



MIPT AT A GLANCE



MIPT Facts






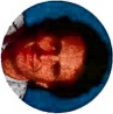






Rankings

#48
THE Physics
#1 in Russia

#67
THE Computer Science
#2 in Russia

#42
QS Physics & Astronomy
#2 In Russia

Alumni

- | | | | |
|--|---|--|--|
|  | Konstantin Novoselov
Nobel laureate |  | Alexander Kaleri
Pilot astronaut, Hero of the Russian Federation |
|  | Andrei Geim
Nobel laureate |  | Alexander Polyakov
Theoretical physicist, Lars Onsager Prize winner |
|  | Alexei Kitaev
Physicist, Fundamental Physics Prize winner |  | Valentin Gapontsev
Founder and CEO, IPG Photonics (MCAP = 13.9 bln \$) |
|  | Viatcheslav Mukhanov
Astrophysicist, Planck Medal winner |  | Ratmir Timashev
Founder and CEO, Veeam Software (MCAP = 4.7 bln \$) |
|  | Rashid Sunyaev
Heineman Prize winner, Director of Max Planck Institute for Astrophysics |  | David Yan
Founder and Director of the board, ABBYY (MCAP = 500 mln \$) |

Numbers

Founded in **1951**



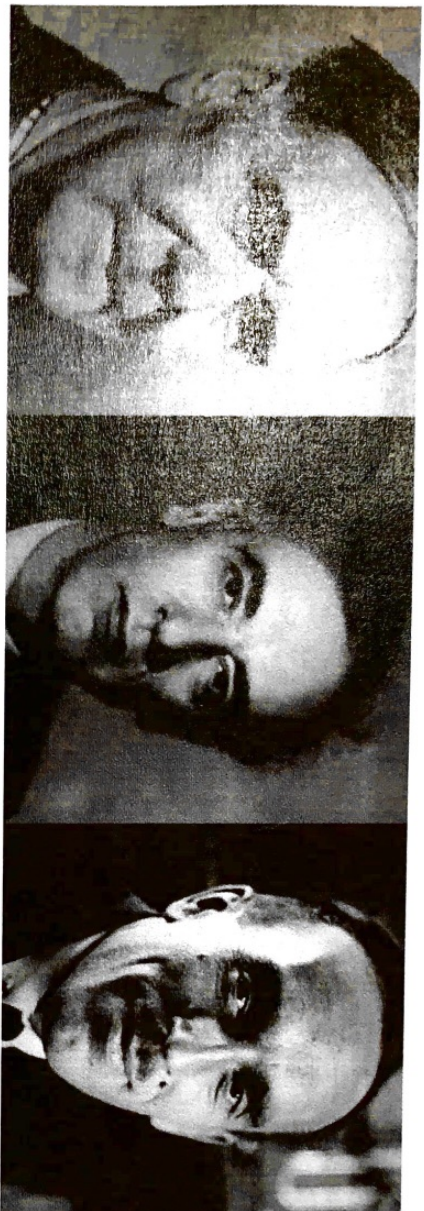
Nobel laureates among professors and alumni

80 Labs on campus

7132

Students

Phystech system



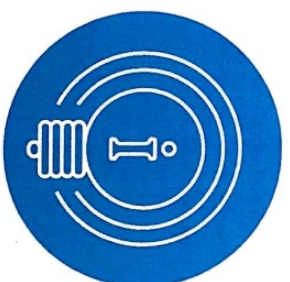
The Phystech System was formulated by Nobel laureates Petr Kapitsa, Lev Landau, and Nikolay Semyonov:



selecting budding scholars



leading researchers coaching the next generation of scientists



taking an individual approach to boost creativity



establishing the country's best labs to allow constructive technological research.

MIPT Schools



School of Radio Engineering and Computer Technology

Major fields:

- Telecommunications & Wireless Networks
- Radiophysics & Radar Engineering
- CPU Architectures & Design of Advanced Microprocessors



School of Aerospace Research and Technology

Major fields:

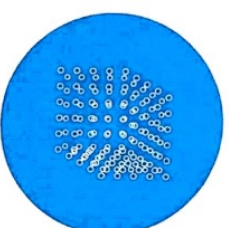
- Space Technology
- Aviation Technology
- Earth & Deep Space Research



School of Applied Mathematics and Informatics

Major fields:

- Artificial Intelligence
- Big Data
- Mathematical Modelling



School of Fundamental and Applied Physics

Major fields:

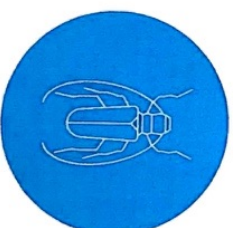
- Particle Physics & Cosmology
- Physics of Nanostructures & Condensed Matter
- Quantum Physics



School of Electronics, Photonics and Molecular Physics

Major fields:

- 2D materials
- Nanoelectronics & Quantum Data Processing
- Chemical Physics & Molecular Electronics



School of Biological and Medical Physics

Major fields:

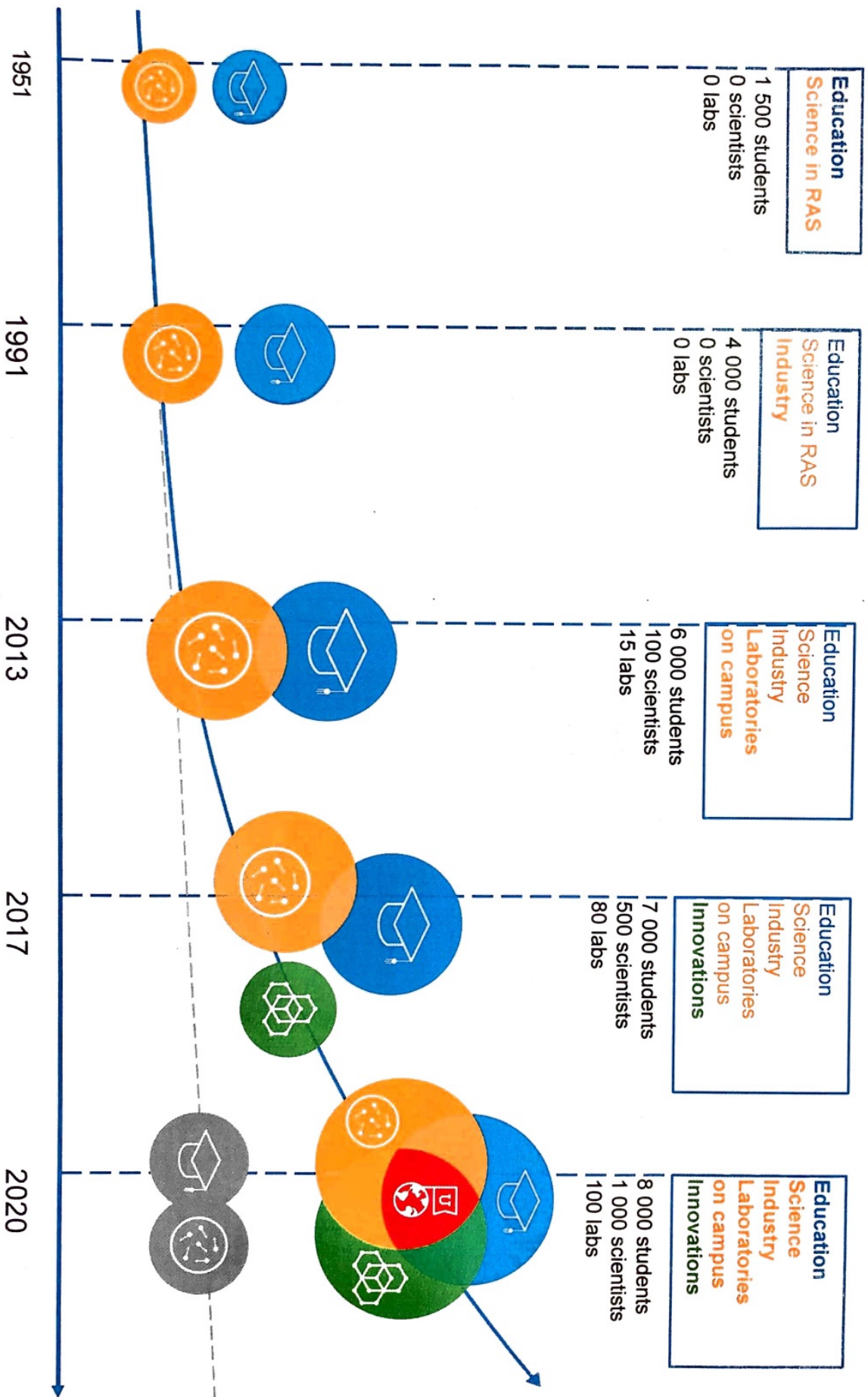
- Bioinformatics
- Active Ageing & Precision Medicine
- Medical Engineering & Diagnostic Technologies

Benchmark Comparison



THE Physical Sciences, ranking	26	16	89	48	5	2	23
Academic reputation in Physics (THE), score	78.3	71.5	41.7	77.7	87.8	93.6	64.7
Number of students	3 126	9 750	9 327	7 132	11 192	15 878	31 080
Students/Faculty	4.8	6.1	7.9	7.4	3.7	3.7	4.9
Research citations	1.6	2.1	1.4	1.3	2.5	2.6	2.0
International students, %	30	54	9	12	33	23	48
International faculty members %	40	77	12	5	56	48	40

MIPT Development



MIPT Results in 2018



- 13 out of 80 labs opened in 2018
- 30% growth in R&D relative to 2016
- 50 publications in the top 1% most cited publications in the world (2,6%)
- Highest admission quality (USE of 94 out of 100)
- 41 courses on Coursera with 270 000 learners
- 675 professors, with more than 20% being members of the RAS
- 40 projects passed through the startup accelerator Phystech-start
- 1st enrollment in online master's program in technological entrepreneurship realized with RUSNANO
- MIPT got into the **five** selected universities of the program for the development of technological entrepreneurship in Russia



"This is the best progress we have had so far. I see the progress not only in indicators, but the ideas are just terrific, organization is terrific".

Rafael Reif, MIT's president,
Chairman of MIPT's International Board



"MIPT provides excellent training in the field of natural sciences at the world level. Now the university needs to be strengthened by opening new promising areas and commercializing research results".

Konstantin Novoselov, MIPT graduate,
Nobel laureate, member of MIPT's Supervisory Board

MIPT attracts talent



270
thousand

Coursera
learners

32

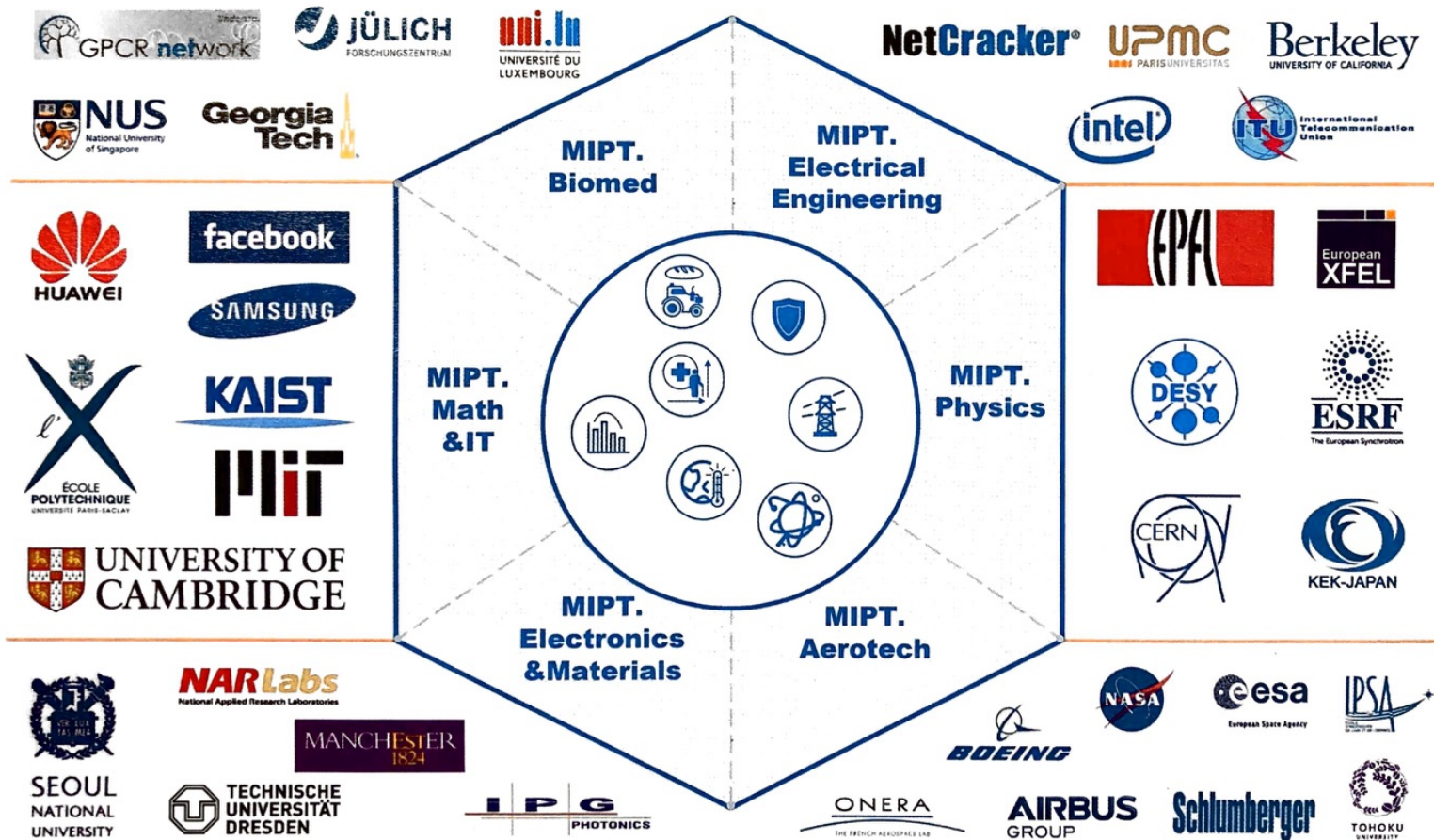
Professors
from the leading
world scientific
centers

136

Universities
participating
in ACM ICPC
Workshops

- **30%** of international students are winners of international olympiads in **2017**
- Schoolchildren from **26** countries admitted into international distant-learning Phystech Academy
- MIPT professors lead the training of Russian National Schoolchildren Teams in Physics and Mathematics
- MIPT students won international olympiads on **Programming, Theoretical Physics, Mathematics, and Mechanics**
- **5** training sessions of **ACM ICPC** attracted students from **136** universities of **45** countries
- Coaches of Peru and Georgia national teams on Physics and Mathematics enrolled into MIPT Master's programs
- International recruitment system attracted **32** professors from leading universities
- More than **2000** scientists took part in **15** international conferences on MIPT campus
- International researchers participate in **45%** of all MIPT scientific publications.

MIPT Responds to Big Challenges



Big challenges

- Exhaustion of the energy-raw material economy
- Global security
- Change in the character of energy systems
- Anthropogenic loads on the environment
- Demographic transition
- Food security and independence
- Need for effective space development

School of Technology Entrepreneurship

Skyeng

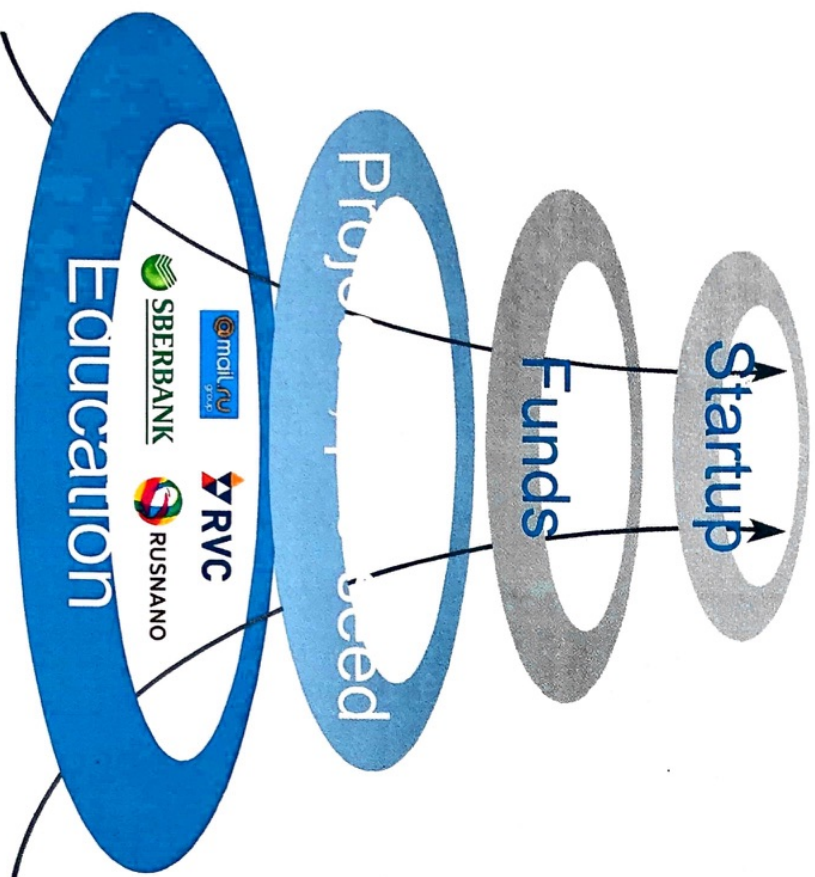
(MCAP = 100 mln \$)

Revolut

(MCAP = 90 mln \$)

Tsuru Robotics

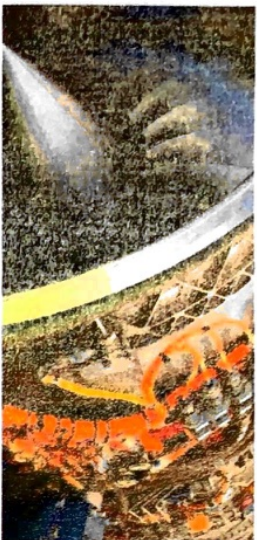
(MCAP = 15 mln \$)



New Learning Paradigm:

- Own startup as a graduation thesis
- Fund for Promoting Innovations
- ABRT Fund
- Project mentoring by serial entrepreneurs and MIPT graduates
- Master program: Leadership, Sales, Cross-function team, New Product Development, Strategy, Managerial Economics, Corporate Finance, Marketing, Entrepreneurship
- Bachelor program: Economics and Finance, Soft Skills, Marketing and Project Management, Philanthropy

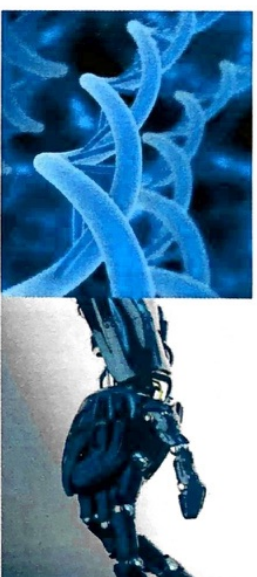
English bachelor programs



Aerospace Engineering

This program provides students with the knowledge and practical skills crucial for the development and production of aerospace systems. In addition, it includes the study of specialized modules in aircraft performance, the principles of microeconomics and structures, along with electives in the mechanics of deformable bodies, advanced aerodynamics, aviation and space flight.

Director of School:
Dr. S.S. Negodyaev



Biomedical Engineering

This degree program will attract outstanding students who wish to be equipped with the tools to be leaders in the field of biomedical engineering in the 21st Century. The course includes a solid foundation in engineering, mathematics, and natural sciences — biology, chemistry, and physics. In the frameworks of Biomedical engineering program students study devices, systems, complexes and basic medical technologies, as well as methods of research, therapeutic effect, information processing in health care and various fields of biomedical research.

Director of School:
Dr. V.B. Nazarov

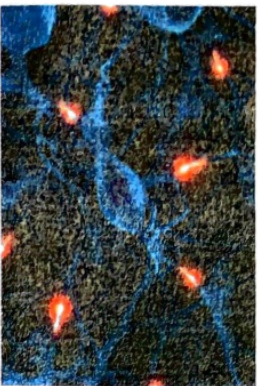


Computer Science

The computer science program is based on the fundamentals of programming and computational theory. It provides the knowledge and skills that serve as a solid foundation for effectively applying digital processes to the issues of broad interest to the global society. The course also offers opportunities for undergraduate research and international study.

Director of School:
Prof. A. M. Raigorodskiy

English master programs



Neural Networks and Neural Computers

The program is designed to orient the students with the domain of computation science, neural network and their implementation in modern computer architectures.

Program partners:

- Centre of Information Technology and Systems
- Czestochowa University of Technology

Program Coordinator:

Prof. E. Avedian



Aerodynamics

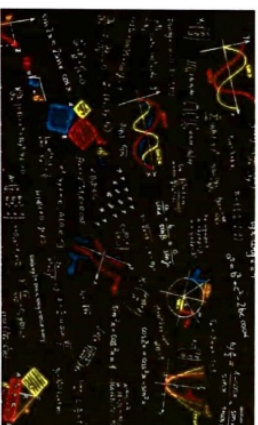
This program prepares students for professional positions in the aerospace industry, government, and business, it focuses on aeromechanics, control, propulsion and engineering problems of aircraft.

Program partners:

- Institut Polytechnique des Sciences Avancées
- Embry-Riddle Aeronautical University
- Beihang University

Program Coordinator:

Ass. Prof. S. Serokhvostov



Advanced Combinatorics

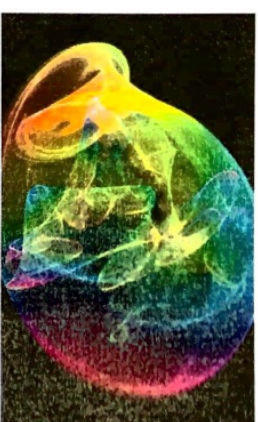
The program is focused on modern aspects of combinatorics (discrete mathematics) and its applications in computer science and in the theory of complex networks.

Program partners:

- Steklov Mathematics Institute
- Yandex
- AlfrédRényi Institute of Mathematics
- École Polytechnique Fédérale de Lausanne

Program Coordinator:

Prof. A. Raigorodskiy



Beam-plasma systems & technologies

The program is targeted at fundamental and applied researches in plasma physics and plasma chemistry associated with advanced technologies; it is based on the system approach to the beam-plasma systems and to their life-cycle support.

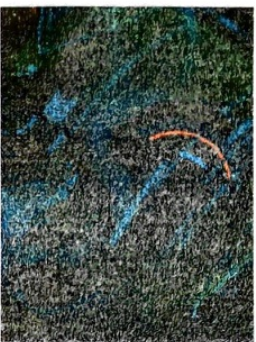
Program partners:

- Weatherford

Program Coordinator:

Prof. M. Vasiliev

English master programs



Blockchain

The Master Program Blockchain focuses on in-depth study of the DLT (Distributed Ledger Technology), and its applications. Students will learn how to develop real DLT solutions, applications based on Hyperledger Fabric, as well as on the stack technologies provided by the Ethereum platform and EOS.

Program Coordinator:
Meet Prof. Gorgadze



Cyber Security

The program is aimed at training professional specialists in information security management with a set of technical, economic, organizational and legal knowledge. Graduates will have skills in theoretical, organizational and legal issues of security in computer systems, cryptographic and statistical methods of protection, standard subsystems and solutions for information security.

Program Coordinator:
Meet Prof. A. Nazarov



Digital transformation

Digital transformation requires a deep understanding of advanced disruptive technologies and ability to manage change and uncertainty. The Program trains students to shape digital transformations in a company using an array of analytical, computational, and experimental techniques both from technical and business areas.

Program Coordinator:
Meet L. Akobyan



Bioinformatics for industry

Bioinformatics lies in the interface of biology, computer science and statistics and aims to give meaning and interpret a huge mass of biological data. Students will learn how easily to manage methods and software tools to process and analyze large-scale data generated from wet lab experiments in Omics research.

Program Coordinator:
Meet Prof. V. Makeev



International Entrepreneurship and Technology

The program is designed for graduates of technical universities from around the world who are striving to become the leaders of a new generation in Eurasia, capable of implementing international business projects in the field of new technologies. Students consider the Program as a platform to create a business venture

Program Coordinator:
Meet L. Akobyan

Phystech.International



Contest eligibility:

The contest is open to all high school students graduating in 2019 or within two years.

Contest information:

Online stage: Sept 22-16/1600
Final stage: Dec 9-10/1600

Contest objectives:

Spot, recognize, and nurture talent for STEM subjects. Offer more opportunities for applicants competing for university education grants from the Russian government. Facilitate the access of international students, including those from the Commonwealth of Independent States, to Russian university education. Create and expand the body of prospective MIPET students for ongoing instruction and preparation for future contests.

Contest stages:

The olympiad is conducted in two stages, the first of which is a qualifying round held online. The second stage is final and will be held on site, separately for mathematics and physics. Participation in the competition is free. The language of the olympiad is English.

To participate in the qualifying round, sign up online at en.phystech.international and follow the instructions on the website.