



NATIONAL RESEARCH CENTRE
«KURCHATOV INSTITUTE»

Collaboration and Russian-German Project Funding within the Ioffe-Röntgen-Institute IRI

Mikhail Popov

**CREMLIN WP2 Workshop on «Funding and Joint Research Programmes at the
Megascience Facilities»**

Grenoble, 15-16 June 2017



International Megascience projects

Joint activity of Russia and Germany within following Megascience projects laid the ground for fruitful Russian – German cooperation within Ioffe-Röntgen Institute.

European X-ray free electron laser XFEL



European facility for ion and antiproton research FAIR



International Centre for Neutron Research (ICNR) on the basis of the reactor PIK





The Russian-German Ioffe-Röntgen Institute



On 23th of May 2011 Minister of Education and Science of Russia A.A. Fursenko and Minister of Education and Research of Germany A. Schavan signed an Agreement to establish the joint Ioffe-Röntgen Institute.

The Agreement for the establishment of the Ioffe-Röntgen Institute between NRC KI and DESY was signed in Moscow on 17 April 2012 by Prof. M.V. Kovalchuk and Prof. H. Dosch.

Ioffe-Röntgen Institute was founded in the framework of cooperation between DESY and NRC «Kurchatov Institute» as a common platform for strengthening of cooperation in science, education and technological development, including the development of new large-scale research infrastructure.





Objectives & Scientific Fields

Photon Science

**Accelerator Research and
Development**

Particles, Nuclei and Plasmas

**Design of Nanomaterials,
Biomaterials
and Multifunctional Materials**

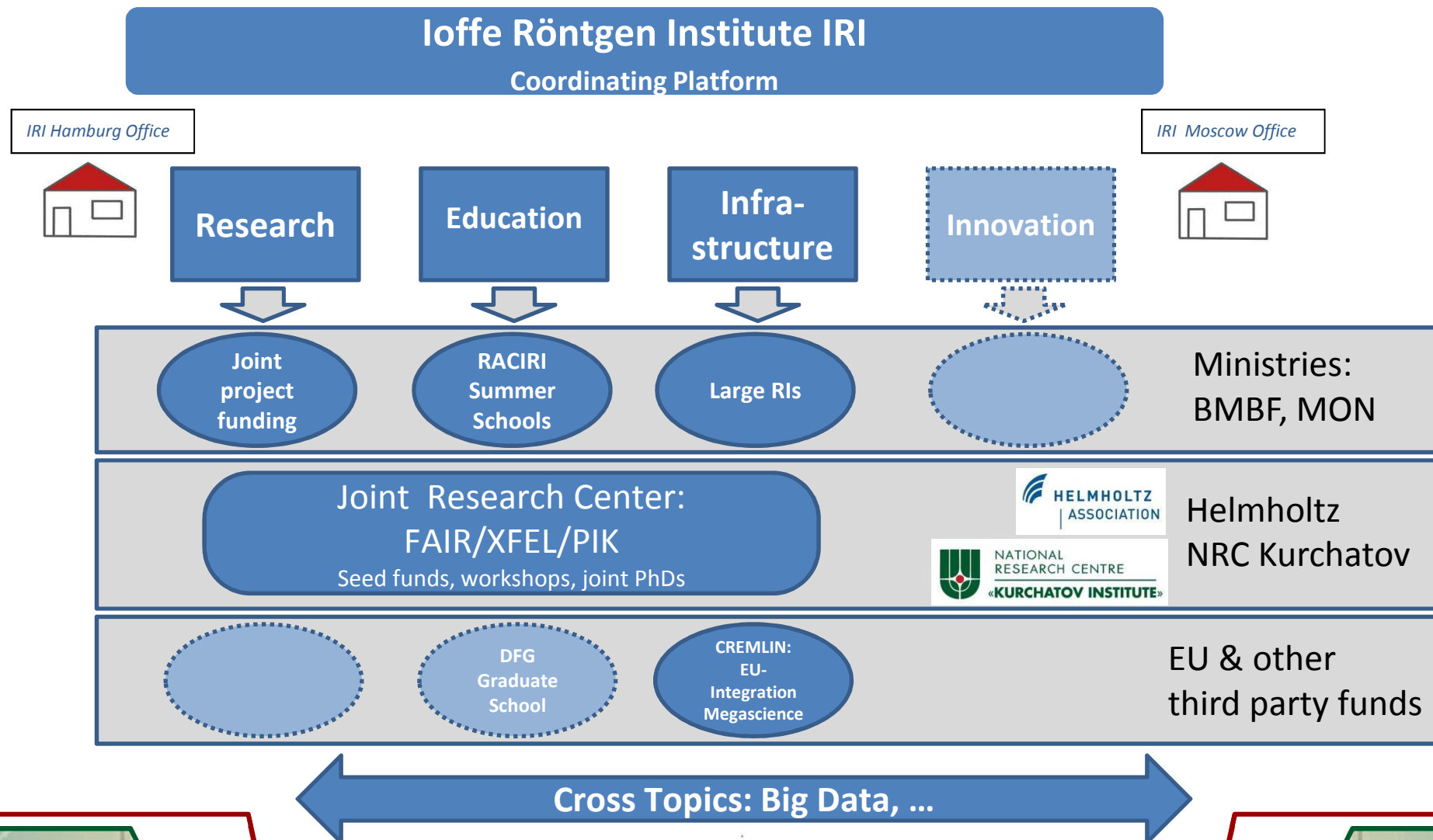
Large-scale Data Management

Energy Materials Research

Education



The overall Ioffe-Röntgen Institute structure



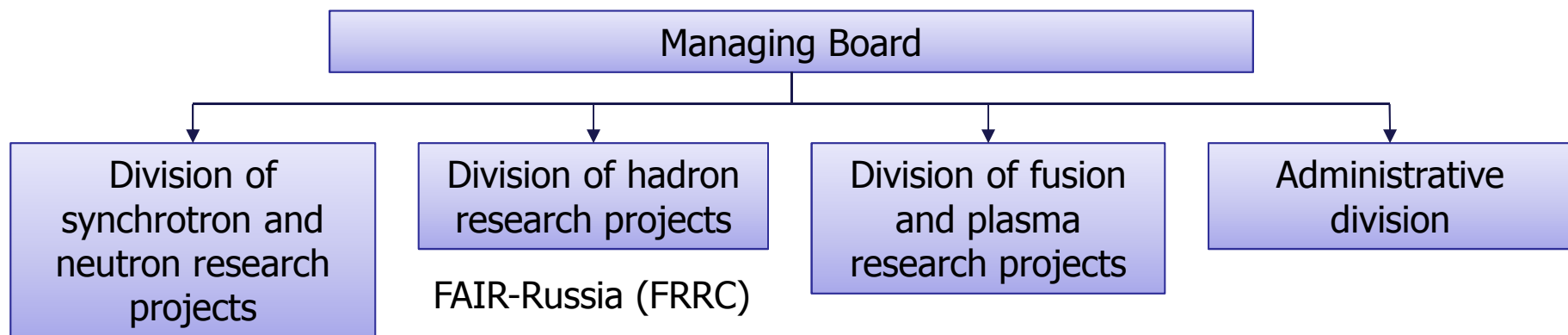


The Ioffe-Röntgen Institute in the structure of NRC «Kurchatov Institute»

In April 2017 the Charter and the structure of the Ioffe-Röntgen Institute as a part of the NRC «Kurchatov Institute» was approved.

The main task of the Ioffe-Röntgen Institute is to form the National research programs and ensure their realization in the following Megascience projects: **SSRS-4, ICNR PIK, IGNITOR, XFEL, ESRF, FAIR, CERN-LHC, ITER.**

Structure of the Ioffe-Röntgen Institute as a part of the NRC «Kurchatov institute»



A special building on the territory of the NRC «Kurchatov Institute» is dedicated to host the Ioffe-Röntgen Institute.



Russian-German cooperation



In the course of the communication of two leaders the cooperation in the creation, development and use of research Megascience infrastructure was confirmed.

The main objectives of this cooperation are following:

- ensuring access and participation of Russian scientists and specialists in the creation of newest technologies with the use of Megascience projects;
- training of personnel of the highest world qualification for Russian science, industry and business on the basis of involvement and active participation of Russian students, young scientists and specialists in Megascience projects;
- modernization and development of the Russian Megascience infrastructure for research in priority areas;
- development and creation of new breakthrough technologies which are most relevant on the market of innovative products.



Activities of Russian and German Ministries of Science and Education



In 2014 by the Ministries of Education and Science of the Russian Federation and Germany under the auspices of the Ioffe-Roentgen Institute the joint open call devoted to the photon and neutron research was realized. 24 organizations applied to this call and 11 programs were selected to get financial support (10 million euro from both sides in total).

In 2017 by the Ministries of Education and Science of the Russian Federation and Germany under the auspices of the Ioffe-Röntgen Institute the new joint open call devoted to the photon and neutron research is planned for the realization period 2017-2020.

In 2017 a joint call of Russian Scientific Fund and Helmholtz Gemeinschaft was announced. This call is dedicated to the basic research and research studies by international scientific groups and is scheduled on 2018-2020. Amount of financing within one grant is from 4 to 6 million rubles (i.e. from 60-90 kEuro) annually.



Cooperation with FZ Juelich on PIK project



In 2014 NRC «Kurchatov Institute» and FZ Juelich signed an agreement on scientific cooperation.

The agreement provides for joint programs for students, planning and design of neutron experimental facilities and equipment for the high-flow research reactor PIK.



JÜLICH
FORSCHUNGSZENTRUM



Concept of Distributed Scientific Center (DSC) for the research using heavy ions and antiprotons

The purpose of creating the DSC is to unite the efforts of scientists from the Russian Federation and Germany, in studies of the properties of matter in experiments using heavy ions and antiprotons.

The FAIR project in Darmstadt, the NICA project in Dubna and the projects of SPASCHARM and VES on the largest in Russia accelerator U-70 in Protvino are parts of DSC where realization of new research programs is planned.

Agreement between NRC «Kurchatov Institute» and Joint Institute for Nuclear Research on scientific and technical cooperation on the development and use of the research infrastructure of the DSC is planned to be signed.

Main tasks of the DSC, which unites and coordinates efforts in these scientific centers, are:

- the discovery and study of new forms of matter;
- hadronic spectroscopy;
- search for a phase transition between hadronic matter and quark-gluon plasma;
- a detailed study of the fundamental properties of spin in strong interactions;
- development of the theoretical nonperturbative tools of quantum chromodynamics.

The scientific management and coordination of the activities of the DSC is carried out by the newly created Institute of Ioffe-Röntgen in NRC «Kurchatov Institute».

The FAIR-Russia Research Centre (FRRC)

The FAIR-Russia Research Centre is the joint project of the NRC «Kurchatov Institute» and GSI Helmholtz Centre for Heavy Ion Research, established on 18th of September 2007 in ITEP NRC «Kurchatov Institute», in order provide the Russian institutes and scientific groups, participating in the construction of the FAIR accelerator complex and experiments.

Currently the schemes of FRRC funding and interaction are being changed both from Russian and German sides.

The FAIR-Russia Research Centre Goals:

- Preparation of scientific personnel, who participates in the FAIR project by providing support for brilliant Russian master students, PhD students, PhDs and young groups leaders as well as developing multifunctional creative environment and appropriate equipment for FAIR partners;
- Organization of symposiums, seminars and workshops on the subjects relating to the implementation of the FAIR project;
- Coordination as well as IT and analytical support for the Russian research institutes involved in the implementation of the FAIR program;
- Assistance in developing of innovation environment for promotion and commercialization of results of scientific activities;
- Support of IT-infrastructure for scientific research.

Financial report on FRRC activities 2007-2016

Total amount of financing provided for implementation of main FRRC activities starting in 2007 is 249,54 mRUB.

All FRRC expenses by items of expenditures and by sources of financing for the period of 2007-2016 (mRUB)

German side		Russian side	
Labor costs of the winners of FRRC contests (insurance premium payments included)	79,14	Labor costs of the winners of FRRC contests (insurance premium payments included)	84,54
Equipment and materials	0,24	Equipment and materials	12,03
Business trips	13,41	Business trips	22,79
Events	6,14	Events	5,86
Organizational and technical support	11,64	Organizational and technical support	13,75
Subtotal	110,57	Subtotal	138,97
Total 249,54			



Russian-French open scientific calls 2015, 2017

In 2015 by the Ministry of Education and Science of the Russian Federation and European Synchrotron Radiation Facility (ESRF) two joint open calls devoted to the conducting research at ESRF have been realized. More than 30 organizations applied to this call.



Министерство образования и науки
Российской Федерации



In 2017 by the Ministry of Education and Science of the Russian Federation and European Synchrotron Radiation Facility (ESRF) a new joint open call devoted to elaboration of technical concepts of the next generation synchrotron radiation source is planned for the realization period 2017-2018. This activity will be partly dedicated to the SSRS-4 project and will allow to form an international team of specialists.

Connecting Russian and European measures for Large-scale research infrastructure – CREMLIN

The CREMLIN project is one of the key efforts of Ioffe-Röntgen institute along with the RACIRI summer school for young scientists.



The main purpose of CREMLIN is the development of scientific cooperation between the Russian Federation and the European Union in the field of development and scientific use of large-scale research infrastructure in the framework of Horizon 2020 program.





A German-Swedish-Russian Initiative to promote young scientists embedded in the RAC and IRI collaboration frameworks (RACIRI Summer School)



Being the initiative of Sweden, Russia and Germany the RACIRI summer school is a good example of joint education and an important part of the Ioffe-Roentgen Institute activity. The first RACIRI school took place in 2013.



It strives for strengthening the scientific knowledge base of young researchers in advanced materials design with a strong connection to the excellent research infrastructures in the region and to contribute to the necessary interdisciplinary literacy in relevant scientific fields and disciplines.

Next 5th RACIRI Summer School «Grand Challenges and Opportunities with the Best X-ray and Neutron Sources» will be held in Ronneby, Sweden, 19-26 August 2017.



The International Science Policy Committee (ISPC) of the NRC «Kurchatov Institute»



ISPC of the NRC «Kurchatov Institute» was established in 2012.

- ✓ ISPC is formed out of the leading world-level scientists with competences in the scientific and technological priority fields of the NRC «Kurchatov Institute» and in the Russian Megascience program;
- ✓ Recommendations to the NRC «Kurchatov Institute» on the formation of the future research strategy;
- ✓ Support in the preparation and realization of the Megascience projects by request of the Director of the NRC «Kurchatov Institute»;
- ✓ Expertize on the scientific directions which have strategic priorities.





Thank you for your
attention!