

UrFU Road Map Highlights

Ural Federal University – Axis Of Change

UrFU rector
Victor Koksharov

The Mission of Ural Federal University

is to ensure re-industrialization and to enhance competitiveness, to build human, scientific and technical capacity, to upgrade traditional sectors of Russian economy and to develop post-industrial ones in a balanced manner, in particular within the Urals

 QS INTELLIGENCE UNIT THOMSON REUTERS

Our Dream is to establish a **World-Class University** in the heart of Eurasia

Ural Federal University

Today:

- Top 500-550 in QS World University Ranking
- Top 10 in Interfax Russian national ranking
- The 4th among Russian universities by the number of the articles published in internationally recognized scientific journals

Cooperation is a key instrument
and a crucial source of UFU fast development

- The white points represent institutions of the top 200 of THE ranking
- The purple points represent institutions of the top 200-400 of THE ranking

Cooperation in the Domain of Science

Interdisciplinary areas & full cycle of competencies

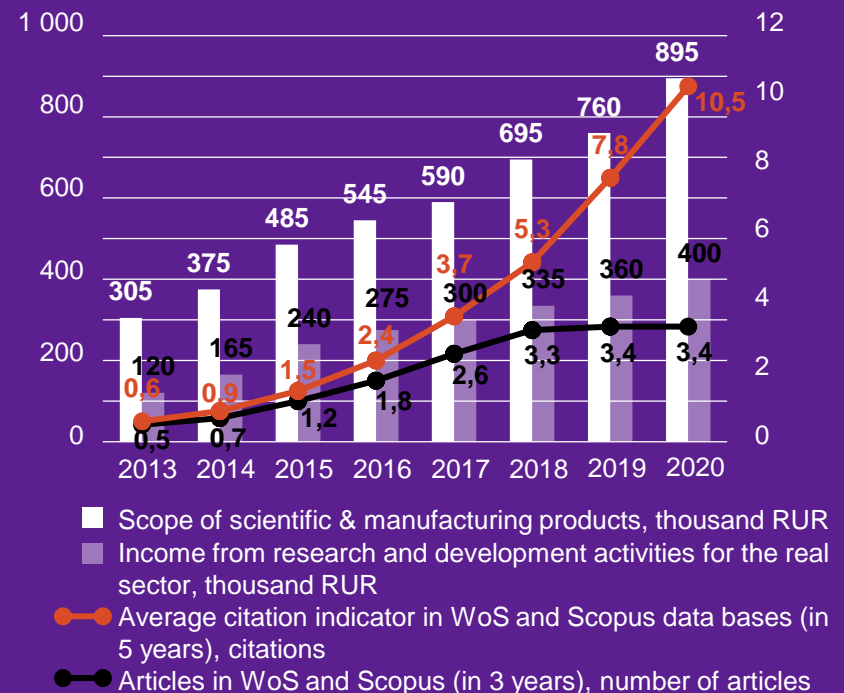
Excellence centres in priority areas:

1. Information Technologies and Human Being in the Information Society
2. Power Engineering, Resource Saving, and Environmental Management
3. Flexible Technologies and New Materials
4. Living Systems and Health

Partner networks in Research :

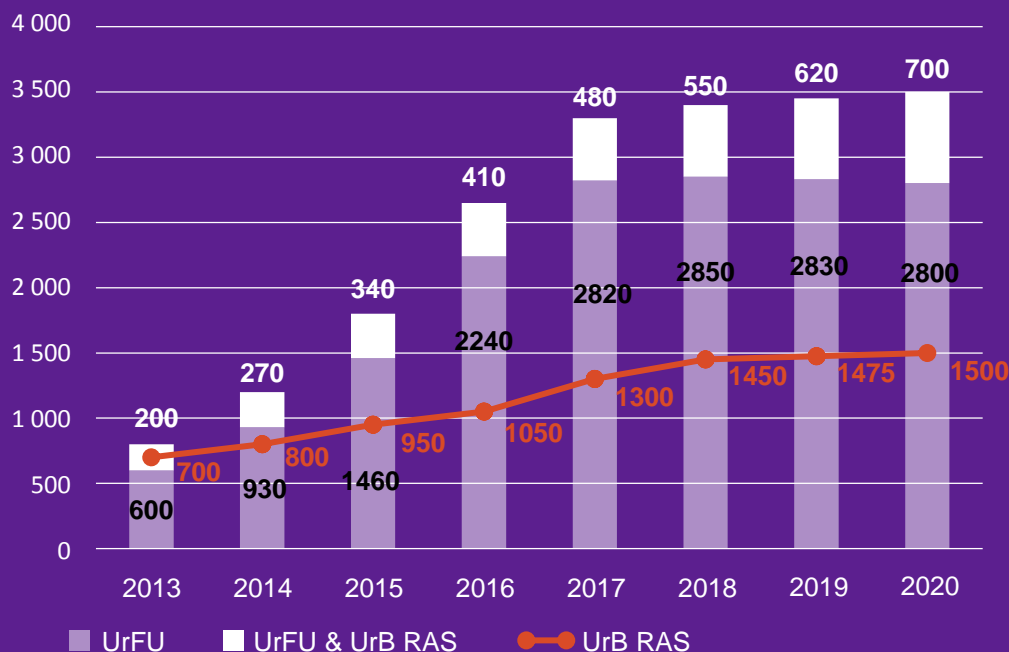
- More than 60 international universities and research institutes from more than 20 countries
- International corporations
- Major Russian corporations

Research output, per faculty member



'Quick win' cooperation strategy

Contribution of joint publications by scientists of UrFU and UrB of RAS to the UrFU publication numbers, by SCOPUS data



18 new competences on science charts of the UrB of RAS and the UrFU

Potential of joint works:

- for the UrB of RAS is 202 publications and 100 authors;
- for the UrFU, 232 publications and 118 authors

Joint networks of 486

International partners:

- UrB RAS – 298 partners
- UrFU – 204 partners

Excellence centres in priority areas

**Information Technologies
and Human Being
in the Information Society**

Basis for further development

**Power Engineering,
Resource Saving, and
Environmental Management**

Major attractor of corporate funding

**Flexible Technologies
and New Materials**

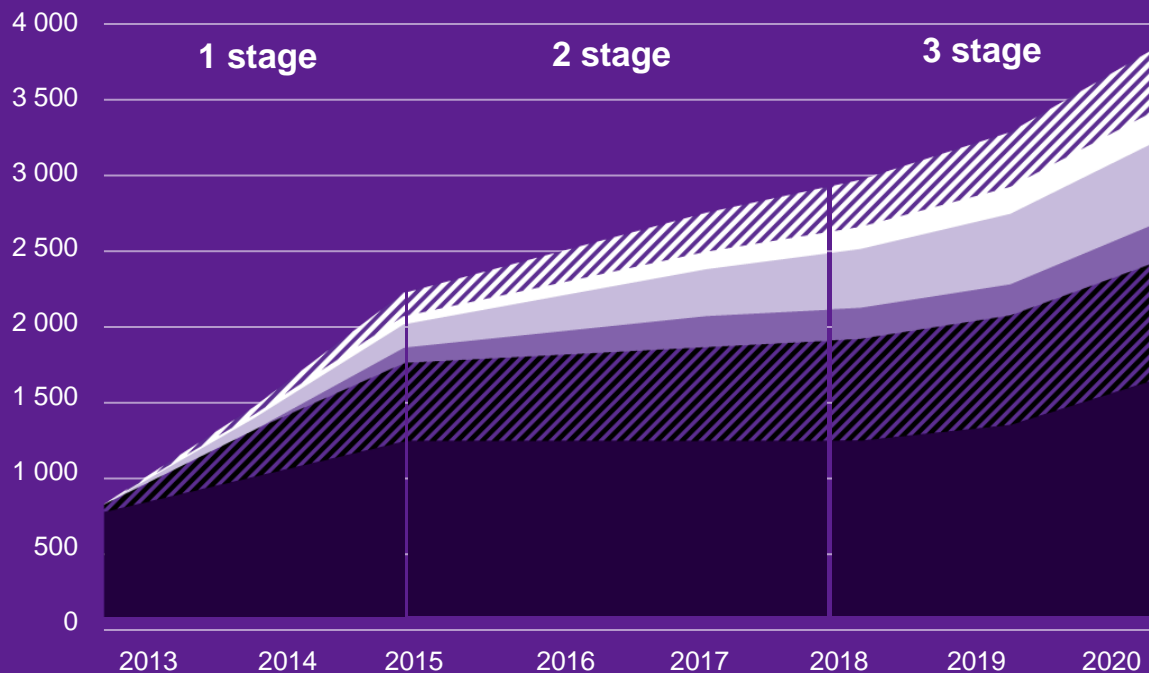
Major publication activity source






**Living Systems
and Health**

Long-term investment

Scientific publications

Sources of publication activity growth, articles



-  Joint scientific research centres with foreign universities
-  Russian and foreign post doctorate employees
-  Scientists on a long-term internships
-  UrFU Journals listed in WoS & Scopus Indexes
-  Laboratories
-  Excellence Centres

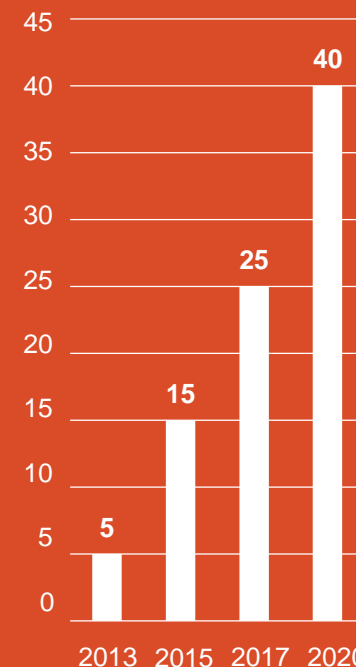


Cooperation in the Domain of Education

Project-based approach as a Key Advantage of UrFU Education

	1 stage 2013-2015	2 stage 2016-2017	3 stage 2018-2020
Priority Geographic Markets	Ural Region and former USSR countries	Former USSR countries and developing countries of South-East Asia and Middle East	Global education services market
High focused areas	Information Technologies and Man in the Information Society		
	Power Engineering, Resource Saving, and Environmental Management		
	Flexible Technologies and New Materials		Living Systems and Health
Students involved in breakthrough areas	30%	40%	60%

Share of higher education programmes implemented jointly with employers, %



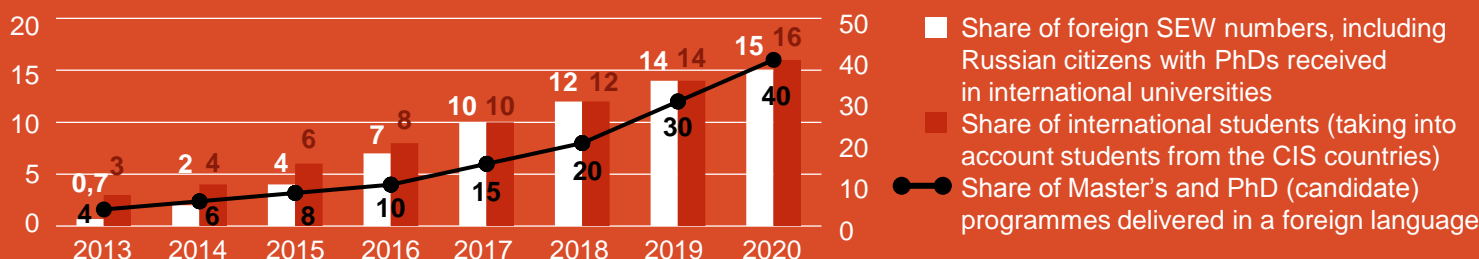
Strategic partners: Siemens, DMG, Schneider Electric, IPG-group, Intel, Microsoft, Delcam, Schlumberger, IBM, Oracle, SAP AG, ANSYS, DuPont, RENISHAW, Enel, TMK, Ural Metal and Metallurgical Company, OMZ, VSMPO-Avisma etc.



Educational expansion

	Priority Countries	Priority Fields	Predominant Training Formats
1 stage 2013-2015	CIS countries Kazakhstan, Tajikistan, Armenia, Kirgizstan	Economics, Social and political sciences, Metallurgy, Information technologies and telecommunications, Construction, Power engineering and nuclear technologies	Baccalaureate RUS (70%), Master's courses RUS (20%), PhD (aspirantura) courses in the RUS (10%)
2 stage 2016-2017	Developing countries China, India, Iran, Vietnam, Malaysia, Indonesia, Pakistan, Mongolia	Power engineering and nuclear technologies, Nanotechnologies and new materials, Information technologies and telecommunications, Natural sciences (living systems), Humane sciences, Social and political sciences	Baccalaureate and preparation faculty RUS (40%), Master's courses ENG (40%), PhD (aspirantura) courses ENG (20%)
3 stage 2018-2020	Developed countries EU countries, Germany, France, UK, USA	Humane sciences, Social and political sciences, Natural sciences, Interdisciplinary modules delivered jointly with international corporations	Academic exchange, Networked education programmes with partner universities, Russian As A Foreign Language courses, Summer schools, Open learning

Internationalisation indicators, %



Total
4 770
international students

Open education learning environment

Open University

- E-course by programme module
- Open free e-course
- E-course developed in partnership with the employer
- E-course of partner universities



Involvement of at least
25 000 open course
attendees in 2020

Available on

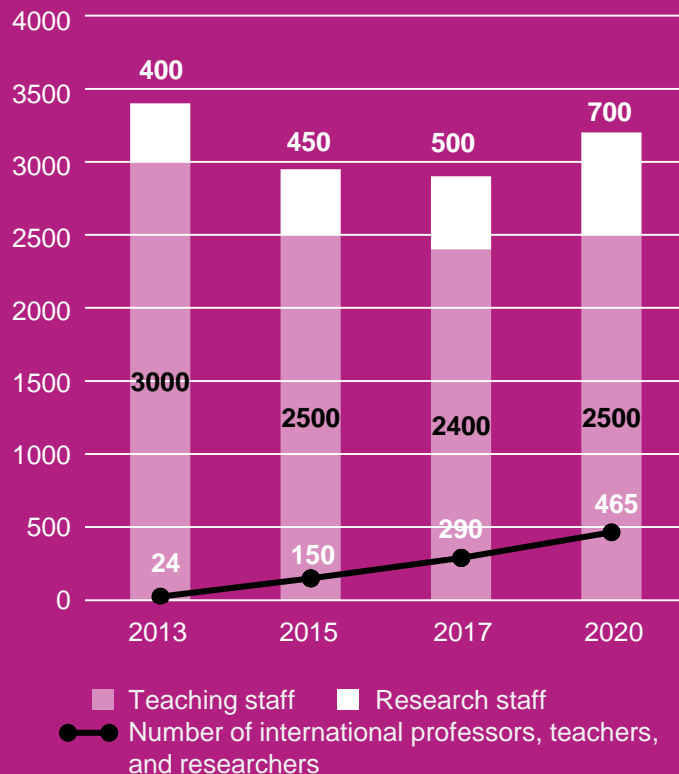
- Open University site
- E-platforms: Coursera.org, edX.org



Human resources management

Principal reform of the University's human resource policy

Personnel



- Pro-active recruitment policy
- Staff characteristics

Up to

75%

share
faculty
members
fluent in
English

Up to

70%

share
faculty
members
younger than
50

Up to

35%

share
faculty
members
younger than
40

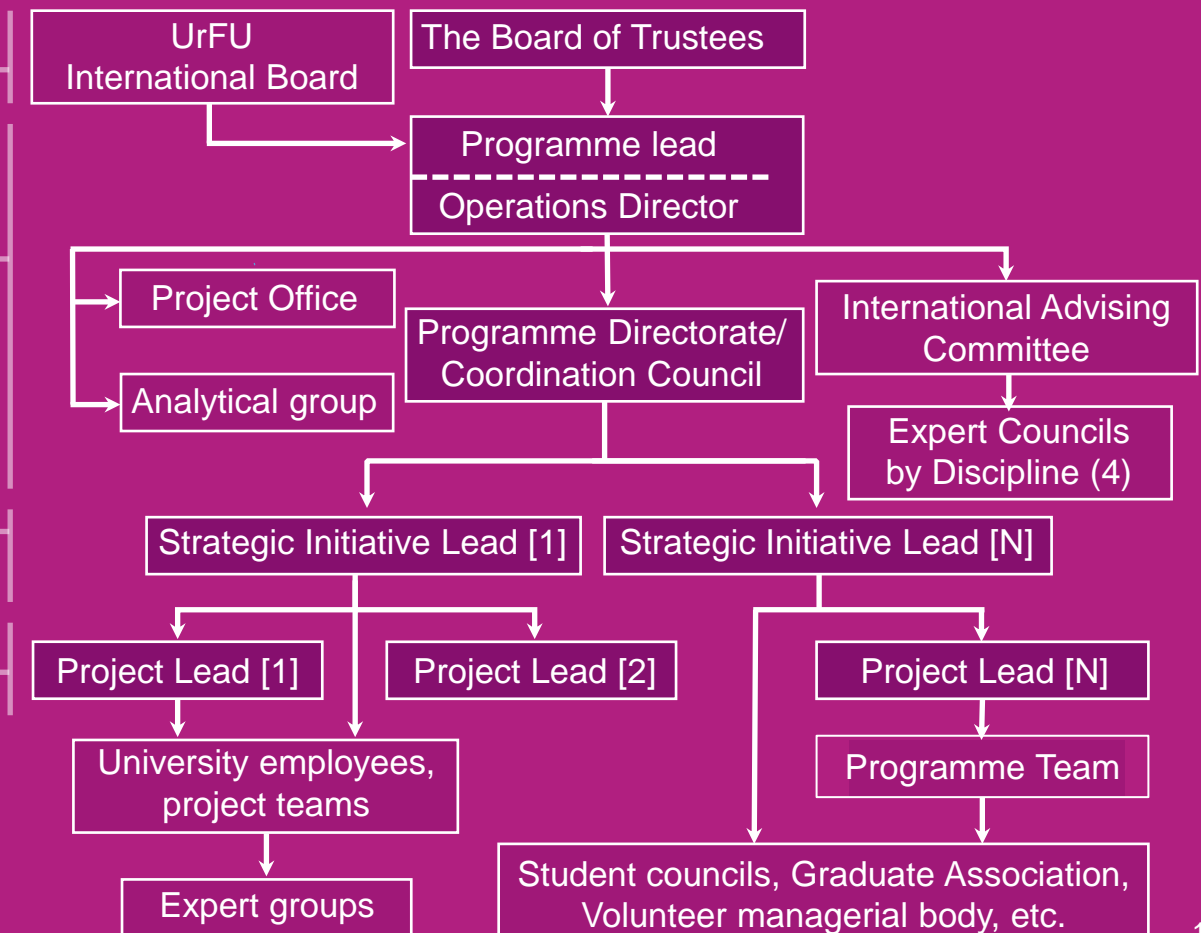


Programme management system

Level of decisions to be made

- Strategic decisions, evaluation and verification of the changes according to the Road Map
- Approval of the decisions within the scopes of values defined in the Road Map
- Approval of the changes within the scope of strategic initiatives
- Approval of the changes within the scope of individual projects

Management bodies





Key instruments of transformation



The student community as a driver of change

Excellence centres

Restricting bureaucratization

Involvement of trustees

Management focused on personal efficiency and achievements

New quality of academic staff



Integrity of the reforms

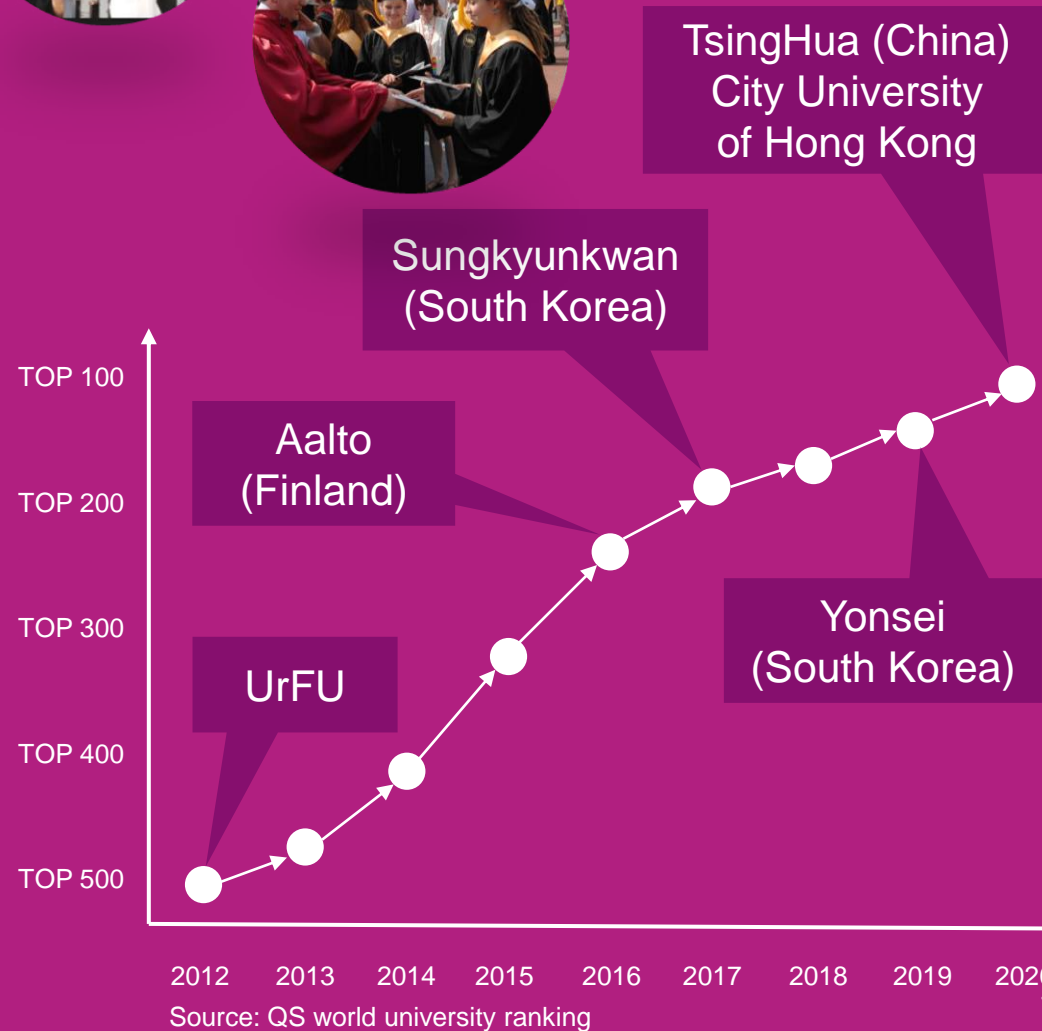
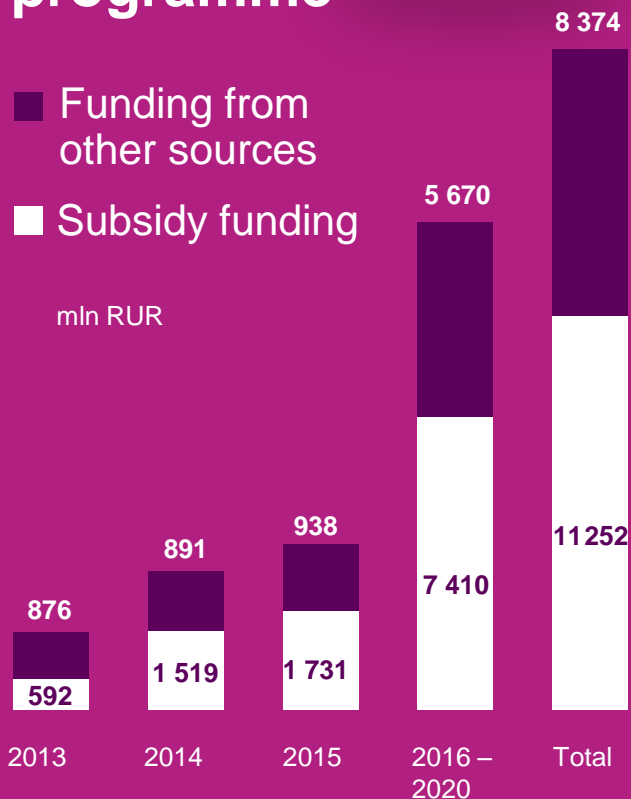




Competitiveness programme

- Funding from other sources
- Subsidy funding

mIn RUR



Source: QS world university ranking

Appendix



Brand code

Product

Unique combination of educational, scientific, innovative and social technologies, products and projects aimed at human capital formation and sustainable development of Urals region, Russian Federation and Global community

Mission

Implementation, adaptation and promotion of the GAPTUM* as a new model for universities in Russia

*GAPT University Model (GAPTUM):

G — Global,
A — Advanced,
P — Practice-oriented,
T — Transparent

The axis of change

Placement

Largest federal university in Russia, an intellectual core of dynamically developing business, cultural and industrial centre of Eurasia, offering vast opportunities for professional and social personal development

Vision

One of the leading educational and scientific centers (poles) of global technical and social development

Style

Dynamic
Successful
Versatile
Networking
Open
Independent

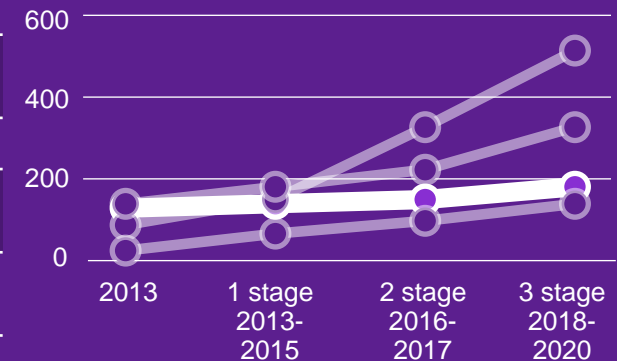
Values

Evolution
Academic freedom
Team spirit
Fundamental approach
Responsibility for next generations
Practice-oriented approach

1. Information Technologies and Man in the Information Society

Indicator	2013 (present)	Phase I 2013-2015	Phase II 2015-2017	Phase III 2018-2020
Key excellence centres	5	7	7	8
Laboratories and science groups	5	20	23	26
Articles in Web of Science and Scopus / with international participation per year	150/25	240/62	350/104	400/120
Total scope of SRW per year, mln RUR	150	175	215	290
Scope of SRW completed on business orders per year, mln RUR	110	120	130	160
Working post-docs and international researchers per year, persons	3	11	17	22

Proceeds form R&D projects conducted in the interests of industrial companies



Strategic Partners:

Academic: University of Oxford; University of California, Berkeley; University of Vienna, University of Tasmania, Hobart; University of Paris Diderot — Paris 7; University of Paris 1 — Pantheon-Sorbonne; Karlsruhe University, Fachhochschule Brandenburg; University of Stuttgart; European Southern Observatory, Santiago

Business: Microsoft, Intel, IM, Cisco, National Instruments, Google, Yandex, Siemens

- 2014 ACM ICPC World Finals
- CE ‘Intelligent systems, technical vision, programming’
- CE ‘Quantum and video information technologies: from computer vision to intellectual videoanalytics’

2. Power Engineering, Resource Saving, and Environmental Management

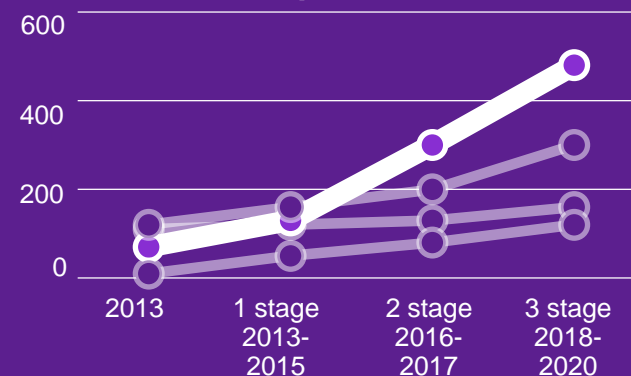
Indicator	2013 (present)	Phase I 2013-2015	Phase II 2015-2017	Phase III 2018-2020
Key excellence centres	3	4	5	6
Laboratories and science groups	5	12	22	32
Articles in Web of Science and Scopus / with international participation per year	160/12	240/45	260/75	290/120
Total scope of SRW per year, mln RUR	110	250	500	950
Scope of SRW completed on business orders per year, mln RUR	70	130	300	480
Working post-docs and international researchers per year, persons	2	11	17	25

Strategic Partners:

Academic: University of Hamburg; Atmosphere and Ocean Research Institute, the University of Tokyo; Institute of Environmental Physics at the University of Bremen; Grenoble Institute of Technology; University of Versailles; Alfred Wegener Institute for Polar and Marine Research; The Deutsches Elektronen-Synchrotron DESY; Dresden-Rossendorf Research Centre, the Institute of Ion Beam Physics and Materials Research; Korea Atomic Energy Research Institute KAERI; Institute Pierre Simon Laplace

Business: Ural Mining and Metallurgical Company, TMK, Evraz Holding, Mechel, NLMK, Russian Copper Company, VSMPO-Avisma

Proceeds from R&D projects conducted in the interests of industrial companies

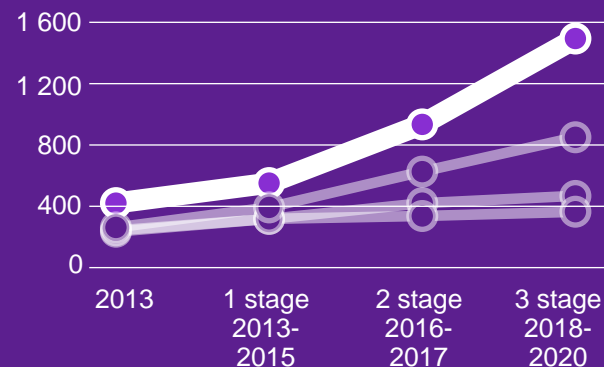


- The project 'Physics of Climate and Environment'
- Cyclotron Nuclear Medicine Centre
- Corporate Technical University and Base Department (in collaboration with UMMC)

3. Flexible Technologies and New Materials

Indicator	2013 (Present)	Phase I 2013-2015	Phase II 2015-2017	Phase III 2018-2020
Key excellence centres	8	11	13	15
Laboratories and science groups	7	17	25	30
Articles in Web of Science and Scopus / with international participation per year	350/50	490/105	900/290	1500/600
Total scope of SRW per year, mln RUR	280	340	540	1 100
Scope of SRW completed on business orders per year, mln RUR	120	160	200	300
Working post-docs and international researchers per year, persons	5	14	32	55

Number of articles in Scopus and WoS



Strategic Partners:

Academic: University of Manchester; Radboud University; Vienna University of Technology; Seoul National University; Ecole Central Paris; University of Oxford; University of Twente; Tokyo University; Higher Technical Schools (Switzerland); Oak Ridge National Laboratory; Shanghai Institute of Ceramics, Chinese Academy of Sciences; German Aerospace Centre; National Institute for Material Science (Japan)

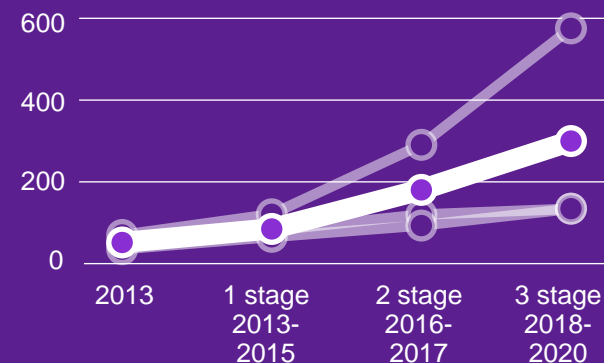
Business: Boeing (USA), SMS Meer Group (Germany), Linseis (Germany), Chiyoda Technol Corporation (Japan), and Hitachi Europe Ltd. (Cambridge, GB)

- Nanodimensional Ferrielectric Materials Laboratory (lead by leading international scientist – Andrei Kholkin, Professor, University of Aveiro)

4. Living Systems and Health

Indicator	2013 (Present)	Phase I 2013-2015	Phase II 2015-2017	Phase III 2018-2020
Key excellence centres	3	4	6	8
Laboratories and science groups	3	8	17	25
Articles in Web of Science and Scopus / with international participation per year	180/30	320/66	570/170	810/300
Total scope of SRW per year, mln RUR	30	70	125	250
Scope of SRW completed on business orders per year, mln RUR	10	50	80	120
Working post-docs and international researchers per year, persons	2	10	16	27

Number of articles in Scopus and WoS published with foreign co-authors



Strategic Partners:

Academic: University of Oxford; Imperial College London, University of Manchester; Ghent University; Okayama University; University of Tasmania; University of Hyderabad; Catholic University of Leuven; Nankai University; Rutgers University; Medicinal University of Vienna; Clinical University of Ulm

Business: Intel, IBM, NVIDIA, BIOTRONIK SE & Co.KG (Germany), Medsintez Plant LLC, Medical Military Centre

- Science and Technology and Innovation Pharmaceutical Technology Centre
- Chemical Pharmacy Centre