

Saint Petersburg State University (SPSU)- The Bio-Bank Resource Center

St Petersburg University is the first university in Russia (since 1724) and a world-leading centre of science, education and culture. It is ranked among the **top 300 universities** around the world and in **2-d place in Eastern Europe and Central Asia** according to the QS Rankings.

The outstanding intellectual and academic environment of the SPSU serves the basis for the 25 resource centers that are now an integral part of **the SPbU Research Park** and target the following priority fields: Nanotechnology and Materials Science; Biomedicine and Human Health; Information Systems and Technology; Ecology and Nature Management. In the field of Nanotechnology the Research Park provides opportunities to carry out research projects based on nuclear magnetic resonance, nuclear quadrupole resonance, electron paramagnetic resonance, spectroscopy as well as in various fields of material science, solid state physics and chemistry, research on nanosystems and nanomaterials. The equipment of the Research Park allows the implementation of a wide range of experimental studies aimed to assess the composition, optical, physical and chemical properties of various substances and materials with analysis of local atomic and spin structure, morphology, electron energy. In the field of Biomedicine the Research Park implements the complex approach in the study of various living objects and biosystems on the cellular, subcellular, molecular, genomic and proteomic levels.

The Biobank co-facility center – cryostorage with ultramodern equipment – is a part of Research Park; the center supports scientists in biomedical fields with collections of biomedical samples.



St Petersburg
University



Saint-Petersburg
State
University

Research Park

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researchpark.spbu.ru
<https://researchpark.spbu.ru/en/bio-bank-eng>

Instruments/ techique used:

Domain and object of research: ENV; H&F; PSE; DIGIT

Unique Research modular platform Nanolab	This research platform allows to solve synthesis and diagnostic tasks for nano-objects with description of processes at the atomic level, and analysis of fine features of the electronic energy and spin structure of nano-objects facilitating the creation of cutting-edge technologies and research in the most modern and relevant areas of nanoelectronics (including graphene) and spintronics.
Combined Auger, X-ray and Ultraviolet Photoelectron spectrometer Thermo Fisher Scientific Escalab 250Xi	Spectrometer ESCALAB 250Xi is considered as the modern complex of electron spectroscopic equipment that can solve most of the modern diagnostic-type tasks of the synthesized organic and inorganic materials. Spectrometer allows carrying out investigations by X-ray photoelectron spectroscopy and Auger electron spectroscopy for elemental and chemical analysis.
LC-HRMS (ESI, APCI): Bruker MicroTOF, Bruker Maxis, Shimadzu LCMS-9030	The Equipment is used in the Chemical Analysis and Materials Research center which provides analytical support for research with the most commonly used analytical methods.
Bruker Avance III 500 MHz Three channel NMR spectrometer	This spectrometer is suited for the measurements of 1D, 2D and 3D NMR spectra of liquids and solutions. The equipment provides a broad range of analytical capabilities to solve non-routine problems from fields of chemistry and physics of condensed phase.
LiCONiC STC Compact ULT -80 °C	Automated biobanking systems LiCONiC designed to store wide range of biological specimens at temperatures from -196°C to +4°C.
HiSeq 4000 Sequencing System	The system is the most effective instrument for next-generation sequencing. It allows sequencing of the whole human genome and other organisms genome, sequencing of human exomes.
Bruker Tim ToF Pro	Mass spectrometry (MS)-based proteomics is a powerful technology for the identification and quantification of thousands of proteins. The new mass spectrometer provides extremely high speed and sensitivity to reach new depths in shotgun proteomics and phosphoproteomics, using low sample amounts.