

# RUSSIAN TECHNOLOGY PLATFORMS



Ministry of Economic Development  
of the Russian Federation



Ministry of Industry and Trade  
of the Russian Federation



Industry  
Development  
Fund



Ministry of Science and Higher Education  
of the Russian Federation



HIGHER SCHOOL OF ECONOMICS  
NATIONAL RESEARCH UNIVERSITY

# Welcome address



**SERGEY GORKOV**  
Deputy Minister  
of Economic Development  
of the Russian Federation

Technological platforms serve as an important tool for combining the efforts of business, science and the state to implement the priority directions of modernization and technological development of the Russian economy.

Currently in Russia there are 34 technological platforms operating in the 13 most promising areas of scientific and technological development.

These self-organized associations include more than 3,500 participants – companies, scientific and educational organizations, development institutions.

This publication provides information on the activities of technology platforms: key activities of technology platforms, competitive advantages and capabilities of Russian technology platforms, as well as the most significant projects implemented by them.

I am confident that the contribution of technology platforms to the development of technology transfer mechanisms, the expansion of the practice of scientific and technical cooperation and public-private partnership in the innovation sphere will consistently increase, and the materials of this publication will be useful for a wide range of Russian and foreign partners

# RUSSIAN TECHNOLOGY PLATFORMS LIST

Technology platform name	page
<b>MEDICINE OF THE FUTURE</b>	<b>4</b>
<b>BIOTECH2030 TECHNOLOGY PLATFORM</b>	<b>6</b>
<b>BIOENERGY</b>	<b>8</b>
<b>NATIONAL SUPERCOMPUTING TECHNOLOGY PLATFORM</b>	<b>10</b>
<b>INNOVATIVE LASER, OPTICAL AND OPTOELECTRONIC TECHNOLOGIES – PHOTONICS</b>	<b>12</b>
<b>RUSSIAN LED TECHNOLOGY DEVELOPMENT</b>	<b>14</b>
<b>AIR MOBILITY AND AVIATION TECHNOLOGIES</b>	<b>16</b>
<b>NATIONAL SPACE TECHNOLOGY PLATFORM</b>	<b>18</b>
<b>NATIONAL INFORMATION SATELLITE SYSTEMS</b>	<b>20</b>
<b>CLOSED NUCLEAR FUEL CYCLE WITH REACTORS ON FAST NEUTRONS</b>	<b>22</b>
<b>CONTROLLED THERMONUCLEAR FUSION</b>	<b>24</b>
<b>INTELLECTUAL ENERGY SYSTEM OF RUSSIA</b>	<b>26</b>
<b>ENVIRONMENTALLY FRIENDLY THERMAL POWER SECTOR OF HIGH EFFICIENCY</b>	<b>28</b>
<b>PERSPECTIVE RENEWABLE ENERGY TECHNOLOGIES</b>	<b>30</b>
<b>SMALL DISTRIBUTED ENERGY</b>	<b>32</b>
<b>NEW POLYMERIC COMPOSITE MATERIALS AND TECHNOLOGIES</b>	<b>34</b>
<b>MATERIALS AND TECHNOLOGY IN METALLURGY</b>	<b>36</b>
<b>TECHNOLOGY PLATFORM OF SOLID MINERALS</b>	<b>38</b>
<b>HYDROCARBON PRODUCTION AND USE TECHNOLOGIES</b>	<b>40</b>

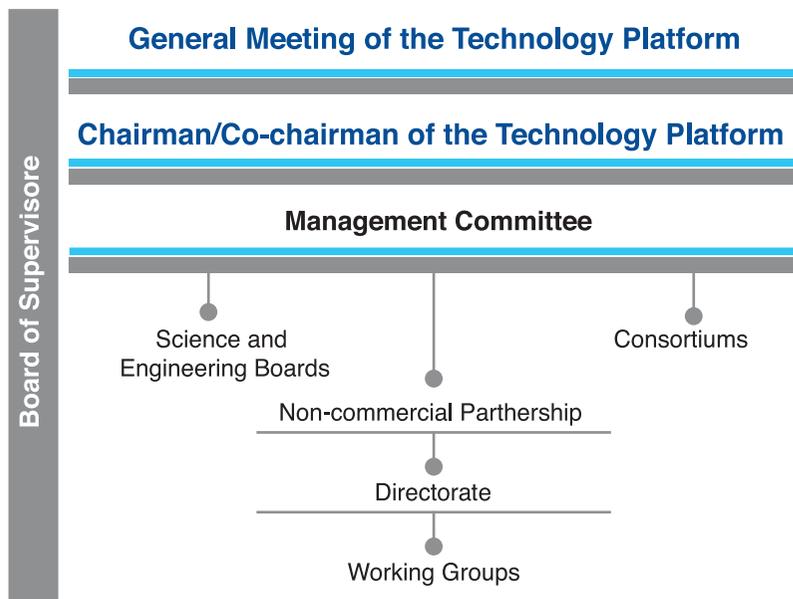
# RUSSIAN TECHNOLOGY PLATFORMS LIST

Technology platform name	page
DEEP PROCESSING OF HYDROCARBON RESOURCES	42
TECHNOLOGIES OF MECHATRONICS, EMBEDDED CONTROL SYSTEMS, RADIO FREQUENCY IDENTIFICATION AND ROBOTICS	44
MICROWAVE TECHNOLOGIES	46
DEVELOPMENT OF OCEAN RESOURCE	48
TECHNOLOGIES OF ECOLOGICAL DEVELOPMENT	50
INDUSTRY OF THE FUTURE	52
TEXTILE AND LIGHT INDUSTRY (TP «TLI»)	54
ENVIRONMENTALLY SAFE VEHICLES “GREEN CAR”	56
TECHNOLOGIES OF FOOD AND PROCESSING INDUSTRIES OF AGRO-INDUSTRIAL COMPLEX – HEALTHY FOOD	58
LIGHT AND RELIABLE STRUCTURES	60
INDUSTRY AND ENERGY INTEGRATED SAFETY	62
CONSTRUCTION AND ARCHITECTURE	64
USE OF RESULTS OF SPACE ACTIVITY FOR THE BENEFIT OF END USERS	66
INNOVATIVE AGRICULTURE MACHINE TECHNOLOGIES	68
NATIONAL SOFTWARE PLATFORM*	
HIGH-SPEED INTELLECTUAL RAIL TRANSPORT*	
EURASIAN TECHNOLOGY PLATFORMS	70

\* In the reorganization.

Creation date	Coordinator of the Platform	Initiator of the Platform	Legal form
July 7, 2011	Siberian State Medical University	Siberian State Medical University	Non-commercial partnership

## STRUCTURE OF THE TECHNOLOGY PLATFORM

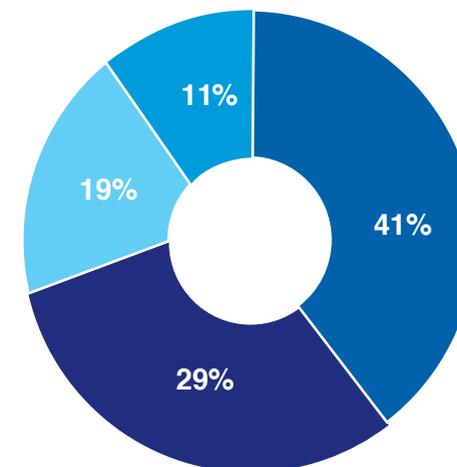


**VSEVOLOD A. TKACHUK**  
Chairman of the Technology Platform  
Dean of the Fundamental Medicine Faculty  
RAS Academician professor



**ALEXANDER B. VOROZHTSOV,**  
Executive Director of Non-commercial partnership  
Professor

## THE PLATFORM MEMBERS



- Business structures
- Scientific and project organizations
- Educational institutions
- Associations (partnerships)

- Members of the platform – 419 organisations
- Strategic research program
- 9 Science and Engineering Boards of the priority areas
- Well-developed system of expertise of projects
- 30 Full cycle complex programs
- 26 consortiums

### Contact information:

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**Official website:** [www.tp-medfuture.ru](http://www.tp-medfuture.ru)

## PLATFORM'S KEY DIRECTIONS

**Predictive and analytical activities.** Strategic planning of bio-medical and pharmaceutical research development, creation and realization of road map, priority identification

**Educational work.** Upgrading of curriculums and educational programs focused on the needs of business and science, staff training and personnel recruitment

**Informational activity.** Information distribution, information support, communication with Russian and European Technology Platforms. Organizing conferences, meetings, seminars and other events

**Organizational and financial activity,** involvement of private and corporate capital to the programs and projects realization, foundation of funds for project development and its constant functioning

## INTERNATIONAL COOPERATION

- The Platform cooperates with Edinburgh University (Great Britain). The aim of the cooperation is to exchange the science topics, to conduct joint research and to promote scientific development in the biomedical sphere.

- Cooperation with Claude Bernard University (France) aims to **join together efforts of the Parties to carry out research and development in priority areas involving research organizations and universities within the framework of the Russian-French Hubert Curien Partnership program "Kolmogorov"**

- Cooperation with EurA AG (Germany) aims to **join together efforts to develop innovative pharmaceutical products, diagnostics technologies and rehabilitation systems**

## PLATFORM'S COMPETITIVE ADVANTAGES

- Science and technology foresight
- Development priorities
- Development of scientific-technological backlogs in medium and long term perspective
- Planning for business interests

## PLATFORM'S ABILITIES

- Encouraging innovations, expansion of scientific and industrial cooperation and support of scientific and technical activities and processes of modernization
- Technology foresight
- Complex expertise of projects by profile science and engineering boards and specification of technical requirements
- Creating strategic plans for pre-clinical testing of drugs for their further implementation, accounting the interest of the market

## COMPLEX FULL-CYCLE PROJECTS IMPLEMENTED BY SEVERAL PARTICIPANTS OF THE PLATFORM

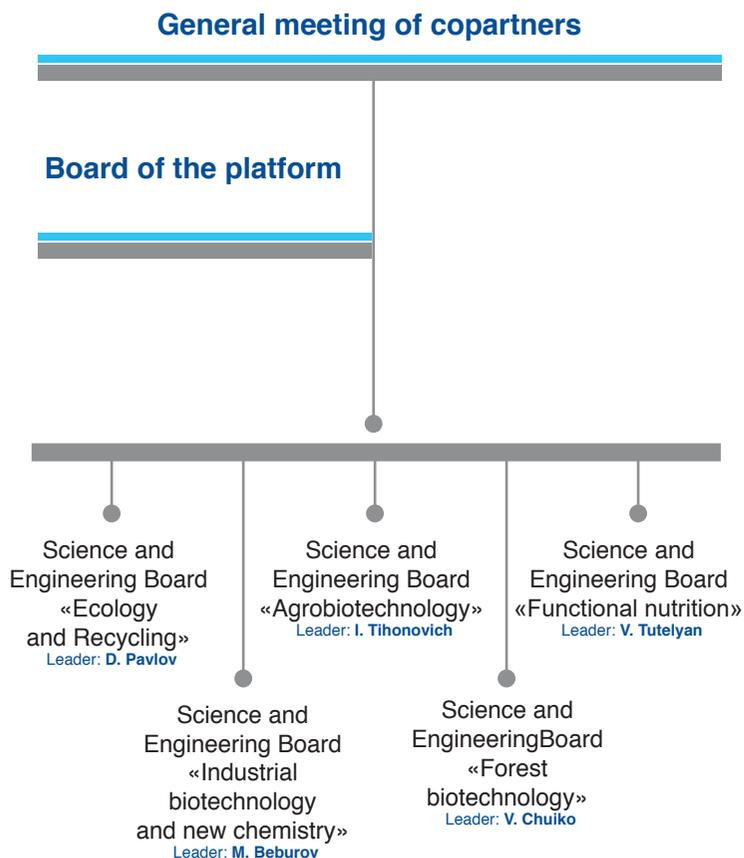
- Development of a new generation of innovative neuroprotective drugs with proneurogenic activity
- Development and introduction into clinical practice of mechatronic systems with pulsatile blood flow that replace the functions of the natural heart
- Translation of omix technologies into the preventive medicine and in vitro diagnostics
- Development of the new biotargets and test systems and their use for the development of innovative anti-infective drugs

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

1. Preparation of concepts and forecasts for the development of the industry.
2. Assistance in training and professional development of scientific and engineering personnel.
3. Participation in the implementation of the National technology initiative, roadmaps FoodNet, MariNet.
5. Assistance in carrying out examinations of state and industry decisions in the field of competence of the Technology Platform.
6. Development of state Standards and professional standards in the field of biotechnology.
7. Organization of participation of members of the Technology Platform in events (conferences, forums, exhibitions, etc.).

Creation date	Coordinator of the platform	The Initiators of the Platform	Legal form
October 2, 2012	Research Center of Biotechnology RAS	Moscow State University, Rostec Corporation	Association

## STRUCTURE OF THE TECHNOLOGY PLATFORM



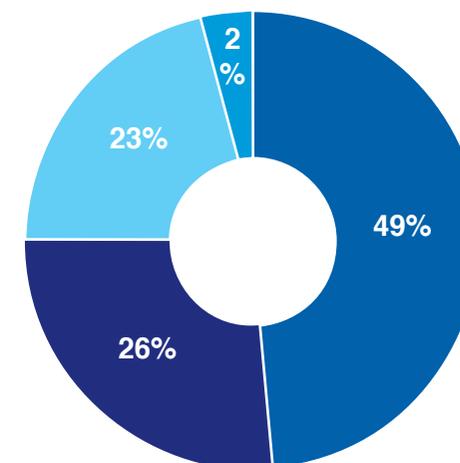
**VLADIMIR POPOV**  
The chairman of the Board



**ALINA OSMAKOVA**  
Executive Director

## THE PLATFORM MEMBERS

The Platform includes more than 100 members



- Business
- Educational organizations
- Scientific and research organizations
- Other

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Leninskiy Ave 33/2,

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**E-mail:** mail@biotech2030.ru

**Official website:** [www.biotech2030.ru](http://www.biotech2030.ru)

## PLATFORM'S KEY DIRECTIONS

- Biotechnology renewable raw materials processing
- Renewable biomass as a raw material base to chemical industry and heavy organic synthesis; genomic and post-genomic technologies, methods of bioengineering, cell technology for new products creation; biocatalytic and biosynthetic technology
- Biotechnology for new food products and food materials production, functional foods, etc., food quality and safety monitoring
- Biotechnology which increase the efficiency of commercial minerals extraction
- Biotechnology of processing and recycling industrial and agriculture waste, environmental protection; information systems of remote sensing monitoring for forest resource evaluation; agrobiotechnology.

## PLATFORM'S OPPORTUNITIES

The platform provides the integration of the national research and development system in biotechnology sphere in the international scientific community; provides expert assessment of public and industry business solutions in the area of TP competence.

## PLATFORM'S COMPETITIVE ADVANTAGES

- Uniting representatives of government, business, science and civil society in order to create new technologies, products and services
- Realization of bioindustry innovative development and bio resources application for sustainable development of the Russian economy
- Incentives for innovation, formation of new partnerships, supporting scientific and technological activity, bioindustry and related sector modernization processes; Development, discussion and adoption of documents defining basic scientific and technical priorities in the area of TP competence
- Integration of R&D national system in biotechnology sphere in the global scientific community
- Education system and training of specialists improvement
- Improvement of the legal and technical regulations in the field of bioindustry and bioresources.

## THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

By the aid of TP «BioTech2030» there were realized several full-cycle projects uniting representatives of business and science in order to create new technologies, products and services.

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

1. Preparation of concepts and forecasts for the development of the industry.
2. Assistance in training and professional development of scientific and engineering personnel.
3. Participation in the implementation of the National technology initiative, roadmaps FoodNet, MariNet .
5. Assistance in carrying out examinations of state and industry decisions in the field of competence of the Technology Platform.
6. Development of state Standards and professional standards in the field of biotechnology.
7. Organization of participation of members of the Technology Platform in events (conferences, forums, exhibitions, etc.).

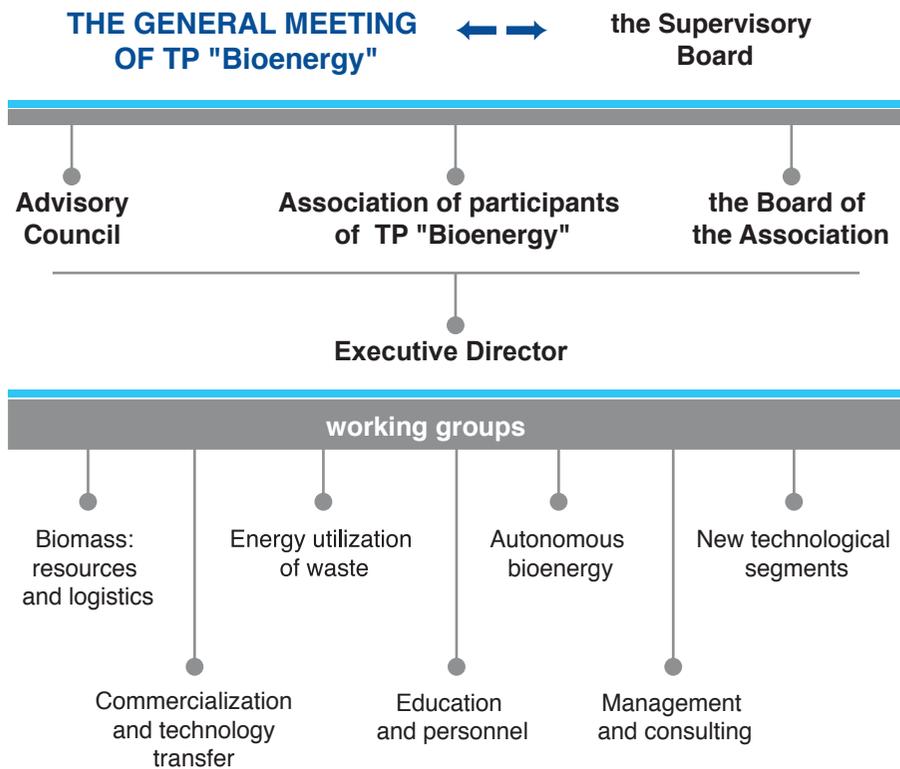
## INTERNATIONAL COOPERATION

- 1) International business and scientific cooperation (using the infrastructure of CLIB2021);
- 2) Representation of interests of Russian science in international funding programmes (Horizon 2020 Programme; ERA in Industrial Biotechnology);
- 3) Participation in exhibition and Congress activities: introduction of participants and projects of TP «BioTech2030» in the international public arena.

International cooperation in the structure of TP «BioTech2030» coordinated by the Russian national contact center "Biotechnology, agriculture, forestry, fisheries and food".

Creation date	Coordinator of the platform	The Initiator of the Platform	Legal form
November 19, 2010	NRC "Kurchatov Institute"	NRC "Kurchatov Institute"	Association

## STRUCTURE OF THE TECHNOLOGY PLATFORM



## THE PLATFORM MEMBERS



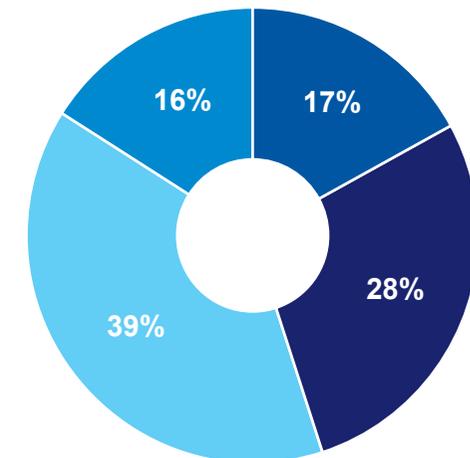
**MIKHAIL KOVALCHUK**  
Chairman of The Supervisory Board



**SERGEY CHERNIN**  
Chairman of The Board



**RAIF VASILOV**  
Chairman of The Board



- Educational institutions
- Scientific and planning organizations
- Business structures
- Associations (partnerships)

### Contact information:

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**Official website:** [www.tp-bioenergy.ru](http://www.tp-bioenergy.ru)

## PLATFORM'S KEY DIRECTIONS

1. Biomass: resources and logistics.
2. Deep processing of biomass, "biorefining".
3. Transport biofuels I-V generations (biodiesel, bioethanol, biobutanol, etc.).
4. Aviation biofuels (biodiesel).
5. Generation of thermal and electric energy from biomass, cogeneration.
6. Solid biofuels based on different types of biomass.
7. Energy disposal of waste (incineration, gasification, pyrolysis).
8. Biogas technology.

## COMPETITIVE ADVANTAGES OF THE PLATFORM

The Association consists platforms professional competences of participants representing the various links in the technological chain (science – production – infrastructure – market), creates the conditions for the implementation of large-scale complex projects involving the most successful technology, investment resources and state support measures.

- Provide conditions for implementation of projects of interdisciplinary and intersectoral character that is based on cooperation with organizations and companies working in the field of agriculture, energy, housing, industry, environmental protection etc.
- Organization of the wide international cooperation of the participants of the platform with partners from CIS, BRICS, Eurasian Economic Union, etc.

## PLATFORM'S COMPETITIVE ADVANTAGES

- TP «Bioenergy» brings together sufficient scientific and technological, technical and institutional capacity for accelerated development of priority directions of scientific researches in the sphere of creation of energy-efficient and resource-saving technologies of production, storage and transfer of energy derived from biomass, and development of new technologies of power generation on the principles of nature

- Coordination of scientific-practical activities of the participants on the basis of the approved «Strategic research programme in the field of bioenergy» avoids duplication of research topics and projects, fragmentation of the platform participants in the process of research and implementation activities

## COMPREHENSIVE FULL-CYCLE PROJECTS, IMPLEMENTED BY SEVERAL PARTICIPANTS OF THE PLATFORM

1. Infrastructure project «Bioenergy village» Autonomous energy supply of settlements in 4 Russian regions based on the integrated use of local renewable energy (photovoltaic technologies, wind energy, bioenergy).
2. Integrated projects for implementation in the framework of innovation development programmes of state companies and corporations (PIR):

- 2.1. «Creating engineering biotechnology centre for oil and gas industry»;
- 2.2. «The creation of the Russian industrial cluster for organic electronics and Photonics»;
- 2.3. «Development of technologies for producing aviation biofuel in climatic and economic conditions of the Russian Federation».

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

1. Deep processing of grain and biomass to produce fuels, energy and other valuable products.
2. Production of bioethanol using various kinds of feedstocks; development of a set of measures to support the introduction of biofuels to Russian biofuels markets.
3. Development of technologies for the production of biofuels from various kinds of biomass for automobiles, aviation, and marine transport, suitable for extreme climate conditions of the Russian Far North and the Arctic zone.
4. Production of energy and target products based on wood, agricultural residues and other organic wastes.

5. Energy-efficient production of microalgal biomass as a feedstock for biorefining; development of technologies to produce third generation biofuels.
6. Use of photobioreactors for CO<sub>2</sub> sequestration, improving the atmosphere of cities, reducing the anthropogenic impact on the environment.
7. Design and production of machinery and equipment for generation of biofuels from various types of biological feedstocks.
8. Design and production of bioenergy equipment for heat and power generation using local organic feedstock, including municipal waste, for energy supply to remote and hard-to-reach regions.
9. Development of state standards for various kinds of motor biofuels.

## INTERNATIONAL COOPERATION

- Development of technologies and implementation of joint projects in the field of bioenergy, biotechnology and ecology together with partners from the Republic of Belarus, the Republic of Kazakhstan and the Republic of Armenia within the framework of the Eurasian technology platform "EurasiaBIO"
- Joint implementation of the Russian-German project "Urban bioeconomy solutions – carbon dioxide sequestration with new automated photobioreactor concepts"

# National supercomputing technology platform

Creation date	Coordinator of the platform	The Initiators of the Platform	Legal form
September 28, 2011	M.V. Lomonosov Moscow State University, and Program Systems Institute of the Russian Academy of Sciences	M.V. Lomonosov Moscow State University, and Program Systems Institute of the Russian Academy of Sciences	Consortium

## TECHNOLOGY PLATFORM CO-CHAIRS:



**E. VELIKHOV**, academician, president of National Research Center «Kurchatov Institute»



**V. SADOVNICHYI**, academician, rector of Lomonosov Moscow State University

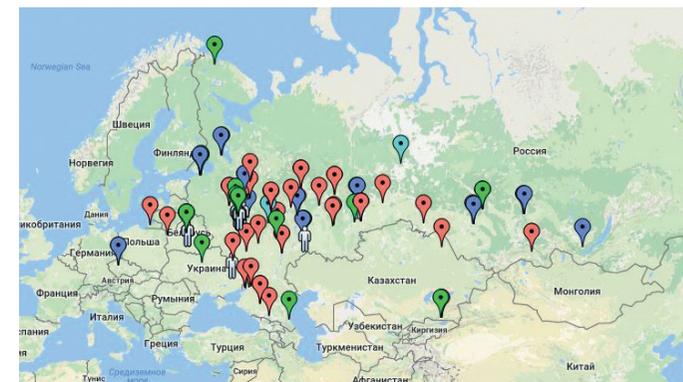


**V. BETELIN**, academician, scientific coordinator of Scientific Research Institute for System Analysis, Russian Academy of Sciences



**I. KAMENSKIKH**, State Corporation «Rosatom»

## THE PLATFORM MEMBERS



## TECHNOLOGY PLATFORM SECRETARIAT:



**VL. VOEVOVIN**, Research Computing Center of Lomonosov Moscow State University



**B. SHABANOV**, Joint Super-computer Center of the Russian Academy of Sciences



**M. YAKOBOVSKIY**, Keldysh Institute of Applied Mathematics of the Russian Academy of Sciences



**S. ABRAMOV**, Program Systems Institute of the Russian Academy of Sciences



**A. VOLGIN**, State Corporation «Rosatom» (executive secretary)

### Contact information:

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**E-mail:** voevodin@parallel.ru

**Official website:** [www.hpc-platform.ru](http://www.hpc-platform.ru)

# National supercomputing technology platform

## PLATFORM'S KEY DIRECTIONS

1. Development of supercomputing infrastructure in Russia.
2. Science.
3. Education.
4. International collaboration.
5. Cooperation with federal entities, industry and business.

## PLATFORM'S COMPETITIVE ADVANTAGES

Integration of science, education, business, IT- companies and industry to meet the national-level challenges by making use of latter-day world-class computing technologies.

Collaboration with the leading research centers and scientific groups in the world.



## PLATFORM'S OPPORTUNITIES

Provide unique potential of supercomputing technologies and mathematical modeling to advance and increase competitive abilities of industrial and commercial companies in Russia.

## COMPLEX BEGINNING-TO-END PROJECTS, RUN BY SEVERAL PLATFORM PARTICIPANTS

Foundation of supercomputer complexes and centers starting from the scale of a lab to State-level shared-use large supercomputer centers.

Development of efficient applications to solve the scientific, industrial and social problems.



## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

1. Development of national supercomputing infrastructure.
2. Arranging and conducting of the national supercomputing conferences and youth schools.
3. Maintenance of Supercomputing Consortium of Russian Universities.

## INTERNATIONAL CONTACTS

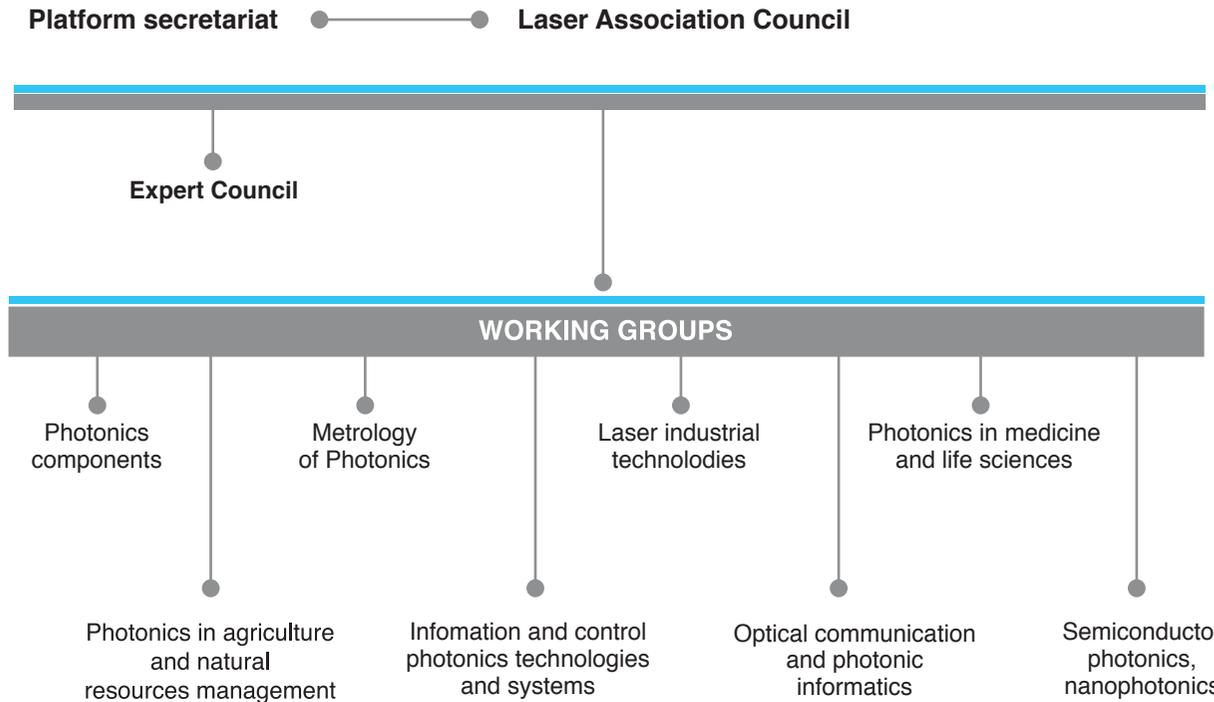
USA, Japan, China, South Africa, European countries. MSU is a member of the NESUS project (<http://nesus.eu/>), which includes more than 30 European countries.



# Innovative laser, optical and optoelectronic technologies – Photonics

Creation date	Coordinator of the Platform	The Initiator of the Platform	Legal form
April 1, 2011	Laser Association	Laser Association	Association

## THE STRUCTURE OF THE TECHNOLOGY PLATFORM



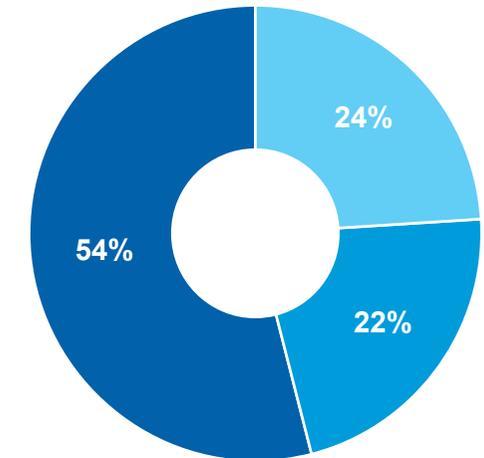
**I. KOVSH**  
Coordinator  
President  
of the Laser Association



**V. VOLGIN**  
Scientific Secretary  
of the Platform

## THE PLATFORM MEMBERS

There are 194 Platform Participants (October of 2018)



- R&D Institutes, Design offices
- Universities
- Companies, industrial enterprises

### Contact information:

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**E-mail:** las@tsr.ru; las@cislaser.com; tp@cislaser.com

**Official website:** www.cislaser.com; www.photonica.cislaser.com

# Innovative laser, optical and optoelectronic technologies – Photonics

## PLATFORM'S KEY DIRECTIONS

- Photonics and its applications analysis and prediction
- Complex expertise of profile projects and programs
- Information exchange assistance – issuing catalogues and directories, holding of exhibitions, conferences, round table discussions, etc.
- Development of innovative activities, stimulation of R&D organizations cooperation with production companies
- The help to the platform participants in their interaction with Federal Executive Authorities, state corporations, institutes of innovative development
- The help to the platform participants in their international activities on the platforms subjects

## PLATFORM'S COMPETITIVE ADVANTAGES

- The highest competence of the thematic area
- Possibility of ensuring completeness and objectivity of examination for projects of any level in the field of photonics and its applications, detailed knowledge and strict accounting of domestic realities in case of assessment of profile R&D projects, productions and markets
- Democratic character and flexibility of structure, participation of the organizations of all scales and specializations in elaboration of common decisions of the technological platform
- Laser Association (platform coordinator) wide experience of work in laser-optical community at national and international level

## COMPLEX PROJECTS REALIZED BY THE PLATFORM PARTICIPANTS NOW

- Drafting the RF Photonics development strategy in 2019–2035
- Tens of projects resulting in photonics technologies creation and implementation in industry, agriculture, communications, etc.
- Establishing of «Radiophotonics» Consortium (25 organizations-participants)

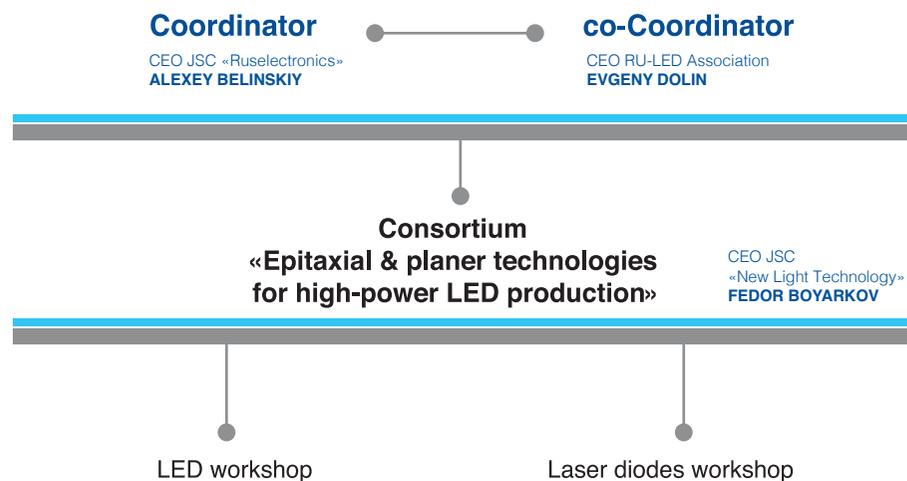
## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- Diode laser module with fiber-optic the output of LLD-150, («NPP «Inzhekt», Saratov) Lidar for remote measurement of the temperature of the atmosphere, (IAO SB RAS, Tomsk, Russia)
- Precision laser technological complex for the production of optical scales, grids, photos templates and the synthesized hologram-based three-dimensional laser micro-and nano-processing, (IAE SB RAS and SDI SI SB RAS, Novosibirsk)
- Laser welding technology of high-precision large-size structures of titanium alloys, (CJSC «RSLT», Yekaterinburg) 100 Gb-optical block «Don» for fiber-optical communication line (SE «T8», Moscow)

# Russian LED technology development

Creation date	Coordinator of the platform	The Initiator of the Platform	Legal form
April 1, 2011	JSC "Radioelectronics"	OJSC "Rosnano"	Non-commercial partnership

## STRUCTURE OF THE TECHNOLOGY PLATFORM



## THE PLATFORM MEMBERS

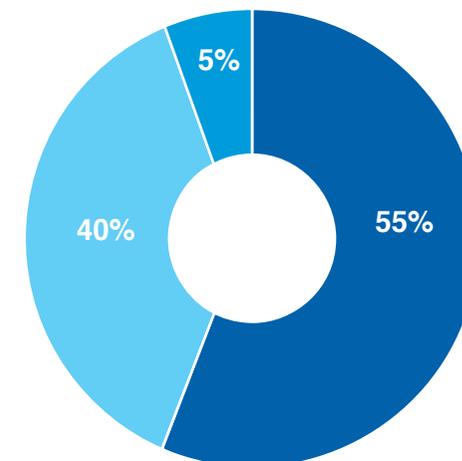
The Platform includes 20 members



**E. DOLIN**  
General director of the Platform



**F. BOYARKOV**  
General director  
"New light technologies" JSC



- Associations and partners
- Scientific and educational organizations
- Business structures

### Contact information:

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**Tel.:** +7 (495) 777-42-82; **Fax:** +7 (495) 708-23-16

**E-mail:** info@ruselectronics.ru  
avgulyachenko@ruselectronics.ru  
bauman@soptel.ru

**Official website:** [www.ruselectronics.ru/](http://www.ruselectronics.ru/)

# Russian LED technology development

## PLATFORM'S KEY DIRECTIONS

- Mass production of LEDs and LED lighting in Russia
- Research and development in the field of LED technology
- LED technology education programs development and coordination
- World-class R & D competitive in the field of LED lighting
- Combining the efforts of public authorities, scientific and industrial institutions to provide technological, legal, financial, administrative and informational basis for the development of LED industry

## PLATFORM'S COMPETITIVE ADVANTAGES

- Creating scientific and technological potential in LED industry and advanced development centers, the introduction of new technologies in the production and training of qualified personnel
- Development of the demand for LED technology and the formation of a civilized market
- Development of critical LED technologies
- LED lighting products quality improving
- Filling the domestic LED products market

## INTEGRATED PROJECTS COMPLETE CYCLE BY THE PLATFORM MEMBERS

Creating a vertically integrated manufacturing enterprise with a full cycle of production of LEDs.

Scheduled power – LEDs 1 billion a year.

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

### 1. Improve the performance of white LEDs and reduce their cost:

- new solutions development to improve the efficiency of heat dissipation from the light emitting chip;
- development of methods for increasing the output of light from the LEDs;
- development of phosphors with improved efficiency and spectral characteristics.

### 2. Development of the domestic component and raw material base for the production of LEDs and LED lighting equipment.

### 3. Development of domestic equipment for the production of LED heterostructures and crystals.



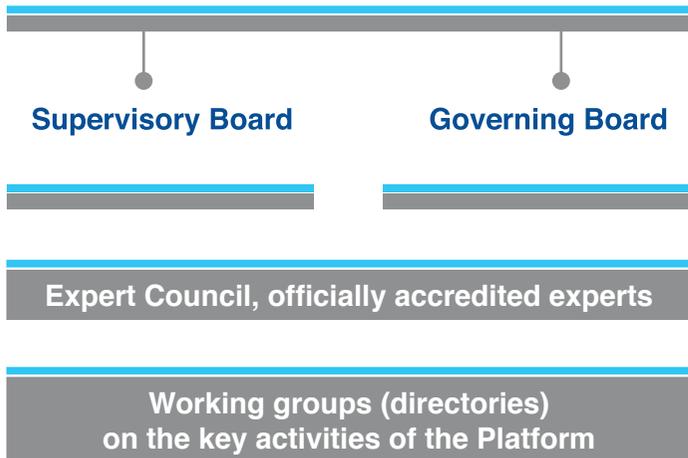
# Air mobility and aviation technologies

Creation date	Coordinators of the Platform	The Initiators of the Platform	Legal form
November 29, 2010	FSUE «TsAGI», PJSC «United Aircraft Corporation», State Corporation «Rostec»	FSUE «TsAGI», FSUE «CIAM named after P.I. Baranov», FSUE «GosNIIAS», FSUE «GosNII GA»	Non-profit organization in the form of Association

## STRUCTURE OF THE TECHNOLOGY PLATFORM

In accordance with the Charter, the Technology platform is managed and provided by the Association «Technology platform «Air mobility and aviation technologies»

### The General Meeting of the Association members



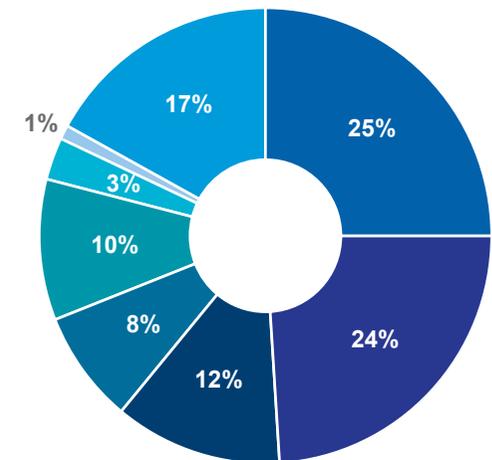
**B.S. ALYOSHIN**  
Science and Technology Advisor of President of JSC «UAC», corresponding member of the RAS Supervisory Board Chairperson



**A.A. KIM**  
Chairman of the Board

## THE PLATFORM MEMBERS

The Platform includes 122 members



- Higher education institutions
- Research institutes
- Development organizations
- Holding companies
- Manufacturing plants
- Airlines, transport organizations
- Government agencies
- Design, engineering, service and other companies

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**Official website:** www.aviatp.ru



## PLATFORM'S KEY DIRECTIONS

- Assistance in organizing the interaction of participants of the Technological Platform
- Planning and forecasting the development of markets and technologies in the field of the Platform
- Formation and implementation of research and technology projects, attracting budget and private funding
- Assistance in the implementation of research, development and technological works
- Assistance in providing participants of the Platform with human resources
- Participation in the development of norms, rules and standards

## PLATFORM'S ABILITIES

- Integrated and system-oriented approach to planning and organization of advanced research and development;
- The introduction of the most promising developments in the industry
- Professional and independent expertise
- The balance of interests of business (industry) and science
- Maximum openness and transparency of activities
- High-quality analytical and information and communication support

## PLATFORM'S COMPETITIVE ADVANTAGES

- Interaction with a large number of organizations and experts;
- Qualitative organization of project and expert work;
- Constructive relations with state authorities, specialized funds and development institutions;
- The presence of a legal entity – the Association – to form consortia, project teams, conclude contracts, participate in competitive procedures and implement promising research and technology projects

## INTERNATIONAL COOPERATION

Interaction with research, engineering and manufacturing organizations of France to form and implement joint scientific and technological projects. At present, at the suggestion of the French colleagues, a rubric is opened on the TP website, where articles will be published on the subject of creating an innovative aviation piston engine and other promising areas.



## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- Development of experimental technologies for automated manufacturing of parts of promising aircraft of large dimensions from thermoplastic composite materials
- Development of methods to reduce the acoustic impact of the aircraft on the environment, taking into account the azimuthal heterogeneity of sound-absorbing structures in the air intake channel of an aircraft engine and changes in the amplitude and directivity of the sound rotating modes during flow
- Investigation of the thermophysical properties of nanostructured composite coatings and the development of technology and equipment samples to create heat-resistant pistons of vehicle engines

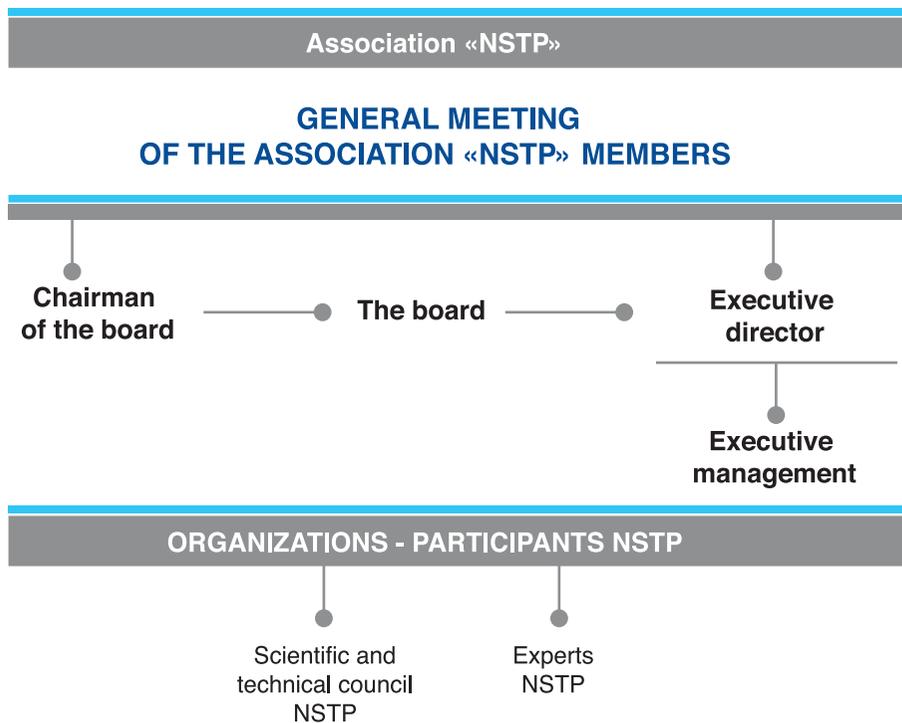




# National space technology platform

Creation date	Coordinator of the platform	The Initiators of the Platform	Legal form
April 1, 2011	Central Research Institute of Machine Building Moscow Aviation Institute (National Research University)	Central Research Institute of Machine Building, Moscow Aviation Institute (National Research University), Khronichev State Research and Production Space Center, Scientific and Production Association named after S.A. Lavochkin, S.P. Korolev Rocket and Space Public Corporation Energia, Central AeroHydrodynamic Institute named after Professor N.E. Zhukovsky.	Association

## STRUCTURE OF THE TECHNOLOGY PLATFORM



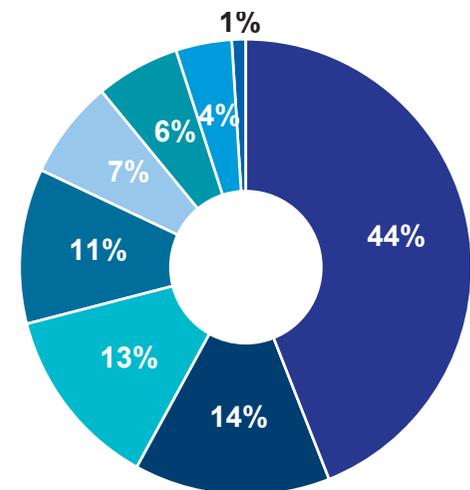
**DENIS LYSKOV,**  
CHAIRMAN OF THE BOARD  
CHIEF EXECUTIVE OFFICER  
JSC «Glavkosmos»



**TATIANA TERESHCHENKO**  
EXECUTIVE DIRECTOR

## THE PLATFORM MEMBERS

The Platform includes 71 members



- Higher educational institutions
- FSUE
- JSC
- LTD
- Engineering offices (JSC, LTD)
- Institutes of Russian Academy of Sciences
- Research Institute
- NP

### Contact information:

**Address:** Russia, 125310, Moscow,  
Volokolamskoye highway, 4

**Tel.:** +7 (499) 158-40-66

**E-mail:** spacetp@mail.ru

**Official website:** [www.spacetp.ru](http://www.spacetp.ru)



# National space technology platform

## PLATFORM'S KEY DIRECTIONS

- Develop a strategic research program providing the definition middle and long-term priorities in conducting researches and developments in rocket and space technologies
- Expert, predictive and analytical activity, the development of road maps to achieve the strategic goals
- Methodical, consulting and information support of federal executive authorities, public organizations and agencies business activity NSTP
- Formation of a database of multiple equipment shared access space industry organizations and experts database for technological forecasting
- Organization and carrying out expert activities, seminars, conferences including those in the framework of career guidance activities

## PLATFORM'S ABILITY

NSTP – a key technology platform in the field of rocket and space technologies which involves the State Space Corporation ROSCOSMOS, United Rocket And Space Corporation, the leading industrial companies, specialized scientific and educational organizations.

## PLATFORM'S COMPETITIVE ADVANTAGES

- Examination of the scientific and technical projects in the NSTP profile
- Accounting expert opinions from NSTP during the competitive selection in Federal target program «Researches and developments on priority directions of scientific-technological complex of Russia in-2014-2020 years»
- Attracting highly qualified experts of NSTP in the development of system-forecast documents in the field of rocket and space activities
- Information support of activities of specialized companies
- Organization and carrying out relevant events (conferences, forums, competitions etc.) in the interest of the space industry



## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

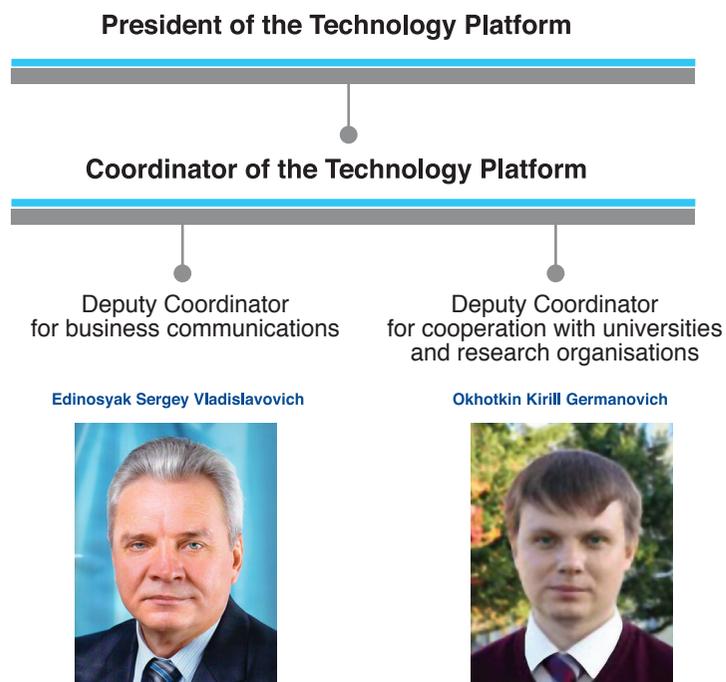
- In 2014–2017 years on the basis of competitive selection within Federal target program «Researches and developments on priority directions of scientific-technological complex of Russia in-2014-2020 years» recognized as winners of 15 projects with a total funding more than 839.5 million rub.
- In December 2015 was developed proposals for specialized companies that implement innovative development program
- In 2015 NSTP became a partner of Aerospace competition-accelerator Generations – intensive educational development program of technology business for startups
- With the support of The Ministry of Education and Science of Russia also with information support from NSTP embassy of France in Russia in collaboration with the French institute in Russia and Moscow Aviation Institute organized the 1st Franco-Russian forum in the field of aerospace education and science (Moscow, October 27–28, 2015)
- In 2015 and 2016 with the organizational and information support from NSTP the International Week of aerospace technology «Aerospace science week» (ASWeek) was organized
- National Space Technological Platform (NSTP) provides information support to events organized by the platform participants on the activity profile NSTP

## INTERNATIONAL COOPERATION

- Development of sci-tech connections with foreign leaders at space-rocket industry branch
- Trend spotting and development forecast for international space activities

Creation date	Coordinator of the platform	The Initiators of the Platform	Legal form
April 1, 2011	JSC Academician M.F. Reshetnev Information Satellite Systems	JSC Academician M.F. Reshetnev Information Satellite Systems Lavochkin Science and Production Association Reshetnev State University of Science and Technology	Unincorporated association

## STRUCTURE OF THE TECHNOLOGY PLATFORM



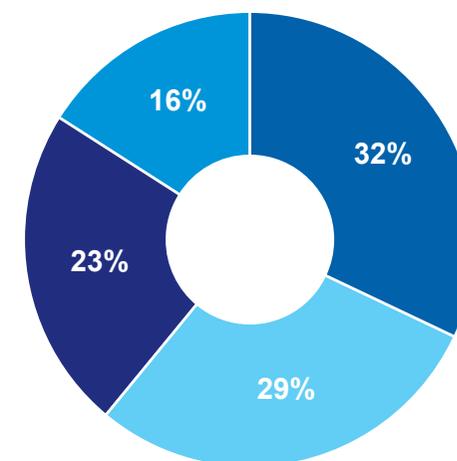
**NIKOLAY TESTOYEDOV**  
President of the Technology Platform



**VLADIMIR KHALIMANOVICH**  
Coordinator of the Technology Platform -  
Association Director

## THE PLATFORM MEMBERS

The Platform includes 120 members



- Business organizations
- Research organizations
- Educational organizations
- Small and medium enterprises

### Contact information:

**Address:** Russia, Krashnoyarsk Region, Zheleznogorsk,  
32 Pushkina Str., office 226

**Tel.:** +7 (3919) 76-47-55  
**E-mail:** esv@iss-reshetnev.ru; okg2000@mail.ru

**Official website:** [tp.iss-reshetnev.ru](http://tp.iss-reshetnev.ru)

## PLATFORM'S KEY DIRECTIONS

1. Satellite manufacturing.
2. Microelectronics and Space instrumentation.
3. Materials and technologies R&D for space engineering.
4. Information and telecom systems manufacturing.
5. Ground infrastructure development. Production and testing facilities development.
6. Aerospace services (communication, navigation, geodesy and remote sensing).

## PLATFORM'S COMPETITIVE ADVANTAGES

- System alignment and coordination of the process of developing advanced scientific and technological reserve in the design, production and testing of a new generation competitive hardware and space technology for various purposes
- Ability to develop advanced space technologies
- Fully developed implementation of integrated design, engineering and technological solutions of the development of advanced space vehicles and communication systems, navigation and remote sensing of the new generation for defense, scientific and commercial applications with a competitively-capable world-class performance, including those with a lifetime of over 15 years
- Development and implementation of the dual-use space technologies in the civilian sector of Russian Federation's economy
- Ability to deploy heavy payload to orbit with current and future deployment means
- Creation of information system that provides communications for remote areas of Russian Federation and ensures its development

## PLATFORM'S OPPORTUNITIES

- Technological modernisation of the domestic space industry
- Improving domestic space industry's competitive edge in the world
- Introducing new communicational, navigational and monitoring technologies to the hi-tech economy sectors of Russia
- Increasing access to the most demanded near-Earth orbits for Russia's state and private consumers
- Broadening the use of the informational space technologies for better management of Russian Federation's federal subjects
- Facilitating businesses' participation in R&D and commercialization of the research project's results
- Mobilising scientific, human and financial resources of the platform members to provide impetus for the innovational development and effective management
- Development of an integrated system of training of highly qualified personnel for the space industry through the integration of science, education and high-tech manufacturing
- Playing a significant role in contributing towards the Russian Federation technological advancement in accordance with National Strategy for science and technology advancement. Developing a series of breakthrough technologies to ensure Russian Federation hi-tech products taking its share of international markets. Forming project-driven consortiums between universities, research organisations and manufacturers. Synchronising research teams across industry
- Taking part in modernizing the educational system by introducing flexible curriculum, tailored specifically for students, who want to pursue career in space-related industry; as well as providing the research facilities for future candidates of science or Ph.D-equivalent degrees

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

TP NISS has supported 62 scientific projects from Platforms's members that have been granted financing from Federal Targeted Programme. Overall financing amounts to more than 3.5 billion rubles

## THE COMPLEX FULL-CIRCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

11 complex projects for high-tech production being realized under the framework provided by the order of the Government of the Russian Federation № 218

## INTERNATIONAL COOPERATION

Scientific and technical cooperation with the countries of the European Union is under way

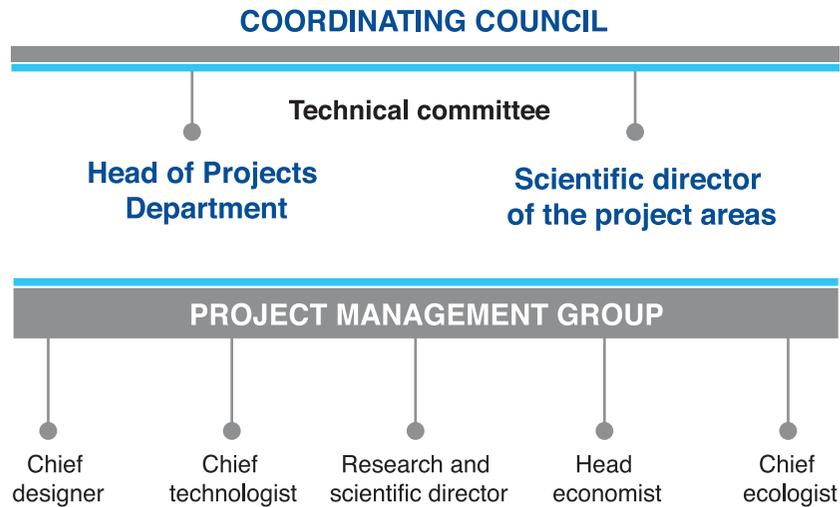


POCATOM

# Closed nuclear fuel cycle with reactors on fast neutrons

Creation date	Coordinator of the platform	The Initiator of the Platform	Legal form
April 1, 2011	Devison for innovation management State corporation Rosatom	State corporation «Rosatom»	Corporation

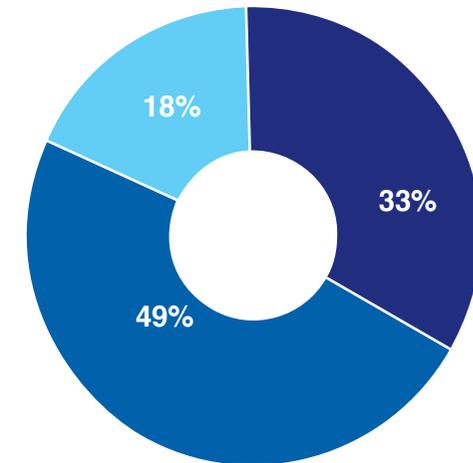
## STRUCTURE OF THE TECHNOLOGY PLATFORM



V. PERCHUKOV  
Head of the Platform

## THE PLATFORM MEMBERS

The Platform includes more than 30 members



- Research and project organizations
- Educational institutions
- Business structures

### Contact information:

**Address:** Russia, 119017, Moscow,  
B. Ordynka str., 24

**Tel.:** +7 (499) 949-26-36  
**E-mail:** VIVMaslov@rosatom.ru

**Official website:** [www.proryv2020.ru](http://www.proryv2020.ru);  
[www.innov-rosatom.ru](http://www.innov-rosatom.ru)



POCATOM

# Closed nuclear fuel cycle with reactors on fast neutrons

## PLATFORM'S KEY DIRECTIONS

1. The creation of scientific and technological base for large-scale development of atomic energy on the principles of natural security and providing for the development, construction and commissioning of the pilot demonstration power complex (hereinafter – ODAC) as part of a unit with a fast neutron reactor with lead coolant (BREST-300) and the NPP unit for reprocessing of spent nuclear fuel, the fabrication of dense and refabricate repletomessage fuel.
2. The modernization of existing and creation of new experimental test facilities to substantiate physical principles, design decisions, analysis and safety assessment of the implementation of major scientific and technological solutions of innovative nuclear energy.
3. Development, construction and commissioning of production repletomessage oxide fuel (reserve) for reactors on fast neutrons.

## COMPETITIVE ADVANTAGES OF THE PLATFORM

The generated intermediate results in the development of technologies for closing the nuclear fuel cycle either ahead of the competition, or have no analogues.

## PLATFORM'S OPPORTUNITIES

The composition and qualification of the enterprises – participants of the platform allows to carry out a full complex of works on closing the nuclear fuel cycle (research, design and prototyping of equipment and systems, design, construction and operation of industrial complexes).

## COMPREHENSIVE FULL-CYCLE PROJECTS, IMPLEMENTED BY SEVERAL PARTICIPANTS OF THE PLATFORM

Construction and commissioning of ADAC in the composition of the power unit with fast neutron reactor with lead coolant and the NPP unit for reprocessing of spent nuclear fuel, the fabrication of dense and refabricate repletomessage fuel.

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- Construction and commissioning of production repletomessage oxide fuel for fast neutron reactors
- Construction and commissioning of ADAC
- Technical re-equipment of the large physical stands

### The construction of a multipurpose research reactor MBIR





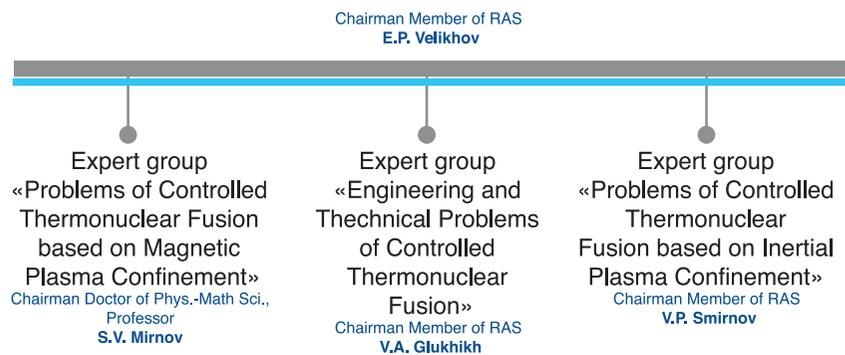
# Controlled thermonuclear fusion

Creation date	Coordinator of the platform	The Initiator of the Platform	Legal form
April 1, 2011	State Research Center of Russian Federation Troitsk Institute for Innovation and Fusion Research (SRC RF TRINITI)	SC "ROSATOM"	

## STRUCTURE OF THE TECHNOLOGY PLATFORM

### STATE CORPORATION «ROSATOM»

#### Section «Controlled Thermonuclear Fusion and New Power Technologies» of Science and Technological Council

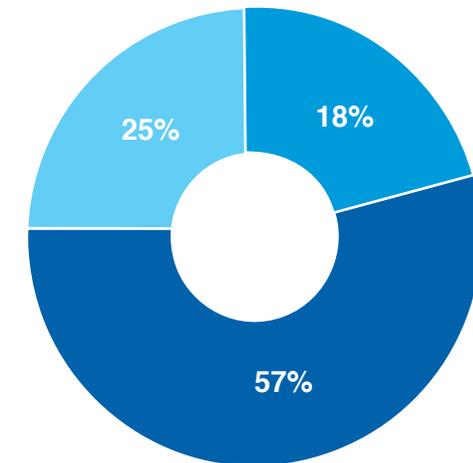


**EVGENIY VELIKHOV**

Chairman of the Platform President of National Research Center «Kurchatov Institute» Member of Russian Academy of Sciences (RAS)

## THE PLATFORM MEMBERS

The Platform includes 25 members



- Business structures
- Scientific and planning organizations
- Educational institutions

### Contact information:

**Address:** Russia, 119017, Moscow, Bol'shaya Ordynka, 24

**Tel.:** +7 (495) 841-53-08  
**E-mail:** liner@triniti.ru

**Official website:** [www.triniti.ru](http://www.triniti.ru)



# Controlled thermonuclear fusion

## PLATFORM'S KEY DIRECTIONS

- Development and modernization of tokamak innovative experimental base
- New plasma diagnostics tools
- Theoretical foundations of the processes in fusion devices
- Blanket technologies, including nuclear technologies of controlled fusion, tritium production, etc.
- IT, models and codes.
- Plasma control technologies and systems
- Demo fusion neutron source
- Hybrid fusion-fission systems
- First wall and divertor technologies, including lithium technology of capillary-porous structures
- Development of new materials
- Physics of HF and SHF heating, neutral injection
- Technologies of electron-cyclotron systems (gyrotrons, transmission lines, antennas)
- Education in plasma physics and control fusion

## COMPETITIVE ADVANTAGES OF THE PLATFORM

- Unique knowledge in tokamak physics
- Unique plasma accelerators for material studies
- Unique lithium technologies for first wall protection (Research program on T-11M tokamak, SRC RF TRINITI)

## PLATFORM'S OPPORTUNITIES

- Fundamental and applied research in the field of hot plasma physics, controlled fusion with magnetic and inertial confinement
- R&D in fusion neutron sources based on tokamaks with hybrid blankets
- Development of new technologies based on the usage of plasma accelerators and their applications in power technology, air and space technologies and in medicine

- Research of material properties in extreme conditions of high temperature, pressure, magnetic fields, particle and plasma irradiation
- Education programs for preparation of high quality specialists for R&D in international and domestic programs in controlled fusion and plasma physics.

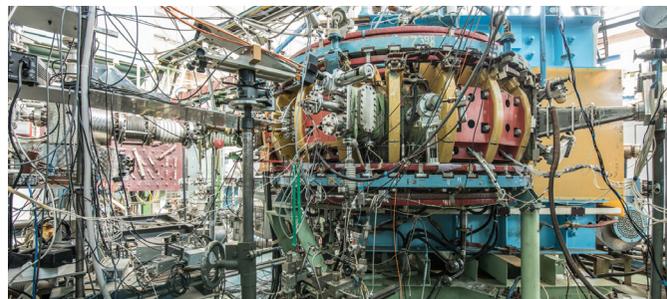
## COMPREHENSIVE FULL-CYCLE PROJECTS, IMPLEMENTED BY SEVERAL PARTICIPANTS OF THE PLATFORM

- Russian-Italian tokamak Ignitor (NRC Kurchatov Institute, SRC RF TRINITI)
- International Thermonuclear Experimental Reactor (NRC Kurchatov Institute, SRC RF TRINITI, PC ITER-Center, Efremov institute of Electrophysical apparatus, Bochvar institute of inorganic materials)

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- Modernization of the tokamak T-15 for development of fusion-based neutron source (NRC Kurchatov institute)
- Creation of the thermonuclear complex "Baikal" (SRC RF TRINITI)
- Creation of high power laser thermonuclear installation (RFNC VNIIEF, Sarov)
- Development of fusion installations based on magnetic open traps (G/I/ Budker INF Siberian branch of RAS)

### Plasma accelerator in SRC RF TRINITI



## INTERNATIONAL COOPERATION

2017 – Start of the Ministry of Education and Science precursory Project (NRC Kurchatov Institute, SRC RF TRINITI, JSC «Krasnaya Zvezda», NRNU «MIFI») on the design of International Russia-Italy Megascience Facility «Ignitor».

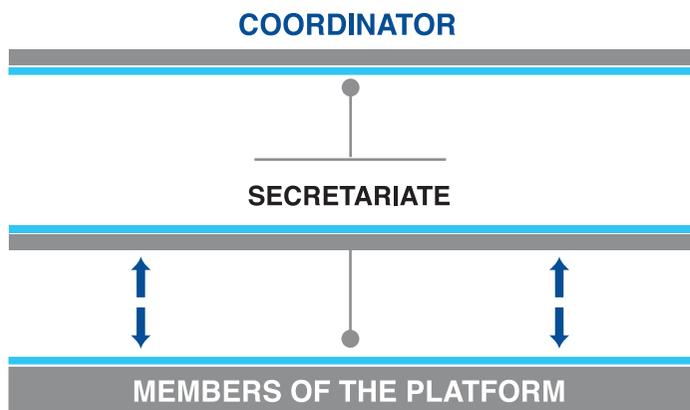


ИНТЕЛЛЕКТУАЛЬНАЯ  
ЭНЕРГЕТИЧЕСКАЯ  
СИСТЕМА РОССИИ

# Intellectual energy system of Russia

Creation date	Coordinator Of the platform	Co-initiators:
November 17, 2010	Federal State Budgetary Organization "Russian Energy Agency" (REA) of the Energy Ministry of the Russian Federation	Federal State Budgetary Organization "Russian Energy Agency" (REA) PJSC Federal Grid Company of the Energy Ministry of the Russian Federation

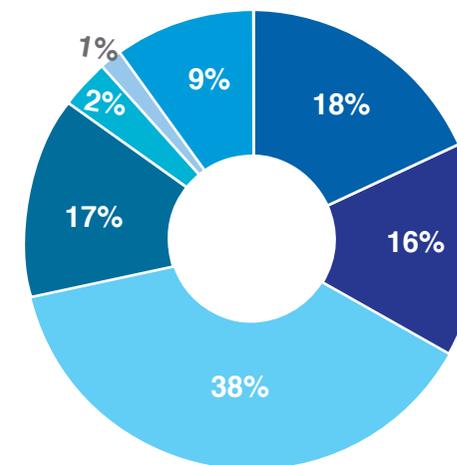
## STRUCTURE OF THE TECHNOLOGY PLATFORM



**ALEXEY KONEV**  
Innovation Director FSBI  
Russian Energy Agency of the Energy Ministry  
of the Russian Federation

## THE PLATFORM MEMBERS

The Platform includes 215 members



- Educational institutions
- Research and project organizations
- Consulting, engineering and service companies
- Production companies
- State bodies
- Financial-credit and state development institutions

### Contact information:

**Address:** Russia, 129110, Moscow,  
Shchepkina str., 40, b. 1

**Tel.:** +7 (495) 789-92-92, доб. 22-72

**E-mail:** info@rosenergo.gov.ru

**Official website:** www.rosenergo.gov.ru



ИНТЕЛЛЕКТУАЛЬНАЯ  
ЭНЕРГЕТИЧЕСКАЯ  
СИСТЕМА РОССИИ

# Intellectual energy system of Russia

## PLATFORM'S KEY DIRECTIONS

1. Develop implementation mechanisms to ensure compliance on a continuous basis functions TP IES in the interests of its members.
2. Coordination of TP IES with STI «Energinet», innovative development programs and R&D participants of TP IES.
3. Development/ updating of strategic documents of TP IES, including solid strategic vision for the development of smart technologies in the energy sector of Russia, the strategic studies subject to the provisions of the Concept of the national project «smart energy system of Russia».
4. Interaction with the Ministry of science in the formation of the work the topic of intelligent networks of the State program «Development of science and technologies» for the period 2014–2020.
5. Organization of work on the structuring of projects on the subject of TP IES and financing (co-financing).

## PLATFORM'S COMPETITIVE ADVANTAGES

- Developed relationships with relevant authorities, professional market participants and infrastructure organizations in the energy, development institutions
- An extensive panel of industry experts
- The availability of updated information on trends and projections of the technological development of the sector

## PLATFORM'S OPPORTUNITIES

1. Monitoring and analysis of smart and digital energy development in Russia and in the world.
2. Assessment of the readiness of power companies to implement smart and digital energy technologies.
3. Examination of projects and programs in the development of smart and digital energy.
4. Development (harmonization) standards for development of smart and digital energy technologies.
5. Project development, expertise of normative legal acts aimed at supporting the technology development of smart and digital energy.
6. The development of professional standards in the field of smart and digital energy.

## THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

- Project «Smart energy system of Russia»
- The national project «Digital substation»
- The project “Development and implementation of superconducting technology in the Russian energy sector”
- Electric car charging infrastructure formation

## INTERNATIONAL COOPERATION

Participation in the working agreement of the International Energy Agency on the program of cooperation in the field of intellectual networks ISGAN

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- Development and implementation of digital electrical substations and stations on the newly constructed and reconstructed objects of power
- Creating interconnections at 220 kV between UES Siberia and UES East through Transbaikal Converter system on the SS «Sankt-Peterburg» (SBPC)
- Creation of a high-temperature superconducting (HTSC) DC cable line for a voltage of 20 kV with a current of 2500 A with a length of up to 2500 m
- The creation of the infrastructure of electric transport in the city of Moscow
- Creation of a comprehensive automation system for 15 kV distribution networks of “Yantarenergo” (SMART GRID)
- Creation of an active-adaptive distribution network 10-110 kV on the territory of St. Petersburg
- “Smorgunov” digital substation (110/10 kV) development (PJSC “IDGC of Siberia”)

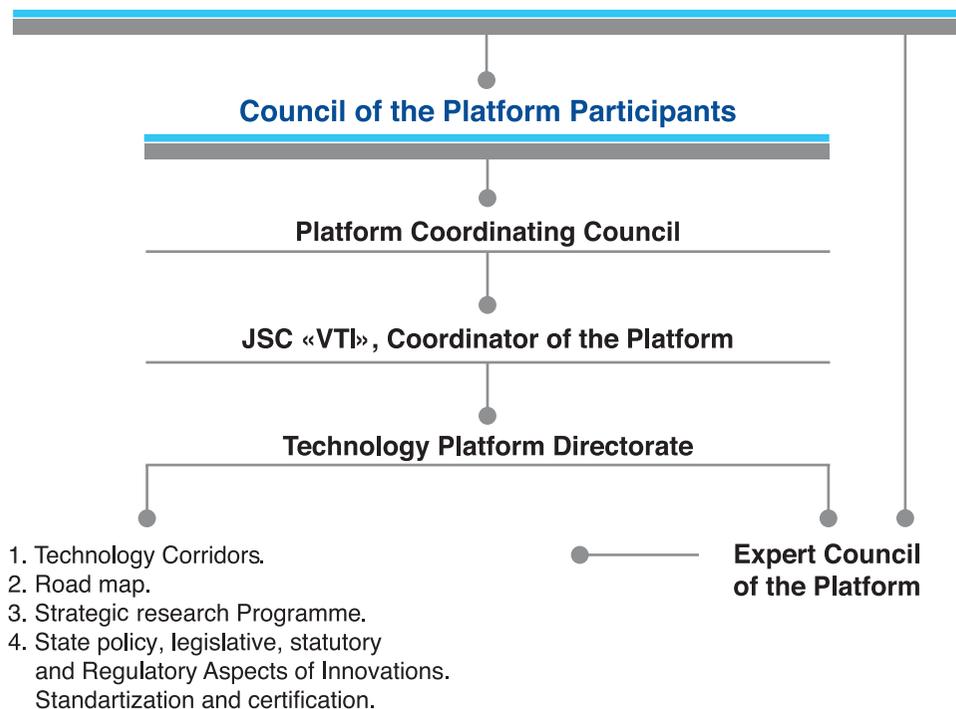


# Environmentally friendly thermal power sector of high efficiency

Creation date	TP Coordinator	TP Initiators	Legal form
April 1, 2011	JSC "All Russia Thermal Engineering Institute" (JSC "VTI")	Ministry of Energy of the Russian Federation, PJSC Inter RAO	No

## TECHNOLOGY PLATFORM STRUCTURE

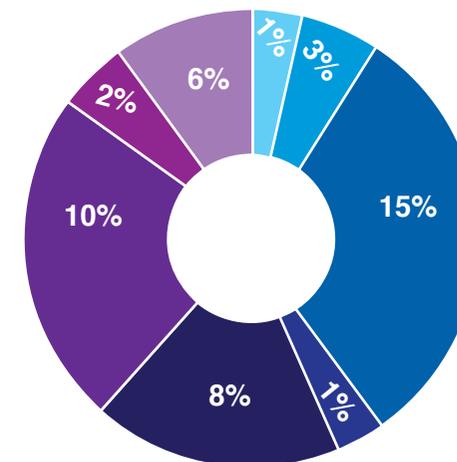
### PARTICIPATING ORGANIZATIONS



**BORIS F. REUTOV**  
Coordinator of Platform  
Senior Vice-President of JSC "VTI"

## PLATFORM MEMBERS

The Platform includes 52 members



- State Authorities
- Power Generating Companies
- R&D Organizations
- Design Organizations
- Industrial Enterprises
- Universities
- Financial Organizations
- Engineering and Service Organizations

### Contact information:

**Address:** Russia, 115280, Moscow, Avtozavodskaya str., 14

**Tel.:** +7 (495) 137-77-70  
**E-mail:** vti@vti.ru

**Official website:** [www.tp-energy.ru](http://www.tp-energy.ru)



# Environmentally friendly thermal power sector of high efficiency

## PLATFORM'S KEY DIRECTIONS

1. Domestically-produced gas turbines (GT) and combined cycle gas turbine (CCGT) Units unit with efficiency of  $\geq 60\%$ .
2. Combined heat and power plants of high efficiency, reliability and flexibility with a single-unit capacity in the range of 100 MW - 170 MW, designed for construction of new CHP plants and modernization of the existing plants.
3. Development of combined-cycle plant modules with a single-unit electrical output capacity in the range of 20 up to 100 MW, designed for supplying the cogenerated electricity and heating power from CHP plants of towns and city districts.
4. Advanced ultrasupercritical coal-fired power plants with a single-unit capacity in the range of 660 MW up to 1 000 MW and efficiency of 45–47%.
5. The development of coal-fired power plants of new generation with a single-unit capacity in the range of 100–200–300 MW based on modern fuel combustion technologies of high efficiency.
6. Development, scaling-up and commercial exploitation of up-to date pollution control equipment for power plants, such as fly ash handling systems, desulphurization units, flue gas denitrification plants as well as CO<sub>2</sub> capture and utilization technologies.
7. Hybrid-type power generation units combining fuel cells and turbine systems.

## PLATFORM'S COMPETITIVE ADVANTAGES

1. High expert potential: TP possess all competences required for implementation of the most complicated projects in the power sector; among its members are R&D institutions, manufacturing enterprises, design and engineering companies, universities and financial institutions.
2. High level of TP member competences from the research community: most of them are the leader with a wealth of experience in R&D and implementation of integrated multi-purpose projects.
3. Availability of infrastructure that allows to solve the most complicated S&T problems: state-of-the-art equipment, instruments and accredited test-benches, jointly used research centers.
4. Mechanisms provided by Technology Park.

## PLATFORM'S CAPABILITIES

1. Organization of jointly implemented R&D projects aimed at the development of advanced technologies and process equipment.

2. Systematization and other engineering services related to approbation and adaptation of new equipment for commercial exploitation.
3. Access to information collected from power generating enterprises and built-up data bases, comprehensive analysis of the obtained data, consultation activities.
4. Engineering design activities, including implementation of typical and individual engineering design projects related to introduction and exploitation of new technologies and process equipment.
5. Expert evaluation of R&D projects, R&D and Innovative Development Programmes in the interest of power companies (TP members).
6. Expert evaluation, testing (including certification tests) and other certification activities.
7. Development of federal/industrial/corporate standards.
8. Training and Educational activities: degree education (higher education, post graduate courses), upgrading qualifications, re-education, dissertation councils.
9. Development of educational programs in collaboration with industrial partners.

## THE COMPLEX COMPLETE-CYCLE PROJECTS IMPLEMENTED THROUGH COLLABORATION OF TP PARTICIPANTS

1. The development of technological standards for power sector, including national standards, environmental requirements to be met by a new power plant to be put into operation, establishing specific emission limit values.
2. Development of scientific and technical solutions and control techniques to manage the CCGT combustion chamber modes with a view to improve its energy efficiency and environmental performance.
3. Technical solutions for development of an A-USC heavy-duty coal-fired power unit.
4. Working –out solutions for improving efficiency and environmental parameters of the coal-fired power plants – through use of FCB boilers, more efficient combustion technologies and others.
5. Engineering development and commercialization of the upgraded gas turbine unit – GTD-110 M.

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

1. Development of the cogeneration units for supplying heat and power to meet the needs of towns and city districts.

2. Development of advanced gas turbine units and CCGT units of high flexibility to be used within the peak load curve.
3. New technical solutions and control techniques to manage the CCGT combustion chamber modes with a view to improve its energy efficiency and environmental performance.
4. Development of a technological solutions for environmentally friendly low-emission burners designed for a boiler of a coal-fired plant.
5. Development of new generation coal-fired CHP plants with improved technical and economic performance parameters designed for replacement of the currently-operated equipment and construction of new power plants.
6. R&D with the view to create domestically-produced pollution control systems (such as fly ash handling systems, desulphurization units, flue gas denitrification plants) as well as technologies for carbon capture and its further utilization.
7. Improving flexibility of steam gas and CCGT power plants.
8. Development of systems for on-line monitoring and diagnosing the technical conditions of the thermal and mechanical equipment at power plants
9. R&D aimed at development of up-to-date heating supply systems, with development of the related equipment.

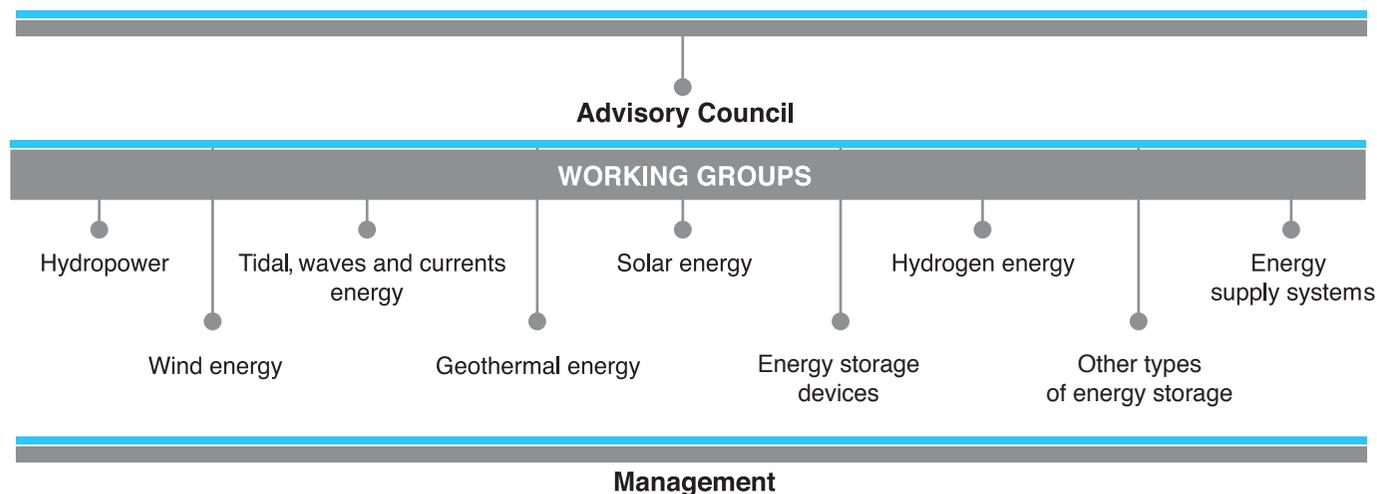


# Perspective renewable energy technologies

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
November 24, 2010	JSC "RusHydro"	JSC "RusHydro"	Without a legal entity

## STRUCTURE OF THE TECHNOLOGY PLATFORM

### THE MANAGING COMMITTEE



**ELISTRATOV VIKTOR**  
Member of the Platform AC,  
Head of the Department  
SPbSPU

**KALINKO OLEG**  
Coordinator Of The Platform,  
Member of the Platform AC  
Head of the direction electrical  
power engineering and solid  
fuel of UK "RUSNANO"

**KOZLOV MIKHAIL**  
Member of the managing  
committee

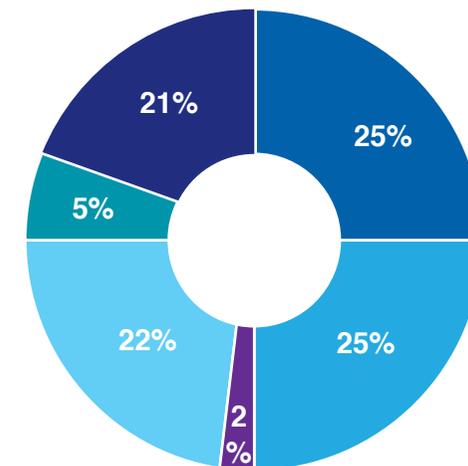
**REUTOV BORIS**  
CEO OJSC "VTI", Member  
of the managing committee

**SOROKOVIK DANIEL**  
The Deputy coordinator of the  
Platform, Leading expert of  
Department of innovation  
development, JSC "RusHydro"

**KHAZIAKHMETOV RASIM**  
Member of the managing  
committee

## THE PLATFORM MEMBERS

The Platform includes 139 members



- Business structures
- Higher education institutions
- Foreign organizations
- Research organizations
- Non-profit partnerships
- Planning organizations, engineering and service companies

### Contact information:

**Address:** Russia, 127006, Moscow, Malaya Dmitrovka str., 7

**E-mail:** info@i-renew.ru

**Official website:** www.i-renew.ru



# Perspective renewable energy technologies

## PLATFORM'S KEY DIRECTIONS

- Hydropower (including large)
- Wind energy
- Energy of tides, waves and currents
- Solar energy
- Geothermal energy
- Energy storage devices
- Hydrogen energy
- Other renewable energy technologies
- Systems of energy supply on the basis of complex use of renewable energy sources

## PLATFORM'S COMPETITIVE ADVANTAGES

The goal of the Platform is to unite the efforts of government, business, financial institutions and development institutions, scientific and design communities, educational institutions in creating conditions for renewable energy development, introduction of highly efficient generation technologies based on renewable energy sources (RES), increasing the competitiveness of the products and services of renewable energy in the Russian and world markets.

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY PLATFORM

- Updated the Strategic research agenda of the Platform ([www.i-renew.ru/program](http://www.i-renew.ru/program)).
- Participants of the Platform are 26 projects for a total amount of about 1,5 billion rubles, in accordance with the directions outlined in the Strategic research agenda. Financing of projects carried out at the expense of extrabudgetary sources, as well as within the Federal program «Research and development on priority directions of development of scientific-technological complex of Russia for 2014–2020»
- Regular analysis of the proposals of the working groups on scientific and technological areas of the Platform, the implementation of the selection of proposals for their compliance projects, and objectives of the strategic program of research and development Platform, including for possible participation in the Federal program of IR
- Conduct regular scientific and technological workshops with heads of working groups of the Platform
- In cooperation with the joint Institute for high temperatures of RAS, Moscow power engineering Institute conducted industrial practice of students of Moscow power engineering Institute in the laboratories of the joint Institute for high temperatures Russian Academy of Sciences
- Under the auspices of the Platform held an international conference «Renewable energy XXI century: energy and economic efficiency» REENCON-XXI ([www.reencon-xxi.ru/](http://www.reencon-xxi.ru/))
- With the active participation of the Platform held a number of educational acceleration events in the field of modern power generation (Power&Energy) for technological entrepreneurs of various stages within the accelerator «GenerationS», including:
  - participation of employees of the companies-corporate partners of the track Power&Energy in business and technical examination of projects and mentoring sessions;
  - organization of seminars and expert sessions with project teams of innovation projects to assess the potential implementation of the proposed technologies and technical solutions, seminars;
  - providing informational, consulting, organizational and PR support in the implementation of programs and projects
- News and documents of the Platform are published on the official Internet portal of the Platform «TPWI.RF» and «i-Renew.ru» ([www.i-renew.ru/](http://www.i-renew.ru/)) and on the page of social network facebook ([www.facebook.com/PTofRES/](http://www.facebook.com/PTofRES/))
- Carried out information support of the Internet magazine «the Fifth element» and «Technology platform»



# Small distributed energy

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
April 1, 2011	NCP « Distributed energy»	Agency for forecasting balances in electric power industry INTER RAO UES, Russian Read and Bioenergy society	Ex: non-profit partnership

## STRUCTURE OF THE TECHNOLOGY PLATFORM

### The General meeting of TP «SDE» (consortium)

#### The co-chairs of TP «SDE»

FSBI «REA» (**I.S. Kozhukhovskiy**)  
 Subcommittee on SDE of the state  
 Duma of Russian Federation (**S.Y. Esakov**)  
 JSC «INTER RAO UES»  
 NP «Russian peat and bioenergy  
 society» (**A.A. Bochenkov**)

#### Advisory Council

Representatives of relevant research  
 institutes and design agencies,  
 major energy companies,  
 manufacturers of energy equipment,  
 non-profit associations,  
 promoting distributed energy  
 in Russia (32 participants)  
 Chairman – **O.S. Popel**

#### Coordinating Council

FSBI «Russian energy Agency»  
 JSC «INTER RAO UES»;  
 NP «Peat and bioenergy society»;  
 RRC «Kurchatov Institute»;  
 JSC «MC «UEC», the Yaroslavl region Government,  
 OJSC «Yaroslavl Generating Company», etc.

#### Non-commercial partnership «Distributed energy»

Coordination of the Technology Platform (Protocol coordination Council dated 21.02.2014 № 6  
 Coordinator - O.A. Novoselova  
 (General Director of «Distributed generation, Vice President of NP «ER»)



**KOZCHUHOVKIJ I.**  
Co-chair of the Platform



**ESYAKOV S.**  
Co-chair of the Platform



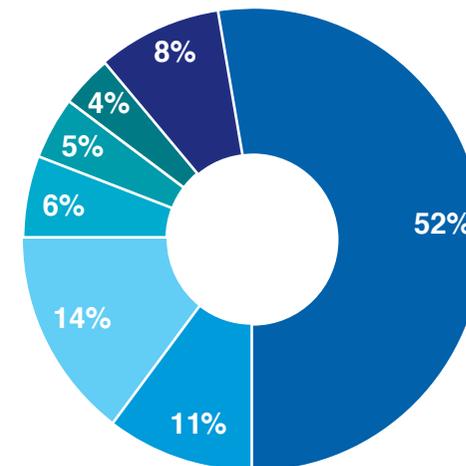
**BOCHENKOV A.**  
Co-chair of the Platform



**NOVOSPELOVA O.**  
Co-chair of the Platform

## THE PLATFORM MEMBERS

The Platform includes 232 members



- Production enterprise
- Research organizations
- The design of the organization, engineering and service companies
- Educational institutions

### Contact information:

**Address:** Russia, 121170, Moscow,  
Kulneva str., 3-1

**Tel.:** +7 (916) 396-38-20  
**E-mail:** noa@ds-energy.ru

**Official website:** www.ds-energy.ru



## Small distributed energy

### PLATFORM'S KEY DIRECTIONS

- Coordination of work ( communication platform) for development of innovative sector of the Russian energy industry – small scale distributed power generation
- Promotion of the best Russian technologies and projects in the field of small distributed energy (including in collaboration with financial institutions and development institutions – RUSNANO, RVC, the Fund for the development of the industry, SKOLKOVO, etc.)
- Assistance to interested organisations promotion at the Federal and regional levels of integrated projects in the field of distributed energy, including in the framework of the Working group of the energy Ministry on the implementation of smart energy systems and National technological initiatives «EnergyNet»
- Organization of interaction of the organizations – members of TM in companies with state participation (JSC «Inter», JSC «Rosseti») on the promotion of the most promising developments in the framework of innovative programs of state-owned companies

### PLATFORM'S COMPETITIVE ADVANTAGES

- Coordination of efforts of business, science, government agencies , financial institutions in development of innovation sector of the Russian energy – distributed energy
- Assistance to interested organizations, companies (groups of companies) in cooperation with Federal and regional authorities, development institutions to promote the most promising developments and projects in the field of low distributed energy
- Identify and develop to the stage of loan financing and/or subsidies for highly efficient investment projects, facilitating interaction with Russian and international financial institutions («Industry development Fund », «WEB», «SKOLKOVO», «RVC», etc.), search of the interested strategic investors, the formation of sustainable business structures, implementation of functions of «integrator» integrated projec

### THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

“Autonomous hybrid system of power supply based on open architecture with high level of fuel substitution for objects and difficult to reach settlements” (as part of a Consortium).

### THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

Projects initiated within the framework of the National technological initiative:

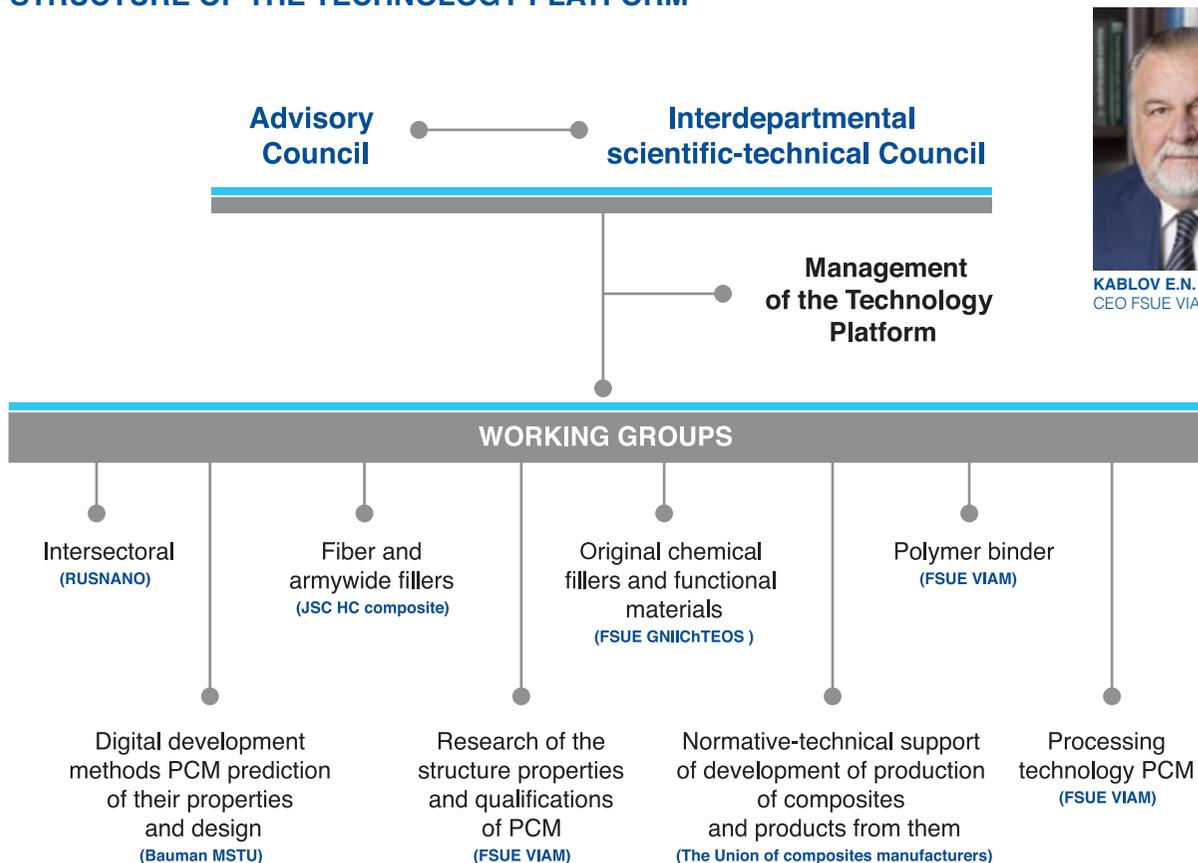
- “Autonomous hybrid system of power supply based on open architecture with high level of fuel substitution for objects and difficult to reach settlements” (as part of a Consortium);
- A meeting of the Expert Council on Legislative Regulation of Distributed Energy, including the RES of the Energy Committee of the State Duma of the Russian Federation (May 25, 2017);
- Organized and held (June 26, 2017; December 12, 2017) Round table of the Committee on Energy of the State Duma of the Russian Federation;
- Participated (with a report) in the preparation and conduct of the Meetings of the Coordinating Council on Energy, Energy Saving and Energy Efficiency of the Association of Interregional Social and Economic Cooperation “Central Federal District” on the issue “Development of distributed energy and its role in the implementation of investment projects (July 3, 2017);
- Took part in the preparation and conduct (with a report) of the Round Table of the Analytical Center under the Government of the Russian Federation “Features of Distributed Generation Development in Russia” (September 20, 2017).



# New polymeric composite materials and technologies

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
13 Jun 2013	FSUE "VIAM", OJSC "RUSNANO", JSC "HC "Composite", State Corporation "rostec"	state Corporation "Russian technologies", Federal state unitary enterprise "VIAM", Russian Academy of Sciences, state Corporation "Rosatom", JSC "RUSNANO", JSC "HC "Composite"	Non-profit partnership

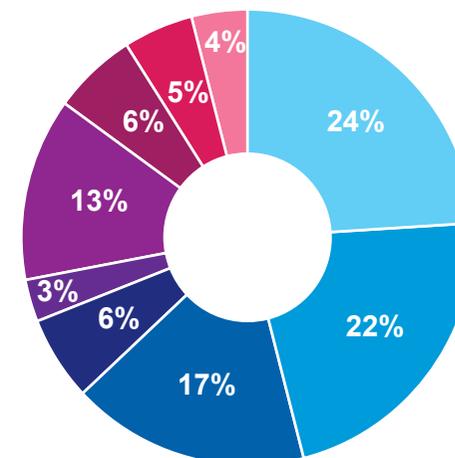
## STRUCTURE OF THE TECHNOLOGY PLATFORM



KABLOV E.N.  
CEO FSUE VIAM

## THE PLATFORM MEMBERS

The Platform includes 119 members



- Higher education institutions
- Manufacturing plants
- Scientific organizations
- Engineering
- Public authorities
- Experimental design bureau
- Foreign companies
- Development institutions
- Other members

### Contact information:

**Address:** FSUE "VIAM", 10500, Moscow, Radio str., 17

**Tel.:** +7 (499) 263-88-75  
**E-mail:** tppkm@viam.ru

**Official website:** тппкм.виам.рф



# New polymeric composite materials and technologies

## PLATFORM'S KEY DIRECTIONS

- The formation of a single industrial-technological platform for the development, production and the use of polymer composite materials and designing products for various industries
- Attracting fundamental and fundamentally-oriented results of institutes of the Russian Academy of Sciences, public research centers and institutions of higher education for the achievement of the strategic scientific, technological and industrial goals
- Development and implementation of training plans and educational programs for the preparation and retraining of specialists in engineering, scientific composition, professional workers and management personnel recruitment and retention in enterprises and organizations of the industry promising young specialists and scientists
- Significant cost reduction materials, processes and energy consumption, increase productivity through the implementation of new technological approaches, reduction the cost of polymer composite materials and significant the expansion of their functionality

## PLATFORM'S COMPETITIVE ADVANTAGES

Technology platform formed as the main tool implementation of the Concept «Development production of new polymeric composite materials» project which developed by the Ministry of industry and trade of the Russian Federation in accordance with the decision of 09.06.2010, №1 Of the Council of General and chief designers, leading scientists and experts in the field high-tech sectors of the economy

### THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

#### The project «Heat supply» (JSC «HC «Kompozit»)

The aim of the project is development of technology of production of pipes from polymer composite for main and distribution heat supply networks, hybrid carbon-composite pipe of high hardness, and composite large diameter pipes resistant to aggressive environment and composite pipes with elements of diagnosis.

#### The project «Showcase» (JSC «GNIChTEOS»)

The aim of the project is to develop technologies for obtaining structural and functional composite materials of new generation and design considerations for a shock-resistant, vandal-resistant architectural glazing structures, and also mastering the production of high-tech products based on the technological solutions.

#### The project «ARKA» (FSUE «VIAM»)

The aim of the project is to develop technologies for production of composite materials of new generation and design solutions for use in the construction of prefabricated bridges using as the aerial parts of the supports of the arch elements and the profiled decking, as well as development of production of high-tech products based on the technological solutions.

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

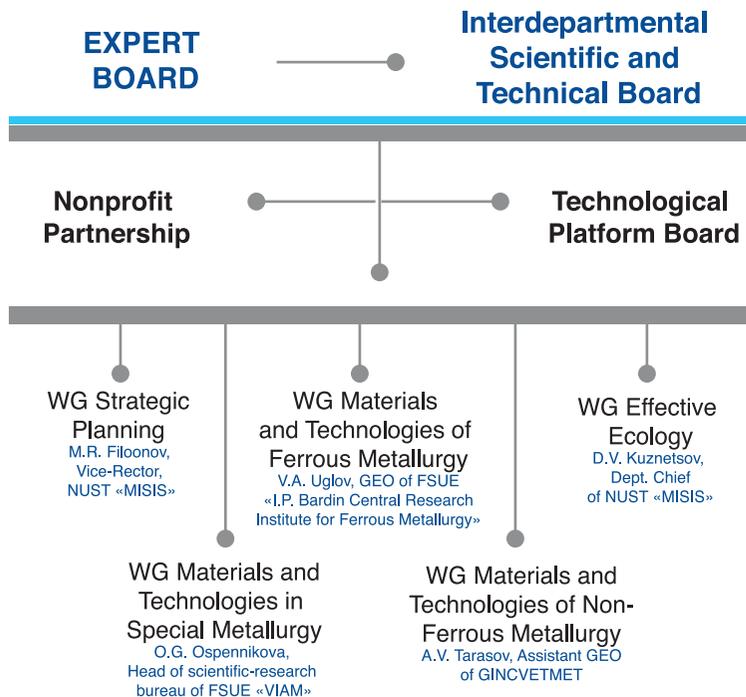
Technological platform «New polymer composite materials» performs work in support of the (examination of the obtained results, coordination of scientific research) Routines «Development of production of composite materials (composites) and products from them» state program of the Russian Federation «Development of industry and increase of its competitiveness»



# Materials and technology in metallurgy

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
June 13, 2013	FSUE "VIAM", NUST "MISIS", FSUE "I.P. Bardin Central Research Institute for Ferrous Metallurgy"	MINPRMTORG OF RUSSIA, SC Rostec, FSUE "VIAM", Russian Academy of Sciences, Managing Company «Aluminium Products», FSUE "I.P. Bardin Central Research Institute for Ferrous Metallurgy", FSUE CRISM "Prometey", The United Shipbuilding Corporation, SC "Rosatom", NUST "MISIS"	Non-profit Partnership

## STRUCTURE OF THE TECHNOLOGY PLATFORM



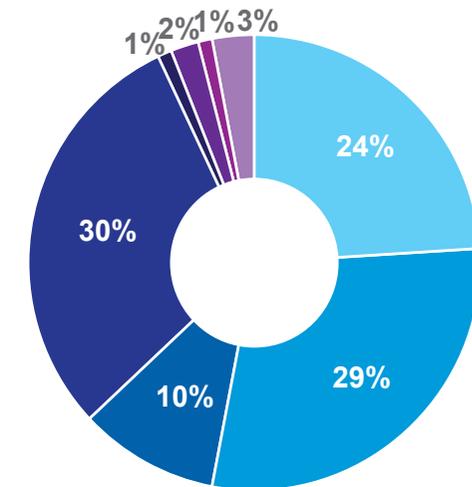
**KABLOV E.N.**  
CEO FSUE "VIAM"



**FILONOV M.R.**  
Vice-rector of research and development NUST "MISIS"

## THE PLATFORM MEMBERS

The Platform includes 137 members



- Educational Institutions
- Scientific Organizations
- Experimental Design Bureau
- Manufacturing Organisations
- Public Authorities
- Public Corporation
- Foreign Companies
- Other Members

### Contact information:

#### Address:

NUST "MISIS": 4 Leninskiy Ave, Moscow, 119049  
FSUE "VIAM": 17 Radio St., Moscow, 105005

**Tel.:** +7 (495) 638-45-33  
**E-mail:** science@misys.ru  
**Tel.:** +7 (499) 261-86-77  
**E-mail:** inno@viam.ru

**Official website:** [www.tp-mtm.ru](http://www.tp-mtm.ru)



# Materials and technology in metallurgy

## PLATFORM'S KEY DIRECTIONS

- Development of theoretical foundations, materials methodologies and production technologies
- Development of new generation materials with enhanced features
- Development of resource-saving and energy-efficient technologies in metallurgy

- Composite materials with metal and by intermetallic matrices

Modern equipment technologies

- R&D approach in the materials and metallurgy technologies

## PLATFORM'S COMPETITIVE ADVANTAGES

One of the features of the Technology Platform «Materials and Technologies in Metallurgy» is its organization to meet the state demands for research and development, technological and experimental designing, industrial prototyping to achieve the goals and strategies of sustainable development of the metallurgy with renewable resources for various industries.

## PLATFORM'S OPPORTUNITIES

There is a new class of complex high-alloyed austenitic nitrogenous steel with anticorrosion in inorganic and bioactive environment and with special properties.

There is a prototype created for cascade solar elements based on metal-organic perovskite compounds for converting solar energy into electricity with over 15% of power efficiency with planned figures over 20% NUST «MISiS».

## THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

The project to create innovative supercapacitors based on unique electrolytes developed at the university. The production was launched in 2017 in Khimki, Moscow Region. The scientific team from the NUST MISiS have synthesized special carbon materials, “viskers”. Supercapacitor modules based on the obtained materials successfully operate at temperatures of 60°C and lower.

The world's first unique furnace for highly efficient processing of human-made and solid domestic waste and the production of cast iron by bubbling. It was developed by scientific group from NUST MISiS together with the industrial partner of the university – LLC «PC «Vtoralyuminproduct»». The first unit was built and launched on the territory of CJSC MK “Stalkron” in Mtsensk, Orel region.

Example of public-private partnership: The Institute of Light Materials and Technologies is the first in Russia platform for joint implementation of R&D projects on the development of modern technologies by NUST MISiS, UC RUSAL and members of the Aluminum Association.

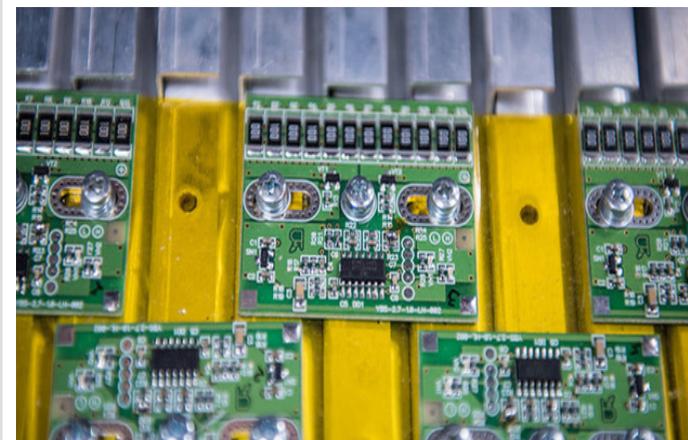
## INTERNATIONAL COOPERATION

- Participation in the implementation of international projects within the framework of the Eurasian technological platform “technologies of metallurgy and new materials”, which unites the leading enterprises and scientific organizations of Armenia, Belarus, Kazakhstan and Russia. TP “Materials and technologies of metallurgy” is the initiator and coordinator of the Eurasian technological platform “technologies of metallurgy and new materials”

- Organization and holding of international conferences
- Development of a programme to support the export of advanced high-tech technologies in the field of metallurgy and new materials

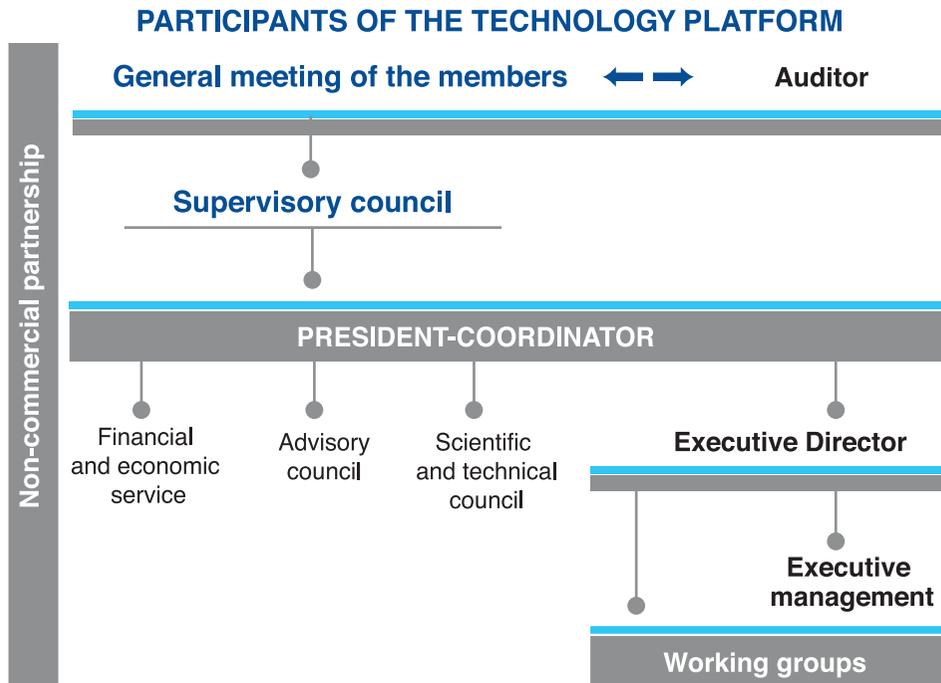
## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY PLATFORM

NUST MISiS scientists have proposed a technology that can double the strength of composites obtained by 3D printing from aluminum powder, and advance the characteristics of these products to the quality of titanium alloys: titanium's strength is about six times higher than that of aluminum, but the density of titanium is 1.7 times higher.



Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
June 27, 2013	FGBUN IPKON RAS	PJSC "SUEK", FGBUN IPKON RAS, FGBOU IN Ural State Mining University, FGBOU IN NMSU "Mining", FGBUN IGD UB RAS, JSC SPC "Mechanobr-technique", FGBUN IGD SB RAS	Non-commercial partnership

## STRUCTURE OF THE TECHNOLOGY PLATFORM



**VALERY ZAHAROV**  
 President-Coordinator  
 Director of the Russian Academy of Sciences IPKON  
 Corr. Russian Academy of Sciences, prof., Ph.D.



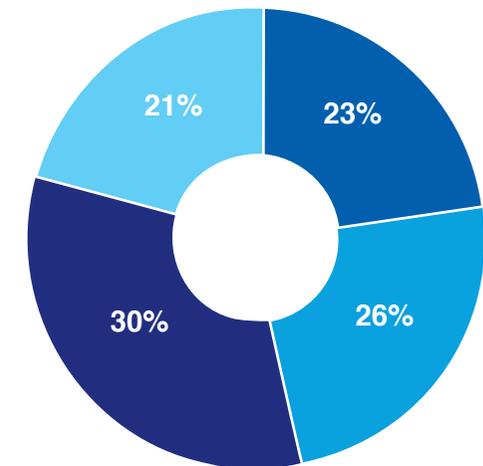
**LEONID WEISBERG**  
 Chairman of the Supervisory Board  
 Chairman of the Board  
 JSC SPC "Mekhanobr-technique"  
 Academician of Russian Academy of Sciences, prof., Ph.D.



**ALEXANDER VARTANOV**  
 Executive Director  
 Deputy Director of the Russian Academy of Sciences IPKON

## THE PLATFORM MEMBERS

The Platform includes 105 members



- Educational organizations
- Research organizations
- Design and service companies
- Mining enterprises

### Contact information:

**Address:** 111020 Moscow, Kryukovsky deadlock, 4;  
 St. Petersburg, 22 line, 4, Cor. 5

**Tel.:** Тел.: +7(495) 360-89-60; +7(495) 360-89-64  
**E-mail:** tp-tpi-ipkonran@mail.ru

**Official website:** [www.TPTPI.com](http://www.TPTPI.com)



# Technology platform of solid minerals

## PLATFORM'S KEY DIRECTIONS

- Examination and preparation of recommendations for projects in the mining profile
- Development of changes in the regulatory framework of industries, TPI
- Development of training programs and standards of certification training for industries, TPI
- Implementation of innovative projects in the sectors of solid minerals
- Organization of activities to improve participants' communication industries, TPI
- Development of programs of development of the domestic mining engineering and mechanical engineering
- Management and protection of intellectual property

## PLATFORM'S ABILITY

- Creation of energy efficient and resource saving technologies, providing, in their commercialization and implementation, the expansion of mineral resource base, increasing value-added products, productivity and competitiveness of enterprises of the mining industries of Russia
- Creation of conditions for the elimination of the backlog of Russia in the methods and volume of production of solid minerals in the future – achieving a leading scientific, technical and economic positions of enterprises of the mining industries of Russia

- The accumulated potential of the research and development of the partnership members on a number of scientific and technical directions in the field of mining and deep processing of solid minerals undertaken at the global level, primarily in geomechanical and geodynamic research, development wellbore («ISR») mining methods of solid minerals, developing the fields of the poor and fine-ores

## PLATFORM'S COMPETITIVE ADVANTAGES

- Knowledge mobilization partnership on the basis of cooperation together leading industrial and academic organizations and institutions in the formation and implementation of best national and international practices in the field of mining, dressing and deep processing of solid minerals
- Joint solution of applied tasks in the sphere of subsoil use by the members of the partnership, through the development of innovative technologies corresponding to the modern level of scientific and technological development, and removing barriers to collaboration on public-private partnerships

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- Support of projects on scientific and technological security of mining operations and environmental management
- Preparation of a draft decree of the Government of the Russian Federation on approval of the program of state support for R&D and ODA in the field of exploration and mining in accordance with the list of machinery and equipment for the exploration and mining subject to import substitution
- Participation in the international championship of engineering cases
- The development of the concept of transition of the mining industry on best available technologies. Participation in the preparation of cross-sectoral and information technology industry BREF
- The formation of the Eurasian technology platform «Production and processing of solid minerals»
- The formation of a complex research programme «Mine Safety»
- Edition of the Terminological dictionary «Mining»

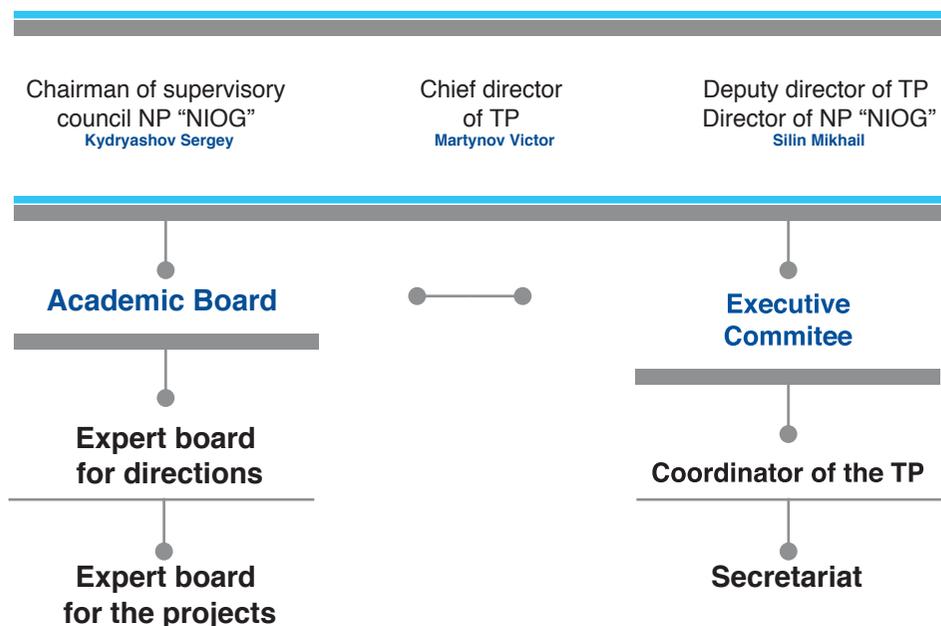


# Hydrocarbon production and use technologies

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
November 23, 2011	The non-commercial partnership Development of innovation fuel-energy complex «National Institute of Oil and Gas» (NP «NIOG»)	Gubkin Russian State University of Oil and Gas	Non-profit partnership

## STRUCTURE OF THE TECHNOLOGY PLATFORM

### SUPERVISORY BOARD



**VICTOR MARTYNOV**  
Chief director of TP



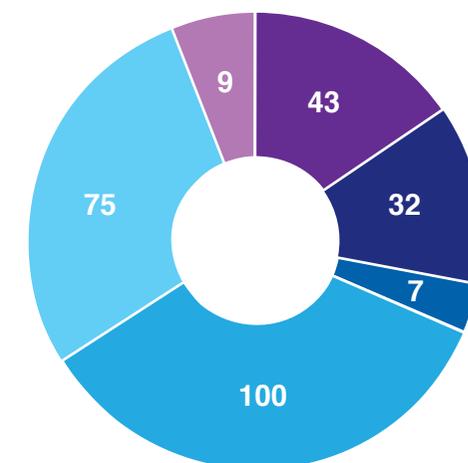
**SERGEY KYDRYASHOV**  
Chairman of supervisory council NP "NIOG"



**MIKHAIL SILIN**  
Deputy director of TP,  
director of NP "NIOG"

## THE PLATFORM MEMBERS

The Platform includes 266 members



- Institutions of higher education
- Scientific research institutes
- Experienced and development offices
- Project and service companies
- Manufacturing companies
- Foreign organizations

### Contact information:

**Address:** Russia, 119991, Moscow,  
Leninskiy Av., 63/2

**Tel.:** +7 (499) 507-88-65  
**E-mail:** mail@tp-ning.ru

**Official website:** www.tp-ning.ru



# Hydrocarbon production and use technologies

## PLATFORM'S KEY DIRECTIONS

- The growth of hydrocarbon reserves
- The increase of oil recovery efficiency
- The intensification of oil production
- Technologies APG utilization
- Drilling and oil and gas fields development
- Technology offshore fields development
- Hydrocarbon production from unconventional fields
- Equipment for oil and gas production
- Hydrocarbon production from unconventional fields

## PLATFORM'S COMPETITIVE ADVANTAGES

TP is a voluntary association of participants that is based on the principle of equality regardless of their organizational and legal form and form of ownership. The only condition of accession to the TP is their agreement with purposes and objectives of the TP and part in their achievement.

## PLATFORM'S ABILITY

- event management for interaction of the participants of TP with international organizations;
- development of scientific and innovation infrastructure;
- assistance in training and advanced training of scientific personnel and engineers;
- development of communication in scientific, technical and innovation sphere;
- development of mechanisms of regulation and self-regulation;
- selection and project expertise for the Federal target program "Research and development in priority areas of development of the scientific and technological complex of Russia.

## THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

- Joint meetings of Advisory Board for innovative development oil and gas industry (Ministry of Energy) and Technology Platform «Hydrocarbons production and use technology»
- Working meetings of the Platform participants with representatives of major oil and gas companies (PJSC «Gazpromneft», PJSC «Lukoil», JSC «Zarubegneft», etc.)
- Creation of a working group on the development a program of increased oil production
- Creation of working groups on standardization in the oil and gas industry
- Creation of working groups on the development of professional standards
- Launch of a quarterly electronic magazine «Technology of production and use of hydrocarbons»

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- Creation of the National Oil and Gas Electronic Library
- Creation of information resources: oilring.ru, tp-ning.ru, electronic magazine «Technology of production and use of hydrocarbons»
- Creation of the All-Russian Center for collective use
- Creation of expert councils
- Creation the collection of developments for oil and gas industry
- Development of professional standards
- Creation of the Road map for innovation in oil and gas industry
- Creation of the catalog of innovative developments of participants



# Deep processing of hydrocarbon resources

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
April 1, 2011	OJSC VNIPIneft	Russian Academy of Sciences A.V.Topchiev Institute of Petrochemical Synthesis, RAS, Institute of Problems of Chemical Physics, RAS, Boreskov Institute of Catalysis, RAS, PJSC «Rosneft», OJSC «Tatneftkhiminvest-holding» PJSC «Gazprom Neft» PJSC «SIBUR», OJSC VNIPIneft	Non-commercial partnership

## STRUCTURE OF THE TECHNOLOGY PLATFORM

### GENERAL MEETING OF PARTNERSHIP MEMBERS

#### Scientific council



**S.M. ALDOSHIN**  
Chairman of the Scientific Council of the platform  
academician,  
Vice-President of RAS



**V.N. PARMON**  
Member of the platform Scientific Council,  
academician,  
Scientific Director of RAS SB Institute of Catalysis



**V.M. KAPUSTIN**  
Member of the platform Scientific Council,  
Academician of RANS,  
Prof. Dr. of Engineering,  
Gubkin Russian State Oil & Gas University,  
Head of the Oil Refining Technology Department



**A.L. MAKSIMOV**  
Member of the platform Scientific Council,  
Prof. Dr. of Chemistry,  
Director of Topchiev Institute of Petrochemical Synthesis RAS

#### Bureau of technology platform



**A.S. NOSKOV**  
Member of the platform Scientific Council,  
Prof. Dr. of Engineering,  
Deputy Director for Scientific Work of Boreskov Institute of Catalysis RAS



**P.K. BERZIGIYAROV**  
Member of the platform Bureau, Dr. of Physics and Mathematics, Deputy Director of RAS Institute of Chemical Physics Problems



**L.M. GOKHBERG**  
Member of the platform Bureau, First Vice-Rector of National Research University "Higher School of Economics"



**E.A. CHERNYSHEVA**  
Member of the platform Bureau, Prof. Cand. Of Chemistry, Head of OAO VNIPIneft Innovative Research Group



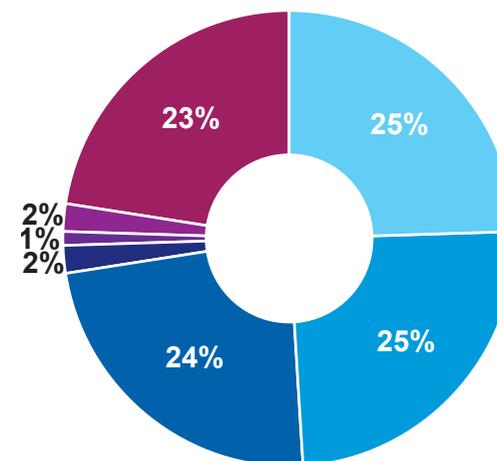
**A.V. MAKSIMOVA**  
Member of the platform Bureau, OAO VNIPIneft Engineering Department Head



**I.V. SEDOV**  
Member of the platform Bureau, Cand. Of Chemistry, Head of Chemical Engineering Department, RAS Institute of Problems of Chemical Physics

## THE PLATFORM MEMBERS

The Platform includes 118 members



- Higher education institutions
- Scientific Research institutes
- Manufacturing plants
- Engineering and service companies
- Experimental design bureau
- Foreign companies
- Other members

## EXPERT GROUPS ON KEY DIRECTIONS OF THE PLATFORM ACTIVITIES

### Contact information:

**Address:** Russia, 105005, Moscow,  
Engels str., 32, b. 1

**Tel.:** +7 (495) 795-31-30  
**E-mail:** vnipineft@vnipineft.ru

**Official website:** [www.techplatforma.ru](http://www.techplatforma.ru)



# Deep processing of hydrocarbon resources

## PLATFORM'S KEY DIRECTIONS

- Processes and catalysts for processing of heavy oils and residual materials
- Production of environmentally friendly fuels, oils and additives
- Processes and catalysts for the production of monomers, intermediates and raw materials for the petrochemical industry
- Processes and catalysts for processing of natural and associated gas, production of hydrogen, synthesis gas and products based on them
- Processes and catalysts for the production of polymeric materials, including for extreme conditions
- Processes and catalysts for the production of composite materials

## PLATFORM'S ABILITY

- Expert evaluation of projects
- Analyze the current state of the industry
- Participation in forming Expert Group topics "Hydrocarbon Feed Production, Transportation and Processing" within the framework of RF Scientific and Technological Development Strategy of the Russian Federation
- Expert analysis of the feast of the companies with state participation
- Organization of round tables and conferences with the involvement of all stakeholders

## PLATFORM'S COMPETITIVE ADVANTAGES

- The interaction between leading universities, academic and branch institutes, largest oil companies in the country, as well as Federal Bodies of Executive Power
- Creation of the largest database of domestic innovative developments in the field of oil and gas processing and petrochemistry and provision of access the database of modern developments and technologies of all participants of TP Deep Conversion of Hydrocarbon Resources (TP DCHR)
- Possibility of cooperation with society participants to decrease financial load during development of modern and innovative technologies and catalysts
- Possibility to place an order for target process developments with various researchers
- Possibility to utilize jointly used research centers with regard to laboratory and pilot equipment
- Possibility to participate in complex process development projects as a co-contractor

- Possibility to influence on fundamental decision making and participation in oil branch development policy formation as a participant of the Platform
- Access to foreign market via work teams and international committees of RF Ministry of Economic Development and Trade for participation in international complex projects
- Possibility to form and use target human capacity of leading universities by area of activity, academic and branch companies

## THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

1. Development and techno-economic analysis of the technology of complex processing of matrix oil with the maximum extraction of valuable products.
2. Development of complex technology of processing of oil and vegetable raw materials to produce diesel fuels for Arctic and aviation kerosine.
3. Development of technology for production of import-substituting catalysts of deep hydroperiod vacuum gasoil.
4. The study of kinetics and mechanism of thermolysis of crude oil and the development of production technology of new forms of oil carbon (needle coke structure, additives coking).
5. Utilization of acid tar waste volume production refineries.

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY PLATFORM

**Seven project leading participants TP GUR received the status of «national project» in the field of energy:**

- Development of Heavy Crude Oil Hydroconversion technology to produce high quality fuel, oil and feedstock for petrochemical processes;
- Petroleum feedstock deep conversion catalysts based on aluminium oxide;
- Development of domestic catalytic reforming technology with continuous catalyst regeneration for high quality gasoline production;
- Development of C7 Isomerization technology;
- Development of import-substituting high-purity powder aluminium hydroxide production and bead catalyst carriers for oil refining industry;
- Development of olefin polymerization titanium-magnesium catalysts;
- Industrial implementation of isoparaffine (alkyl-gasoline) synthesis process based on heterogeneous catalysts.

## INTERNATIONAL COOPERATION

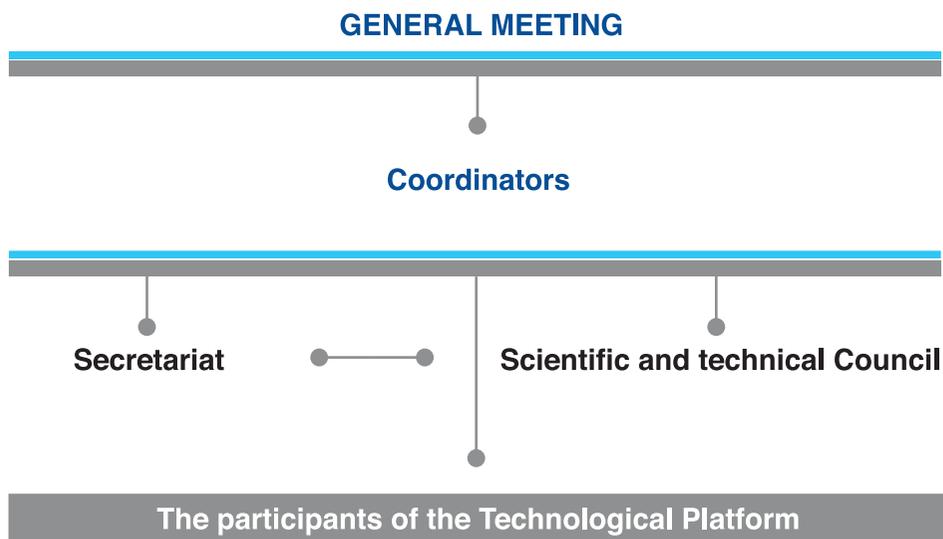
- Participants of the Platform develop a number of projects and scientific&research work together with foreign and international companies in the sphere of technological platform activities: UOP, Honewell, Solomon Associates, Snc-Lavalin and others, for example:
  - Topchiev Institute of Petrochemical Synthesis in conjunction with ARCUS Technologie (Germany) developed the project «The innovation process «gas to liquid» for renewable resources and associated petroleum gases using highly specialized catalysts» in 2014–2017; carries out the project "Development of porous hollow fiber membranes with scalable hydrophobic-hydrophilic surface properties for gas-liquid membrane contactors" jointly with the Institute of Physics and Chemical Technology of the National Academy of Sciences of Belarus in 2017–2019; participates in a joint project "Disposal of asphaltene residues from oil refining in the process of producing polymer nanocomposites with improved performance properties" with Colombia in 2012–2019
  - Boreskov Institute of Catalysis in the consortium of European companies in 2014–2017, participated in FASTCARD project, aimed at development of catalysts for the biofuels production
- Representatives of the Platform participants take part in different international symposia and conferences
- Scientific probation of post-graduate students and employees of platform participants abroad in 2017–2018 – Technical University of Munich (TUM), Hamburg University of Technology (TUHH) and Chemical Technology Institute of Stuttgart University (Germany)



# Technologies of mechatronics, embedded control systems, radio frequency identification and robotics

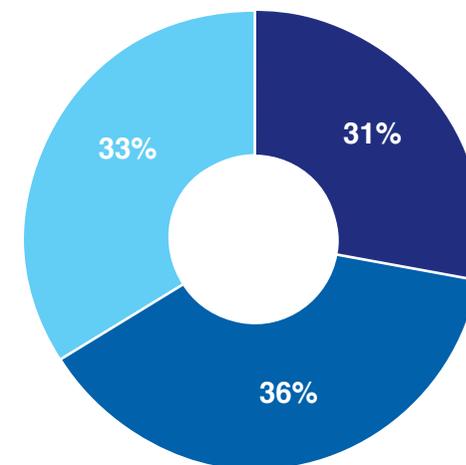
Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
February 17, 2011	the Moscow Institute of physics and technology (MIPT), Federal state Autonomous scientific institution "Central research and experimental design Institute of robotics and technical Cybernetics" (RTC)	MIPT, RTC, JSC "RUSNANO", JSC "breeze"	Association (in approval process)

## STRUCTURE OF THE TECHNOLOGY PLATFORM



## THE PLATFORM MEMBERS

The Platform includes 122 members



- Business structure
- Research and design organizations
- Educational institutions

**N. KUDRYAVTSEV**  
MIPT Rector

**A. LOPOTA**  
Director-Chief Designer of the RTC Central Research Institute

### Contact information:

**Address: RTC:** Russia, 194064, Saint-Petersburg, Tikhoretsky avenue, 21  
**MIPT:** Russia, 141701, Moscow region, Dolgoprudny, Pervomaiskaya str., 3, room 406

**Tel.:** +7 (812) 552-07-25  
**E-mail:** v.fedorova@rtc.ru  
**Tel.:** +7 (498) 713-91-08  
**E-mail:** tp@mipt.ru

**Official website:** [www.tp25.su](http://www.tp25.su)



# Technologies of mechatronics, embedded control systems, radio frequency identification and robotics

## PLATFORM'S KEY DIRECTIONS

1. Navigation, telematics and motion control.
2. Robotics, mechatronics and actuators.
3. The RFID technology.
4. Telecommunications and services in parts of embedded control systems, RFID and robotics facilities.
5. Electronics and microprocessor «system-on-chip».
6. Sensors, vision systems, human-machine interfaces.
7. Technology information processing, software for embedded control systems, radio frequency identification and robotics, technology of its development.

## PLATFORM'S COMPETITIVE ADVANTAGES

- Regular monitoring and analysis of the domestic and international level and application of emerging technologies in civil and defense sectors of the economy, surveys on current status of the industry
- Timely support and coordination of production, scientific organizations and educational institutions for implementation of research and development, organization and production development and personnel training

## PLATFORM'S OPPORTUNITIES

1. Expanding the range of domestic scientific and technical products with a high knowledge-based component, and its integration into the civil sphere.
2. Improving the competitiveness of the industry by conducting research and development in the field of control systems, radio frequency identification, and robotics.
3. The creation and application of effective mechanisms of scientific-industrial cooperation between scientific, industrial organizations and universities, both public and commercial.
4. Creating opportunities for technology transfer, including foreign.
5. Activities in the field of publication of magazines and periodicals in the field of scientific research and production.
6. The involvement of the participants of the technological platform in public-private partnerships.
7. Development of standards and implementation of voluntary certification.
8. The collection and dissemination of information, creation of databases in order to assist members.
9. Improvement of legislation in the areas concerning the activities of the Technology platform, jointly with the authorized bodies.

## THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

The establishment of a universal collective rescue means a new type with the function of self-control for evacuation of personnel in emergency situations of natural and technogenic character on the Arctic shelf

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

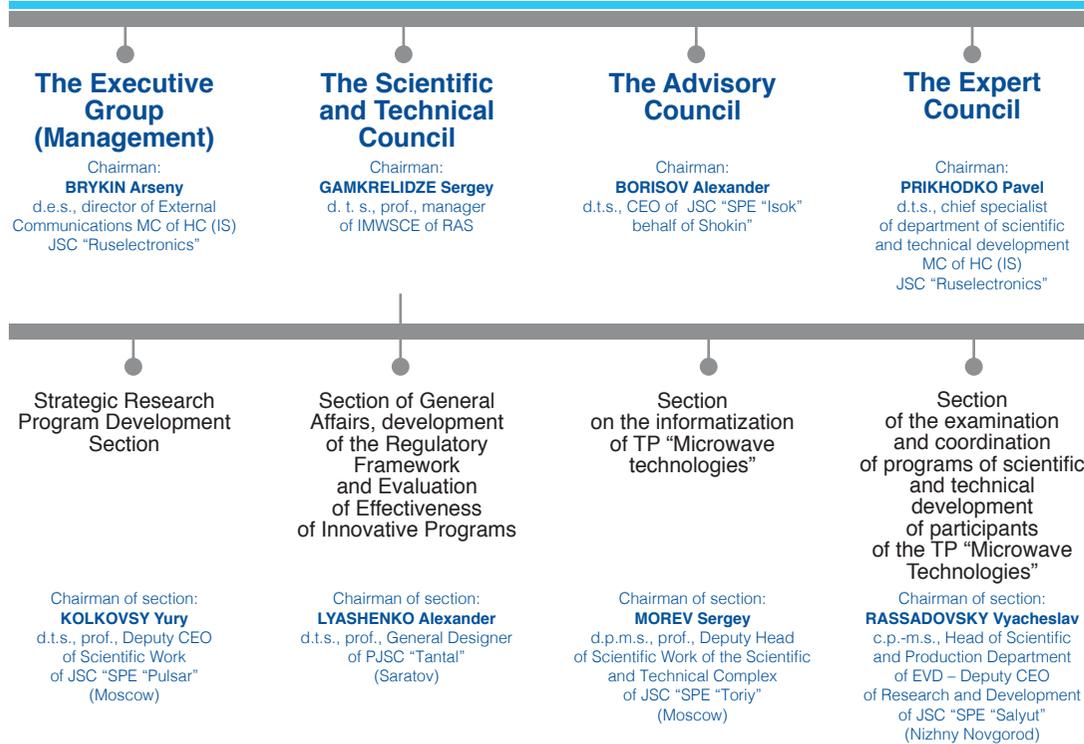
- Development of base line of domestic intellectual pressure sensors with the aim of import substitution when building a high-tech control systems and automation
- Development of design and production technology of micromechanical sensing elements for navigation systems of high accuracy
- Development of a new generation of fast neural network learning means recognition of a wide class of chemicals (highly intelligent artificial nose) based on solid state gas sensing matrices
- Development of advanced technologies and structures of a series of ICS for device control and management of important engineering systems and objects with increased requirements to protection of information and consumption, working in wireless sensor networks
- Creation of experimental prototype Autonomous amphibious transport-technological complex with an intelligent system control and navigation for year-round carrying out reconnaissance drilling on the Arctic shelf
- Experimental development of a medical centre for minimally invasive surgery vascular and oncological diseases on the basis of a laser coagulator and ultrasonic dopplerography
- Development of 3D nanotechnology of formation of topological elements of the functional layers on the basis of local X-ray stimulated processes of chemical deposition from the gas phase
- Development of a multifunctional complex antijamming radio communication and radar detection of objects

# Microwave technologies

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
April 1, 2011	JSC "RUSELECTRONICS"	IMVSE RAS, JSC "Concern" Orion", JSC "Kozitsky OIF"	Consortium

## STRUCTURE OF THE TECHNOLOGY PLATFORM

### Working and control groups of the technological platform "Microwave technologies"

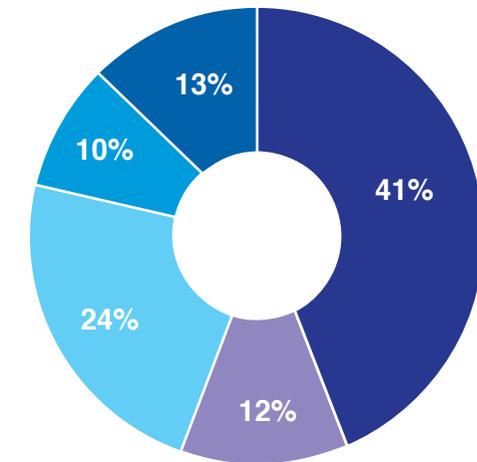


## THE PLATFORM MEMBERS

The Platform includes 69 members



**ARSENIY BRYKIN**,  
Deputy of GM –  
State Secretary



- Joint-Stock Companies
- Public companies
- Educational institutions
- Scientific organizations of RAS
- Business structures (CJSC, LLC)

### Contact information:

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**Tel.:** +7 (495) 777-42-82  
**E-mail:** info@ruselectronics.ru;  
avbrykin@ruselectronics.ru

**Official website:** [www.isvch.ru/tp](http://www.isvch.ru/tp)

# Microwave technologies

## KEY ACTIVITIES OF THE PLATFORM

- creating optimized heterostructures based on GaN and other wide bandgap materials (GaN, SiC, diamond) for power microwave (SHF) and EHF devices and radiation-resistant BEC;
- development and implementation of the technology for creating microwave and microwave transistors and other extreme electronics based on wide-band semiconductor materials;
- development of a functionally complete set of microwave and EHF MIC with operating frequencies up to 150 GHz;
- creation of solid-state pulse powerful amplifiers in the frequency range up to 18 GHz with an output power of up to 100 W and an efficiency of at least 65 %;
- production development of heterogeneous technology integration A3B5 – CMOS and A3B5-N – Si;
- introduction of HTCC and LTCC technologies of multilayer circuit boards, metal-ceramic (Al<sub>2</sub>O<sub>3</sub>, AlN) frames of discrete models and devices;
- technology design of synthesis of new nano heterostructures by MBE for semiconductor high-power transistors and microwave MIC;
- gas-phase epitaxy technology design from organometallic compounds for the growth of metal films and dielectrics;
- R&D of technology of high-power semiconductor devices and MIC of microwave range based on «N-face» hetero epitaxial nitride nanostructures;
- development of industrial technology and the creation of the elemental base of radiophotonics based on innovative solutions of science and technology;
- improvement of existing and introduction of new technologies and basic structures to create powerful multipath small-size electrovacuum devices and integrated devices based on them with low levels of supply voltages, including microwave devices of millimeter and terahertz ranges;
- development of high-efficiency technology of microwave conversion of petroleum gas and other wastes into useful products and materials

## COMPETITIVE ADVANTAGES OF THE PLATFORM

Regular participation in exhibitions, publications and message monitoring the world's leading companies, organizations of meetings, round tables and consultations provide information to developers, manufacturers and consumers BEC and complexed systems for the best available microwave technologies.

## PLATFORM FEATURES

Definition of perspective directions of development of microwave technologies and products ensuring a significant improvement in the qualitative characteristics of microwave devices and providing the world leadership of Russian companies in this field.

## COMPLEX FULL-CYCLE PROJECTS IMPLEMENTED BY SEVERAL PLATFORM PARTICIPANTS

1. R&D "Development of small-sized active phased array of X-band", performer: JSC "Shokin SPE "Istok".
2. R&D "Development of a physiotherapeutic medical device at frequency 40, 68 MHz for local electromagnetic hyperthermia of superficial and deeply located tissues", performer: JSC "Shokin SPE "Istok".
3. R&D "Development of systems and devices for the collective security system "City" and the creation of production facilities for their manufacture", contractor: JSC "SPE "Almaz".
4. R&D "Development of an optical-electronic surveillance and sighting system for a helicopter", performer: JSC "Shokin SPE "Istok".

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

1. R&D "Development and production of broadband low noise amplifier in the frequency range up to 18 GHz", performer: JSC "Shokin SPE "Istok".
2. R&D "Development and production of super powerful klystrons of impulse action of L-frequency range", performer: JSC "Shokin SPE "Istok".
3. R&D "Design and production of microwave transceiver modules in the frequency range 10–12,5 GHz with continuous radiation and frequency modulation of the probing signal", performer: JSC "SRIMA "Progress".
4. R&D "Development of wideband solid-state amplifiers in the range of 4 ... 12 GHz and 6 ... 18 GHz with an output power of at least 10 W", performer: JSC "SPE "Almaz".
5. R&D "Development of material for epitaxial heterostructures based on solid solutions of III nitrides group on Si and SiC substrates with a diameter of more than 150 mm with improved electrophysical parameters by vapour phase deposition for high-frequency high-power semiconductor devices and MIC of REA", JSC "SP "Pulsar".

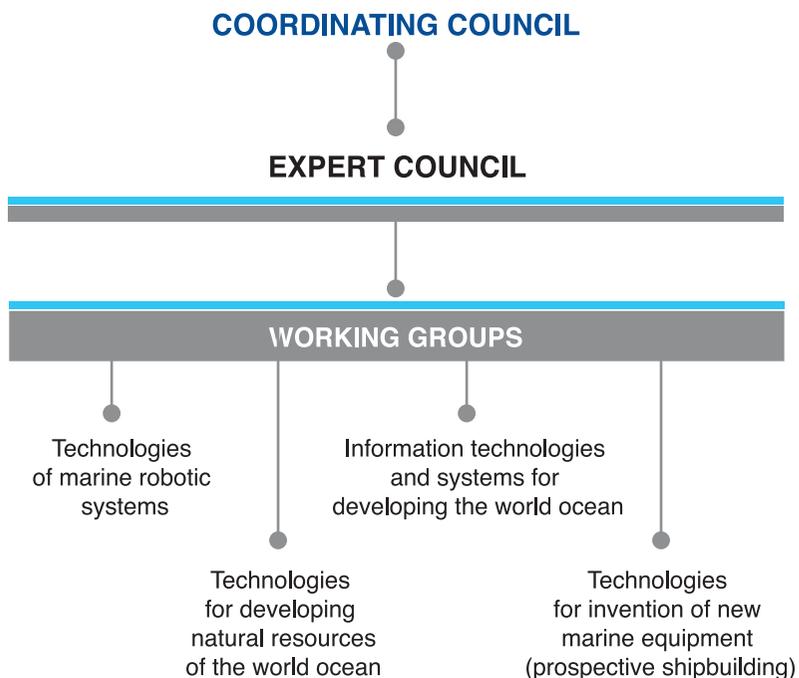
6. R&D «Development of basic manufacturing elements of active MMIC technology HEMT-based heterojunction structures GaN / AlGaN with non-combustible ohmic contacts». Implementer: JSC «SPE «Istok» on behalf of Shokin».

## INTERNATIONAL COOPERATION

1. Arranged work with the project office of the European program of scientific and technical cooperation in the field of high technologies "Eureka" (Innovative Technologies and Engineering Center of Moscow Technological University "MIREA").
2. Active participation in international conferences and exhibitions:
  - International Youth Industrial Forum "Engineers of the Future";
  - International Exhibition of Equipment and Technologies for Oil and Gas Complex, Moscow;
  - "Vacuum science and technology" scientific and technical conference with international participation. Sudak, Crimea;
  - International Crimean Conference "Microwave Technology and Telecommunication Technologies", Sevastopol;
  - International Scientific and Technical Conference "Actual Problems of Electronic Instrument Engineering", Saratov;
  - International Symposium "Metrology of Time and Space", St. Petersburg;
  - International Military-Technical Forum "Army", Kubinka, Moscow Region.
3. Participation in the work of the Business Councils "Russia–Cuba", "Russia–South Korea" and other international organizations.
4. Participation in competitions of the Russian Fund of Fundamental Research of the best research projects conducted jointly with the National Research Foundation of South Africa Republic, the Vietnamese Academy of Science and Technology, the State Natural Science Foundation of China, the National Center of Scientific Research of France, the Ministry of Science, Technology and the Environment of the Republic of Cuba, the program "Science and Innovation Space of East Asia", the Ministry of Science and Technology of Taiwan, the Austrian Science Foundation, etc., and "Megascience": laboratory models of experiments of the program "XFEL" (Germany).
5. Participation in the competition for grants Russian Scientific Fund jointly with the Association of Helmholtz – "Die Helmholtz-Gemeinschaft", German research community – "DFG" ("Deutsche Forschungsgemeinschaft"), National Research Agency of France – "ANR" ("Agence Nationales de la Recherche").

Date of creation:	Organizations – initiators and coordinators of the technological platform	Legal form
April 1, 2011	JSC Concern Morinformsystem-Agat, JSC United Shipbuilding Corporation, JSC Concern Marine Underwater Weapon – Gidropribor	An association is being formed from the organizations of the participants of the TP “Ocean Development” in Primorsky Krai

## STRUCTURE OF THE TECHNOLOGY PLATFORM



**V. V. KOBLYANSKY**  
JSC Concern Morinformsystem-Agat



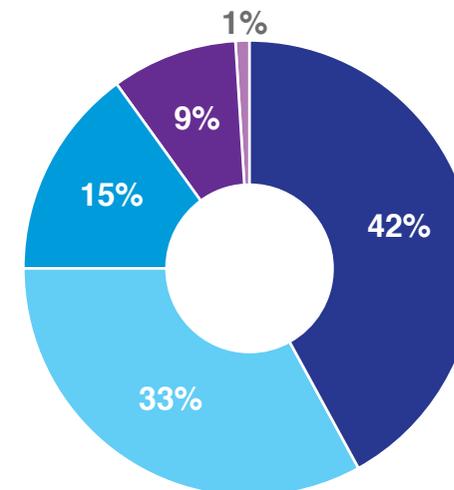
**D. YU. KOLODIAZHNYI**  
JSC "USC"



**A. K. FILIMONOV**  
JSC Concern Marine Underwater Weapon – Gidropribor

## THE PLATFORM MEMBERS

The Platform includes 67 participants



- Industrial enterprises
- Education institutions
- Scientific and Design organizations
- Service and engineering companies
- Lesser innovative enterprises
- Foreign enterprises

Re-registration of participants of the Technology Platform “Ocean Development” completed in 2017

Coordination council members were approved in November 2016  
Update of the Expert Council was completed in 2017

### Contact information:

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+7(911) 231-02-68  
**E-mail:** secretary@oceanplatform.ru

**Official website:**  
<http://oceanplatform.ru>

## THE PLATFORM KEY AREAS

- Marine robotic systems technologies:
  - technologies of creation the unmanned underwater vehicles (robots);
  - development and creation of infrastructure for marine underwater robotic systems;
  - technologies of creation the control structures, navigation and communication systems, information processing methods;
  - rescue techniques using the automatic devices;
  - mobile software and hardware for the full-scale testing new types of marine equipment and robotic systems
- Development of natural resources of the ocean:
  - new technologies of automated production and transportation of raw materials;
  - creation of technical equipment complex for the subsea and under-ice well drilling;
  - new generation technologies of building the subsea pipelines and communications;
  - automated processes of biological resource reproduction;
  - sea animals population automated monitoring technologies;
  - marine bionics
- IT and systems for the development of ocean resources:
  - remote methods of sea state analysis;
  - space based communications;
  - creation of mobile automated systems for submarine trials;
  - technology of deepwater stationary units creation, including underwater neutrino telescopes and power plants;
  - technologies of creation the systems and tools for automated subsea technological processes;
  - new technology of underwater communications;
  - perspective shipbuilding technology;
  - building of underwater manned vehicles;
  - establishment and maintenance of deepwater vehicles and devices;
  - new systems of marine hydrocarbons transportation;
  - development of new marine geophysical investigation methods including the building of specialized vessels;
  - the use of nanotechnology to create advanced ships and marine equipment;
  - creation of technical means of under-ice drilling;
  - development of air-independent propulsion based on closed-cycle Turboshift

## THE PLATFORM COMPETITIVE ADVANTAGES AND CAPABILITIES

Interdisciplinary technological platform «Development of ocean resource» initiated by large industrial enterprises that are interested in the innovative development of underwater technology and marine instrumentation constructing which is its main competitive advantage. 110 organizations, which are among the participants of The Platform, operate and represent all the technologies and expertise in the field of marine activities of the Russian Federation. They also are the authors of the major developments in area. The expert community of these organizations are able to effectively carry out any analytical work: from R&D conclusions to the development of legislation in the field of marine activities of the Russian Federation.

## COMPLEX PROJECTS, IMPLEMENTED BY THE PLATFORM MEMBERS

Creation and development of the Far East Scientific-Production Association in underwater robotics and marine engineering, including the construction of hydrofoil vessels and ground effect vehicles.

Design department was founded; experimental underwater system sample was developed and built.

Regular publishing journal «Marine Information and Control Systems».

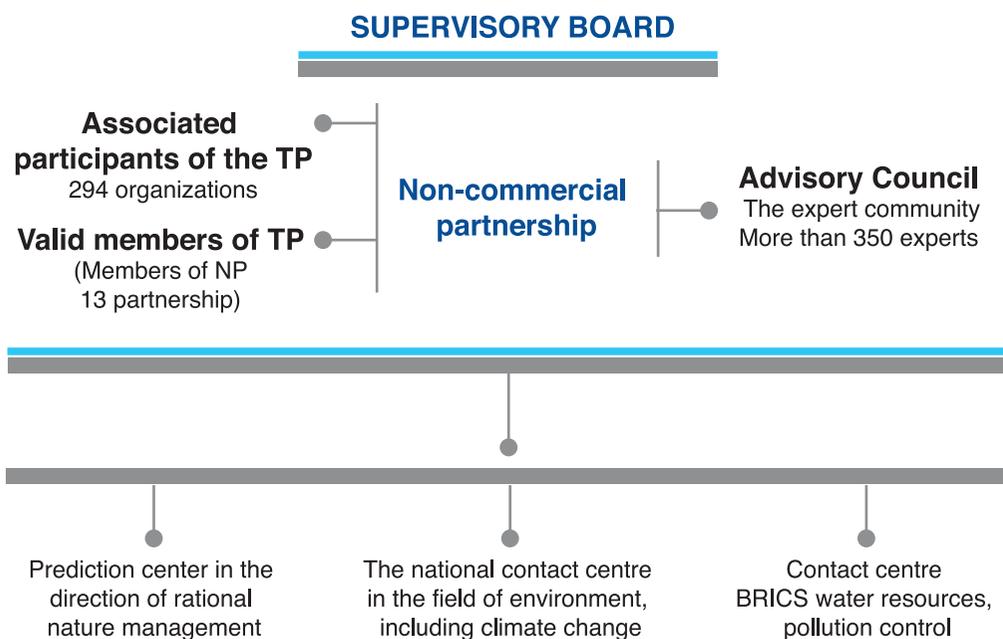


## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- Participation in 1-st, 2-nd и 3-rd Eastern Economic Forum
- Annual participation in «Open Innovations Forum»
- Constant work of the Far Eastern Center of Competence JSC «Concern» Morinsis-Agat» based at the FEFU. This is the basis for creating the new Scientific-Innovative Zone of Russian Island. Interacting with the Far Eastern Federal University and the Russian Academy of Sciences, The Competence Center significantly increases the economic activity in the region: concluded new contracts
- The Platform carries out support to the R&D projects performed by FEFU
- Participated in the International Conference «Offshore Marintec Russia» in Saint Petersburg (October 4–7 2016). This event has been dedicated to shipbuilding and the development of high-tech equipment for the Arctic and offshore development. Expert-speakers talked about the oil and gas service equipment as well as security and development of gas and oil fields and seismic exploration on the Arctic sea shelf
- Creation of seaside all-season deep-water multifunctional manufacturing and testing facility at Black Sea for operation on behalf of companies and organizations designing marine equipment for sea shelf development and World ocean research

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
5 July, 2011	VOO "Russian geographical society"	Russian State hydrometeorological University, Moscow state University, National research University "Higher school of Economics"	Non-commercial partnership

## STRUCTURE OF THE TECHNOLOGY PLATFORM

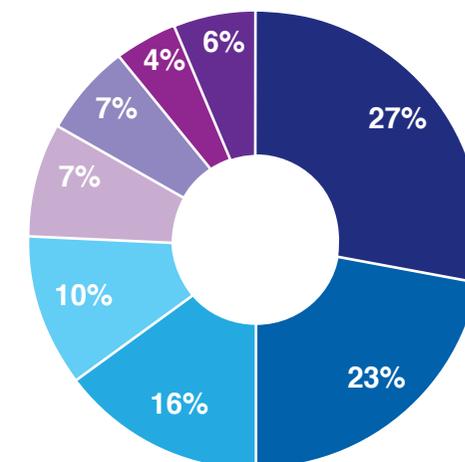


**N. KASIMOV**

Chairman of the non-commercial partnership "Technological Platform "Technologies of ecological development" First Vice-President of Russian Geographical Society, Academician

## THE PLATFORM MEMBERS

The Platform includes 307 members



- Research Institute
- Educational institutions
- Profit making organization
- Non-profit organization
- Production companies
- Experimental project bureau, project organization, etc.
- State sponsored companies
- Other

### Contact information:

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**E-mail:** mail@tp-eco.ru

**Official website:** [www.tp-eco.ru](http://www.tp-eco.ru)

## PLATFORM'S KEY DIRECTIONS

- Environmentally friendly production technology
- Technologies of environmentally safe waste management, including the elimination of accumulated environmental damage
- Technologies and systems of monitoring, evaluation and forecasting the state of the environment
- Technologies of rational nature management, ensuring environmental safety and new environmental standards of human life
- Technologies ensuring environmentally safe development of the Arctic zone of the Russian Federation

## PLATFORM'S ABILITY

- Scientific-technological forecasting – foresight-research and expert activities
- Find modern and innovative solutions in the field of rational nature management and environmental safety
- Advisory and expert support of projects and studies
- Information support and organization of conferences, meetings, seminars, schools and other events
- International co – operative interaction and development of relations with representatives of European scientific organizations and organizations of the EurAsEC countries and the BRICS

## PLATFORM'S COMPETITIVE ADVANTAGES

- High expertise
- The experience of forecasting the development of markets and technologies
- Experience of interaction with Federal Executive authorities and international organizations
- Developed communication possibilities in the search for partners and formation of scientific and technological consortia, support and counselling project activities.

## IMPLEMENTED PROJECTS

- Comprehensive analysis of foreign best practices energy companies in the field of resource saving, sustainable development and reduction of greenhouse gas emissions gas in the context of the impact of carbon markets on Russia and the countries – importers of Russian gas
- Study of external and internal challenges affecting on strategic priorities of the Russian Federation in Arctic
- Problems of spatial development planning Arctic territories
- Determination of water supplies and transport of pollutants in the basins of large rivers-tributaries to the lake Baikal
- Comparative characteristics of the flow balance of solid substances and heavy metals of Baikal tributaries; Assessment pollution of river waters of the tributaries of the lake Baikal; The Development of models of long-term changes in the barrier functions of deltas rivers the Selenga and Upper Angara

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- The national contact point “Climate action”
- Development of the Eurasian technological platform “Technologies for Sustainable Ecological Development” and the Eurasian network of technology transfer
- Development of cooperation of the BRICS countries in priority directions “Water resources” and “Prevention and liquidation of natural disasters “
- Conducting the contest “Clean Energy for Territory Development”

## INTERNATIONAL COOPERATION

International cooperation is carried out within the work of the NCP “Climate action”. The purpose of the NCP is to coordinate joint scientific and innovation activities of Russian scientific, educational and innovation organizations and enterprises with European organizations and enterprises. Especially close contacts with tubing EU embassy in the Russian Federation, embassies FRG, France, United Kingdom, Italy, Belgium and Spain. New direction of international Cooperation for NCP has become interaction within the framework of BRICS. Cooperation with embassies of countries participants: Brazil, China, India and South Africa. Organized by attraction of Russian organizations to competitions, conducted negotiations with potential partners, visits and conference. Currently, there is cooperation with representative offices of Taipei, Vietnam, other countries of Asia Pacific.

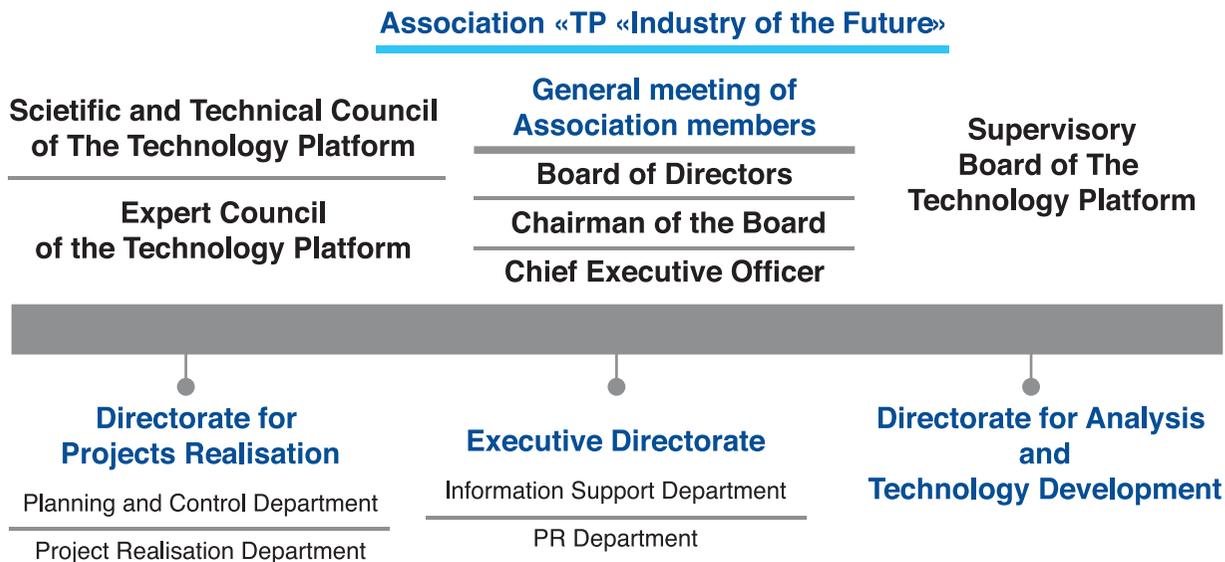


# Technology platform Industry of the future

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
September 14, 2011	Association «TECHNOLOGY PLATFORM "INDUSTRY OF THE FUTURE"» The State Atomic Energy Corporation ROSATOM	Open Joint Stock Company «Russian Board of Industry» Open Joint Stock Company «Scientific and Production Association Russian basic information technology " (RusBITech)	Association

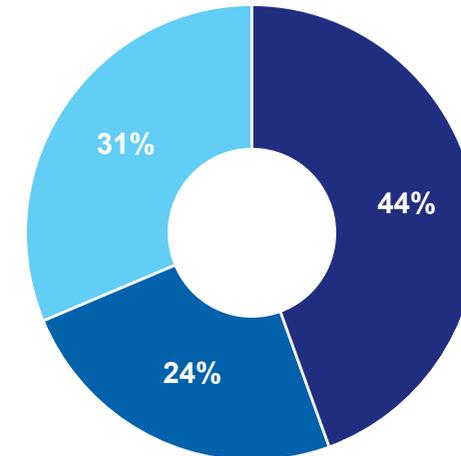
## STRUCTURE OF THE TECHNOLOGY PLATFORM

### GENERAL MEETING OF TECHNOLOGY PLATFORM PARTICIPANTS



## THE PLATFORM MEMBERS

The Platform includes more than 100 members



- Industrial Enterprises
- Universities
- Research Institutes

### Contact information:

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Sadovaya-Kudrinskaya str., 20

**Tel.:** +7 (495) 234-3681; +7 (495) 234-36-83  
**E-mail:** info@mtevs.org

**Official website:** [www.mtevs.org](http://www.mtevs.org)



# Technology platform Industry of the future

## PLATFORM'S KEY DIRECTIONS

- Information & Communication Technologies
  - Computer Architectures & Systems
  - Telecommunication Technologies
  - Information Processing & Analysis Technologies
  - Hardware components & Electronic devices, Robotics
  - Predictive Modeling, Systems From Functional Perspective
  - Information Security
  - Algorithms & Software
- New Materials & Nanotechnologies, Structural & Functional Materials
  - Hybrid Materials, Convergent Technologies, Biomimetic Materials
  - Computer Simulation of Materials and Processes
  - Material Diagnostics
- Advanced Weapons
  - AW Engineering & Production Technologies
  - AW Operation & Disposal Technologies
  - Technologies for Managing the AW Life Cycle
- Transport & Space Systems
  - Advanced Transport & Space Systems

## PLATFORM'S COMPETITIVE ADVANTAGES

- Interindustry nature of activities, providing the development of Advanced Technologies that simultaneously matter for several sectors of the Economy
- The list of participants, including both strategic Universities and Research Institutes engaged in the development of breakthrough Scientific and Technical solutions, as well as Innovation-oriented Enterprises involved in the creation of complex high-tech products and interested in the commercialization of new developments
- High level of competence of Experts and Specialists

## PLATFORM'S ABILITY

- Analysis of the manufacturing capabilities of the Russian industrial complex, forecasting the development trends of the Industrial and Technological markets, assessment of the potential of domestic Innovative Solutions and the possibilities of adaptation of the best foreign practices in the field of Innovative Industries to the Russian market requirements
- Organization of Research and Production cooperatives for the rapid and effective dissemination of new production technologies in Real Economy and their development at all stages of the life cycle of high-tech products
- Assistance to the forming of an integrated system of training and staff development to meet the needs of Real Economy
- Preparation of proposals for the development and improvement of the rules and regulations and technical standards basis

## THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

- Integrated projects for the development and mastering of additive technologies by various industries
- Integrated projects for the development and implementation of advanced digital technologies by the domestic industry
- Integrated projects to create the production of promising domestic materials for high-tech enterprises

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- Establishing the domestic information infrastructure (hardware and software) support for the life cycle of high-tech products for the enterprises-participants of TP
- Monitoring the needs of enterprises for new production technologies (together with the Ministry of Industry and Trade of Russia), as well as advanced developments of leading universities and research institutes in order to find solutions to key technological issues that enterprises face
- Development of cooperative chains (consortiums) for the implementation of integrated projects for mastering of additive technologies (including the development of materials, equipment and technology) by enterprises-participants of TP

## INTERNATIONAL COOPERATION

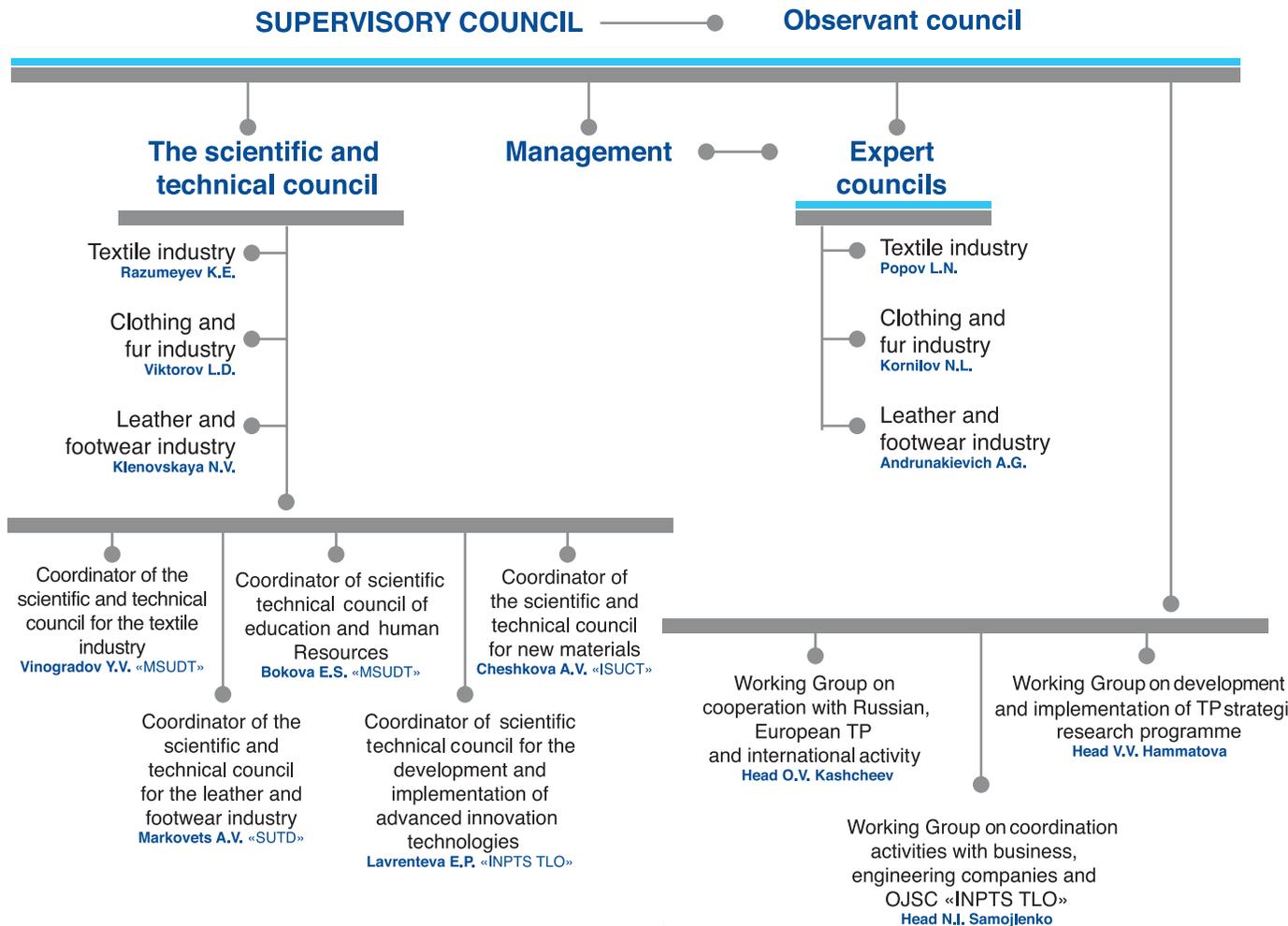
- TP has a membership in the international organization World Federation of Colleges and Polytechnics (WFCP) since 2015 (we are the only organization from Russia). The WFCP members are educational organizations (and their associations) from more than 50 countries. The mission of WFCP is to provide the global economy with the necessary human resources by organizing the exchange of expertise and interaction between key players in the labor market and education
- Cooperation with foreign leading companies (from Japan, Switzerland, China, South Korea, Belarus, etc.) in the field of machine-tool construction, materials science and new production technologies in order to increase the competitiveness of domestic high-tech products and conduct joint research activities



# Textile and light industry (TP «TLI»)

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
February 21, 2012	KNRTU	MSUDT, SUTD, TSNIIPK	Association (TP «TLI»)

## STRUCTURE OF THE TECHNOLOGY PLATFORM

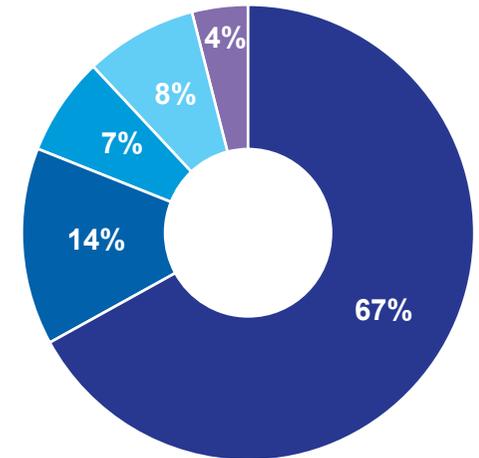


## PLATFORM MEMBERS

The Platform includes 116 members



**YUSHKO S.V.**  
Coordinator  
Chairman of board  
AS TP «TLI»



**ABUTALIPOVA L.N.**  
Executive Director  
AS TP «TLI»

- Companies manufacturers
- High professional educational institutions
- Russian Associations (partnerships)
- Scientific research institutes
- Foreign organizations

### Contact information:

**Address:** 68 Karl Marx street, Kazan, 420015, Republic of Tatarstan, Russian Federation  
the Department of TEMLI

**Tel.:** +7 (843) 231-43-37; +7(903) 061-65-78;  
+7 (917) 273-44-10  
**E-mail:** t.fedorova50@mail.ru; venerabb@mail.ru

**Official website:** [www.kstu.ru](http://www.kstu.ru)



# Textile and light industry (TP «TLI»)

## PLATFORM'S KEY DIRECTIONS

### 1. Scientific direction

- Coordination of work (as a communication platform) for the development of advanced technologies and products in research and production cooperation (science, education, business)
- Development of a long-term strategy of scientific and applied research, its systematic adjustment
- Assistance in technical and organizational support for the implementation of projects and programs under the TP

### 2. Education

- Assist in the formation of an integrated system of specialists training for textile and light industry

### 3. International direction

- Deepening the processes of cooperation, integration and development of interterritorial and inter-sectoral interaction of subjects of science, industry and entrepreneurship subjects
- Using the international personnel market to attract leading foreign specialists to new developments

### 4. Interaction with government agencies and business

## PLATFORM'S COMPETITIVE ADVANTAGES

- The list of participants of the TP «TLI», including system-forming universities and research centers engaged in the development of scientific and technical solutions and business, interested in the commercialization of new developments
- The choice of strategic research areas in solving the problems of TP by consensus of experts representing science, education, business in Russia and on the Eurasian space
- The development of mechanisms for cross-platform and inter-cluster interaction of TP members

## PLATFORM'S OPPORTUNITIES

- Development of short, medium and long-term development priorities in the areas of TP work in cooperation of the platform participants in the field of research and development
- Improvement of normative-legal regulation in the field of scientific, scientific and technical and innovative development
- Creation of a proposals bank on innovative developments for business and government agencies on promising and priority directions of the development of the technological platform
- Examination of projects in the textile industry and external customers
- Preparation of proposals to state authorities on the measures which are necessary for bringing promising developments obtained in the framework of platform activities to the market
- Holding conferences, seminars, project sessions, schools for young scientists and specialists

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY PLATFORM

- Ways to create digital factories in the light industry
- Improvement of technological approaches to the production of modern polymeric materials for the targeted delivery of drugs
- Innovative technologies of textile materials' functionalization

## THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPATES OF PLATFORM

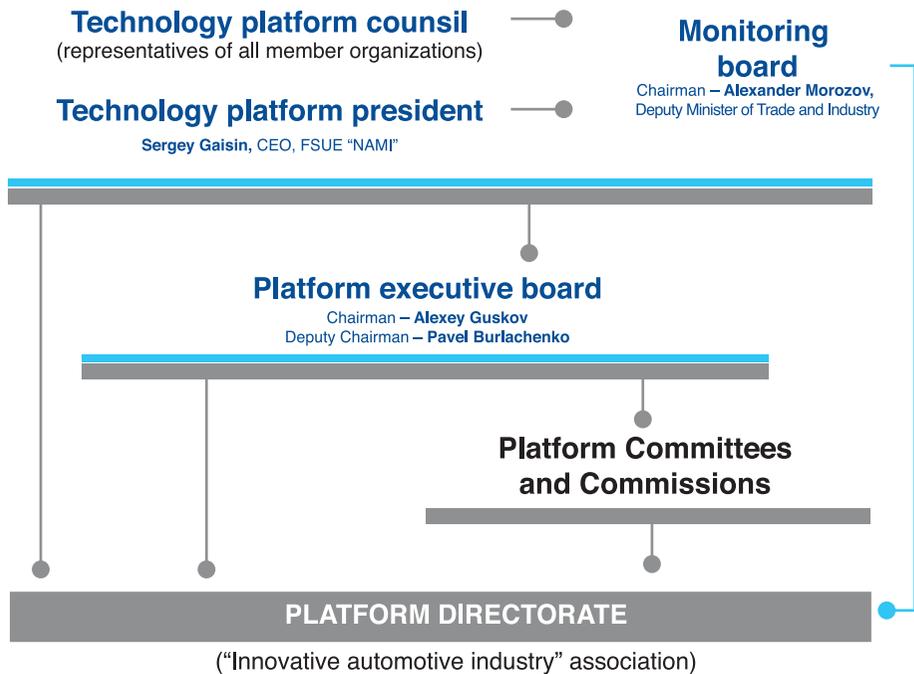
- Development of disposable clothing of rescuers and firefighters and new thermo-resistant textile materials with a minimum surface density for these clothes
- Development of reinforcing multilayer fabrics and 3D woven preforms
- Development of the production technology of protective clothing with repellent-acaricidal properties

## INTERNATIONAL COOPERATION

- Cooperation with the international clothing federation within the framework of international cooperation in the field of light industry, the accumulation of the world's basic knowledge of the industry of light industry on the basis of the Technical University of Aachen
- Expansion of mutually beneficial multilateral relations with foreign universities, research centers, production companies through the development of academic exchange, implementation of joint research, organization of scientific conferences, and the strengthening of cultural ties
- Initiation of projects of scientific and technological development in the areas of development of industries with the involvement of international research centers. Stimulation of the corporate research centers creation on the Eurasian space

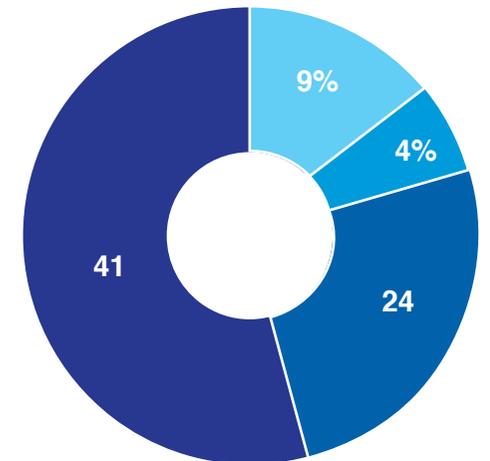
Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
20 April, 2012	Central scientific research automobile and automotive engine institute “NAMI”	Ministry of Industry and Trade of the Russian Federation	Association (registration phase)

## STRUCTURE OF THE TECHNOLOGY PLATFORM



## THE PLATFORM MEMBERS

The Platform includes 78 members



- Educational organizations
- Scientific and engineering companies
- Business structures
- Government agencies

### Contact information:

**Address:** Russia, 125438, Moscow, Automotornaya str., 2

**Tel.:** +7 (495) 456-30-61  
**E-mail:** greencar@innauto.ru

**Official website:** [www.innauto.ru](http://www.innauto.ru)  
[www.tp-greencar.ru](http://www.tp-greencar.ru);

## PLATFORM FOCUS

- Generating a common information database and discussion board
- Forming a common concept for the automotive industry technology evolution
- Concentration of scientific, engineering, financial and administrative resources in order to ensure commercial success of innovative technologies
- Optimizing legislation and requirements
- Generation of synchronized education curriculums and a continuous system of education standards update
- International collaboration

## PLATFORM ADVANTAGES

The platform is a vast business-association, bringing together key automotive industry companies including the main domestic car manufacturers in Russia. The basis of the Platform is the leading automotive research facility, FSUE “NAMI”, with tight connections to all the most significant industry leaders in Russia and abroad.

Currently, the Technology Platform is the leading business association in automotive industry of Russian Federation.

## PLATFORM COMPETENCE

- Connecting domestic and foreign companies for project implementation
- Industry projects financing assistance
- Technological and marketing prognosis for the automotive industry
- Government relations
- Forming strategic partnerships
- Taking part in government strategic planning for automotive industry

## FULL CYCLE PROJECTS, IMPLEMENTED BY THE PLATFORM

The major full-cycle project “Shuttle” was presented at Moscow International Motor Show – 2016.

## PROJECT PORTFOLIO

Currently the main projects of the Technology Platform are aimed at implementation of the “AutoNet” roadmap, specifically in the following projects:

- Development of automotive intellectual systems components and sensors;
- Development of proving grounds for vehicles with intellectual systems;
- Development of vehicle legislation and regulations;
- Development of electric drive systems and other components.

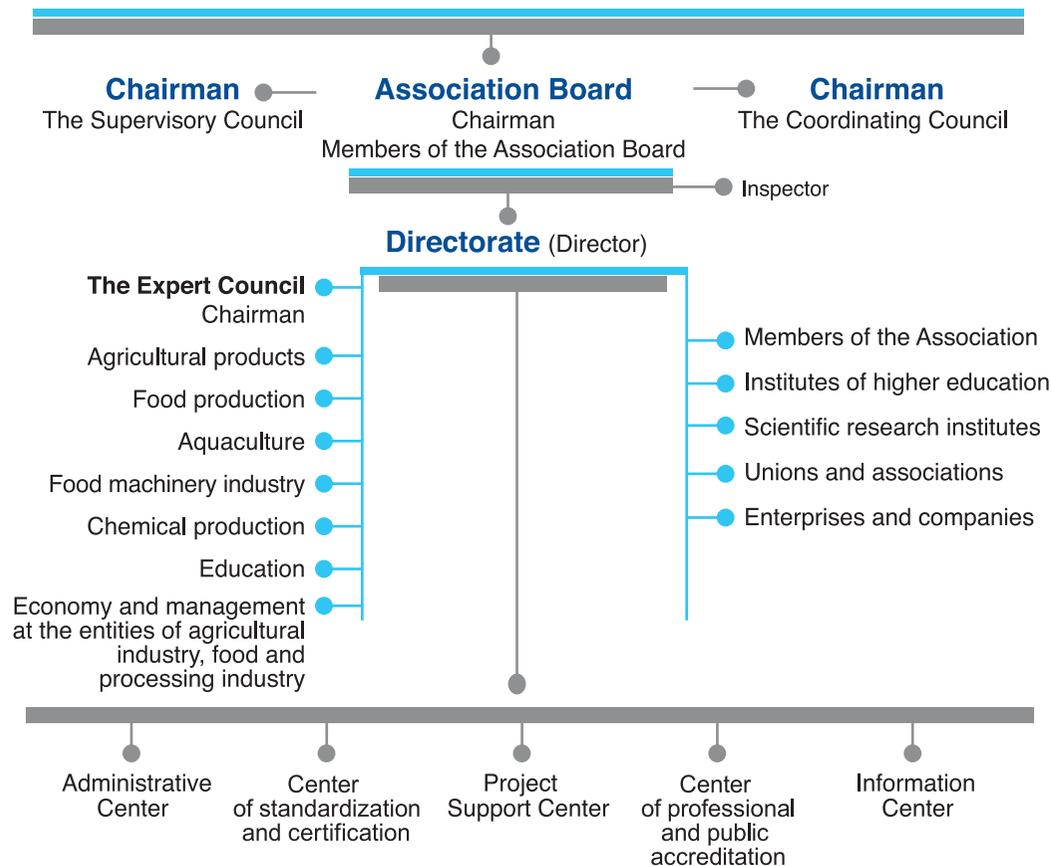


# Technologies of food and processing industries of agro-industrial complex– Healthy Food

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
November 20, 2012	Association «Technology platform «Technologies of Food and Processing Industries of Agro-industrial Complex– Healthy Food»	1. Voronezh State University of Engineering Technologies 2. Michurinsk State Agrarian University 3. Astrakhan State University	Association

## STRUCTURE OF THE TECHNOLOGY PLATFORM

### GENERAL MEETING OF THE ASSOCIATION



**ALEKSEY ZHURAVLEV**  
The Director of Association



**ALEXANDER NIKITIN**  
The Chairman of the Association  
Supervisory Council



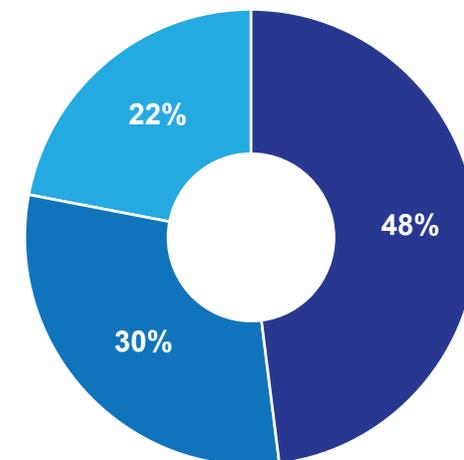
**ELENA FADEEVA**  
The Chairman of the Association  
Coordinating Council



**EVGENIY CHERTOV**  
The Chairman of the Association Board

## THE PLATFORM MEMBERS

The Platform includes 56 members



- Educational institutions
- Scientific and project organizations
- Business of the organization

### Contact information:

**Address:** Russia, 394036, Voronezh,  
Revolution avenue, 19, office 409

**Tel.:** +7 (473) 255-55-57  
**E-mail:** platforma-apk@mail.ru

**Official website:** [www.platforma-apk.com](http://www.platforma-apk.com);  
платформа-апк.рф

# Technologies of food and processing industries of agro-industrial complex– Healthy Food

## PLATFORM'S MAIN DIRECTIONS

- Agricultural products
- Food production
- Aquaculture
- Machinery industry
- Biochemical production
- Education
- Economy and management at the entities of agricultural industry, food and processing industry

## COMPETITIVE ADVANTAGES OF PLATFORM

1. The only federal Technology Platform in Russia which was approved.
2. The Platform coverage is more than 50 regions.
3. The Platform has the status of «Eurasian technology platform «Technologies of Food and Processing Industries of Agro-industrial Complex– Healthy Food».
4. The scientific and theoretical journal «Technologies of Food and Processing Industries of Agro-industrial Complex– Healthy Food» is published by the Platform. This journal was included in the list of publications, which are recommended by Higher Attestation Commission, and was included in database of AGRIS.

## INTERNATIONAL COOPERATION

- The agreement with the non-profit joint-stock company “National agrarian scientific-educational center”
- The agreement with the Eurasian Aquaculture Alliance
- The agreement with the partnership, OOO “KazExpoFood”
- Cooperation with the relevant Ministries of the Republic of Armenia, Belarus, Kazakhstan, Kyrgyzstan and also Universities

## PLATFORM'S OPPORTUNITIES

1. The Association assistances for receiving governmental support for implementation of innovative projects.
2. Consortiums are organized and supported by the Association for implementation of large-scale complete cycle projects.
3. The Association arranges congresses, forums, exhibitions, conferences, seminars on the technology platform activities.
4. Technological projection, equipment selection and supply, assembling, warranty service and service after expiry of the warranty for food industrial enterprises.
5. Projection and construction enterprises' energy facilities.

## THE COMPLEX FULL-CYCLE PROJECTS ARE REALIZED BY MEMBERS OF THE PLATFORM

1. Creation of a complete cycle of the high-technology greenhouse complex.
2. Production of high-protein feed products with probiotic properties.
3. Creating new technologies of deep and complex processing of food raw materials and fish products for a healthy diet.
4. Technology for production of functional and therapeutic-prophylactic purposes foods with a prepared biochemical composition, which based on the using modern methods of selection of vegetable, fruit and other agricultural crops.

## THE MOST IMPORTANT PROJECTS ARE REALIZED BY THE PLATFORM

1. Development of technology selection and technological transformation of biologically active substances with the obtaining of import-substituting complexes of micronutrients.
2. Construction of the national scientific and educational centre for the development of competitive advantages APK.
3. Formation of agricultural sustainability on the basis of the strategy of innovation-oriented development in the framework of the common economic space.



# Light and reliable structures

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
March 26, 2012	S.P. Korolev Rocket and Space Corporation «ENERGIA»	S.P. Korolev Rocket and Space Corporation «ENERGIA», Central Aerohydrodynamic Institute named after N.E. Zhukovsky (TsAGI), Institute of Strength Physics and Materials Science Siberian branch of Russian Academy of Sciences, Institute of Machines Science named after A.A. Blagonravov of Russian Academy of Sciences, Bauman Moscow State Technical University, Moscow Aviation Institute, National University of Science and Technology MISiS, National Research Nuclear University MEPhI, Institute of Control Sciences named after V.A. Trapeznikov of Russian Academy of Sciences	

## STRUCTURE OF THE TECHNOLOGY PLATFORM

### GENERAL MEETING OF THE PLATFORM PARTICIPANTS



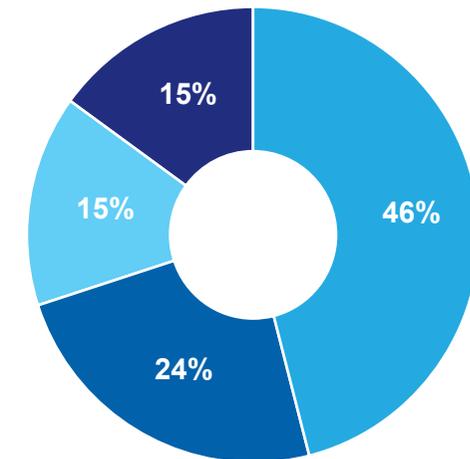
**VIKTOR SADOVNICHIIY**  
Supervisory Council Chairman



**ALEXANDER CHERNIAVSKY**  
Platform Coordinator

## THE PLATFORM MEMBERS

The Platform includes 53 members



- Educational institutions
- Scientific and planning organizations
- Engineering companies
- Industrial companies

### Contact information:

**Address:** Russia, 141070, Moscow region,  
Lenina str. 4a, Korolev

**Tel.:** +7 (495) 513-81-52  
**E-mail:** Irina.Vorobey1@rsce.ru;  
Alexander.Cherniavsky2012@yandex.ru

**Official website:** [www.lnkon.ru](http://www.lnkon.ru)



# Light and reliable structures

## PLATFORM'S KEY DIRECTIONS

- aerospace and aviation industry
- shipbuilding
- nuclear and power engineering
- heavy and transport engineering
- industrial construction
- tool engineering
- engineering education

## PLATFORM'S ABILITY

Possibility of interaction of the enterprises and organizations of various industries, the universities, scientific organizations and small business enterprises, public authorities of the power of Russia and the international scientific and technical and university community for the solution of questions of introduction of world-class technologies in the Russian industry. Interaction within the framework of the Interdepartmental Project Office «Materials, Technologies and Reliable Constructions» of the Interdepartmental Council of the Comprehensive Research Program «Perspective Materials with a Multi-Level Hierarchical Structure for New Technologies and Reliable Constructions» at the Ministry of Education and Science.

## INTERNATIONAL COOPERATION

Interaction with organizations, universities and enterprises:

- Germany, Fraunhofer IWU University, Berlin technical University (Technische Universität Berlin), Airbus and others in the field of composite technologies, additive and PIM technologies, nanotechnology and tribology;
- Italy, Technical University of Milan (Politecnico di Milano), CMS company in the field of additive technologies;
- France, Arkema company in the field of 3D / PIM-technologies and nanotechnologies;
- China, Beijing Institute of Technology, Shenyang Polytechnic University and Beecore company in the field of aerospace technologies including honeycomb core and nanocoatings;

- Vietnam, Tropical center for methods of control and protection of structures of aerospace, shipbuilding and transport industries;

- Latvia, Riga Technical University (Riga Technical University), Eco air company in the field of heat exchanger production technologies;

- Hong Kong, Hong Kong Productivity Council (HKPC) in the field of innovative technologies including 3D/PIM.

## PLATFORM'S COMPETITIVE ADVANTAGES

Creation of integration structures on innovative technologies with participation of universities, institutes of RAS, large industrial enterprises and small businesses.

## THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

Improvement of technology of welding by friction with hashing with ultrasonic influence for formation of one-piece compounds of the disperse strengthened aluminum alloys of transport and aerospace appointment.

Development and implementation of methods multi-level dynamic modeling in the design of new rocket and space technology.

Development of technology of receiving powder compositions for production by method of injection formation of metal products of irregular shape with the increased physicomechanical properties for transport and space systems (PIM technology).

Creation of experimental digital platform for certification of materials and products created on the basis of advanced production technologies.

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

Development of the technology and application of functional nanocomposite coatings equipment to extend the active use and protection of designs solar spacecraft.

Production organization of solder lamellar heat exchangers. Development of technology for small-scale production of aluminum honeycomb to rocket and space industry of the Russian Federation.

Development and research of new generation ejector vacuum systems for power plants.

The scientific and technological challenges of providing electron-beam additive manufacturing of large-sized products with a controlled internal structure of the wire high-strength and heat-resistant alloys for aerospace industry.



# Industry and energy integrated safety

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
July 31, 2013	Nuclear Safety Institute of the Russian Academy of Sciences (IBRAE RAN)	Nuclear Safety Institute of the Russian Academy of Sciences (IBRAE RAN), National Research Center "Kurchatov Institute" Bauman Moscow State Technical University	Association "National Innovation Center "Kompleksnaia Bezopasnost"

## STRUCTURE OF THE TECHNOLOGY PLATFORM



**MICHAIL KOVALCHUK**  
Co-Director Of Platform



**L. BOLSHOV**  
Co-Director Of Platform



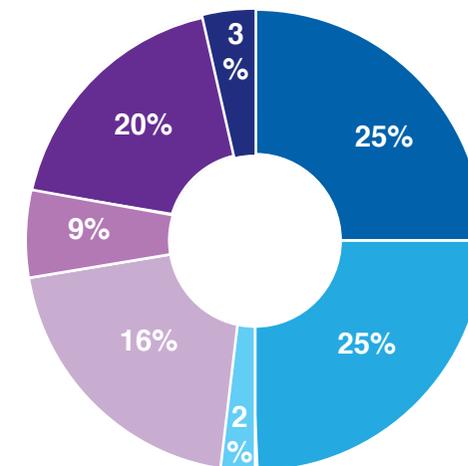
**ANDREY ALEXANDROV**  
Co-Director Of Platform



**V. PONOMAREV**  
The Chairman of the Board of the Platform

## THE PLATFORM MEMBERS

The Platform includes 141 members



- Higher education establishments
- Scientific research institutes
- Development design offices
- Project, engineering and service companies
- Industrial organizations
- Financial and credit organizations and state institute of development
- Other organizations

### Contact information:

**Address:** 52 Bolshaya Tulsкая,  
Moscow, 115191, Russia

**Tel.:** +7 (495) 955-22-04  
**E-mail:** sbs@ibrae.ac.ru

**Official website:** [www.techppe.ru](http://www.techppe.ru)



# Industry and energy integrated safety

## PLATFORM'S KEY DIRECTIONS

1. Creation of the basic models for analysis and safety justification of specific technologies or projects on the basis of the nuclear energy experience on the order of companies.
2. Development and improvement of common methods of probabilistic and deterministic safety analysis of different technologies. Risk assessment and management in industry and energy.
3. Development of methods of analysis and environmental safety justification, including environmental safety of the Arctic regions, waste management and disposal (recycling).
4. Development of integrated safety monitoring methods for various non-nuclear technologies using the latest diagnostic equipment.
5. Development of recommendations on the construction of integrated monitoring and safety control systems of complex technical objects.
6. Dual purpose innovation technology development.
7. Improving the working methods of interaction with the population in severe accidents at industrial and energy facilities.
8. Application of Lifecycle Management technologies of know-edge-intensive products and industrial facilities (by industry branches).
9. Development of public-private partnership instruments in addressing integral safety tasks in industry and energy.

## PLATFORM'S COMPETITIVE ADVANTAGES

- High expertise potential
- Ability to attract extra-budgetary resources for projects
- Experience of interaction with federal bodies of executive and legislative authorities and international organizations
- Developed communication capabilities in the partner search, the formation of scientific and technological consortia, support and counseling of project activities
- Interaction with other technological platforms

## PLATFORM'S ABILITY

1. Advisory and expert support of projects and research.
2. Selection of the best modern innovative technologies for the realization of projects.
3. Organization of experience exchange and cooperation with foreign and Russian representatives of scientific organizations and industrial enterprises.
4. Creation of integrated solutions based on PLM-technologies for the automation of engineering activity of Russian enterprises.
5. Development and implementation of projects to ensure physical protection of enterprises and industrial, energy, transport, etc. facilities.
6. Organization and carrying out of industrial safety examination of buildings and structures at hazardous production facilities, technical devices used there, safety documentation on conservation, elimination of hazardous production facilities.
7. Development and implementation of projects using innovative technologies in the sphere of housing and communal services.

## INTEGRATED FULL-CYCLE PROJECTS IMPLEMENTED BY SEVERAL PLATFORM PARTICIPANTS

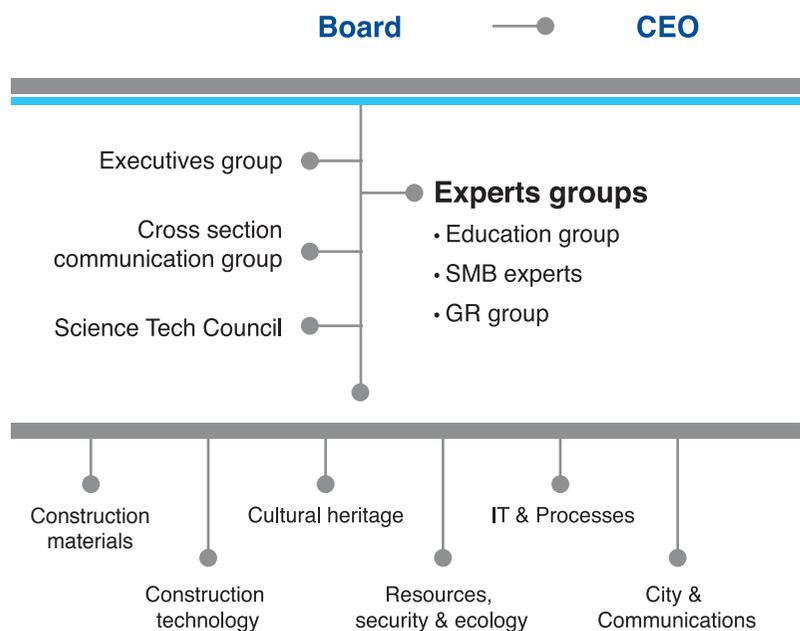
- Implementation of the "Pelena" project to ensure the physical protection of a facility using radio-wave means of intrusion detection
- Ship hull monitoring using subsea vehicle development program

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

1. The project to create a comprehensive solution on the basis of PLM-technologies for the automation of enterprise engineering activity.
2. Russian seafarer's safety using operative oceanology program.
3. Development of means for high-speed data processing of information sensors in situational management systems.
4. There have been developed and successfully applied at the thermal and nuclear power plants domestic disinfectant «Silver bullet».
5. Creation of "Fareast federal university laboratory" for "ROSATOM" eco-monitoring.
6. New technologies while exploring professional fire fighter's system using finely divided water.
7. «Interplatform interaction with technological platforms «Industry of the future», «Air mobility and aviation technologies» and others.
8. Implementation of the project to seal the urban sewer systems by unlimited inflow of infiltration and ground water.

Creation date	Coordinators of the Platform	The Initiators of the Platform	Legal form
July 17, 2014	MGSU, MARCHI, JSC RC "Construction", RAASN (Academy)	MGSU, MARCHI, JSC RC "Construction", RAASN (Academy)	

## STRUCTURE OF THE TECHNOLOGY PLATFORM



Platform Coordinator  
**ANDREY VOLKOV**



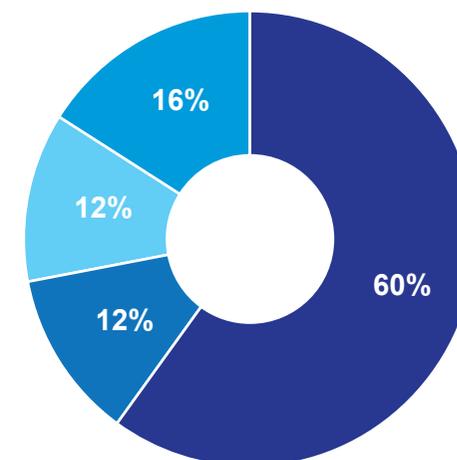
Platform Coordinator  
**ALEXANDER KUZMIN**



Platform Coordinator  
**GEORGY YESAULOV**

## THE PLATFORM MEMBERS

The Platform includes 194 members



- Business structures
- Scientific and engineering organizations
- Educational institutions
- Associations and partnerships

### Contact information:

**Address:** 26 Yaroslavskoye highway,  
Moscow, 129337, Russia

**Tel.:** +7 (495) 781-80-07  
**E-mail:** info@tpca.ru; kanz@mgsu.ru

**Official website:** [www.tpca.ru](http://www.tpca.ru)

## PLATFORM'S MAIN DIRECTIONS

- Construction technologies and equipment
- Construction and building materials
- City and communication
- Information environment and process control
- Cultural heritage
- Resource efficiency, safety, and environmental protection

## COMPETITIVE ADVANTAGES OF PLATFORM

Ensuring of conformity of products and professional personnel with international standards and norms in the framework of increasing the competitiveness of business and the achievement of high quality of life. The development of research in the architectural / construction industry, liaising with foreign professional societies, organization of interaction with the European technological platform in the field of construction.

## PLATFORM'S OPPORTUNITIES

- Attracting the results of fundamental and applied research of the state academies of Sciences, research organisations and enterprises, educational organizations to meet the strategic scientific, technological and production tasks

- Development and implementation of innovative educational, professional workers and managerial staff, to attract and retain businesses and organisations of promising young specialists and scientists
- Promoting economic efficiency and technological equipment of architectural-construction complex, the solution of the actual and perspective tasks of import substitution

## INTERNATIONAL COOPERATION

Platform's member organizations with the support of AECEI (The International Association of Educational Civil Engineering Institutions of Construction) annually arrange meetings with the foreign delegates from around the world (Germany, France, Italy, China, Japan, Canada, USA, Cuba, etc.) on international cooperation in the field of educational, scientific and technical activities.

One of the notable projects in the field of international cooperation is the promotion of international cooperation between universities, professional development of professional staff and creation of new ties between universities within the framework of the international program ERASMUS + International Credit Mobility.

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- Developing a roadmap for National technology initiatives in the construction sector
- Development of strategy of innovative development of the construction industry in the Russian Federation
- Development of programs of integrated rehabilitation of cultural mining settlements of the Urals means of planning and architecture on the basis of public-private partnerships

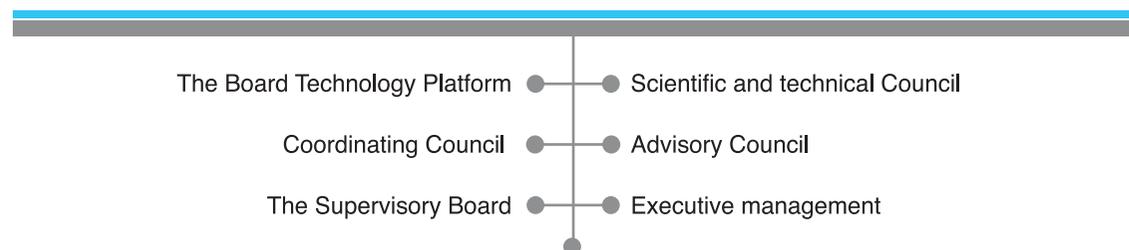


# Use of results of space activity for the benefit of end users

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
June 24, 2016	Joint Stock Company "Scientific production corporation "REKOD"	Joint Stock Company "Scientific production corporation "REKOD"; Joint Stock Company "Russian Space Systems"; Joint Stock Company "Rocket Space Center "Progress"; "St. Petersburg National Research University of Information Technologies, Mechanics and Optics"; "Peoples' Friendship University of Russia"; Joint Stock company "Glavkosomos"; National Research Center "KURCHATOV INSTITUTE"	Association

## STRUCTURE OF THE TECHNOLOGY PLATFORM

### GENERAL MEETING OF PARTICIPANTS OF THE TECHNOLOGICAL PLATFORM



### THE WORKING GROUPS ON THE DIRECTIONS

Coordination, regulation, support, control, creation of conditions for market and competition, uniform technical policy, determine priorities, the concentration of resources and efforts

The creation of new domestic technical, software, system and other products and services based on the use of RKD

Forming an integrated system of training and advanced raining of specialists in the use of RKD in the system of higher, special and General education

The international cooperation in the sphere of use of RKD

The formation of a unified legal and regulation framework of legal regulation in the field of use RKD

System, fundamental and applied research on issues of ensuring the efficient use of RKD

Implementation in all constituent entitles of the Russian Federation, regional target programs use RKD



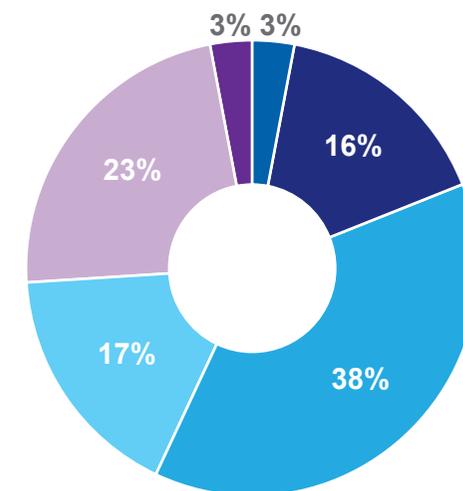
**VYACHESLAV BEZBORODOV**  
Coordinator of the technological platform



**NIKOLAY DUBOVTSEV**  
Deputy Coordinator of the technological platform

## THE PLATFORM MEMBERS

The Platform includes 87 organizations



- Federal Executive Authorities
- Regional Executive Authorities
- Representatives of business structures
- Manufacturing enterprises and scientific institutions
- Universities of Russia
- Institutes of the Russian Academy of Sciences

### Contact information:

**Address:** Russia, 127018, Moscow, 3rd passage Maryina Roshcha, 40–6, build 1

**Tel.:** +7 (495) 660-31-44; +7 (495) 012-01-00

**E-mail:** info@rekod.ru; dubow61@mail.ru

**Official website:** www.rekod.ru



# Use of results of space activity for the benefit of end users

## PLATFORM'S KEY DIRECTIONS

- Coordination of efforts and resources of the state, civil society, science, business and education with the aim of placing the results of space activities in the interests of modernization of economy of the Russian Federation and development of its regions for the period up to 2030 (PR-51, dated 14 Jan 2014)
- Coordinated solution of the complex of educational, scientific, technical, technological and economic problems of creating and using advanced space systems and complexes with the aim of effectively using the results of space activities
- The commercialization of RKD, the promotion of space products, services and technologies in the Russian and world markets, including through active involvement of small and medium business in the sphere of creation and use of RKD
- Space and geoinformation support of major infrastructure projects

## COMPETITIVE ADVANTAGES OF THE PLATFORM

- Integrated use of heterogeneous results of space activities and other information resources in order to more effectively implement the regulations address the problems of the consumers
- Development and creation of space products and services, competitive on the world market
- Collection, systematization, analysis and recording of requirements of different consumer groups RKD to create space products
- Realization financial and a manpower in an innovation and in production of that space production and services which are necessary for the end user, but not that are available to the enterprises taking into account their technological equipment today
- Relationship to other Technology platforms

## PLATFORM'S OPPORTUNITIES

- A professional forum to develop and discuss the basic conceptual system-technical solutions and technologies for the use of RKD
- Achieving a synergistic effect in industries through building effective private public partnership in the interaction representatives of the state, industry, scientific and expert organizations
- The transfer of space technology, products (services), established in the framework of the Technological platform in various spheres of socio-economic activities.
- Bring space products and services to a wide range of consumers, including improving the quality of life of the population
- Support and assist in the implementation of initiative projects and technologies, including in the interests of the enterprises of small and average business
- The exchange of experience, technologies and knowledge
- The satisfaction of urgent social needs in the RKD's involvement in the actual processes of socio-economic development of our country through the consolidation and coordination of efforts and resources of government, business, science and civil society

## INTERNATIONAL COOPERATION

- Assist in the coordination of international cooperation in the use of RCU, including the organization in the established order of interaction with competent bodies of foreign States and foreign legal entities or individuals, creating a space providing space products and services
- Stimulating mutually beneficial innovative development of national industrial complexes, creating competence centers in the field of using the results of space activities in the Russian Federation, the Commonwealth of Independent States (CIS), the states of the Eurasian Economic Union (EAEU), shaping the economy of the future, technological renewal and improving global competitiveness in space technologies, products and services

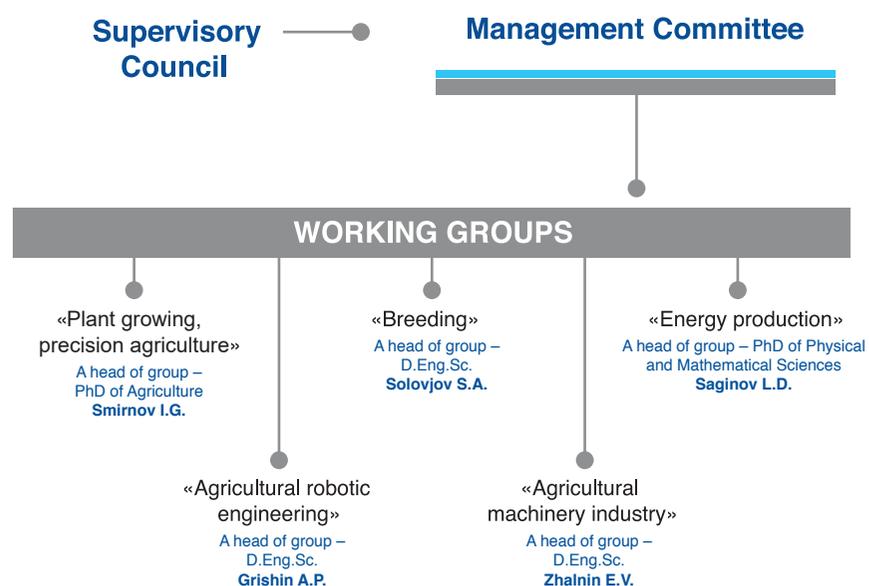
## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

- The commercialization of RKD, the promotion of space products, services and technologies in the Russian and world markets, including through active involvement of small and medium business in the sphere of creation and use of RKD
- Formation of network structures of interaction with collaborators and subcontractors
- Space and GIS software major infrastructure projects

# Innovative agriculture machine technologies

Creation date	Coordinator of the Platform	The Initiators of the Platform	Legal form
June 24, 2016	FSBSI «Federal research center of agricultural engineering VIM» (FSBSI FSAC VIM)	FSBSI «Federal research center of agricultural engineering VIM» (FSBSI FSAC VIM)	Non-commercial partnership

## STRUCTURE OF THE TECHNOLOGY PLATFORM

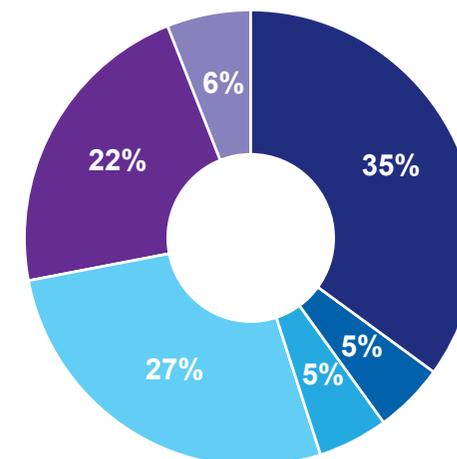


**ANDREY IZMAILOV**  
President of the technology platform –  
A director of FSBSI FSAC VIM,  
academician of RAS



**ZAHID GODZHAEV**  
Managing technology platform –  
A deputy director of FSBSI FSAC VIM,  
D. Eng. Sc., professor

## THE PLATFORM MEMBERS



- Industrial enterprises, agricultural holdings
- Educational organisations
- Foreign organisations
- Federal agencies
- Research organisations
- Other organisations

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# Innovative agriculture machine technologies

## KEY DIRECTIONS OF THE PLATFORM

- Robotized and automated machine-technological complexes for the use of effective intellectual agriculture and monitoring, incl. with the use of unmanned drones
- Creation of innovative environmentally friendly machine technologies and mobile power tools and a complex of machines for agricultural production
- Creation of electric and heat technologies, systems and technical means of power supply, mechanization of animal husbandry using intelligent automation
- Creation of a comprehensive training system
- Creation of transport-technological agricultural machines with electric drive up to 450 kW
- Development of intelligent technologies for cultivating crops and obtaining seed based on the principles of tracking individual physiological processes in plants
- Development of methods and tools for diagnostics and repair of agricultural machines and their working bodies

## COMPETITIVE ADVANTAGES OF THE PLATFORM

This platform is the only one in the world. However, it is partly comparable with the existing European technological Platform FABRE – Technological platform of livestock and reproduction.

Competitive advantage of our platform in the presence of objects of innovative scientific and industrial infrastructure, allowing to provide communication of science, production and business, to concentrate resources on priority directions of scientific and technological development of the agrarian and industrial complex of the Russian Federation.

## INTERNATIONAL COOPERATION

1. Jointly with the Azerbaijan State University of Oil and Industry (Baku) develops joint projects in the field of renewable energy sources (generation of energy of sea waves into electric) and automated frequency-controlled electric drives in mobile energy facilities.
2. Jointly with the “Kazakh Institute of Plant Protection” (Almaty) the project “Development of intelligent agrotechnologies and the creation of unmanned aerial vehicles for the introduction of plant protection products and fertilizers in the system of accurate farming is being prepared”.
3. Jointly with Academy of Sciences of Republic of Belarus the cooperation on creation of systems of agricultural machines is set up.
4. Jointly with Agrarian scientific center in case of the Ministry of Agriculture of the republic Azerbaijan the cooperation on subject “Precision agriculture” is established.

## PLATFORM’S OPPORTUNITIES

The unique possibilities of the Russian Technology Platform Innovative machine technologies of agriculture consist in the fact that within the framework of this platform the scientific and technical, production, personnel and financial potential of many advanced research institutes (FSBSI FSAC VIM, Central Research Automobile and Automotive Engine Institute «NAMI», FSBSI All-Russian Selection and Technology Institute of Horticulture and Nursery, etc.), as well as design bureaus and plants (CJSC Petersburg Tractor Plant, Concern Tractor Plants, Rostselmash, JSC «Bryanskselmash», JSC «Buinsky machines Building Plant», etc.), creating machinery and technologies for agriculture – more than 40 organizations.

## THE COMPLEX FULL-CYCLE PROJECTS REALIZED BY SEVERAL PARTICIPANTS OF THE PLATFORM

1. Creation of unmanned aerial and land vehicles for agricultural purposes, incl. within the framework of projects of national technological initiatives «Autonet», «Aeronet», «Foodnet».
2. Development and creation of all-season and environmentally safe removable running systems, mobile energy means of agricultural designation.
3. Development of an intelligent combine harvester of class 6 and a tractor of class 2, 3, 4 incl. robotic.
4. Development of a system of technical means of autonomous power supply for agricultural facilities, as well as renewable energy sources.
5. Development of innovative technologies for treating friction surfaces of working organs of agricultural machinery.
6. Phytotron with computer-controlled modes, volume up to 10 m<sup>3</sup>.
7. Creation of robotic complexes.

## THE MOST SIGNIFICANT PROJECTS IMPLEMENTED BY THE PLATFORM

1. Creation of an integral wheeled agricultural tractor of classes 3, 4.
2. Development and production of unmanned gyroplanes for monitoring and agricultural works.
3. Development and production of a self-propelled chassis of class 0,6 with traction electric drives for selection-seed farms.

# Eurasian technology platforms

	Participants of the ETP	Main directions
<b>SPACE AND GEOINFORMATION TECHNOLOGIES – PRODUCTS OF GLOBAL COMPETITIVENESS</b>	Russia, Belarus, Kazakhstan	Research in the field of space technologies and geoinformation systems
<b>EURASIAN BIOMEDICAL TECHNOLOGY PLATFORM</b>	Russia, Belarus, Kazakhstan	Bioengineering technologies, Nano-, Bio-, information and cognitive technologies
<b>EURASIAN SUPERCOMPUTER TECHNOLOGY PLATFORM</b>	Russia, Belarus, Kazakhstan	Development of the element base for supercomputers, supercomputer services in the interests of science, education, the economy, social sphere
<b>PHOTONICS</b>	Russia, Belarus, Kazakhstan, Armenia, Kyrgyzstan	Element base of photonics, laser technologies and equipment, optoelectronics
<b>EURASIAN LED TECHNOLOGY PLATFORM</b>	Russia, Kazakhstan, Belarus, Armenia	Development and use of LED technology in the interests of science, education, economy, social sphere
<b>TECHNOLOGIES FOR EXTRACTION AND PROCESSING OF SOLID MINERALS</b>	Russia, Kazakhstan, Belarus, Kyrgyzstan	Extraction and deep processing of rare-earth ores, geological prospecting, subsoil use
<b>TECHNOLOGIES OF ECOLOGICAL DEVELOPMENT</b>	Russia, Belarus, Kazakhstan	Technologies of ecological safe handling with waste, development of the market of ecological services
<b>EURASIABIO</b>	Russia, Belarus, Kazakhstan, Armenia	Development of biotechnologies, project expertise, technology transfer, bioeconomic
<b>TECHNOLOGIES OF FOOD AND PROCESSING INDUSTRY OF THE AGRO-INDUSTRIAL COMPLEX – HEALTHY FOOD</b>	Russia, Belarus, Kazakhstan	Production, processing, storage of agricultural products, cattle breeding
<b>EURASIAN AGRICULTURAL TECHNOLOGY PLATFORM</b>	Russia, Belarus, Kazakhstan, Armenia, Kyrgyzstan	Farming, veterinary, machinery industry, transfer of innovative technologies
<b>LIGHT INDUSTRY</b>	Kyrgyzstan, Russia, Kazakhstan, Belarus, Armenia	Development of textile and light industry, industrial technology
<b>TECHNOLOGIES OF METALLURGY AND NEW MATERIALS</b>	Belarus, Russia, Kazakhstan, Armenia	New materials, ferroalloys
<b>INDUSTRIAL TECHNOLOGIES FOR CONSTRUCTION INDUSTRY</b>	Armenia, Belarus, Kyrgyzstan	Development of technologies for obtaining new building materials, products and structures, increasing production potential of construction industry and building materials industry on basis of technical re-equipment and modernization
<b>LIGHTING ENGINEERING</b>	Russia, Armenia, Belarus, Kazakhstan, Kyrgyzstan	Development of energy-efficient for food and reprocessing industries of agro-industrial complex, development of modern equipment and innovative technologies for production of lighting products
<b>ENERGY AND ELECTRIFICATION</b>	Russia, Belarus, Kazakhstan, Kyrgyzstan	Power engineering, efficient central-heating, cogeneration and trigeneration, centralized and decentralized heat-supply, electrification, “smart electric networks”, distributed generation, including renewable energy sources

## EURASIAN ECONOMIC COMMISSION

Department of Industrial Policy

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