



ISTC in Armenia

(18 years +)

International Science and Technology Center



ISTC Armenian Branch Office - 15 years

Yerevan - 2013

All materials presented in this brochure were submitted
by the Institutes, that greatly participated in the ISTC activities

Statement of the Executive Director

It is an honor to present this Anniversary Edition brochure which is devoted to describing the International Science & Technology Center's (ISTC) support in Armenia over the past 18 years. Equally important, it is the 15 Year Anniversary of the establishment of the ISTC Armenian Branch Office in Yerevan, which is our principle point of contact with the Armenian scientific community.

The ISTC, as one of its pillars, has always promoted and supported the development of international scientific collaboration, often by encouraging and funding scientific projects and providing access to an extensive network of international experts volunteering as collaborators. Funding travel for scientists and experts of Armenia to enable them to work together with these colleagues from Canada, the EU, Japan, Korea and the USA, as well as with scientists from Russia, Georgia and other CIS countries is another mechanism employed in this endeavor. This collaboration has led to an integration of Armenian scientists into the world scientific community that has benefited both the global science community as well as Armenia.

In this brochure, we present a brief summary of the results ISTC has achieved in Armenia. Beginning from 1995, when the first Armenian project was funded, 473 project proposals have been submitted for review, of which 170 projects were funded for a total of USD \$41.64 million. This includes 27 Partner projects with a value of USD \$5.71 million, and 2 Commercialization Initiatives, which supported purchasing equipment worth nearly USD \$4.50 million.

Additionally, a Resource Center was established in 2006 to assist Armenian scientists to link through the internet to their international collaborators and to access databases, and provide a writing platform for their proposals, as well as a venue for distance learning and training. More than 200 scientists have been trained as part of this initiative.

During this time, Armenia has hosted two ISTC Governing Board meetings, GB17 (1998) and GB40 (2006), as well as two Scientific Advisory Committee meetings (2000 and 2012).



In summary, I would like to thank the Government of Armenia and the National Academy of Sciences in particular for the tremendous support provided for our activities, without which we could not have successfully implemented our objectives. Additionally, the entire Armenian scientific community needs to be praised for their willingness to engage and to learn and adapt to new and challenging ways of doing things. And finally, I wish to congratulate the staff of our Branch Office in Armenia with its jubilee - 15th anniversary - of its founding, and express my appreciation for their faithful work and support over the years.

Leo Owsicki
ISTC Executive Director



Statement of the President of the National Academy of Sciences of Armenia

It is hard to overlook the tremendous amount of work that the ISTC has done over the years of its existence, appreciate the help that it has provided and continues to provide to scientists of the CIS countries and Armenia as well. In talking about the ISTC, we must recall the political and economical situation in the country: the collapse of the Soviet Union and deep economic and political crises. The overall infrastructural situation was so dismal that consideration for fundamental science was totally ignored and seemingly impossible. Total devastation of the economy and frustration in the minds of the people in Armenia is a very bad background for the development of science. Recall that in 1988 we had a devastating earthquake that immediately affected the overall development and pushed our country many years backwards. A seemingly irreversible process had begun: a brain drain, the collapse of institutions, the loss of qualified scientists, and the failure of their research activities. So, the creation of such an organization as the ISTC was absolutely necessary to overcome many difficulties in science at that time and we are all very grateful to the founding countries for this timely and necessary initiative.

Since the earliest days of the ISTC, Armenian scientists became involved in the activities of the

Center, and as a result, the experts were able to work in their chosen fields and continue their work started prior. They began to receive grants; hence, they were able to continue their work. With the support of the ISTC, the Armenian scientists were able to establish links with leading European centers and to restore the broken relationship between specialists of the CIS. There are new collaborations, and as a result, numerous joint projects.

There is virtually no area of modern science without the involvement of the ISTC. Today most of the attention is on the environment, bio-security, biotechnology and life sciences. With the support of ISTC, many of our institutions partially updated their scientific equipment with the latest devices, and their employees have the opportunity to travel abroad to meet with partners and to participate in international scientific forums.

ISTC has also contributed to getting our scientists knowledge in the commercialization of the results of their scientific research and to learn how to create a commercially attractive product that helps them achieve economic independence.

I would also like to emphasize that almost all the institutions of NAS RA were actively involved in the implementation of programs by the ISTC. From a total amount of 144 projects represented by the Institutes of NAS, 56 have received funding totaling of \$8.25 mln USD and 4.77 mln Euro.

Needless to say, huge efforts were made toward transforming "weapons making" scientists back into civilian and peaceful paths. With the support of the ISTC, hundreds of Armenian scientists were able to stay afloat and move on. And finally, I would like to mention the role of the Armenian Branch Office of ISTC: Due to their well-coordinated work, the realization of objectives of our scientists through ISTC programs was much easier.

For their noble work I'm sure the ISTC deserves our highest praise and gratitude.

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

Statement of the Chairman of the State Committee of Science of Ministry of Education and Science of Armenia

Science and technology are considered to be key factors contributing to achieving sustainable development. To become more competitive and play a leading role globally it is very important to cross the borders and promote international collaborations, which can range from individual scientist to scientist interactions to large team based projects and programs between countries.

The Armenian Branch Office of the International Science and Technology Center has done a huge work during the past 15 years to achieve the objectives of ISTC and perform its tasks. Thanks to the support of Armenian Branch Office of ISTC a number of plans on sustainable development of several research centers of Armenia have been developed, many of Armenian scientists have been able to realize their scientific ideas at the hard times for the country. A number of important activities to support young scientists, such as various trainings and consulting events, have been carried out.

Nowadays, we have a wide international cooperation in the field of science and advanced technologies, large-scale innovation projects, and a prospect of their future development, which puts new challenges. In the Strategies of the Development of Science in Armenia (2011 – 2020), adopted by the resolution of the Government of RA, the priorities for the development of science in Armenia are well defined, and among them is the integration into global scientific and educational community. In this regard, it is necessary to find new forms of cooperation with the participating countries of ISTC and funding parties, including options of co-funding projects. This is important for both Armenia and other participating countries of ISTC.

To my opinion, one of the main problems, which is equally important and actual for all Parties of ISTC Agreement nowadays, is the joining of efforts and resources for the creation of a common system of technology transfer, including the funding of projects directed to the development of innovation infrastructure and the development of principles for the formation and functioning of venture foundations as the commercialization of research results is a necessary component for the existence of science under the



current conditions.

The Government of Armenia and the State Committee of Science of MES RA will make every effort to extend the fruitful cooperation with the ISTC and with its Armenian Branch Office - for solving contemporary problems in various fields of science and high technologies.

Prof. Samvel Haroutiunian

Chairman of the State Committee of Science
of Ministry of Education and Science
of Armenia



of existence and activity of the Armenian Branch Office. All these years we tried to make life and work of our scientists comfortable. In fact, a lot of good and useful job was done and in witness of it - always positive responses.

ABO staff members always felt the support of both supervisors and officials, supervising the ISTC activity in Armenia - the leadership of the National Academy of Sciences and State Committee of Science.

Taking the opportunity, I would like to express my gratitude to all those, who helped us in our tasks realization and assure, that we are ready to continue our work for the sake of development and consolidation of the Armenian science position.

Dr. Hamlet Navasardyan

Head of the ISTC Armenian Branch Office

Statement of the Head of the ISTC Armenian Branch Office

The implementation of the ISTC programs helped to overcome the problems Armenian scientists faced with. Many of them had to survive in the 90-ies. And if at the beginning scientists preferred to spend the project budget on their personal grants, in our days the preference is given to the purchasing of the modern equipment and materials. And it is naturally enough – one cannot do international level science without it. With the help of the ISTC such a re-equipment became real.

The participation in the ISTC programs gave to our scientists the possibility to direct their knowledge towards the solution of the regional problems - of bio-safety and bio-security, environmental protection, utilization of nuclear wastes and others prior for the Armenian science spheres.

Thanks to the ISTC Mobility Program hundreds of Armenian scientists could visit foreign countries and meet with experts from different countries at the International scientific forums.

The present day situation requests, that scientists can not only develop and create, but implement and present to the market the results of their scientific investigations. To simplify the process of acquiring commercialization knowledge, the ISTC created the Resource Center in Yerevan.

These days we celebrate our little jubilee - 15 years



Scientific and Production Center "Armbiotechnology" NAS RA

The SPC "Armbiotechnology" has been actively involved in R&D and commercialization Programs for the past 15 years initiated by the ISTC. During mentioned period the regular and partner 9 ISTC Projects have been realized and dedicated to the different problems of modern biotechnology, microbiology and organic chemistry involving more than 50 percent well-qualified researchers, including weapon scientists.

Briefly, within the ISTC Project A-1868 the efficient technology for preparation of biofertilizer was developed. The manufactured biofertilizer samples were successfully tested on different plants under laboratory, hothouse and field conditions in the RA territory. This new technology entered into the list of prospective developments of the SPC "Armbiotechnology" NAS RA proposed for establishing business contacts aimed at the possible organization of production jointly with other interested parties both within the Republic and outside.

Within the ISTC Project A-683 the bacterial melanine (BM) preparation was tested on about 50 kinds of various plants and its high biological activity was shown. The preparation stimulates and intensifies the growth processes and development of vegetables (pepper, tomato, potatoes, chick-pea, bean, lentil, cucumber, muskmelon, watermelon, etc.), noticeably increases the harvest rate by 20-50% and resistance to abiotic factors of the medium. BM is actively used by some farms in Armenia.

The objective of the projects A-1247, A-1677 was to synthesize aliphatic, aromatic and heterocycle substituted (S)- or (R)- α -amino acids and di-, tri-, tetrapeptides, containing triazole, lactone and oxazole substitutes in the side-chain radical and to investigate their antibacterial, antiviral and antitumor properties

aimed at revealing potential pharmacologically active compounds. Later on the obtained results can be of commercial interest and will be used for organization of small-scale production of a new generation of heterocycle substituted non-protein (S)- and (R)- α -amino acids and small peptides containing fragments of heterocyclic amino acids aimed at their realization in the world market (Acros Organics BVBA, Belgium; Iris Biotech GmbH, Germany, etc.).

Besides R&D Projects, the Center within the ISTC Science Workshops and Seminars Program successfully organized and accomplished a range of International Scientific Conferences related to advanced biotechnology. The new Conference is devoted to the "Contribution of the Young Generation in the Development of Biotechnology", which will be held on October 1-4, 2013 dedicated to the 70th Anniversary of the NAS.

A special attention should be paid to the ISTC commercialization Project. Analysis of the international market demands and existing intellectual property in Armenia urged to set up a small-scale production line for optically active non-protein α -amino acids on the basis of the SPC "Armbiotechnology". To fulfill the commercial initiative, first of all 6 laboratories were repaired and the preparative technological line for production of non-protein α -amino acids was created. Necessary equipment was purchased ("Waters Alliance 2695" HPLC System, "EuroEA3000" Element CHNS-O analyzer). Certification of about 50 synthesized non-protein amino acids was performed. RA Patent №2181 A2 was received for an invention. Moreover, due to the implementation of the ISTC Projects results, nowadays the Center actively elaborates and sells customers a wide spectrum of optically active non-protein (R)- and (S)- α -amino acids having medicinal, pharmacological and PET-diagnosis significance (Acros Organics BVBA, Belgium; Iris Biotech GmbH, Germany; Bachem, Germany; "FNG Invest" Ltd, Latvia) and environment-favorable biofertilizers (Azotovite-1). The Center received valuable equipment and supplements, such as Fermentator 5m³; Fermentation System; Rotary Evaporator 10L; Microscope Leica DM500 trinocular; Temperature Volume Incubator type WIG-105; Automatic polarimeter PLRA-2B; GC "Varian" 3800, Biological Safety Cabinet "Esco"; etc. The scientists have published in a number of famous journals more than 130 manuscript, as well as the results were presented on 17 International scientific forums. The IPR of the competed research have been formulized in 4 Patents.





Institute of Chemical Physics NAS RA

Two ISTC projects: # A-192 "The influence of electron beam on the formation of binary and multicomponent hydrides with extreme properties" (1998-2000) and # A-1249 "Self-propagating high-temperature synthesis of hydrogen containing materials with maximum content of hydrogen" (2006-2008) were successfully implemented at the A.B. Nalbandyan Institute of Chemical Physics (IChPh) NAS RA. The projects performed in collaboration between the Laboratory of high-temperature synthesis and technologies of inorganic materials of the IChPh and Yerevan Physics Institute were devoted to combustion synthesis of hydrides of transition metals with extremal properties and high hydrogen content. These compounds are considered as perspective materials for modern engineering, in particular, for hydrogen storage applications.

Owing to these projects twelve specialists of IChPh had considerable opportunity to extend their knowledge and gain experience in a new and promising direction: hydrogen materials science, as well as to

establish close scientific collaboration with partners from Canada, France and Russia. Besides, participants of these projects had a good chance to solve many social problems.

During implementation of these ISTC projects experts of the mentioned Laboratory have published about 60 scientific articles, basically in foreign peer-reviewed journals (International Journal of Hydrogen Energy, Solid State Phenomena, Canadian Journal of Physics, Chemical Physics Reports, Journal of Alloys and Compounds, etc.). In 2008 two patents of the RA (No.2299 и No.2308) were obtained related to methods of production of transition metal hydrides.

Essentially all specialists involved in the projects had an opportunity to participate in international conferences, seminars and workshops in many countries (Australia, Canada, France, Russia, Greece, Ukraine, Iceland) with plenary lectures, oral or poster presentations and reports. During these meetings they also have discussed many scientific and organizational issues associated with the successful implementation of the projects.

The results obtained in the framework of these projects led to developing a number of progressive and original technologies in the field of materials science of multicomponent alloys and their hydrides. The developed technologies may be classified as Hi-Tech. For example, based on joint investigations with the public corporation "VNIIT" (Russia) it is planned to develop an innovation technology for obtaining compact hafnium and its alloys used in the production of advanced absorbing materials for nuclear industry, as well as other functional materials from the electrolytic powder and shavings of hafnium, obtained during recirculation of the metal production.



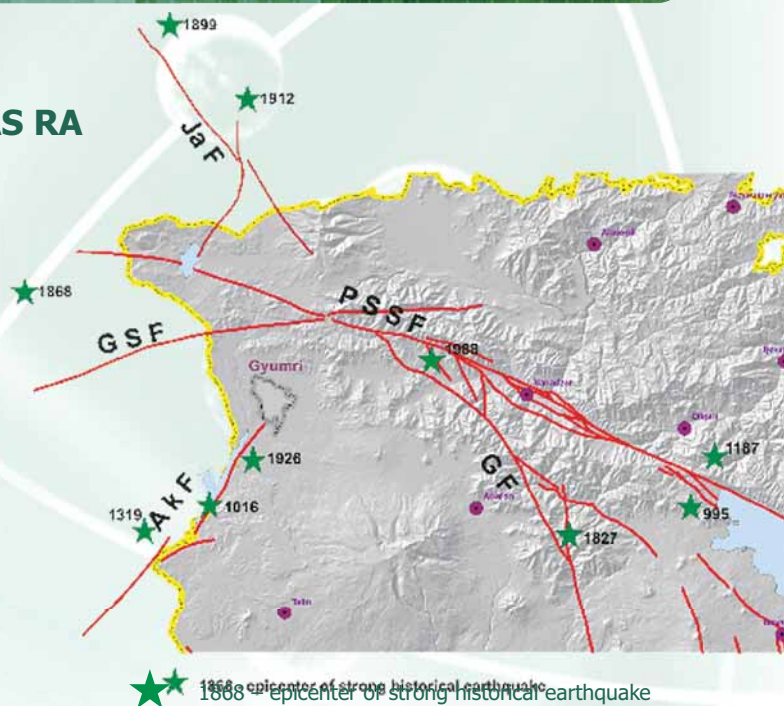
Institute of Geological Sciences NAS RA

During the last 10 years, the Institute of Geological Sciences of the NAS of RA has completed several projects funded by the ISTC. The projects were inter-related and served the single main goal of mitigating the risk posed by strong earthquakes in the Southern Caucasus. All ISTC projects included participants from Armenia, Georgia and Azerbaijan, and some of them involved also Central Asia countries.

The infrastructure of Armenia is extremely vulnerable to seismic hazards. For the 20th century, three strong earthquakes in this country led to the death of more than 30,000 people. Over the last 30 years, 11 catastrophic earthquakes in the Middle East region killed 125,000 people. In the period from 1948 till 1995, 9 strong earthquakes in the USSR occurred in the areas, where earthquakes had been estimated to determine seismic hazard rates, which appeared much lower than the actual ones. Eventually, this low quality of hazard assessment has been a significant contributing factor in the large number of casualties.

How is it possible to reduce the risk of strong earthquakes? Economically developed and rich countries resolve this problem through insuring high-quality earthquake-resistant construction, as not earthquakes themselves are killing, but rather the damage of bad quality buildings built in areas with improperly estimated seismic hazard. Armenia and other Southern Caucasus countries have not yet developed capabilities to apply protection through good-quality and seismically resistant construction. Under these circumstances, an adequate risk reduction strategy should primarily base on correct assessment of the actual rate of seismic risk and on a system of trans-border collection and exchange of seismic information. Geological structures that generate strong earthquakes do not recognize national borders; hence, international cooperation may appear a way to help countries at risk to assess the seismic hazard rate more adequately.

The implementation of the ISTC projects in collaboration with the US, French, and Greek colleagues has resulted in the first probabilistic assessment of seismic hazard for the South Caucasus area. The result provided by this assessment was drastically different of the underestimated assessments adopted in the USSR and laid the foundation for sustainable development of earthquake engineering in future. Another important outcome of the ISTC projects is the creation of a unified



earthquake study information system within the Southern Caucasus. The modern GPS receivers obtained and installed in the course of realization of the ISTC projects created the framework for establishing seismic and geodynamic observation networks in Armenia, Georgia and Azerbaijan. Moreover, properly equipped scientific task-force groups were established in each of the mentioned countries and are ready to respond any earthquake that occurs or is in preparation. In Armenia and Georgia, field trials and workshops were held to train the task-force groups in operations required immediately after a strong earthquake occurring in the region.

However, we believe that the most important achievement of the ISTC projects is the international integration and restoration of scientific links and human relationship with our colleagues in the Southern Caucasus. The ISTC projects launched, and served as solid basis for, the development of this on-going integration, which, to our strong belief, will continue in future.



Institute of Molecular Biology NAS RA

Institute of Molecular Biology (IMB) was founded in 1966 to encourage development of molecular biology in Armenia. Research conducted in IMB in the XX century had a significant input in the elucidation of structure & function of biomolecules, cells, & cellular organelles. Current research activities of IMB are focused on investigation of regulatory mechanisms of cell activity and its alterations in a number of pathologic conditions. Output of these studies is elucidation of molecular and cellular etiopathomechanisms of many multifactorial diseases, identification of vital molecular biomarkers and therapeutic targets of diseases and new physiologically active compounds of potential therapeutic significance.

ISTC has an important contribution into scientific achievements, establishment of the international collaboration, and development of R&D infrastructure in IMB. Beginning from 2000 the IMB researchers implemented 78 R&D projects supported by national & international grants; among those eight projects were supported by ISTC.

The total R&D production of the IMB in the last seven years includes: Books/chapters – 22, Articles in international journals – 176, Articles in national journals – 128, Proceedings of overseas scientific meetings – 144, Proceedings of scientific meetings in Armenia – 174, Patents - 12.

A sufficient part of this production has been developed during realization of the ISTC projects. The results obtained in the framework of these projects have important fundamental and practical implications. Thus, during the implementation of the project «Novel radiomodifying and antitumor agents: research and development of new radiomodifying and antitumor

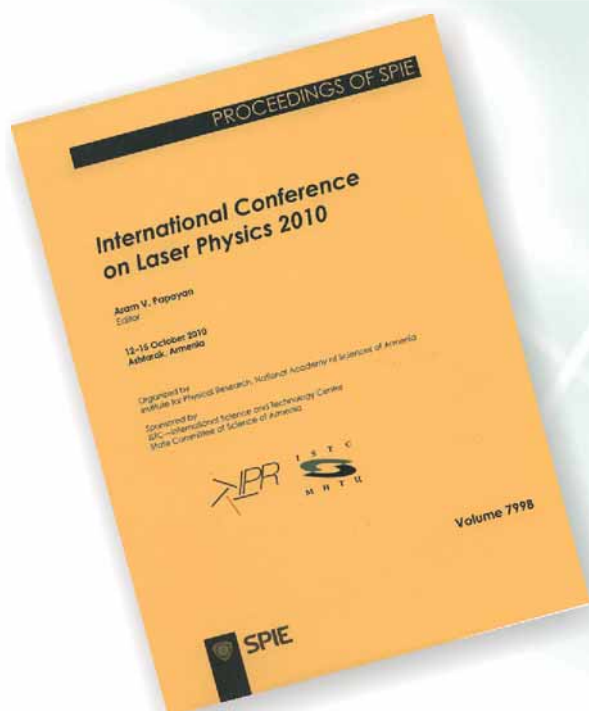
organometallic copper complexes», new organometallic copper complexes with radioprotective and antitumor activities have been synthesized and approved in animal and cell culture models. While implementing the project «Molecular genetics monitoring of blood-sucking flies as basis for biological control of vectors of dangerous infectious diseases and precautions against the acts of biological terrorism», new innovative approaches enabling early detection and prevention of spreading of human infectious disorders have been developed. In the framework of the «Development of regional communication network in Armenia» project a computer class equipped with powerful and modern computers was established in IMB. Here all scientists of the institute are provided with an opportunity for free-of-charge usage of a fiber-optics based Internet connection with highly efficient bandwidth.

Another innovative project implemented in IMB is «The role of intestinal microflora in the pathogenesis of Familial Mediterranean Fever (FMF)». The main goal of this project was to understand the role of gut bacteria in the etiopathogenesis of FMF, the most prevalent hereditary periodic autoinflammatory fever worldwide. A complex valuable approach to the problem including genotyping of patients with FMF in parallel with genotyping of their intestinal bacteria has been designed. During the implementation of the project it was revealed that mutations in FMF gene result in specific redistribution of the main phylogenetic groups of gut bacteria and that the acute stage of this disease is characterized by dramatic reduction in titer and biodiversity of gut bacteria. The results obtained have created a serious fundamental background for development of new approaches of FMF treatment based upon dietary therapy.

The IMB is actively involved in the solution of problems related to environmental safety and protection. And here ISTC has its important contribution. Thus, implementing the ISTC project «Pollution level estimation of water reservoirs in Armenia based on the analysis of zooplankton. Regional monitoring and management» a complex monitoring of the natural water reservoirs and water ecosystems of Armenia was performed by IMB researchers. The main achievements of this study are elaboration of the principles for monitoring of small rivers, methodological recommendations for preservation of water ecosystems, and compilation of ecological passports for rivers Hrazdan, Gavaraget, Argichi and Masrik.

The ongoing ISTC project «Development of zinc oxide composites of antitumor drugs and antitumor compounds with high antitumor activity and low toxicity» is focused on the formation of zinc oxide composites of antitumor drugs in the form of coatings, composite films and gels possessing high antitumor activity.

IMB researchers are actively participating in ISTC-organized conferences and workshops in Armenia and abroad. And at the ISTC Seminar (Yerevan, 2012), PhD student of IMB Hovakim Zakaryan received the First prize.



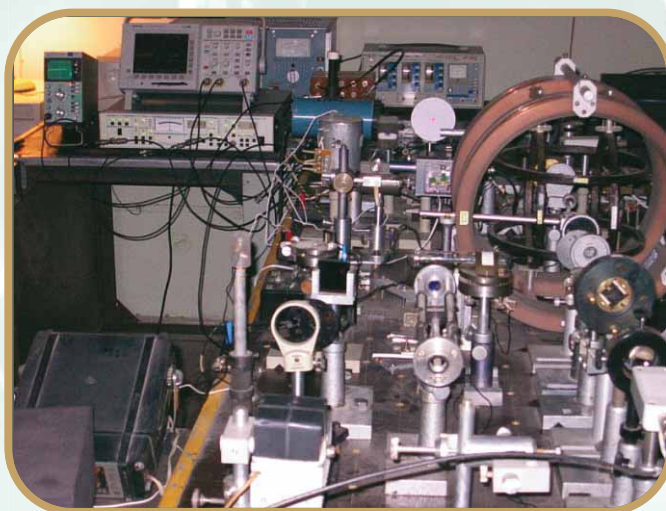
Institute for Physical Research NAS RA

12 regular ISTC projects have been funded, implemented and completed at the Institute (7 as leading and 5 as supporting organization). Besides, the Institute has benefited from the special programs of ISTC: IPR and Asset Inventory and Analysis; Communication Support; Conference, Science Workshops and Seminars Program Support (3 conferences). Over 60 researchers of the Institute staff have been involved in the ISTC projects as participants.

The most valuable and significant equipment acquired from the projects includes: communication and networking equipment for the whole Institute; cooling tower for crystal growth equipment; lasers and laser components; laser beam profiler; digital storage oscilloscopes; lock-in amplifier; DAQ devices; power supplies, process control units; electronic weighing machines; welding machine; computers and office equipment, etc.

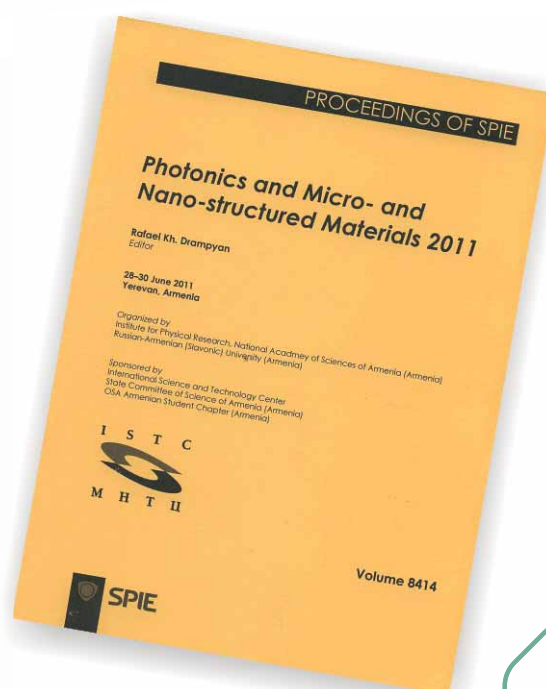
70 research articles (co)authored by the Institute's scientists have been published in refereed journals and proceedings books based on the results of the ISTC projects. These results have been reported at 30 international conferences and workshops.

The results achieved in the course of implementation of ISTC projects promoted development of



new types of scintillation crystals for nuclear medicine and high energy calorimetry, as well as significant advance in the fields of applied laser physics and quantum information. The ISTC projects initiated development of new applied direction, photonics of micro- and nano-structured materials, in the Institute. These achievements stimulated partner-level international innovative collaboration.

Wide involvement in ISTC projects and programs had an overall impact on Institute's activity (in particular, significant improvement of proposal writing, communication, dissemination and collaboration capabilities; introducing assessment and evaluation, IP management, and technology transfer policy).





Yerevan Physics Institute - A.I. Alikhanyan National Science Laboratory Foundation.

Yerevan Physics Institute (YerPhI) was the first institution in Armenia receiving research grant from ISTC in 1995. The first grant follows by 33 others (total funds allocated are about M10\$) provided YerPhI scientists with modern equipment, grants, travel and training support. More than 400 scientists, engineers and technicians of YerPhI have been engaged in these projects and it helped not only to survive very difficult years when government support to fundamental science was minimal, but to perform up-to-date research in high energy physics and astrophysics, radiation technologies, material science and so on. YerPhI started new scientific fields like Space Weather and High energy phenomena in atmosphere where it became one of world leaders due to continuous support of YerPhI's Cosmic Ray Division projects.

YerPhI scientists published more than 200 articles in high rank journals, presented more than 150 reports on international forums, hold tens of workshops in Armenia supported by ISTC. By internationally accepted science-metric parameters for characterizing the institution's scientific outcome YerPhI can be considered one of the best in Armenia.

The list of solved scientific problems is very long; the most important are as follows:

- Development and adoption of radiation technologies on the base of the Radiation-Physical Center of YerPhI.
- Development of a prototype detector system for space weather monitoring and forecasting worldwide network.
- Development and construction a cosmic space simulator installation to investigate the influence of space factors on the properties of semi-conductors (currently one of the most widely applied materials in the Space technology), high temperature superconductors (HTS).
- Space weather research and forecasting by networks of hybrid particle detectors measuring neutral and charged fluxes.
- Development of medicine intended isotopes production methods on the basis of accelerator facility of Yerevan Physics Institute.
- Development of highly effective filtering systems on the basis of a super-thin basalt fiber for radioactive aerosols purification and creation of a work cycle for filters manufacturing with the purpose of their operation at the Nuclear Power Plants.
- Development of Armenian-Georgian Grid infrastructure and applications in the fields of high energy physics, astrophysics and quantum physics.
- Research and development of vibrating wire sensors for accelerators beams diagnostics and thermogravimetry.
- Diffusive mechanism of radiation in random media: application to particle detection and astrophysics. The radiation that originates at the passage of relativistic charged particles through a dielectric random inhomogeneous medium was studied.

In summary, the ISTC assistance led to keeping high-level scientific atmosphere in YerPhI, developing new scientific directions and supporting commercialization possibilities of institute, thereby highly increasing its potential. Armenian government used this potential and turned institute to A.Alikhanyan National Laboratory and doubled its budget. Therefore, the ISTC has huge contribution to keep alive YerPhI and to prepare it to coming challenges of fast changing world.

C J S Company "ErPlastpolymer"

Under the conditions of the unstable financing of the scientific research among many burning problems the Institute faced in the middle of the 90th, one should mark out the following:

- lack or complete absence of budget financing
- brain drain and lack of young scientists in the scientific sphere
- rupture in the innovation process
- low patent activity etc.

With the creation of the ISTC and ABO ISTC formation in 1998, the birth to the principally new and effective for the Armenian science organizational form was given.

During the rather short period of the ISTC existence, scientists of the Institute submitted for the ISTC consideration 23 projects, 10 of which were financed. The financial support rendered to the institute projects by the International organization confirmed the high scientific level of the submitted on the traditional themes for the Institute projects, the final results of which were new financial knowledge in the sphere of chemistry on polymers. Thus, with the ISTC support during last 15 years the huge volume of the scientific research on obtaining polymers with new targeted characteristics, allowing to solve several actual tasks, was fulfilled in the spheres of:

- burns, radiation and cardio medicine
- increasing of the ecological safety of the exploitation and withdrawal of capacities of the existing Nuclear Power Plants
- agriculture, in particularly, protection of fruit orchards from pests and effective restoration of forests

Special emphasis should be made on obtaining the financial support on two projects, relating to the soils decontamination and rehabilitation on the territory of the Fukusima NPP catastrophe, the full-scale scientific investigations of which started in june-july 2013.

In the frames of the program on pre-commercialization request the field tests of a new polymer preparation in various agro-climatic zones of Armenia and State registration of a new polymer preparation were realized.

The support of the investigations on 10 projects, allowed to involve in the research process 230-250 scientists of the Institute, 120-150 of which are the scientific staff, to form small research groups, render targeted help to the most qualified members of the staff, help to raise their scientific qualification, as well as train scientific leaders, clearly defining scientific ideas and able to select staff to realize projects and manage them.

With the ISTC financial support 3 International conferences were held, scientists of the Institute took part in more than 50 authoritative international symposiums and conferences. The members of the Institute actively participated in the Workshops in London (2000), Milan (2001), Paris (2002) and Amsterdam (2003).

Also, it should be noted, that as the result of the 10 projects realization, 45 articles were published and 5 patents were obtained. As for the material and technical basis support, the ISTC helped to fit out the Institute with the office equipment and to purchase sets of viscometers to define physicochemical characteristics of the polymer solutions and Contact Angle Meter CAM 101 to hold investigations on the highest modern level.



Joint Projects

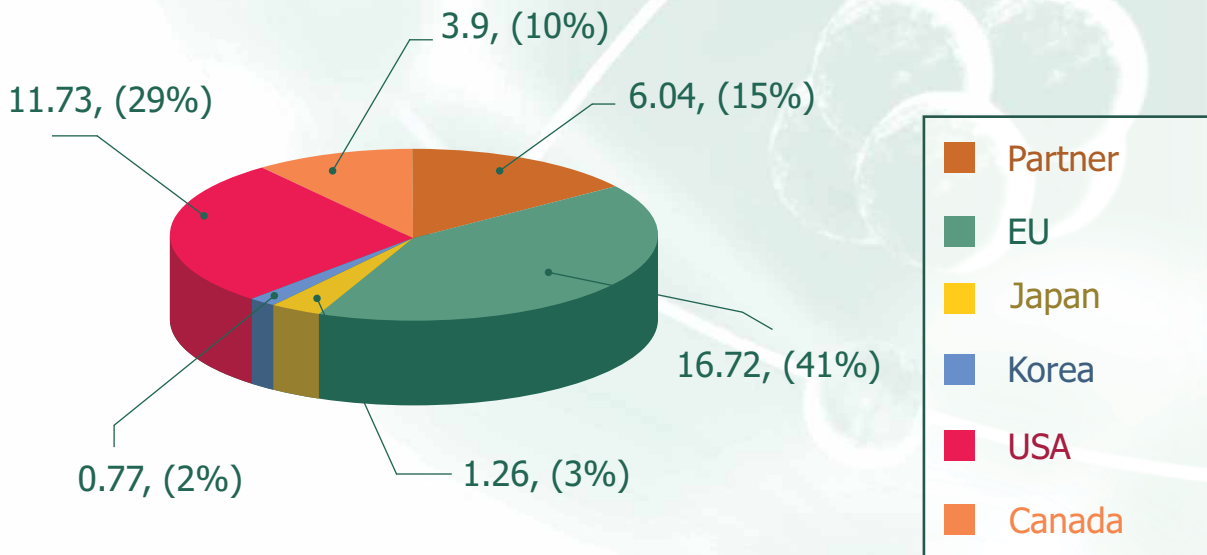
Submitted by CIS Countries Institutes

Country	Project No	Title of Project	Armenian Support Institute
Kazakhstan / Armenia	K-2050	Stabilization of Photovoltaic Cells	State Engineering University of Armenia
Russia / Armenia	2780	Radiotracers for Positron Emission Tomography	Yerevan State University
Russia / Armenia / Kazakhstan/Kyrgyzstan	3826	Genetic Polymorphism of HIV-1	Armenian National AIDS Prevention Center
Tajikistan / Armenia / Kyrgyzstan	T-1954	Great Silk Road as a Target for Biological Threats	Armenian National Institute of Health

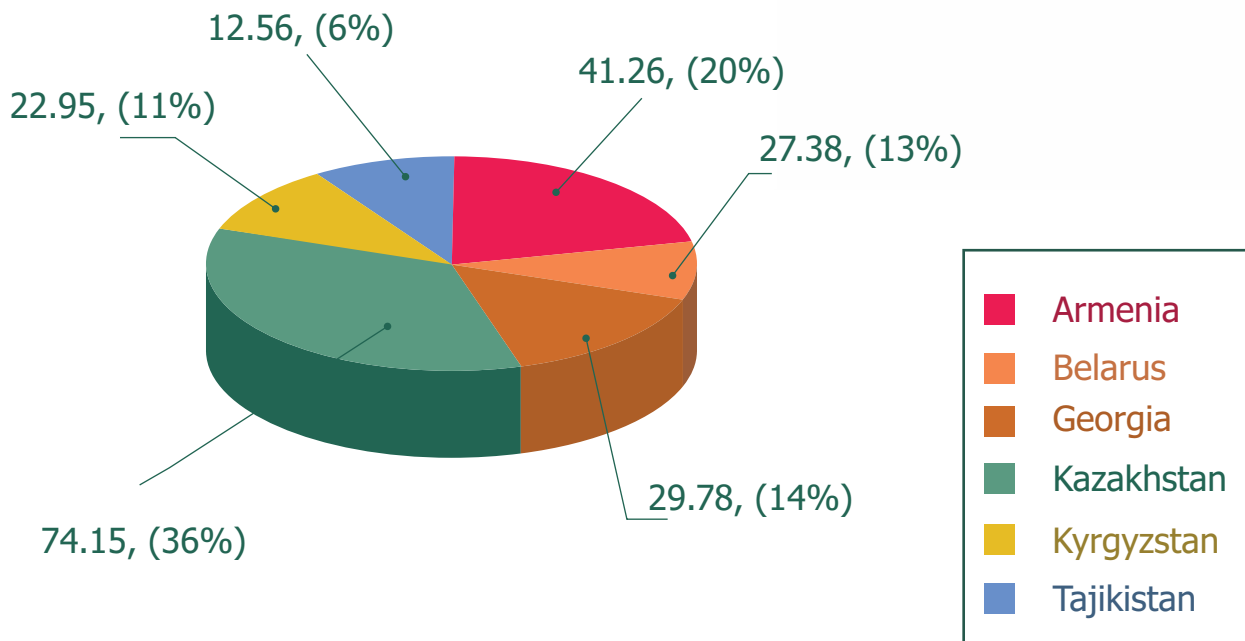
Submitted by Armenian Institutes

Country	Project No	Title of Project	Armenian Support Institute
Armenia / Georgia	A-651	Caucasian Siesmic Information System	National Survey for Seismic Protection of RA
Armenia / Georgia	A-1606	Armenian-Georgian Grid for Physics	Information and Automation Problems Institute
Armenia / Georgia	A-998	National Tuberculosis Reform Program, Republic of Armenia	Armenian National Institute of Health
Armenia / Georgia	A-823	ARMCLUSTER	Information and Automation Problems Institute
Armenia / Georgia	A-1951	Spectropolarimeter for Medical Use	Yerevan State University
Armenia / Georgia / Kyrgyzstan/ Tajikistan	A-1418	Natural Hazards in the Southern Caucasus and Central Asia	Scientific Foundation "International Center Garni"
Armenia/ Russia	A-1512	Beam-Plasma Interaction	Institute of Radiophysics and Electronics
Armenia/ Russia	A-125	Armenian Center of Radiation Therapy	Yerevan Physics Institute
Armenia/ Russia	A-1269	Continuous Mineral Fibers and Composites	NPF "Stone & Silicates"
Armenia/ Russia	A-1095	Quantum Information Storage	Institute for Physical Research
Armenia/ Russia	A-540	Thermal Shock Resisting Corundum Ceramics	Scientific Production Enterprise of Material Science
Armenia/ Russia	A-356	Asymmetric Synthesis of Non-Proteinogenic Amino-Acids	Yerevan State University
Armenia/ Russia	A-1368	Radiation Monitoring at the Armenian NPP	Yerevan State University
Armenia/ Russia	A-1484	Light Valves	Yerevan State University

Armenian ISTC Projects Funding by Source (mln. USD)

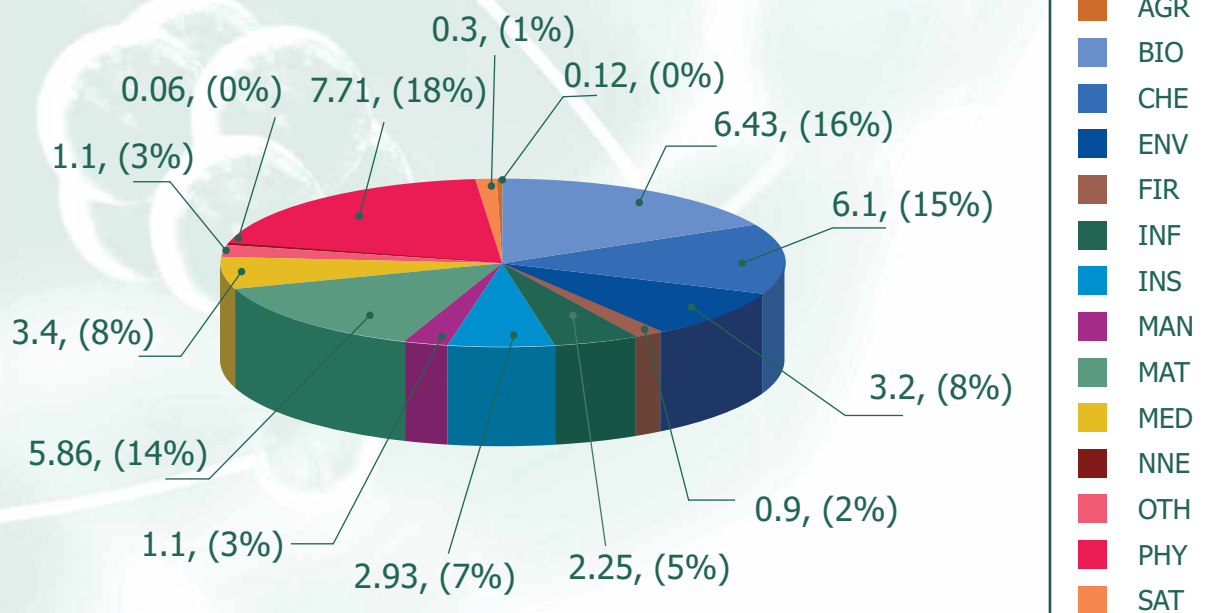


Total Projects Funding by Beneficiary Country (mln. USD) (CIS and Georgia)



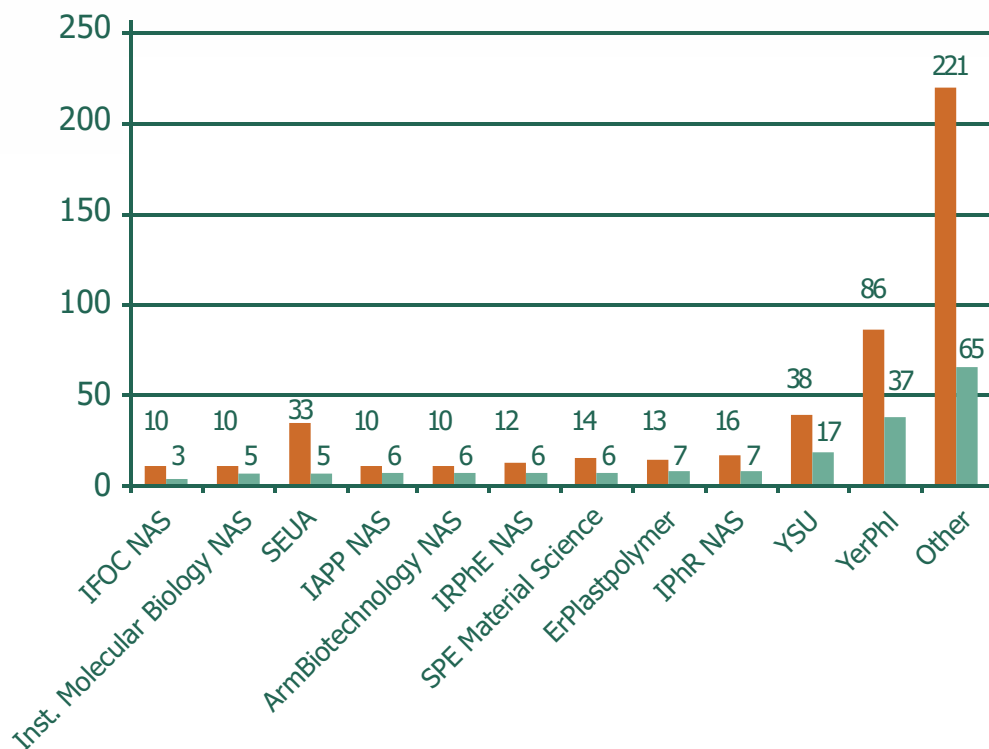
Total Funding to Russian Institutes - \$ 667.663 mln. USD

Armenian Projects Funding by Technology Area (mln. USD)



AGR –Agriculture, **BIO**-Biotechnology and Life, **CHE**-Chemistry, **ENV**-Environment, **FIR**-Fission Reactors, **INF**-Information and Communication, **INS**-Instrumentation, **MAN**-Manufacturing Technology, **MAT**-Materials, **MED**-Medicine, **NNE**-Non Nuclear Energy, **OTH**-Other, **PHY**-Physics, **SAT**-Space,aircraft and surface transportation

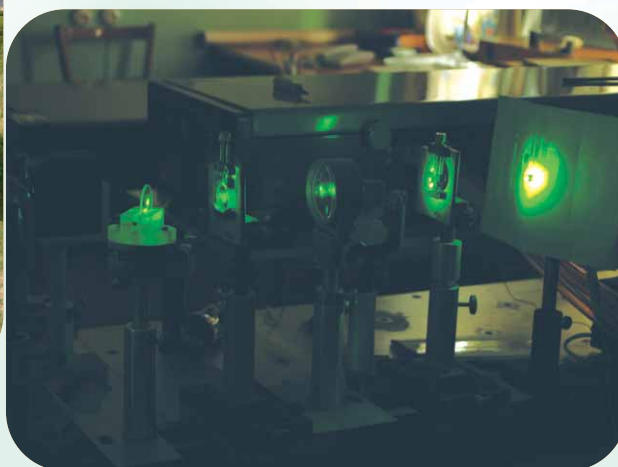
Projects Submitted and Financed by Armenian Institutes and Scientific Organizations





ISTC Armenian Branch Office -15 Years







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