

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.

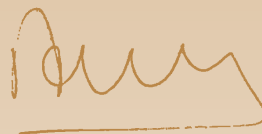
Armenia itself has undergone and is still undergoing rapid changes. Science, Technology and Innovation are vital to further economic and social progress. I consider it our common task to further strengthen the research performance, promoting innovation and knowledge

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

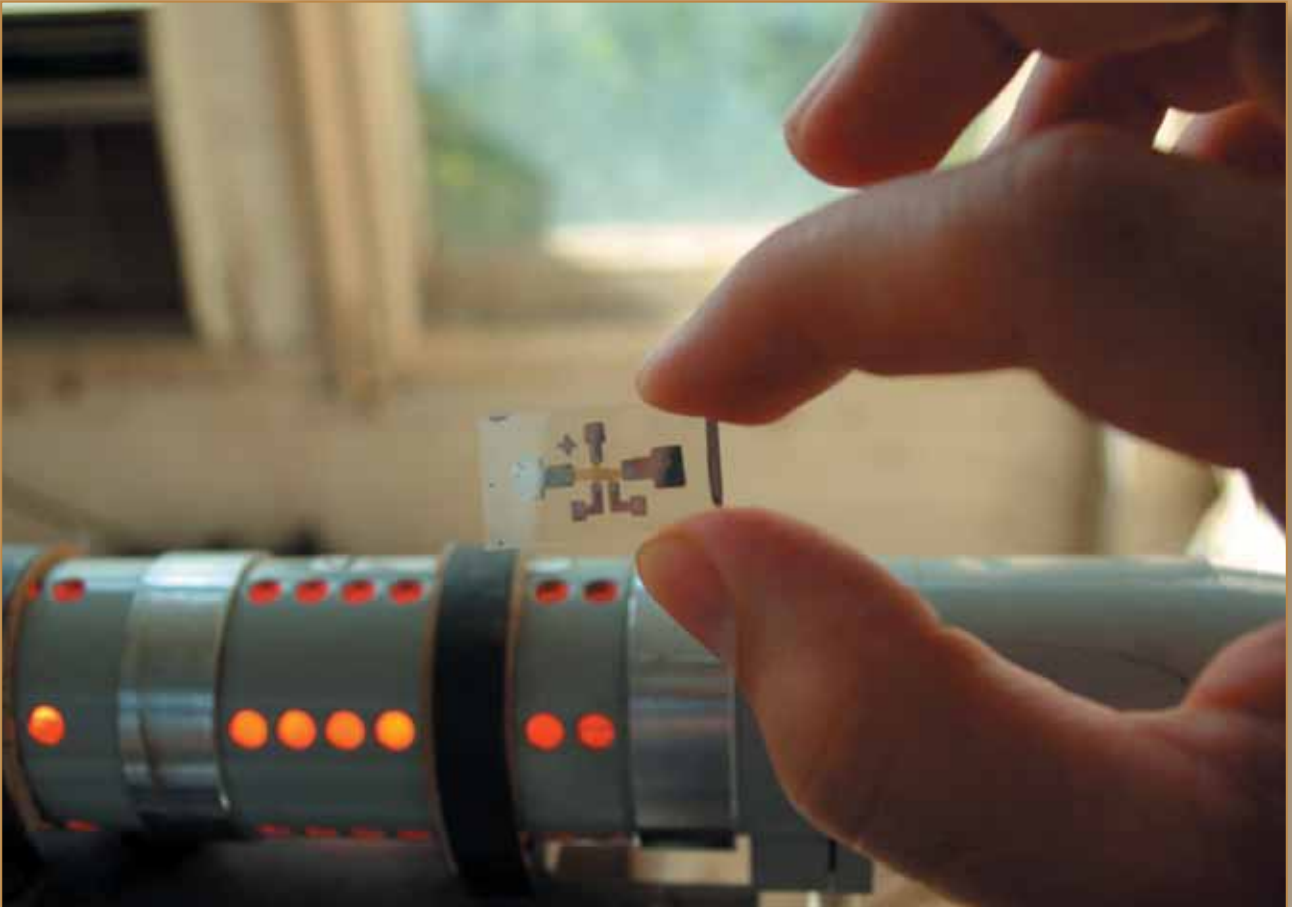
Natural Hazards Prevention System in the South Caucasus and Central Asia



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

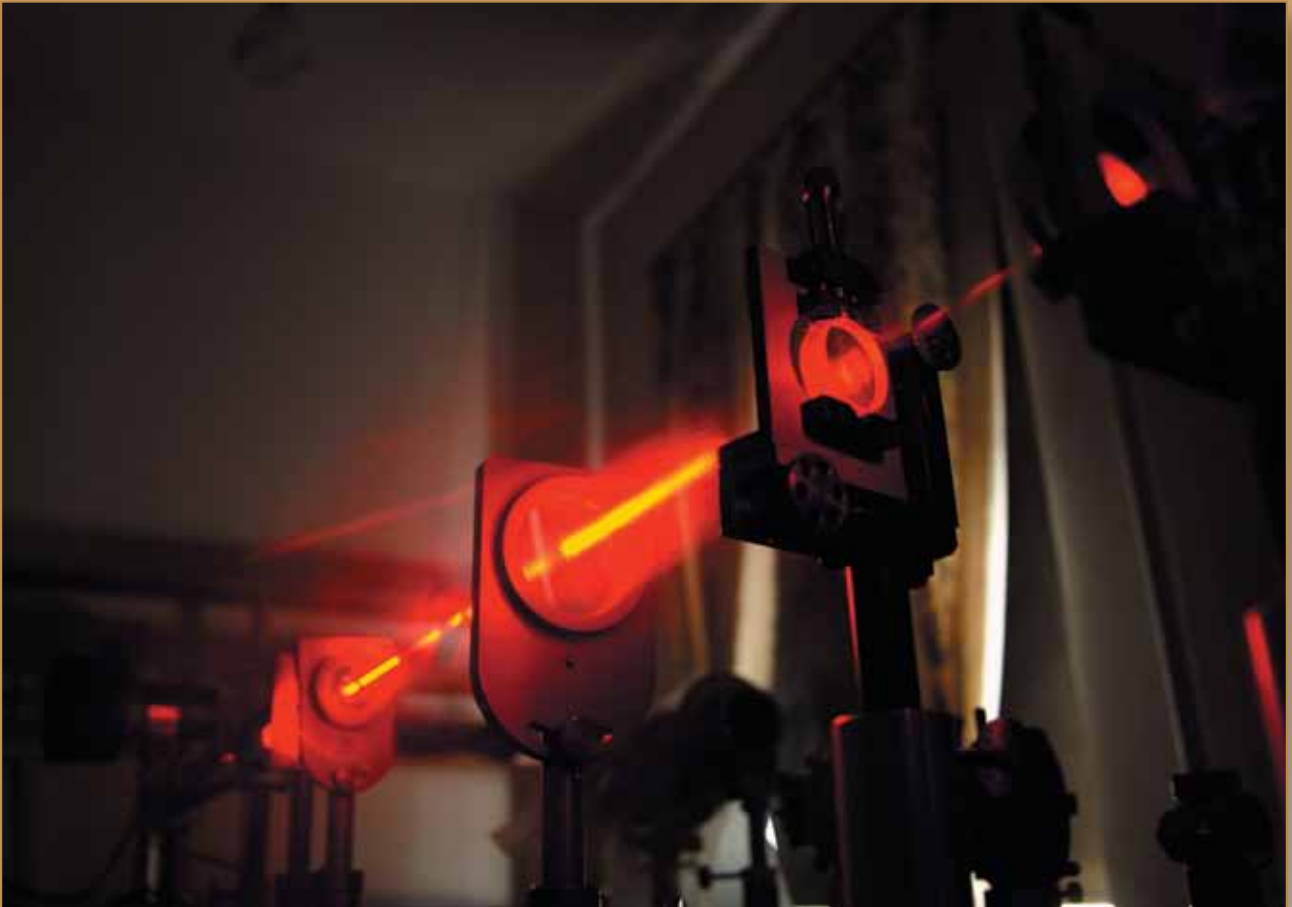
Using Amino Acids in the Search for More Effective Drugs



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

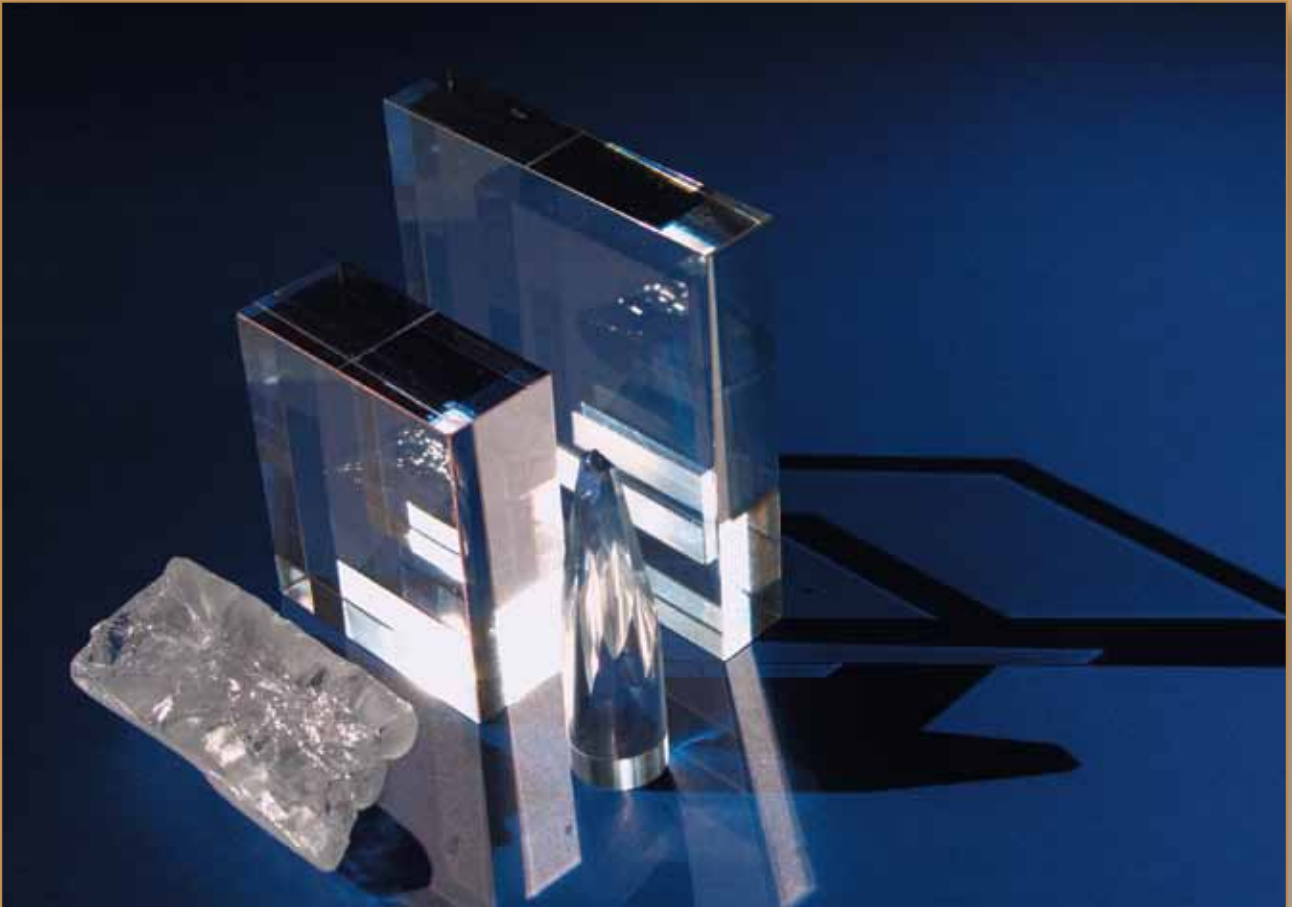
Space Weather Monitoring and Forecasting Using a Network of Particle Detectors



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

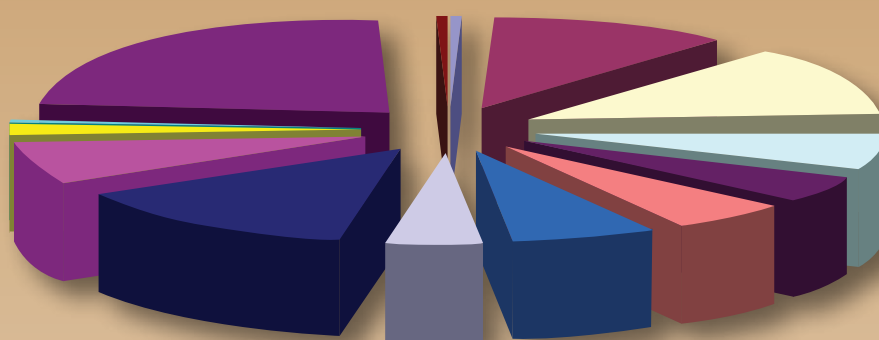
Commercialization
Initiative
#101

Production Line of Large Crystal Sapphire to Meet Industrial Demand



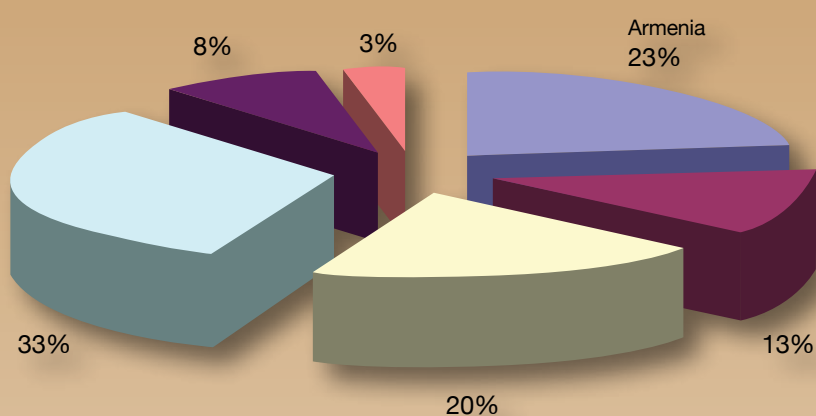
Leading Institute	LT-Pyrkal
Allocated Funds	\$420,000

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%

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

