ISTC EU Promotion Program

Albert Gozal

Malaga, March 24, 2010

ISTC

- Founded in 1992 by the governments of the EU, Japan, USA and Russia; operations began in 1994; Later, Norway, S. Korea and Canada joined as Funding Parties.
- Today, ISTC comprises 39 nations engaged in unique cooperative technology development, and as the status of a diplomatic mission.
  - ISTC is the largest sponsor of R&D in Russia and CIS supporting former scientists of weapons of mass destruction and scientific community.
    - ISTC is headquartered in Moscow and has offices in Armenia, Belarus, Georgia, Kazakhstan, Kirgyzstan and Tajikistan.

ISTC Project Location

www.istc.ru

Over 15 Years of Accomplishment

Service Oriented

Transparent

R&D Network

Unique

www.istc.ru

Service Oriented

A wide range of services focused on our Partner and Scientist success:

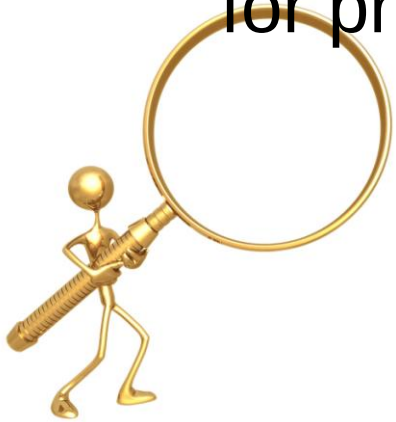
- Technology Matchmaking
- Project Management
- Sustainability Support Program
- Competency Building
- Event and Workshop Management
- Travel and Logistical Support.

R&D Network

- Network of more than 900 R&D Institutes and research centers in Russia and CIS, more than 70,000 talented scientists
- More than 2600 completed projects with the value of more than USD $850 Million
- Ready 2700 project proposals.

Transparent

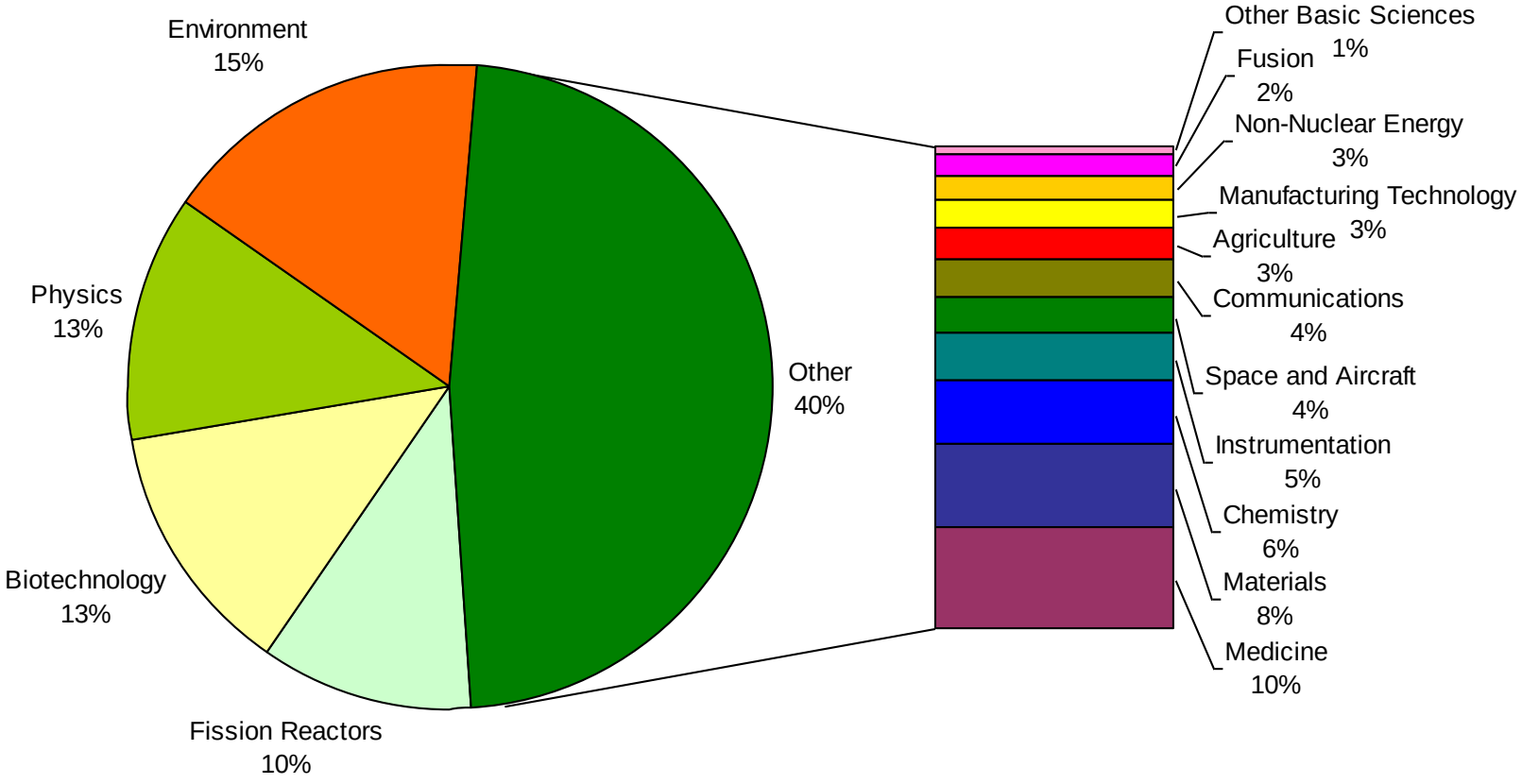
- ISTC activities are audited regularly according to international standards by companies such as Deloitte Touche and Pricewaterhouse Coopers
- We guarantee transparent financial operations to ensure full accountability for project funds



An Impressive Record
(As of December 2009)

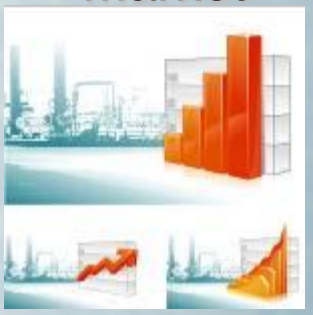
- Funding Party contribution is over $850M including partner funds of $250M
- 2650 Projects, including 685 Partner Projects
- Located at over 900 CIS research institutes with over 70000 specialists involved in ISTC projects.

ISTC Technology Area



Every Step of the Way!

Technology Search → R&D Project Facilitators → Bring a product to market



Organizing Joint Workshops – in Russia / CIS and Abroad

www.istc.ru

ISTC Core Programs and Services

- ***Regular Project Program***
- ***Partner Project Program***
- *Commercialization Support Program*
- *Patenting Program*
- *Competence Building Program*
- ***Workshops and Scientific Seminars***
- ***Travel Grants***
- *Communication Support Program*
- ***Partner Promotion Program***

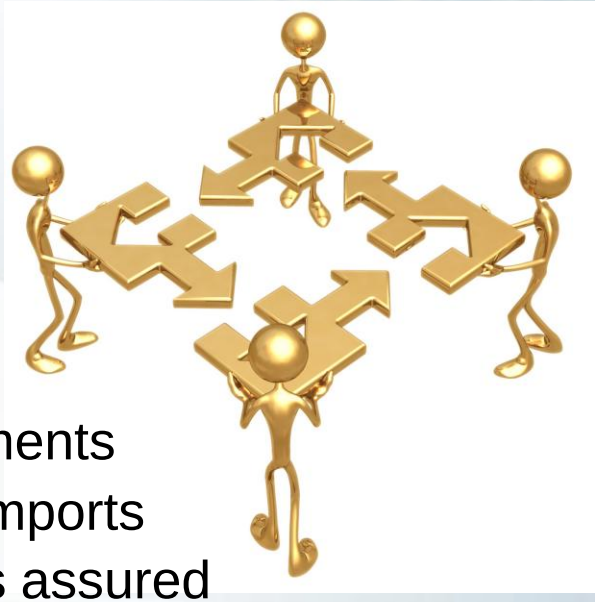
Advantages of Partners

Professional Project Management

Cross-Functional Bilingual Teams
On-site monitoring and audits
Intellectual Property Rights support

Partnership with top scientists

From priority institutes and closed cities in Russia and CIS



Low Cost R&D

Direct tax-free grant payments
Customs- and duty-free imports
Complete control of funds assured

We save money and time to our Partners

You can save operational and transaction costs by

30-35%

Benefits include:

- No income tax grant payment directly to scientist
- Free of equipment import tax
- No extra dedicated Project Manager in your company
- Set overhead for the institutes
- Saves time for regular project monitoring!

We have over 400 partners

and 360 more…

TOXICOLOGICAL AND MEDICAL-HYGIENIC ASPECTS OF NANOPRODUCTS MANUFACTURING AND USAGE

Boris Filatov (RIHTOP)

Research Institute of Hygiene, Toxicology and Occupational Pathology,Volgograd, Russia

- Au nanoparticles study
- 5 nm particle size
- Rats and mice as test animals
- Intraperitoneal and dermal routes of administration
- Hacker’s method for Au NPs imaging
- Acid phosphatase content in tissues by Gomori’s method
- Morphometric study of histochemical products using PhotoM 1.21 program

- Male white mice injected parenterally with Au
- nanoparticles for two times
- The greatest number of particles was found in
- spleen tissue (in a cell layer between red and white
- pulps)
- In mouse liver Au nanoparticles were taken up
- primarily by reticuloendothelial, or Kupffer, cells
- No traces of NPs in brain and the neural tissue
- proper as particles deposited in brain lining
- Kidney and testis tissues were void of Au NPs

ZINC NANOPARTICLES TOXICITY AND BIOLOGICAL PROPERTIES

Skalny A.V., Glushchenko N.N

Institute of Toxicology FMBA,St.Petersburg, Russia

Institute for energetic problems in chemical physics RAS, Moscow, Russia

Toxicity of zinc nanoparticles:

MPD (maximum permissible dose), LD50, LD100. It has been shown that in the range of doses 0.05-100 mg/kg zinc nanoparticles exert biotic action i.e. accelerate metabolic processes, in the range of doses 100-450 mg/kg there's a safety zone, doses more than 450 mg/kg are toxic ones.

LD50 of zinc sulfate is 28 times lower comparing with LD50 of zinc nanoparticles. It has also been shown that the introduction of zinc nanoparticles reduces voluntary alcohol use and reduces by 40% the animal mortality after alcohol intoxication. The mechanism of protecting action of zinc nanoparticles has been studied.

Assessment of genotoxic effect of nanomaterials

L.P.Sycheva, Y.A.Revazova, V.S.Zhurkov

A.N. Sysin Research Institute of Human Ecology and Environmental Health of Russian Academy of Medical Science, Moscow

NM are characterized by high permeability in bodies, organs, tissues and cells; an induction of free radicals, including active forms of oxygen and nitrogen; damage of cell structure; ability of some NM to penetrate through karyolemma to nucleus; conjugation with DNA; structure of some NM including atoms of chemicals, possessing cancerogenic action, for example, cadmium or arsenic; similarity in a structure of some NM with asbestos fibers which are genotoxic and cancerogenic.

Ability of NM to induce DNA-damage, chromosomal aberrations, micronuclei, aneuploidy. Genotoxic actions of NM have been recently revealed: ultrathin particles of titan dioxide (<100 nanometers in diameter), caused fibrosis and a cancer of a lung in rats. The basis of a system for estimation of genetic safety of NM can be a standard approach to an estimation of mutagen properties of the chemical compounds.

Contacts

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