



Leading Institute	Institute for Physical Research, Ashtarak-2
Science Collaborator	Laval University / Center for Optics, Photonics, and Lasers, Canada
Allocated Funds	\$220,000

Project
A-1306

Crystals for X Ray Imaging



Leading Institute	Yerevan Physics Institute
Science Collaborator	Argonne National Laboratory, USA CERN, Switzerland Cornell University, USA DESY, Germany European Synchrotron Radiation Facility, France
Allocated Funds	\$345,000

ISTC Project
#A-1229

Simulating Space Conditions and their Effect on Materials



Leading Institute	Yerevan Physics Institute, Yerevan
Science Collaborator	A. U. G., Canada National Technical University of Athens, Greece Pacific Northwest National Laboratory, USA School of Pharmacy and Chemistry, UK Spacecraft Engineering, Canada University of California, USA
Allocated Funds	\$300,000

ISTC Project
#A-1554

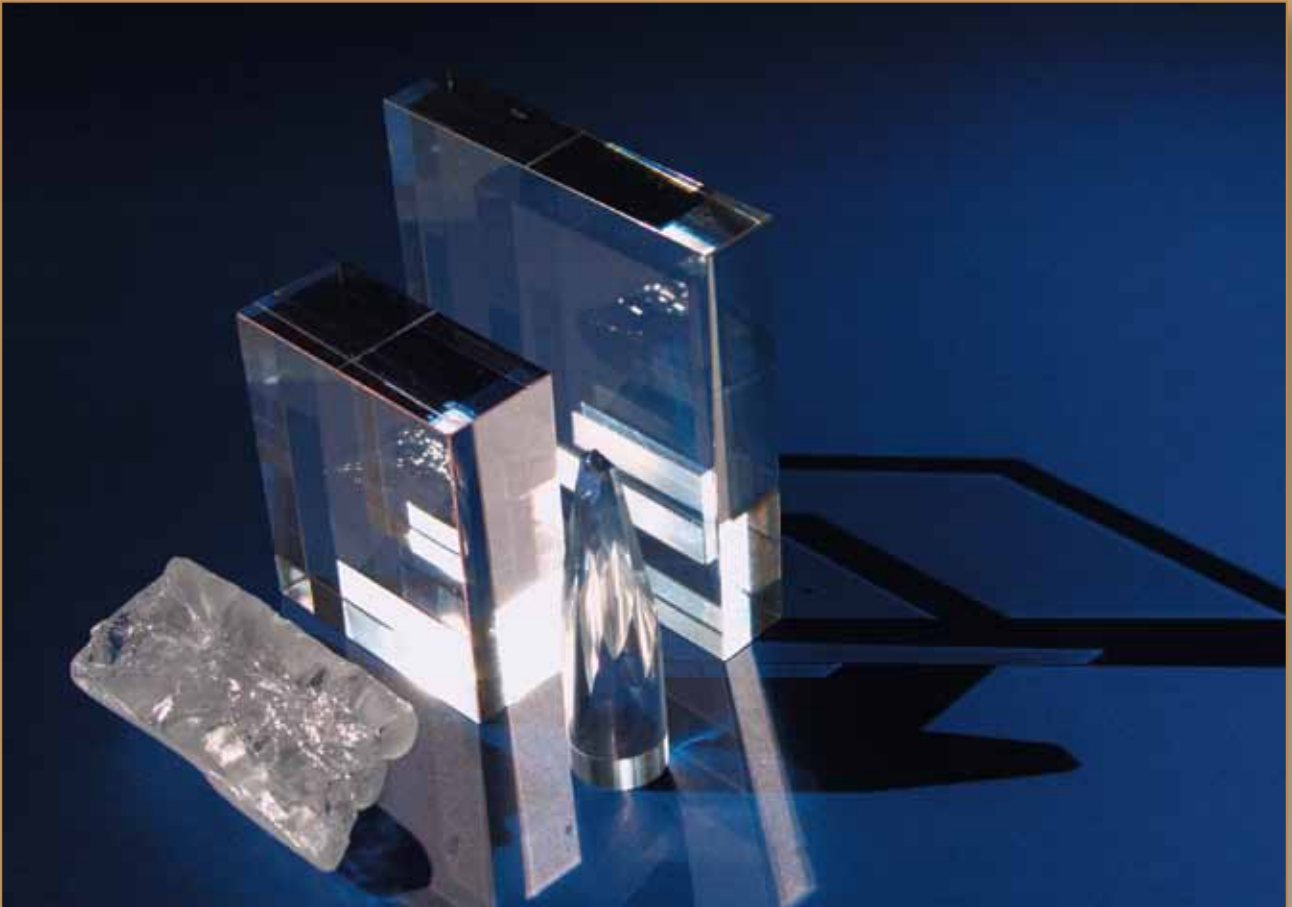
Space Weather Monitoring and Forecasting Using a Network of Particle Detectors



Leading Institute	Yerevan Physics Institute, Yerevan
Science Collaborator	Karlsruhe Institute of Technology, Germany University of Leeds, UK US Department of Commerce / Space Environment Center, USA
Allocated Funds	\$860,000

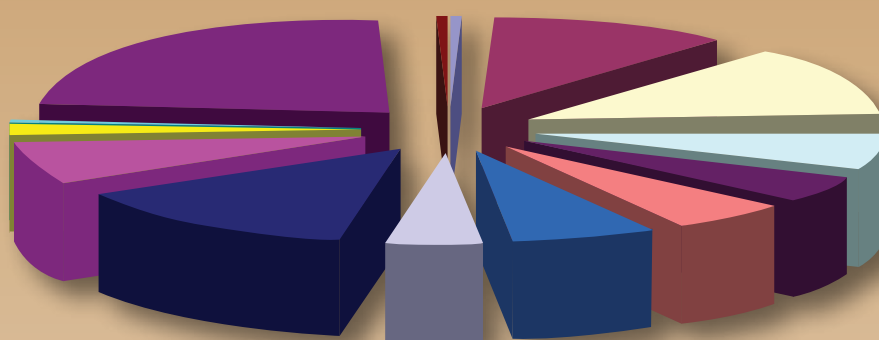
Commercialization
Initiative
#101

Production Line of Large Crystal Sapphire to Meet Industrial Demand



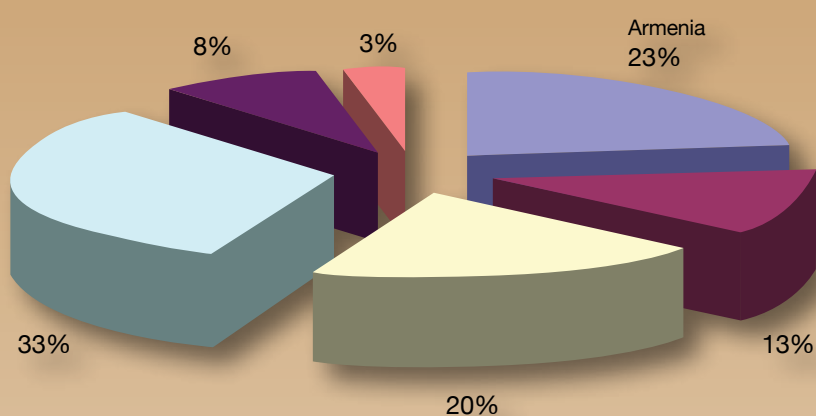
Leading Institute	LT-Pyrkal
Allocated Funds	\$420,000

Project Funding in Armenia by Technology Area Since 1994



Technology area	Number of Projects	Total Allocated (USD)
Agriculture	1	118,828
Biotechnology	18	4,785,651
Chemistry	20	4,918,199
Environment	12	3,079,895
Fission Reactors	8	1,170,911
Information and Communications	9	2,201,143
Instrumentation	11	2,436,523
Manufacturing Technology	7	960,335
Materials	22	5,791,475
Medicine	13	3,725,211
Non-Nuclear Energy	3	1,023,675
Other	1	60,000
Physics	37	8,037,971
Space, Aircraft and Surface Transportation	1	299,200
Total	163	38,609,023

Grants Paid to CIS Scientists (excluding Russia) 1994-2010



Country	No of scientists	Allocated Funds (\$)
Armenia	3180	22,068,953
Belarus	1717	11,672,537
Georgia	2340	17,950,099
Kazakhstan	1195	30,609,078
Kyrgyzstan	4435	7,057,190
Tajikistan	465	2,690,435
Total	13332	92,048,292

ISTC Training program

1. 18-20 April 2005
Commercialization Seminar – 80 people
2. October – November 2006
Training "Business Plan development"
40 people
3. March 2007
Intellectual Property Rights Training - 40 people
4. July 2007
ISTC/SNCP Commercialization Seminar -
5 people
5. 20-21 September 2007
Seminar "Technology Transfer" – 2 people
6. October – November 2007
Training "Negotiation and Presentation Skills"
40 people
7. April – July 2008
Long-term training "Introduction to
Commercialization" for Executive personnel
in Moscow – 2 persons from Armenia
8. March 2008
Seminar "Technological Management (2 days)
in Moscow – 2 persons from Armenia
9. April 2009
Commercialization Seminar – 80 people
10. 12 April – 15 July
Long-term training "Introduction to
Commercialization" for Executive personnel
14 people



Mobility program

	Number of Armenian scientists	Funds for Armenian scientists	% (number) of all program participants	% (Funds) of all program funds
2009	10	\$27,017.86	5,1%	6,1%
2010	14	\$21,651.00	8,8%	7,6%

Armenian institutes participating in ISTC activities

- Center of Applied Zoology and Botany
- GYUXMEKENAYATSUM Scientific Productive Economic Association, Ltd.
- Institute of Microbiology
- National TB Hospital of Republic of Armenia
- State Microbial Depository Center
- QJSC "M&MAVR"
- Institute of Radiophysics and Electronics/ Special Design Center
- Institute of Radiophysics and Electronics/ Special Design Center
- Engineering Center
- Institute for Physical Research
- Institute for Physical Research/ Engineering and Physics Laboratory
- Institute of Radiophysics and Electronics
- Byurakan Astrophysical Observatory
- Garni Geophysical Observatory
- Gyumri State Pedagogical Institute after M. Nalbandyan
- Institute of Geophysics and Engineering Seismology
- Special Experimental-Constructive Technological Institute
- State Engineering University of Armenia/ Gyumri Educational Campus
- Karat Machine Closed Joint Stock Company
- "Akhuryani Shinanyuter" Co.Ltd
- Electron Ltd.
- Armenian NPP
- ECO-99 Ecological Public Organization
- Institute of Polymer Glues "GIPK"
- Academy of Quality Problems
- Acoustic Scientific Center
- Adonis Pharmaceuticals Ltd.
- Advanced Science & Technology Center
- AOZT "Condensator"
- ARAKS JSC
- Aram Science Production Company, Ltd.
- Armenian Association of Computer and Information System
- Armenian Association of Seismology and Physics of the Earth's Interior
- Armenian Centers for Disease Control and Prevention
- Armenian Earthquake Engineering Research & Protection of Construction
- Armenian Institute of Applied Chemistry "ARIAK"
- Armenian Institute of General Hygiene and Occupational Diseases
- Armenian National AIDS Prevention Center
- Armenian National Institute of Health
- Armenian Nuclear Regulatory Authority
- Armenian Nuclear Regulatory Authority/ Nuclear & Radiation Safety Center
- Armenian Pharmaceuticals and Nutraceuticals Expertise Research Institute (JSC)
- Armenian Rescue Service of the Emergency Situations of Republic of Armenia
- Armenian Research Institute for Scientific and Technical Information
- Armenian Research Institute for Scientific and Technical Information/Republican Scientific and Technical Library
- Armenian Research Institute of Earthquake Engineering and Protection of Constructions
- Armenian Scientific-Research Institute of Nuclear Power Plants Exploitation
- Armenian State Agrarian University
- Armenian State Pedagogical University
- Armenian Technological Academy
- Armenmotor JSC
- ArmRIEE & PC (Earthquake Engineering and Protection of Constructions)
- Association "For Sustainable Human Development"
- ASUP-KAVA Ltd.
- Boomerang Software Company
- Center for Ecological Noosphere Studies
- Center for the Advancement of Natural Discoveries using Light Emission
- Center of Educational Reforms
- Center of Medical Genetics of NAS RA
- Center of Photosynthesizing Organisms, Feed Additives and Physiologically Active Compounds
- Center of Prophylaxis of Especially Dangerous Infections
- Center of Scientific Information
- CFPSDID
- Charitable Social Organization "Caravan – 88"
- Close Joint Stock Company "Nairit-2"
- Closed Joint-Stock Company "Infokom-Alpha"
- Composite Ltd
- Computing Technique and Informatics Scientific-Research Institute
- EcoAtom, LLC
- Ecoperlite, ltd.
- ECOSERV Remote Observation Center Co. Ltd.
- Engineering Academy of Armenia
- Erebuni Medical Center
- ExLab JCSC
- Galstyan Gamazasp
- Galstyan G.
- Guelbenkian Control Laboratories
- H2ECOonomy, CJSC
- Hai Consult
- Hyglugh Shinnakhagits, Ltd.
- Information and Automation Problems Institute
- Institute-Museum of Genocide
- Institute of Applied Problems of Physics
- Institute of Archaeology and Ethnography
- Institute of Arts
- Institute of Biochemistry
- Institute of Biotechnology
- Institute of Botany
- Institute of Chemical Physics
- Institute of Economics
- Institute of Economy of Agriculture
- Institute of General and Inorganic Chemistry
- Institute of Geological Sciences
- Institute of History
- Institute of Hydroecology and Ichthyology
- Institute of Hydroponics Problems
- Institute of Language
- Institute of Literature
- Institute of Mathematics
- Institute of Mechanics
- Institute of Molecular Biology
- Institute of Oriental Studies
- Institute of Philosophy and Law
- Institute of Zoology
- International Armenian Centre of the Ethnopathology
- International Association for Human and Animals Health Improvement
- International Science and Technology Center/Armenian Branch Office
- International Scientific-Educational Center
- Khazer
- Life Sciences International Postgraduate Educational Center
- LT-Pyrkal
- L.A.Orbeli Institute of Physiology
- MARTIG CO LTD University of International Economic Relations
- Mikaelian Institute of Surgery
- Ministry of Agriculture
- Ministry of Economy of Republic of Armenia
- Ministry of Education and Science of Armenia
- Ministry of Education and Science of Armenia/State Engineering University of Armenia Polytechnic
- Ministry of Emergency Situations
- Ministry of Health of Armenia
- Ministry of Health of Armenia/Center of Prevention of Special Dangerous Infection Diseases
- Ministry of Health, Republic of Armenia
- Ministry of Health, Republic of Armenia
- Mirabel
- Mirabel Ltd.
- Nairit-1, CJSC
- National Academy of Sciences of the Republic of Armenia
- National Academy of Sciences of the Republic of Armenia/Biophysics Center
- National Academy of Sciences of the Republic of Armenia/Institute for informatics and automation problems
- National Academy of Sciences of the Republic of Armenia/The Institute of Molecular Biology/Armenian National Academy of Sciences
- National Assembly of Republic of Armenia
- National Bureau of Expertise, SNPO
- National Institute of Health, Armenia
- National Instruments/National Instruments, Armenia
- National Survey for Seismic Protection of RA
- National Survey for Seismic Protection of RA/Western Survey for Seismic Protection
- Neumann ev Vordi Ltd.
- NGO Aquafauna
- NGO "Sustainable World"
- Non Governmental Organization for Supporting Economic Development "Economic Way"
- NPF "Stone & Silicates"
- NPO Atom
- NPO Nairit
- Nuclear and Radiation Safety Center of Armenian Nuclear Regulatory Authority
- Oncological Scientific Center
- Parmet
- Radiophysics Research Institute
- Research and Technology Implementation Center "Biotechnology"
- Research Center For The Problem Of The Non Proliferation Of Weapons Mass Destruction
- Research Center of Mother and Child Protection
- Research Center of Radiation Medicine and Burns
- Research Industrial Institute Kometa
- Research Institute of Cardiology
- Research Institute of Environment Hygiene and Prophylactic Toxicology
- Research Institute of Epidemiology, Virology and Medical Parasitology
- Research Institute of Proctology
- Science and Technology Coordinate Center of Armenian Academy of Science "BIOTEST"
- Science industrial cooperative "Anushik"
- Scientific-Production Open Joint Stock Company "Interstanok"
- Scientific Center of Cattle Breeding and Veterinary Science
- Scientific Center of Traumatology and Orthopaedics
- Scientific Center of Zoology and Hydroecology
- Scientific Centre of Soil Science, Agrochemistry and Melioration
- Scientific Foundation "International Center Garni"
- Scientific Production Enterprise of Material Science
- Scientific Research Chemical Technological Institute "CHEMTECH"
- Scientific Research Company GEORISK
- Scientific Technological Centre of Organic and Pharmaceutical Chemistry SNPO
- Scientific Technological Centre of Organic and Pharmaceutical Chemistry SNPO/ Institute of Fine Organic Chemistry
- Scientific Technological Centre of Organic and Pharmaceutical Chemistry SNPO/ Institute of Organic Chemistry
- Scientific Technological Centre of Organic and Pharmaceutical Chemistry SNPO/ Molecular Structure Research Center
- Shirak, International Association
- Sociological Research Center
- SolarEn, LLC.
- SPE ATOM
- SRI Electromash
- State Engineering University of Armenia
- State Engineering University of Armenia
- Technology Transfer Association
- The Russian-Armenian State University
- The Scientific Centre of Radiation Medicine and Burns
- Transistor-Germet
- Transistor Plus Ltd.
- TzKB Electron
- UNESCO Chair in Life Sciences – Life Sciences International Educational Center
- Viasphere Technopark
- X-ray Pnjeri Laboratory
- Yerevan Automated Control Systems Scientific Research Institute
- Yerevan Computer Research Institute
- Yerevan Institute of Architecture and Construction
- Yerevan Institute "Plastpolymer"
- Yerevan Open University
- Yerevan Physics Institute
- Yerevan Physics Institute/Cosmic Ray Division (Nor-Amberd) of Yerevan Physics Institute
- Yerevan Physics Institute/Cosmic Ray Division (Yerevan) of Yerevan Physics Institute
- Yerevan Relay Manufacturing Plant
- Yerevan Research Institute of Optical and Physical Measurements
- Yerevan Scientific Research Institute of Communication Facilities (YSRIFC)
- Yerevan State Institute of Economy
- Yerevan State Medical University
- Yerevan State University
- Yerevan State University
- Yerevan State University of Architecture and Construction
- Yerevan State University/Department of Molecular Physics
- Yerevan Telecommunication Research Institute
- Yerevan State University of Architecture and Construction
- Yerevan State University/Department of Molecular Physics
- Yerevan Telecommunication Research Institute
- Nork Republican Infectious Clinical Hospital
- Stress Center
- "Diagen Plus" Diagnostic laboratory

Events in Armenia



Signature of a Memorandum of Understanding Between Armenia and ISTC



President of the National Academy of Sciences of Armenia, Academician Radik Martirosyan

Events in Armenia



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International Science and Technology Center (ISTC)
Krasnoproletarskaya 32-34,
127473, Moscow
Russian Federation
www.istc.ru

