National type Research Infrastructures (base for distributed RI)

Scientific domain	Name, contact information	Description
Material Sciences and Analytical facilities	The unique research facility for precision measurements of radiometric and spectroradiometric characteristics of sources and detectors of radiation in the spectral range from 1 nm to 20 microns All-Russian Research Institute for Optical and Physical Measurements" (VNIIOFI) Zolotarevsky Yuri, ymz@vniiofi.ru http://www.unu.vniiofi.ru	The unique research facility is a single set of high-precision equipment, including the unique set of precision high-temperature blackbodies with fixed temperatures based on phase transitions of the metal-carbon eutectic alloys of Re-C, TiC-C, ZrC-C, HfC-C, developed and manufactured at VNIIOFI, as well as the unique absolute cryogenic radiometer. The unique research facility is designed for high-accuracy measurements of photometric, radiometric and spectroradiometric characteristics of sources and detectors in a wide spectral and temperature range (up to 3500 K). These types of measurements are mostly in demand in such fields as: -development of space technology; -collecting meteorological information, high-quality weather forecasting and monitoring of dangerous meteorological phenomena; -development of new energy-saving light sources; -fundamental and applied research in various fields of astrophysics, geophysics, medicine, metallurgy, chemistry and engineering
	Shared Research Center of IC RAS "Structural diagnostic of materials" Shubnikov Institute of crystallography Russian Academy of Sciences Grigoriev Yuriy, ckpicras@mail.ru http://crys.ras.ru/tsc	Fundamental and applied researches, including innovative in a field of structural diagnostic of different materials, including nanocrystals, biocrystals and thin films using electron microscopy, x-ray, optical, and other analysis methods.
	Center for collective use of high precision methods and means of Optical and Physical Measurements All-Russian Research Institute for Optical and Physical Measurements" (VNIIOFI) Krutikov Vladimir Nikolaevich, vniiofi@vniiofi.ru http://www.ckp.vniiofi.ru/	Engineering, Physics, Biology, Chemistry
	Center for collective use of scientific equipment «State Engineering Center MSTU «STANKIN» Moscow State University of Technology «STANKIN» Volosova Marina, science@stankin.ru http://stankin.ru/gic/ckp-gic/	- technologies of magnetron, ion-plasma, laser evaporation of a wide range of coatings with nanodimensional and nanocomposite structure with radically new properties; - methods of material and coating research through probe microscopy, optical spectroscopy, mass spectrometry, etc.; - control and measuring systems constructed on interferometry principles and measurement assurance; - additive technologies for layer-by-layer synthesis of products from various powder materials with use of laser and cathode beam; - technologies of fast detail production from plastic (prototyping); - technologies of high-speed microprocessing and multiaxial mechanical processing;

		- technologies of plastic deformation and material cutting; - technologies of hydroabrasive treatment; - technologies of automated and unattended machine manufacturing; - mechatronic unit and digital actuator design.
	Center of Multiple Access to Scientific Equipment-Testing Analytical Certification Center of Giredmet State Research and Design Institute of Rare Metals Industry "Giredmet" Karpov Yuriy, karpov@giredmet.ru http://www.giredmet.ru/ru/aboutinstitute/ckp/	- Implementation of research, methodical and innovative projects related to the analytical control of inorganic substances and materials (semiconductor materials , alloys, and compounds based on rare ferrous and precious metals , high-purity inorganic substances and materials on their basis) using contemporary methods and instruments, including optical emission, atomic absorption and x-ray spectroscopy , mass spectrometry with inductively coupled plasma, spark source mass spectrometry; optical microscopy , transmission electron microscopy, scanning electron microscopy; diffraction; gas analysis; including the study of the physical properties, structure , electronic structure and local composition - Implementation of non-routine and highly complicated analyzes ; - Research and development of analytical methods and procedures, national standards, reference materials, measurement chains; - External expertise, commissioned by the research organizations of different pattern of ownership , academic institutions , large and small industrial enterprises - Certification of production for export; - Strengthening collaboration with Russian industry - provide guidance and consulting to the industrial laboratories - Active cooperation with universities, institutes of Russian Academy of Sciences, branch institutes - Widening of use of unique and expensive analytical equipment
	Use Equipment Center “Research of Nanostructured, Carbon and Superhard Materials” Technological Institute for Superhard and Novel Carbon Materials, Prokhorov Vyacheslav, pvm@tisnum.ru http://www.tisnum.ru/suec/suec.html	Applied and fundamental research is focused on superhard and carbon materials, including nanostructured materials. SUEC combines the resources of the Department of Structural Studies, Department of Physical Properties Studies of Nanostructures, and Department of New Superhard Materials Synthesis. SUEC houses and oversees modern scientific instruments and original devices and techniques developed by TISNCM.
	The Kurchatov complex for synchrotron - neutron researches National Research Center" Kurchatov Institute " Shtrombah Yaroslav Igorevich, Shtrombach_YI@nrcki.ru http://www.kcsni.nrcki.ru	This Complex шncludes the accelerator complex of the Kurchatov synchrotron radiation source (KSRS), which consists of a linear accelerator of electrons with energy 80 MeV (forinjector), intermediate electron storage energy 450 MeV and a large storage (the source of SR in the x-ray region), and the reactor IR-8, which has a very compact active area (size is 280x280x600 mm^3) with a beryllium reflector (thickness is 300 mm) and compact biological protection, that provides a fairly high neutron flux in the active zone (1,5x 10^{14}n/cm2s), and in the reflector (2,3x10^{14} n/cm^2s). These facilities are equipped with research stations where ones carry out of research on the properties of composite nanomaterials, disperse systems and organic materials, diagnostics of nano - and bio-materials, etc. using synchrotron radiation and neutrons. Production of isotopes, neutron activation analysis, radiation testing of materials and irradiated fuel compositions organized at the RR-8.

	Research complex of protective cells for material science (RCPCMS) National Research Center" Kurchatov Institute " Gurovich Boris Aronovich, Gurovich_BA@nrcki.ru http://www.irmt.ru/index.php/experbase/cameras	RCPCMS was designed for carrying out of researches in the field of radiation material science and radiation physics of solids. The uniqueness of the complex is: presence of protective equipment (protective material science camera, the so-called "hot" camera), allowing to work with radioactive materials, including high activity; presence of a wide set of research instruments and facilities, allowing to conduct comprehensive studies of crystalline, amorphous and nanocrystalline materials. The level of equipment of the complex is at the level of the best foreign "hot" laboratories, such as in Saclay and Grenoble (France), in Harwell (UK). Along with the works in the nuclear power directions the complex used effectively for new directions of work in the field of nanotechnology in the study of amorphous metals, quasicrystals, etc.
	Microsystem technology and electronic components National Research University of Electronic Technology Bespalov Vladimir vrfin@miee.ru http://miet.ru/structure/s/1512	Main objectives of our centre are: conducting research and development, providing scientific and technical services to enterprises and organizations. Main research fields: fundamental and applied researches in the field of nano- and microsystem technology and microelectronics; development and creation of samples of microsystem technology; development and creation of microelectronic components; preparation of photomasks for the microelectronics production; design of microelectronics components and device-technological simulation; preparing highly qualified specialists; training and retraining of specialists.
	Heterostructure-based microwave electronics and physics of wide bandgap semiconductors National Research Nuclear University MEPhI Kargin Nikolay, NIKargin@mephi.ru http://ckp-nano.mephi.ru/	Branches of knowledge: condensed matter physics, physics of semiconductors, nanotechnology. Main research areas: research and development in the field of physics and technology of heterostructure-based microwave electronics (based on AIIIBV, AIIIN compounds), light emitting diodes, silicon carbide devices for power and extreme electronics. Physics and technology of nanostructures with quantum wells and dots, HEMT-heterostructures: molecular beam epitaxy, electron-beam nanolithography.
	Centre for common use «Materials Science and Metallurgy» National University of Science and Technology "MISIS" Parkhomenko Yuri olga.trpva@rambler.ru http://www.centremisis.ru/	-materials science of nanomaterials and nanosystems; - materials science of bulk materials and thin film structures; - research and development of new functional materials.
	Education and engineering Center of Nanotechnology, nano- and microsystem technique (Center of Nanotechnology) Bauman Moscow State Technical University (BMSTU) Bashkov Valery, bmstunc@mail.ru http://nano.bmstu.ru/	The Center of Nanotechnology works under educational and R&D purposes for perspective interdisciplinary directions of development of Science and Engineering. The Center possess the scientific and technological equipment installed in "Clean room" laboratory (ISO 5) and conduct the R&D for the several directions: 1. Complex analysis and research of materials for properties relation determination on the different scale levels (macro-micro-nano). 2. Development of scientific and technological basis of deposition of perspective functional coatings and films with given micro- and nanostructure based on impulse laser and filtered vacuum plasma deposition, including diamond-like carbon, nitride ceramic coatings. Technology and equipment development. 3. Development of composites (bulk, coating and film) with given properties of EMI reflection and absorption in wide frequency range (optical and radiofrequency). 4. Development and research perspective thermoelectric

		devices for industry application. 5. Development technological machine based on electron-ion beam methods for materials treatment, including powders, for high technological industry. 6. Research of failure kinetic process of space devices because of the degradation optical properties of optical systems. 7. Research of the perspective semiconductor and polymer nanolayered heterstructures for radioelectronic systems.
	Shared Research and Education Center of Peoples Friendship University of Russia Peoples Friendship University of Russia Abramovich Rimma, abr-rimma@yandex.ru http://ccp.rudn.ru	Chemistry, biology, ecology, biotechnology, medicine, pharmacy, agricultural science, environmental protection: – Development of technology and formulations, including innovative dosage forms, development and examination of technological regulation documents of drugs production; – Researches in the field of studying the structure and properties of complex mixtures, standardization, quality control of raw materials and products, including NMR and MS based methods; examination of quality standards on the active pharmaceutical substances, standard samples and medicines; development and validation of analytical protocols; – Transfer of technologies, techniques and recommendations for the analysis of substances and materials, expert work in the main areas of activity; scaling and implementation of processes in the manufacture of pharmaceuticals; – Clinical and diagnostic tests; – General toxicity study for various routs of administration and local irritating action; preclinical study of the bioavailability of generic drugs; – Pharmacokinetic study of original drugs; – Bioequivalence study of generic drugs; – Expert work in the field of pharmaceutical quality control of medicines in accordance with the accreditation certificate of the Federal Agency for Technical Regulation and Metrology; – Development and implementation of innovative educational programs for training specialists in the framework of the additional professional education.
	Inter-regional Multidisciplinary and Interdisciplinary Center for collective use of promising and competitive technologies in the areas of development and application in industrial/ mechanical engineering based on national achievements in the field of nanotechnology and nanofemtophotonics Stoletovs Vladimir State University, Vladimir, Russia Arakelian Sergei, arak@vlsu.ru http://www.sci.vlsu.ru/main/center/ckp.aspx	Directions: Structural nanomaterials and surface treatment of products – Nanostructured coatings and films, membrane technology – Mechanical engineering, Mechatronics and Industrial measuring means in the nanometer range for positioning of the tool – Nanoelectronics and femtonanophotonics – Nanometrology and micro- nanosystems engineering – Nano- biotechnology, nanosecurity and environmental safety – Vibration-absorbing nanopolymers for Hi-Tech, including aerospace complex – Nanostructures to protect the military units and aerospace complex from intensive external action/radiation. Support processes: to use, first, the unique technology of laser heat strengthened by an automated robotic multichannel laser unit with control of the process in a real time scale; second, additive technologies in the whole process chain from the creation of the master forms (prototypes in polymer and plastic base) to the final product (from metal powder of different composition); thirdly, magnetron deposition of multilayer nanoscale coatings of different materials for surface hardening of critical items in machine engineering; fourthly, the monitoring of some technological processes in a real time scale and with a subsequent both diagnosis (x-ray diffraction measurements, electron microscopy,

		scanning probe microscopy) and testing for the required functional and structural characteristics with the possibility of improvement with targeted modifications implemented process based on the results of testing; fifth, – unique laser equipment for various technological and manufacturing operations including the large-sized objects for industry. Training/professional development for business-partners in all of these competencies.
	Institute of Nano- and Biotechnologies Tver State Technical University Sulman Esfir, science@science.tver.ru http://ckp.science.tver.ru/	Institute of Nano- and Biotechnologies (the center for collective use) is the largest innovation unit in the District was founded in 2007 on the basis of the Tver State Technical University. The structure of the Institute consists of 50 specialists, including doctors and candidates of sciences, having recognized scientific works. The main scientific directions of the Institute of Nano- and Biotechnologies is the research in the field of chemistry (including nanomaterials chemistry), chemical technology and biotechnology, environment, energy, research in the field of the analysis of health and health care. The list of services for communities, provided the Institute: The study of the infrared spectra of fine chemicals; - The separation of organic compounds on the individual components; - Analysis of the calorific value of solid, gaseous and liquid fuels; - Analysis of the specific heat of solid samples; - Study of the processes of thermal decomposition of organic media; - Study of the processes of organic synthesis at elevated temperatures and pressures; - Qualitative and quantitative analysis of the organic matter; - Mineralization of solid and liquid samples; - Physicochemical studies of the composition of samples of aluminosilicate materials of natural origin; - Quantification of the total content of chemical elements; - Analysis of the specific surface area and porosity of solid samples; - Qualitative and quantitative analysis of the surface of solid samples; - The study of the amino acid composition of the biocatalytic conversion of vegetables, raw materials and organic waste; - Analysis of hydrocarbon components in the gas-air mixture; - Analysis of the dimensional characteristics of the catalytically active transition metal nanoparticles.
	Diagnostics of Micro- and Nanostructures P.G. Demidov Yaroslavl State University, Orlikovsky Alexandr, nis@uniyar.ac..ru http://nano.yar.ru/	Comprehensive research in the field of micro- and nanoelectronics. Development of physical, technological and metrological bases for the creation of the crucial elements of structures for integrated nanoelectronic devices. Diagnostics methods for micro- and nanostructures electronics, nanomaterials, biological nano-objects. Development of nanocomposite and nanostructured materials for solar energy and chemical power sources.
	Center for shared use of research equipment "Diagnosing the structure and properties of nanomaterials" Belgorod State National Research University Ivanov Oleg, ivanov.oleg@bsu.edu.ru	**Main lines of activity** The Centre provides its equipment for supporting research conducted by enterprises which carry out projects under federal target programs, and also to other organizations which use scientific equipment, allowing to employ modern methods of material physics. The Centre also provides its equipment for training staff for working with state-of-art scientific equipment, The Centre organizes and hosts research-and-technology conferences. **List of services provided**

	http://belnauka.ru/inovatsionnyy-biznes/centers/centr-kollektivnogo-polzova/	– Mechanical testing of metals and alloys, – Analytical control of element composition and chemical makeup, – Studying phase composition and crystal structure features, – Defining nano-particles' geometric size, – Training staff for working with scientific equipment, – Elaborating procedures of measurements of parameters for nano-industry production. – Primary research areas – Complex studies of the composition, structure and properties of nanostructured bulk materials for medical and technical purposes. – Development of the technological foundations of obtaining by solvotermal and sol-gel methods of nanosized metal powders, metal oxides and semiconductors with reproducible properties, and their complex investigation. – Development of the compaction methods of nanosized powders using the cold isostatic pressing. – Preparation, analysis of the structure and dielectric spectroscopy of lead-free relaxor ferroelectrics. – Zirconia-based ceramic materials for dentistry. – Bulk thermoelectric nanocomposites. – Hardening and wear-resistant coatings. – Mechanical testing, analytical testing of materials and determining the geometric characteristics of nanomaterials in accredited JRC of NRU "BelSU ".
	CUC «Molecular Spectroscopy» Southern Federal University Borodkin Gennadiy, nmr@ipoc.rsu.ru http://www.ipoc.sfedu.ru/index.php?option=com_content&task=view&id=273&Itemid=74	Fundamental and applied research on objects of ecological interest and newly synthesized compounds through modern physicochemical methods: chemical structure identification of complex synthetic and natural organic compound mixtures. Structural mechanism investigation of photoinitiated processes in organic molecular systems. Investigation of electronic excitation energy Deactivation mechanisms in organic molecular systems. Spectroscopy andexcited state reaction dynamics. Regularities detection determining relations between molecular structure and competitive photoinitiated process mechanisms of photochemical/physicalelectronic excitation energy deactivation in organic molecular systems. Kinetics and thermodynamics analysis in ground and exited state of photochromic elements. Organic and bioorganic coordination systems study implying molecular switch and magnetoactive complex compounds for molecular magnets. Spatial and electronic structure of compounds and clusters functioning as new structural motifs for a changing design of new polymeric and 3D crystal formation. Computer modelling of photochromic molecular and nanomolecular systems transformation, aimed at determining bistable structures for 3D molecular memory as well as energy and chemical sensors transformation systems.
	CUC «Nanotechnologies Southern Federal University Polyakov Vadim Vitalievich vpolyakov@sfedu.ru http://fep.tti.sfedu.ru/russian/rmckp	Nanotechnologies and nanomaterials. Mechanotronics and Microsystem device technologie. New and renewable energy sources technologies. Crystalline materials producing and manufacturing technologies. Chemosensors. Biosensors. Cell technology. Genomics. Biomedicine. Regenerative medicine. Medical genetics.

	CUC «High Technology» Southern Federal University Olishevsky Daniil Petrovich, info@ckpvt.ru http://ckpvt.ru	Nanotechnologies and nanomaterials. Mechanotronics and Microsystem device technologie. New and renewable energy sources technologies. Crystalline materials producing and manufacturing technologies. Chemosensors. Biosensors. Cell technology. Genomics. Biomedicine. Regenerative medicine. Medical genetics.
	Research Park SPbU Saint Petersburg State University Mikushev Sergey, s.mikushev@spbu.ru http://researchpark.spbu.ru http://www.ckp-rf.ru/ckp/327352	Nanotechnology and Materials Science Biomedicine and Human Health lnformation Systems and Technology Ecology and Nature Management
	Center for collective use of analytical research of Districtal mineral complex issues National mineral resources university (University of Mines) Pashkevich Maria, mpash@spmi.ru http://www.spmi.ru/nsciarticle/nsciarticle_810	Analytical studies and scientific support of environmentally friendly exploration, extraction and processing of minerals deposits. The equipment includes a set of sample preparation line, the line of electron microscopes JEM-2100, JSM-6460, JSM-7001F, JIB-4500, JSPM-5400) of the company Jeol, X-ray, X-ray fluorescence, atomic absorption spectrometers and optical (ED-2000, XRF-1800 , Niton XLT Series 500), X-ray powder diffractometer (XRD-6000, XRD-7000) with high temperature chamber and the laser analyzer (Horiba LB-550). Equipment set with hardware and software for environmental studies includes appliances, analyzers, satellite and unmanned vehicles and lidar system (VW CRAFTER). Center for collective use allows solving the problem of environmentally friendly sustainable development of mineral resources.
	Joint Research Centre «Material science and characterization in advanced technology Ioffe Institute Konnikov Samuel, konnikov@mail.ioffe.ru http://ckp.rinno.ru/	On the equipment of the Joint Research Centre (JRS) «Material science and characterization in advanced technology» researches and development of the physical principles and technical solutions of effective and safe hybrid nuclear power which will give the chance cardinally to improve safety and efficiency of nuclear power at the expense of accelerated introduction in it thermonuclear technologies are conducted. It is reached by creation of hybrid fusion-fission reactors which nuclear cover (a blanket – a multiplier of neutrons) works in the subcritical mode. Now the level of development of thermonuclear technologies allows to carry out transition to a stage of demonstration of engineering technological capabilities. During the conducted researches the foundation for a successful solution of the problem of development of hybrid fusion-fission reactors will be laid. On the equipment of JRS the following tasks can be implemented: 1. Research and development of effective schemes of noninductive current drive in a compact tokamak - a prototype of the generator of neutrons: • numeric simulations and experimental research of radio-frequency noninductive current drive in a compact tokamak with high efficiency; • numeric simulations and experimental research of the boot-strap current ; • nutral beam current drive optimization. 2. Development of auxiliary heating methods of plasmas in tokamak up to the subthermonuclear temperatures providing conditions for effective generation of beam-plasma fusion neutrons:

		• plasma equilibrium and confinement in conditions with high anisotropy of pressure; • improvement of plasma confinement due to suppression of anomalous transport and formation of transport barriers; • plasma auxiliary heating technologies compatible to technologies of continuous maintenance of current; • diagnostics of high-temperature plasma. 3. Development of technology of exhaust of products of thermonuclear burning via special divertor interfaces: • numerical and experimental modeling of the modes of nuclear fusion with the minimum density of the power postponed for the divertor plates; • technical solutions for divertor unit, research and development for the materials of the first wall of a compact tokamak providing a stationary operating mode resistant to radiation from plasma, neutrons and possessing sufficient transparency for a neutron flux and the minimum induced activity; • on-line and post-mortem diagnostics of materials of the first wall irradiated by fluxes of plasma and high energy particles; • research of change of structure of the materials under the influence of heavy-duty plasma fluxes at the experimental facility. 4. In JRS it is created and the diagnostic complex of the modern analytical equipment which provides quantitative and exact information on element, chemical, phase composition, parameters of a real crystal lattice and electronic structure, type and concentration of defects, optical, electrophysical, geometrical and other parameters and characteristics of solid-state materials and structures.
	Science and Technology Park "Factory" Immanuel Kant Baltic Federal University Gareev Timur, tgareev@kantiana.ru http://www.kantiana.ru/innopark/	- Creating a focus X-ray devices. A coating device for focusing x-rays. Testing of components and devices for synchrotron sources. Creating a synchrotron laboratory. - Design and creation of functional bioactive surfaces for applications in medical diagnostics. Creating nanoscale silver coatings for surgical dressings. Generation and analysis of functional nanostructures composite oxide of titanium and calcium hydroxyapatite and their use in implantology. Development of bases of technology of formation of implantable structures of nano-modified materials. - Research and synthesis of functional testing of polycrystalline oxides and their use as a tunnel insulator in crystalline thin-film structures of magnetic tunnel junctions. Formation and research of nanocomposite structures SiO2: ME segregation by oxidation of silicon metal front for applications nano-flash. - Development of methods for the creation of nanostructures for energy-saving systems of monitoring and control of technological processes and equipment and self-contained power supply. - Design, synthesis and study: amorphous ferromagnetic microwires and their systems Heusler alloys multiferroic structure the structure of the exchange bias alloys with a giant magnetocaloric effect - Magneto magnetic and plasmonic structures - Development of portable and efficient sources of narrowband ultraviolet fotolecheniya for skin diseases, photochemical reactors, as well as laboratory and industrial installations that require powerful ultraviolet radiation.

		- Study of methods for measuring and monitoring of dynamic conditions macroscopic (cm2- m2) relating to the non-stationary oscillatory processes and changes (discontinuities, damped oscillations, surface or shock waves) -is multifunctional optical microscopy combined with spectroscopic methods, -technology optical control for cell Storting and measuring the degree of interaction of cells with each other, - Holographic microscopy and holographic interference measurements for analyzing parameters of stresses, strains, fatigue of the materials used in biomedicine. analysis of the dynamic processes in the damage or bundles in such materials (materials science in biotechnology).
	Common-Use Centre of CRISM «Prometey» “Composition, Structure and Properties of Structural and Functional Materials” Central Research Institute of Structural Materials «Prometey» Petrov Sergey, mail@crism.ru http://ckp.crism-prometey.ru/	Examination of composition (chemical analysis and local elemental phase composition), structure (at different scale levels), mechanical and physical properties of structural and functional materials
	Interdisciplinary Center of shared facilities of nanotechnology and new functional materials Far Eastern Federal University Sergienko Valentin, dvo@hq.febras.ru http://www.dvfu.ru/web/science/ckp/mckp	Interdisciplinary Center of shared facilities of nanotechnology and new functional materials operates on the principle of sharing research equipment to provide opportunities to all structural units FEFU and third parties to carry out research work using modern equipment. The objectives of the Interdisciplinary Center of shared facilities of nanotechnology and new functional materials include research in the framework of the priorities of the Russian Federation and the provision of services to third parties in a professional manner. Main research fields: – biomedical, pharmacological, and biochemical research; – research into the structure and function of cells, molecular and cellular technologies; – Integrated basic and applied genetic research; – comprehensive studies of animal and plant diversity of the land and the world's oceans; – studies of the structure and properties of soil and marine aqua soil; – Environmental monitoring of the aquatic and terrestrial environments; – study the electronic structure of molecules and complexes by electron spectroscopy; – a study of the physical properties and structure of amorphous and microcrystalline alloys and rapidly quenched thin films suitable for magnetic and thermal magnetic recording media; – a laser-optical methods of information processing and image processing; – using the methods of IR, UV and optical spectroscopy, mass spectroscopy, atomic absorption spectroscopy, gas-liquid and high-performance liquid chromatography, elemental, X-ray diffraction and thermal analyzes, complex confocal techniques (laser scanning) microscopy and nuclear magnetic resonance . Services provided by the Center: – A study of the elemental composition of nanostructured films – Measurements of coercivity magnetic films and nanostructures

		– Measurements of the magnetic anisotropy of thin films and nanostructures – Measurement of surface topography of nanostructured objects – A study of the elemental composition of nanostructured films – Determination of micro- and macronutrients in soils, sediments and natural waters
	«Research Nuclear Reactor» Centre National Research Tomsk Polytechnic University Naimushin Artem, reactor@tpu.ru http://www.reactor.tpu.ru	Security and counter-terrorism, in the area of the development of modern systems of physical protection of nuclear facilities; Life sciences, in the area of research for the development of advanced radiopharmaceuticals for diagnosis and treatment of socially significant diseases, the development of technologies for the production of radionuclides for the study of biological objects at the cellular level and the development of efficient methods for radio-ecological survey of territories subjected to human impact; Environmental management, in the area of the development of technologies of extraction and processing of rare and radioactive elements (titanium-containing raw material, quartz-bearing ores and silicates, zirconium concentrates, beryl concentrates, technology of neutron transmutation doping of monocrystalline silicon ingots); Energy efficiency, energy conservation, nuclear power, in the area of research for the development of advanced fuel compositions, as well as the study of the properties of materials, working in extreme conditions.
	Tomsk Districtal common use center National Research Tomsk State University Alekseenko Kira, ckp@mail.tsu.ru http://www.ckp.tsu.ru	Chemical materials, adsorption and catalysis, geology, geochemistry, radio physical measurements, ionospheric research, designing technological devices, high-performance computing, security nanomaterials, laser physics, ecology, genetics, microbiology
	Centre for collective use of the scientific equipment "Technologies of semiconductor, metallic, carbon and bio-organic materials nanostructuring and analtical methods of the nano-scale investigations" Rzhanov Institute of Semiconductor Physics Siberian Branch of Russian Academy of Sciences. Latyshev Alexander, latyshev@isp.nsc.ru	Transmission and scanning electron microscopy investigations of the atomic structure, morphology and chemical composition of the wide class of the materials of different fields of the fundamental and applied science, including semiconductor material science, catalysis, mineralogy and biology. Efficient no-contact control of the atomic surfaces by means of scanning-probe microscopy, determination of the elemental and chemical composition of the solid-state surfaces by means of Auger electron and X-ray photoelectron spectroscopy, Secondary ion mass spectrometry. Creation of the low-dimensional arrays of the nanostructures for nanoelectronics and nanomechanics by means of optic, electron, ion and probe lithography in the field of low-dimensional systems. Centre for collective use of the scientific equipment “NANOSTRUCTURES” provides practical and advanced trainings of the Customer’s staff.
	Center for collaboration in usage of devices and equipment "High Technologies and Analytics of Nanosystems" (CCU HTAN) Novosibirsk State University Arzhannikov Andrey, nsm@nsm.nsu.ru http://ckp-rf.ru/ckp/3209/	CCU HTAN provides a broad instrument supporting research in various fields of physics, chemistry and biology, as well as on the structure and properties of nanomaterials. The center's equipment also ensures the implementation of a number of processes within the high technology. In accordance to the objectives of CCU HTAN it consists of two parts: the Technological department and Analytical department. Technology department is engaged in the process of synthesis of substances and materials, film deposition and its structuring, the creation of structures and models of devices. Equipment of the Technology Department: Interferometer Fizeau "Intellium Z100", laser generator microimages and microholograms, Microwave systems: Voyager SF, Explorer 48, Discover S-Class, MARS XPRESS, automated microscope interferometer MII-4M-USB, complex high-power microwave generators: a

		gyrotron (24 GHz), a magnetron (2.45 GHz), Experimental implanter with the energy of the particles up to 150 keV, installation of plasma chemical etching, device for deposition of diamond and nanocomposite coatings, device for electron beam lithography and reflection electron microscopy. The Analitical department conducts research and provides services to assess the composition of substances, the analysis of structures (up to nm size), the study of the optical and electrical properties of materials and devices. Equipment of the Analytical department: Scanning nanohardness, scanning optical profiler CHR-150-XY, Vacuum ellipsometer, Kvazioptics subterahertz BWT spectrometer, IR spectrometer far-infrared Bruker Vertex 80v, Raman spectrometer T64000, FT-IR spectrometer, Small-angle X-ray diffractometer S3-MICRO (Hecus), X-ray powder diffractometer ARL X'TRA (Thermo Fisher Scientific), Scanning laser ellipsometer, Transimission electron microscope Libra 120, Measuring equipment for electronic measurement of static and high capacity characteristics Agilent, Installation meter electronics for measuring the characteristics of high-voltage, high-current devices Keithley Instruments Inc., Electronic equipment for low-voltage measurement of current-voltage characteristics of Keithley Instruments Inc ., Ultra-high vacuum scanning tunneling microscope with variable sample temperature, Transmission electron microscope with high resolution JEM-2200FS-CS (JEOL), Scanning Probe Microscope AFM / STM SOLVER NEXT, Reflection electron microscope JCM-5700 (JEOL).
Integrating activity for facilitating access to HPC	The center for collective use "system modeling and data processing for mega-class" research facilities. National Research Center" Kurchatov Institute " Velikhov Vasiliy Evgenevich, velikhovve@kiae.ru http://computing.kiae.ru/cce/	CCU consists of a number of supercomputing and grid systems. The CCU provides a solution to the priority scientific task task "Development of mathematical models and cods-algorithmic supports for systems with extra massive parallelism and decision pilot tasks for science and technology". CCU grid complexes include resource centers levels of Tier-1 and Tier-2 for experiments ATLAS, ALICE and LHCb CERN LHC, integrated in the framework of the global info-communications infrastructure.
Biological and Medical Sciences	Core facility “The Human Proteome” Institute of Biomedical Chemistry Archakov A I., inst@ibmc.msk.ru http://proteocenter.ru/	Postgenome (Omics) sciences for biology and medicine, biological mass-spectrometry, bioinformatics of big data, biomolecular interactions, nanobiotechnology and nanomedicine.
	Collective user center of research equipment “CUC IBCh” Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry Russian Academy of Sciences Lukyanov Sergei, luk@ibch.ru , ckp@ibch.ru http://www.ibch.ru/structure/development/ckp	Bio information technologies; biocatalytical, biosynthetic and biosensor technologies; biomedical and veterinary technologies of human and animals life support and defence; Genomic and postgenomic technologies of creation of pharmaceutical drugs. The IBCh collective user center (CUC) is oriented on the next priority tasks: • “Formation of a net of national centers of genetic collections of lab animals for modeling of human pathologies and new drug approbation”; • “Investigation of structures and functions of bioorganic systems for the study of socially important diseases and development of new drugs”; • Investigation, development and creation of hybrid, biomimic artificial biological materials, structures and systems”; • Brain – investigation and modeling of structure, functions and mechanisms of cognitive action for study of the nature of pathologies, development of principally new medical technologies and creation of “brain-mashine” systems”.

	Genetic Resources Center for laboratory animals Institute of cytology and genetics of Siberian Branch of the Russian academy of science Moshkin Mikhail, mmp@bionet.nsc.ru http://spf.bionet.nsc.ru/	The Genetic Resources Center (GRC) for laboratory animals has a full range of technology for maintenance and development of animal genetic lines – models for human diseases and for performance of basic and applied research in basic biology, translational biomedicine, pharmacology, Nano biology and Nano biosafety. GRC performs breeding of specific pathogen free (SPF) laboratory animals, cryopreservation, transgenic reproductive technology, high-technology phenotyping of new genotypes, and development of genetic and experimental models of almost all socially important human diseases for research of novel methods of disease diagnostics, prevention and treatment.
Physical Sciences	Astrophysical complex MSU-ISU for the study of cosmic rays of ultrahigh energies (installation Tunka-133, Tunka-Grande, Tunka-REX, TAIGA, the system of telescopes MATER, EAS-MSU array) Lomonosov Moscow State University Panasyuk Mikhail, panasyuk@sinp.msu.ru http://cosmos.msu.ru/kafedra/cr.html	Astrophysical complex MSU-ISU consists of installations for registration of extensive air showers (EAS) from cosmic rays of superhigh energies: Tunka-133, Tunka-Grande, Tunka-REX, located in Tunka valley (Buryatia), and EAS-MSU (Moscow) and a system of optical telescopes MASTER. **Tunka-133** Tunka-133 was constructed for study cosmic rays by the registration of Cherenkov light from EAS. The installation consists of 175 optical detectors spread over an area of 3 km2. Tunka -133 is a unique array in total area (3 km2), the accuracy of energy measurement(15%), the accuracy of angle measurement (0.3°) and the accuracy of determining the depth of shower maximum (30 g/cm^2), which is sensitive to the type of the primary nucleus. **Tunka-REX** Tunka-REX array consists of 45 wide-angle antennas connected to the data acquisition system Tunka-133 and Tunka-Grande array. It was found out, the net of antennas it is possible to reconstruct the energy of EAS with an accuracy comparable to the energy resolution of Tunka-133 array. The advantages of registration of radio emission compared to the registration of Cherenkov radiation, is due to the total day and night duty cycle **Tunka-Grande** The array consists of 19 stations, for the detection of charged (electrons, muons) EAS particles. Each station consists of 20 scintillation counters, with area of 0.64 sq m each. 12 counters are located on the surface, for the registration of electron -photon component of EAS. 8 counters are located under the 1.5 m of ground and are used for the detection of muons from EAS . **Gamma-observatory TAIGA** Since the summer of 2014 s deployment of gamma-observatory TAIGA (Tunka Advance Instrument for Gamma Astronomy) was started. The TAIGA array will be a unique hybrid setup consisting of a wide-angle (angle of view ~1 ster) optical Cherenkov stations located in the area of 3 km2 (installation Tunka - HiSCORE) , several (about 10) of Cherenkov telescopes based on hemispherical mirrors with a total area of 10 m^2 (Tunka - IACT) and the muon detectors with a total area of over 2000 m^2 . **Telescopes MASTER** System telescopes the MASTER located on the ground in Tunkai valley, is a double-tube high-aperture (diameter 400 mm, aperture 1:2.5) system with a common field of view of 8 square degrees, equipped with a 16 megapixel camera, universal photometer with B,V,R,I filters and polarizers. Two telescopes mounted on ultra-fast mount (speed reference and guidance to 30 degrees/sec), not requiring additional guiding devices. The whole system can work offline and on the Internet. **EAS-MSU array** Installing the EAS-MSU is a network of more than forty detectors electron-photon component of EAS with an area of 1 m^2 each, located on the territory of Moscow state University on the area of 60x120 m2. For the monitoring of the atmospheric surface layer installation is supplemented by a thermal

		neutron detector with an area of 6 m^2 and measuring the electrostatic field of the atmosphere. To search for anisotropy of muon flux array is supplied with a muon telescope with the size of the top layer 4 m2 8 m2 and lower.
	Unique scientific installation " Baikal deep water neutrino telescope - Baikal-GVD" Institute for Nuclear Research Domogatskiy Grigory, domogats@pcbai10.inr.ruhep.ru http://www.inr.ac.ru/a/i/4843	The Installation Baikal-GVD is designed for experimental research programs in fields of neutrino astrophysics, particle physics, cosmic ray physics, cosmology and monitoring of hydrological characteristics of Lake Baikal. The object of direct study are the cosmic muon and neutrino flux , new particles and interactions. Effective area for high energy muon detection is 20-50 thousand square meters (depending on the energy of the particle), and effective volume for neutrino shower registration is roughly equal to 3x107 m3.
	Experimental complex NEVOD National Research Nuclear University MEPhI Petrukhin Anatoly, AAPetrukhin@mephi.ru http://ununevod.mephi.ru/ru/	The Unique Scientific Facility "Experimental Complex NEVOD" combines several detectors that have no analogues in the world: a Cherenkov water detector (CWD) with a volume of 2000 cubic meters capable to measure the energy deposit of charged particles in a wide dynamic range, a coordinate-tracking detector DECOR with a total area of 75 square meters with a high angular (better than 1 degree) and spatial (1 cm) accuracy, a muon hodoscope URAGAN with an area of 46 square meters providing muonographs of the upper hemisphere in real-time regime, calibration telescope system (CTS) that allows allocation of 1600 different muon trajectories and gives possibility to register electromagnetic and muon components of Extensive Air Showers. The Experimental Complex is dedicated to conduction of fundamental research (study of characteristics of the primary cosmic ray flux, processes of generation and interaction of known particles and the search for new particles and states of matter in a wide range of energies, including the energies 10 times higher than those accessible at the Large Hadron Collider) and applied studies (distant monitoring and forecasting of the state of the atmosphere and magnetosphere of the Earth with the aim of the early recognition of potentially dangerous phenomena in the magnetosphere and the atmosphere above the territory of about 10,000 square kilometers).
	Accelerator Complex U-70 of SRC IHEP, beam transfer lines and experimental facilities included (U-70) State Research Center of Russian Federation – Institute for High Energy Physics Lobov Igor, lobov@ihep.ru http://www.oku.ihep.su	Carrying out experimental research using beams of protons, nuclei and secondary high-energy particles. Area of researches is: properties of matter and fundamental interactions, physics of charged particle beams and accelerator technology, applied researches into the modern techniques and technologies. U-70 includes 4 installations. They are combined in a single technological accelerate cascade forming of Russia's largest particle accelerator at the energy of 70 GeV. Complex U-70 is the largest in Russia the current proton accelerator for the energy of 70 GeV. It is the foundation of national material and technical base for the fundamental and applied research. It Provides technological independence of the country in this area of science and technology. U-70 is one of the ten largest accelerators in the world.
	Novosibirsk Free Electron Laser of terahertz range (NovoFEL) Budker Institute of Nuclear Physics of Siberian Branch Russian Academy of Sciences	The Novosibirsk FEL, a high-power terahertz free electron laser, is a major user facility of the Siberian Center for Synchrotron and Terahertz Radiation. The average power of the FEL radiation is the largest in the world and apparently will remain such in the near future. As concerns the spectral emissive power, the Novosibirsk FEL overmatches all the other sources in the world by several orders of magnitude. This enables conduction of unique, having no analogues in the world, experiments using terahertz radiation.

	Vinokurov Nikolay, vinokurov@inp.nsk.su http://ssrc.inp.nsk.su/CKP/NovoFEL3/NovoFEL.html	
	Complex of electron-positron collider VEPP-4-VEPP-2000 for high energy physics experiments? nuclear physics research? experiments with synchrotron radiation Budker Institute of Nuclear Physics of Siberian Branch Russian Academy of Sciences Levichev Evgeny, E.B.Levichev@inp.nsk.su http://www.inp.nsk.su/activity/hw/index.ru.shtml; http://v4.inp.nsk.su/	The VEPP 4 - VEPP 2000 complex is the only Russian complex of installations with colliding beams. The complex includes electron-positron colliders: VEPP-4M with the particle detector KEDR and VEPP-2000 with the detectors CMD and SND, as well as the multi-function electron/positron storage ring VEPP-3. In the detector KEDR, the idea of essentially homogeneous electromagnetic calorimeter on the basis of liquefied krypton was realized for the first time in the world. The physical and technical parameters of the complex enable set-up of world-unique experiments. The results and methods developed are widely used at scientific research organizations, both Russian and foreign. The masses of elementary particles measured with record accuracy are used for description of the fundamental properties of the matter and thus are important information for the world scientific community. In addition to High Energy Physics research, the complex is involved in experiments using synchrotron radiation extracted from the installations VEPP-3 and VEPP-4M. Beams of synchrotron radiation are used in experiments on properties of materials, nanostructures, explosive processes, catalytic reactions, and biological objects. The results of these experiments are applied both to the fundamental research and to technology. Nuclear physics experiments on an inner gas target are also going on. An inner gas target is a high-intensity jet of gas (hydrogen or deuterium), injected directly into the vacuum chamber of the VEPP-3 storage ring. Controlling the polarization of the atoms of the target gas and analyzing the scattering of electron beam on the target, one can obtain unique information about the structure and properties of the proton. Currently, such experiments cannot be conducted on any other cyclic accelerator in the world.
	Complex of Long Open Traps Budker Institute of Nuclear Physics of Siberian Branch Russian Academy of Sciences Ivanov Aleksander, A.A.Ivanov@inp.nsk.su http://www.inp.nsk.su/activity/hw/index.ru.shtml	The traps GOL-3 and GDT, which are part of the complex of long open traps, are unique objects of scientific infrastructure and have no analogues in the world. The research on the installation GDT is aimed at the creation of fusion reactors and high-performance neutron generators for different applications: testing of materials for future fusion reactors, post-combustion of radioactive waste and control of subcritical fission reactors. The results obtained are applied to materials science, energy, environment etc. The main goal of the research on the installation GOL-3 is the creation of a fusion reactor based on a multiple-plug trap. In addition, the approaches being developed can be used in tests for selection of materials and designing of plasma dumps for future fusion reactors. The installations have the necessary engineering infrastructure; all design specifications have been met. The facilities are equipped with the necessary means for automation and control of experiment, as well as up-to-date measuring equipment (in some systems, the available equipment overmatches the world's analogues). Some methodological and technological solutions used in the project are unique; they are delivered on a contract basis to the leading industrialized countries.
	Pulsed atomic reactor IBR-2 Joint Institute for Nuclear Reseacrh Rusakovich Nikolai, main@jinr.ru http://www.jinr.ru/jinr_facilities-en/	The Nuclotron accelerator is a strong-focusing synchrotron designed to provide beams of multicharged ions with energies of up to 6 GeV / nucleon, protons and polarised deuterons. The Nuclotron has been based on the unique technology of superconducting magnets proposed and developed in the Laboratory of High Energy Physics.

	Cyclotron complex at FLNR Joint Institute for Nuclear Reseacrh Rusakovich Nikolai, main@jinr.ru http://www.jinr.ru/jinr_facilities-en/	The U-400 and U-400M cyclotrons have been built to study nuclear structure and mechanisms of nuclear reactions. The physical tasks that can be solved using these facilities include the synthesis of superheavy elements, study of the chemical properties of superheavy elements, study of the structure of light drip-line nuclei, study of the resonance structure of the nuclear systems beyond the drip-line, study of fusion and fission mechanisms.
	IREN Joint Institute for Nuclear Reseacrh Rusakovich Nikolai, main@jinr.ru http://www.jinr.ru/jinr_facilities-en/	IREN (Intense REsonance Neutron source) is intended for experiments that require precision spectroscopy of neutrons in the energy range from 0.1 eV up to hundreds of keVs. The operation of the IREN facility is based on conversion of the electron beam LUE-200 on a tungsten target into the primary neutrons and their further multiplication in the subcritical core.
	Baikal deep water neutrino telescope - Baikal-GVD" Joint Institute for Nuclear Reseacrh Rusakovich Nikolai, main@jinr.ru http://www.jinr.ru/jinr_facilities-en/	The Installation Baikal-GVD is designed for experimental research programs in fields of neutrino astrophysics, particle physics, cosmic ray physics, cosmology and monitoring of hydrological characteristics of Lake Baikal. The object of direct study are the cosmic muon and neutrino flux , new particles and interactions. Effective area for high energy muon detection is 20-50 thousand square meters (depending on the energy of the particle), and effective volume for neutrino shower registration is roughly equal to 3x107 m3.
Environmental and Earth Sciences	Shared use Center of FSUE "VIAM" for testing of materials, equipment and complex technical systems in natural environment All-russian scientific research institute of aviation materials Romanovich Orlov, admin@viam.ru http://isp.viam.ru/centers-for-collective-use	Shared use Center of FSUE "VIAM" was created to address the problems of corrosion protection, aging, and biodegradation of equipment and complex engineering systems of civil and military use, to ensure the functionality and service life of equipment in atmospheric conditions of various climatic zones, reducing the risk of emergency situations. The main activities of the center are: – Field testing of materials, design specimens, structural components, electronic equipment in the seaside atmosphere under temperate warm climate conditions on the basis of the Gelendzhik center of environmental tests of FSUE "VIAM" (GTSKI), in the industrial zone conditions under temperate climate on the basis of Moscow-based Center for environmental tests of FSUE "VIAM" (ICCC), as well as in other climatic zones of the world with domestic (IPTS RAS IFTPS SB RAS) and international partners (Atlas international organization and the Russian-Vietnamese tropical center); – Studies on the corrosion resistance and protection against corrosion of steel, alloys, composite materials with the assistance of the Tauride National University, Bauman MSTU and IPCE RAS; – Studies of non-metallic materials on the environmental, microbiological resistance and fire safety; – Metallophysical investigations of the structure of materials in the process of aging and corrosion under environmental testing conditions; – Studies of mechanical and service properties of materials during their production, operation and environmental testing; – Investigations of thermal properties of materials. Based on the infrastructure, scope and level of research, as well as analytical and testing facilities, the Shared use center of FSUE "VIAM" is a unique research facility, which allows to solve the problems

		of the effect of aggressive environments, climatic and operational factors on the kinetics of corrosion, aging, biological damage and destruction of functional materials and coatings. In contrast to existing environmental testing networks, which are mainly restricted to specimen environmental exposure, the Shared use Center of FSUE "VIAM" provides comprehensive studies on processes of corrosion, aging, biological damage and destruction of structural materials and functional coatings. The comprehensiveness includes modeling of the most important factors of environmental impact and development of accelerated testing methods for the research in new materials and coatings.
	South-Russia Environmental Analytical Centre Of Systemic Research, Mathematical Modeling And Ecological Safety Kuban State University Temerdashev Zaual, temza@kubsu.ru www.ckp/kubsu.ru	– Developing methods and means of control, ecological monitoring of environmental objects, metrological assurance of testing$ – Research and analysis of biological objects, conducting expertise; – Voluntary and mandatory certification and testing, incoming control of products, substances and materials.
	Core Facility Center "Arktika" Northern (Arctic) Federal University named after M.V. Lomonosov Kosyakov Dmitry, kosyakov@mail.ru http://narfu.ru/science/ccu/	Environmental analytical chemistry, chemistry of plant biomass, fundamental principles of green technologies in bioresources treatment, environmental monitoring of arctic territories.
	Center of Shared Facilities Far Eastern Center for Structural Research and Analysis Far Eastern Federal University Dubrovitskiy Sergey, anshukova.nn@dvfu.ru http://www.dvfu.ru/web/science/ckp/ckp-dvfu	CSF organized on the principles of shared facilities of modern analytical equipment to conduct research in the following priority areas of science, technology and engineering in Russian Federation such as Living systems, Industry of nanosystems and materials and Environmental management. The issues of the CSF are to conduct research within the priority areas of Russian Federation and service to sided organizations professionally. The entire complex research in CSF FEFU made at the junction of the biological, physical and chemical fields. The implementation of a multidisciplinary approach and integration of equipment of most scientific laboratories into a single theme complex has opened up entirely new opportunities for fundamental and applied research in the field of structure and physico-chemical properties of new materials, bioengineering, pharmacology and molecular biology. All laboratory facilities have necessary support equipment. All laboratories and support facilities are equipped in accordance with the specifications and requirements of occupational health and safety, have the relevant technical systems and communications. Today CSF provides high-tech services and provides measurements based on the mostly used methods.
	The Shared Equipment Center of North-Caucasus Federal University North-Caucasus Federal University Lisitsyn Sergey, slisitcyn@ncfu.ru	Major research areas: free radical oxidation in biological systems, recurrent processes biophysics, molecular mechanisms in nutrition; associative links microsymbiocenosis of living organisms and the environment, ways and methods of dysbacteriosis correction, development of complex protection of human and animal health in the immunopathology concept, conditions optimization for industrial cultivation of microorganisms, development and improvement of growth media; secondary ion mass spectrometry, infrared spectrometry, diffractometry, study of physical and chemical properties of

	http://www.ckp.ncfu.ru/	nanostructures, A3B5 compounds, silicon carbide, silicon nitride; ecological, geochemical and biogeochemical studies of aquatic and terrestrial ecosystems on the basis of combining ecological and landscape-geochemical approaches, pollution monitoring and forecasting of environment state (based on surface water bodies in the North Caucasus Federal District and land resources), identification of the spatial patterns of differentiation and migration of chemical elements, transformation of biogeochemical cycles and biogeochemical food chain in different zonal climatic and landscape-geochemical conditions, study of intralandscape topsoil differentiation, bio-geochemical characteristics and fertility of North Caucasus Federal District soil.
Social Sciences and Humanities	Head Regional Collective Research Centre of Moscow State University of Civil Engineering Moscow State University of Civil Engineering Bezuglova Ekaterina, BezuglovaEA@mgsu.ru http://grckp.mgsu.ru/	- Development of new efficient building materials, products and structures; - improving the energy efficiency and automation of engineering systems in buildings and structures; - Study of the microstructure, physical and mechanical characteristics and durability properties of building materials and products; - Improving the safety and service life of structures and facilities. - Modeling of physical processes in construction
	Joint Use Center "Baikal Nanotechnology Center" Irkutsk National Research Technical University Afanasev Aleksandr, aad@istu.edu http://www.istu.edu/structure/54/3811/	Technology nanostructured materials. Optics and laser physics. Nonlinear spectroscopy. Plasma Physics. Plasma technology. The technology of silicon and analyst. High-temperature superconductivity. The nano-sized catalysts. Technology polymeric materials. Powder metallurgy. Fuel elements. Information-measuring and telecommunication systems.
	Centre of Collective Use «High Tech methods of research and analysis of new materials, nanomaterials and mineral raw materials» Siberian Federal University Kalyakina Olga, kalyakina@mail.ru http://structure.sfu-kras.ru/ckp	Condensed Matter Physics. Chemistry. Ecology and Natural Resource Management. Applying Geochemistry, Petrology, Mineralogy. Non-Ferrous Metallurgy. Powder Metallurgy, Composition Material, Coatings. Physical and Chemical Processes and Materials. Material Science and New Materials Technology. Electronics and Microelectronics. Microsystem Technology. Nanotechnology. Production of Building Materials and Constructions. Vital Activity Safety in Technosphere.
	Ural Center for Shared Use "Modern nanotechnology" UrFU Ural Federal University named after the first President of Russia B.N.Yeltsin Shur Vladimir, vladimir.shur@urfu.ru http://nanocenter.urfu.ru/	Fundamental and applied investigations in the area of physical and chemical material research of nanomaterials and nanostructures. Development of the technologies of advanced materials and devices based on nanotechnology. Study of the electron structure and phase transformations in semiconductors, ferroelectrics and dielectrics and development of the technologies for optoelectronics. Research of magnetic properties in solid state and creation of the magnetic materials with required properties. Creation of new multifunctional and composite materials and investigation of their physicochemical properties.
	Center for Shared Use of Unique Equipment UrFU	Metal science, metallurgy, chemistry, mechanical engineering. The creation of new materials and technologies for their production and processing. Investigation of the structure and properties of inorganic (metal) and organic materials

	Ural Federal University named after the first President of Russia B.N.Yeltsin Makarov Vladimir, v.s.makarov@urfu.ru http://urfu.ru/ru/science/centry-kollektivnogo-polzovanija/	
	Kourovka Astronomical Observatory of the Ural Federal University (UrFU) Ural Federal University named after the first President of Russia B.N.Yeltsin Zakharova Polina, polina.zakharova@urfu.ru http://astro.ins.urfu.ru/kourovka	The instrument is aimed at fundamental research of open clusters, star-forming Districts, variable stars as well as observations of near space objects. The 1.2-m telescope constructed by APM Telescopes was mounted in Kourovka in 2009. It is a Cassegrain system with an alt-azimuth mounting equipped with two spectrographs, Ural Fiber Echelle Spectrograph (UFES) and Low Resolution Slit Spectrograph ANNA set in Nasmyth foci and a photometer-polarimeter is planned to be set in primary focus. The 70-cm telescope is equipped by multibeam electrophotometer. Simultaneous observations of two stars and sky background enable to set off the effect of shallow clouds and a frog. RMS is 0.003–0.005 mag. The SBG telescope constructed by Carl Zeiss Jena was mounted in Kourovka in 1974. The four-axis telescope with a 788 mm focal length is equipped with a Schmidt optical system and a 500 mm diameter main mirror. An Alta U32 CCD camera with a KAF-3200ME-1 CCD matrix containing 2184 × 1472 elements, each of size 6.8 × 6.8 μm is mounted at the main telescope focus. The scale of the CCD image is 1.8 arcsec/pixel. The field of view of the system is 65 × 44 arcmin. Limiting magnitude is 19 mag. The telescope AZT-3 has main mirror 450 mm, Kassegren focus is 11 m and Newton focus is 2 m. The telescope is equipped by a panoramic photometer base on Alta U6 CCD camera with CCD matrix containing 1024 × 1024 elements, each of size 24 × 24 μm. The field of view of the system is 17.5 arcmin in Kassegren focus and 42 arcmin in Newton focus. A photometric Johnson-Cousins UBVRI system is realized. Horizontal solar telescope ACU-5 has main mirror 44 cm. The telescope is equipped by spectrograph ASP-20. MASTER. The telescope consists of a pair of 40 cm Hamilton catadioptric tubes with the focal length of 100 cm, installed on a equatorial mount. CCD cameras are Apogee Alta U16M with front-illuminated KODAK KAF-16803 chip with anti-blooming: size of a chip is 4096 x 4096 pixels; pixel size is 9 x 9 μm; CCD gain in e/ADU is 1.3; readout noise in e/pix is 10. Image scale is 1.85 arcsec/pix and field of view is 2°x2°. Observations can be performed simultaneously in two filters (Johnson-Cousins BVRI system, Hα, Red Continuum), or in two different polarization planes.
	Federal Center of Shared Facilities for Physical and Chemical Research of Substances and Materials Kazan Federal University Gafurov Ilshat, public.mail@kpfu.ru http://www.fckp.kpfu.ru	1. Definition of the spectral, structural and dynamic characteristics of a wide range of objects by means of magnetic resonance, Mössbauer spectroscopy, X-ray and optical spectroscopy. 2. Studies of micro- and nanoscale objects, including biological, atomic force microscopy. 3. Determination of small and very small concentrations of biologically active agents in samples of water, soil, and biological tissues using electrochemical biosensors. 4. Determination of physico-chemical characteristics of the synthetic polymers and proteins in the thin films, and their thermal stability. 5. Determination of petrochemical synthesis catalysts and enzymes.

		6. Determination of the sorption capacity of synthetic materials and natural specimens in different humidity conditions, and the distribution coefficients of the liquid-vapor steam by gas chromatographic analysis. 7. Determination of the composition of substances and materials by elemental microanalysis, atomic absorption, atomic emission and X-ray fluorescence spectroscopy. 8. Training and retraining of specialists in physical and chemical methods of research.
	Common Use Center “Nanotechnologies and Nanomaterials” holding the scientific equipment for production and research of nanoparticles of metals, metal oxides and polymers " Kazan National Research Technological University Dresvyannikov Alexander, nich140@mail.ru http://ckp.kstu.ru/	Obtaining and modification of nanoparticles of metals and nonmetals oxides, nanoparticles of metals and polymers by high-frequency plasma, electrochemical, supercritical and chemical methods; Production of polymer nanostructured composite materials; Studying of properties, composition and structure of nanoparticles and composite materials by the following methods: high resolution transmission electron microscopy allowing to visualize nanostructures of object and determine structural parameters of separate nanoparticles; Complex of spectral methods: nuclear magnetic resonance spectroscopy and Moessbauer spectroscopy, X-ray fluorescence analysis and X-ray diffractometry, as well as thermal analysis that gives an information about elemental, molecular and phase composition and also about peculiarities of interaction between nanoparticles and base matrix; Supporting of high technologies and knowledge-intensive production; Training of high-qualified specialists and academic staff for work on up-to-date analytical and processing equipment in main activity areas of the Common Use Center; Common Use Center is available for research work performed by scientists, PhD students and senior students from high educational institution of the District.