

**Institute of Crystallography of Federal Scientific Research Centre
“Crystallography and Photonics” of Russian Academy of Sciences
Shared Research Centre**

**«Structural
Diagnostics of
Materials»**



CREMLIN PLUS

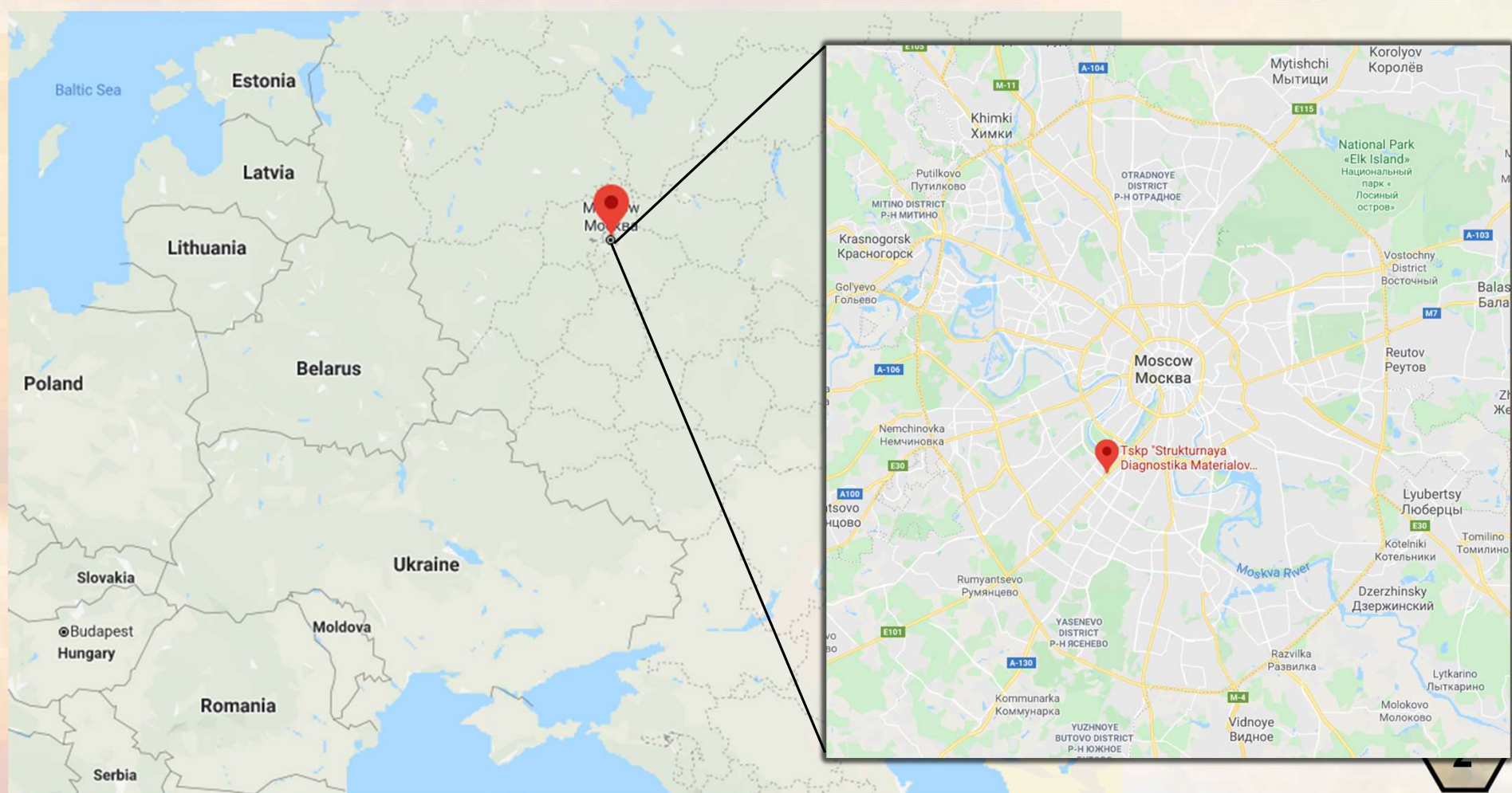
Connecting Russian and European Measures
for Large-scale Research Infrastructures



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Location: Russia, Moscow, Leninskiy Pr. 59



FRC "Crystallography and Photonics RAS"

«Structural Diagnostics of Materials»

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2020



Information about our Centre



Shared Research Centre "Structural Diagnostics of Materials" of Federal Scientific Research Centre "Crystallography and Photonics" of Russian Academy of Sciences was created in 2002 on a base of equipment of Institute of Crystallography A.V. Shubnikov`s of Russian Academy of Sciences.

Now it has more than 25 modern analytical instruments, highly qualified specialists with an academic degree, who can fully and competently work on our equipment and to analyze results.

Over the 18 years of its existence, the Center has accumulated a big experience of work with many clients who works in a different field of science, production and investigations such as The Kurchatov complex for synchrotron - neutron investigations, Rosnano, Moscow state University, Henkel inc., PPG group, Rosneft, Gazprom, Skolkovo institute of technology and many others.

One of most important aspects of our work is metrological support of our equipment, which passes the calibration and verification every year.

Every year our Center conducts internships, seminars and courses for young scientists of Russia and abroad on which they learn modern methods of investigations on our equipment's. Also, every year much of employees are making a doctoral dissertations using the equipment's of Shared Research Center "Structural diagnostics of Materials and write much publications in Russian and foreign high rated journals.

From 2005 to the present our Centre take a part in in a federal target programs of developing a network of shared research centers, during which we re-equipping.

SRC C&F RAS annually takes a part in thematic exhibitions where we present our capabilities in the investigations in a structural diagnostic.





Unicueeness



The uniqueness of our Centre consists of using a big complex of diagnostics and characterization methods, of different kinds crystalline and amorphous materials. We have a possibility to fully establish their composition, structure and some physical and chemical properties, for what we are using methods of electron and atomic probe microscopy, X-ray diffraction of different kinds, optical methods, complex of element analysis methods, measurements of electrical and optical properties and others.



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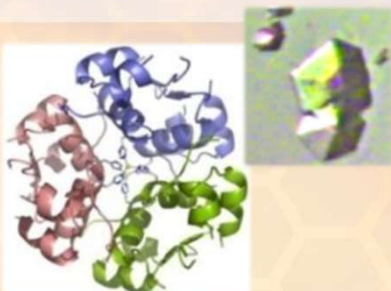
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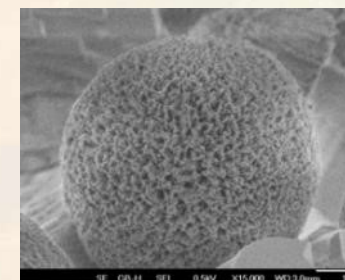
Specialization



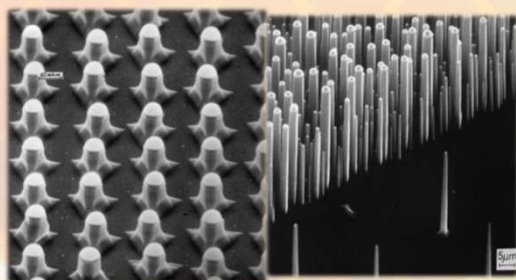
Biomaterials



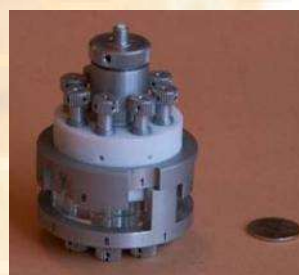
New functional crystalline materials



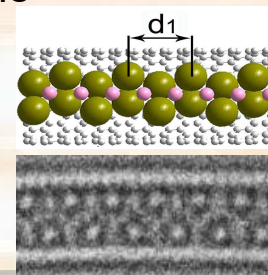
Biomedicine



Functional aspects of the formation of crystalline systems and materials



Space materials technology



Nanotechnology and Nanomaterials



Minerology

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X-RAY Analysis Group



Single crystal X-Ray diffraction



Powder, protein X-Ray diffraction



Small angle X-Ray diffraction

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Microscopy analysis group



Scanning, dual beam, atomic probe, transmission, cryo-electron microscopy, electronography and sample preparation equipment.



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Optical and other methods group



Spectrophotometry and
ellipsometry, Raman
microscopy



Optical and confocal
laser microscopy



Complex of clean
rooms



Instruments for
measuring of
chemical
composition and
physical properties
of different materials



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Access/Access Policy



We have an access to our instruments for external and internal users, whose order is determined by access regulations. For getting access to an instrument you have to fill out an application form. For the internal users you need only filled application and for the external users you need a paid services contract. The equipment is dividing on two groups according to the complexity of working with them. The first group – equipment's that is not so hard to learn and that have a minimal chances of been broken. The second group – expensive and difficult to learn equipment's on which you can work only if you have a good experience on a devices like this and only after the briefing.

We have an application form in Russian and soon we will translate it to English. The access procedure for foreign scientists is the same as for Russian, only you need is too fill the application form but not later than 3 weeks before the visit. After receiving a form we coordinating the time of work with the person responsible for the equipment and sing a services contract.

We have no any supporting measures. We can only sent you an invitation.

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Collaboration with European organizations



- More than 15 Contacts and cooperation agreements with European science organizations.



**Albert-Ludwigs Universität
Freiburg**

**Leibnitz Institute of photon
technology**



Trento University

**3-rd generation Synchrotron
Centre Diamond Light Source**



University of Verona

**Institute of
crystallography of Keln
University**



**École Polytechnique
fédérale de Lausanne,
EPFL**

**Chemical Institute of the
Max Planck Society**



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Users/Foreign Users/ /Close cooperation



2019 statistics:

- 3 foreign users



Henkel GmbH

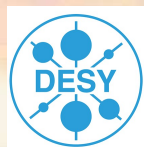


PPG Group



Joint Institute for Nuclear Research (JINR)

- More than 30 external organizations
- More than 200 articles were published
- 4 organizations with close relations, experience and knowledge exchange also with using of their science infrastructure



Deutsches Elektronen
Synchrotron DESY



Berliner Elektronenspeicherring
Gesellschaft für
Synchrotronstrahlung (BESSY)



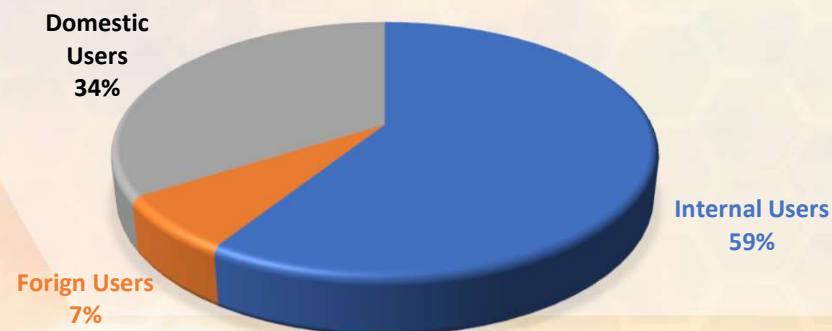
European Synchrotron
Radiation Facility (ESRF)



The European XFEL

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% OF USING BY GROUPS



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Centre needs analysis



- **The most loaded equipment: Scanning, Dual beam and Transmission Electron Microscopy**
- **Less loaded equipment: Spectrophotometry analysis**
- **Most strengths: Complex of methods of analyzing whole spectrum of solid materials**
- **Perspectives in international cooperation: Great experience in cooperation and good and modern equipment base**

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Contacts



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Centre “Crystallography and Photonics” of Russian Academy
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🌐 <https://www.crys.ras.ru/tsc>
RUS

🌐 English version is under construction
ENG



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Ph.D Grigoriev Yuriy Vasilievich



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Ph.D Avilov Anatoliy Sergeevich

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