



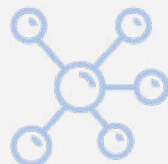
St Petersburg
University

Supported by:



CONDENSED MATTER PHYSICS AT MEGA-SCIENCE FACILITIES

| | |
|--------------------------|-------------------------|
| Level of education: | Master programme |
| Type of instruction: | Full-time |
| Duration: | 2 years |
| Language of instruction: | English |



BENEFITS OF THE PROGRAMME

- The programme aims to study fundamental principles behind modern concepts of nature as seen through the eyes of a physicist. The knowledge is acquired through the exploration of theoretical models and study of condensed matter in a lab environment. The focus is on neutron and synchrotron radiation and the use of converging NBIC technologies.
- The programme aims to provide professional expertise in the field of condensed-matter Physics. It will enable graduates to handle research and engineering problems in various areas of Physics, Chemistry, Biology, and Material Sciences.
- Students are encouraged to carry out fundamental research making full use of the MEGA-Science Facilities.
- Graduates have comprehensive knowledge about the foundations of interaction of neutron and synchrotron radiation with matter (solid state matter, polymers, natural objects, nano- and heterostructures), as well as the categories and concepts of Physics and Mathematics that describe generation, propagation and scattering of coherent radiation.
- Graduates are prepared to collect, process and analyse data obtained from neutron and synchrotron stations. They acquire new methods to record and handle images, detect bodies and processes, and study the fundamental properties of matter. They are able to investigate novel functional materials with modern methods using neutron and synchrotron radiation.



KEY SKILLS

Graduates are prepared to:

- conduct research in condensed matter Physics and undertake applied research;
- apply methodology from fundamental branches of Physics to solve research tasks in condensed matter Physics;
- set up experiments with modern neutron reactors and synchrotron radiation sources;
- apply fundamental knowledge of Physical phenomena underlying the methods of diffraction, small angle scattering, and reflectometry;
- apply modern tools to analyse materials structure and properties: neutron and synchrotron radiation, software, information databases, etc.

CAREER OPPORTUNITIES

Graduates are well-equipped to secure positions in research and production enterprises conducting R&D in the chosen professional niche. Graduates can enter academic or engineering careers or progress to postgraduate study.

Graduates are sought after for the development and operation of innovative scientific equipment in mega-science research facilities, e. g. sources of synchrotron radiation, free-electron lasers, research reactors and pulsed neutron sources; automated control and data collection systems in complex Physical systems.

Graduates find jobs in:

- condensed matter studies in MEGA-science centres for neutrons and synchrotron radiation;
- nano- and biotechnologies, and engineering;
- big data processing and computer simulation;
- R&D and its management in the field of natural sciences.

PROGRAMME OVERVIEW:

Read more >

CONTACT US

International Admissions Office

Location: 13B Universitetskaya Emb., St Petersburg, 199034, Russia

Working hours: Monday – Friday, from 10 AM to 6 PM

Phone: 007 812 3636633

admission@spbu.ru

