

Nuclear Physics Methods for Investigating Substance Properties

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

Degree or qualification is awarded: **Bachelor degree**

Language of study: **Russian**

Mode of study: **full-time, part-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **316 290 rubles per semester**

Programme webpage at the university website:

http://eis.mephi.ru/AccGateway/index.aspx?report_url=/Accreditation/program_annotation&report_param_pid=63

Programme curator: **Vladimir V. Kadilin**

Tel.: **Contact name: Olga N. Petukhova, Phone number. +74957885699, ext. 8045**

E-mail: ONPetukhova@mephi.ru

Field of study: "Nuclear Physics and Technologies".

Duration of training: 4 years, 240 credits.

Course delivery language: russian.

Basic department: Applied Nuclear Physics (No. 24).

The program of continuous training: Bachelor's Degree – Master of Science – Post Graduate.

The goal is to provide the high level of knowledge allowing graduates to work in the activity sphere related to the application of nuclear radiation to investigations of the structure and properties of a substance and products made of it and to investigations of nuclear materials and technologies. At the Bachelor training stage, the goal is to provide basic humanitarian, social, economics, mathematical, and nature science knowledge and the universal and subject-specified competences for a graduate, to prepare the bachelor for joining to the Master's education program and for professional activities related to carrying out of nuclear physics experiments.

Duration of the study: 4 years.

The field of professional activities of the graduates includes investigations, development and creation of technologies for obtaining materials with specified properties; creation of constructional materials having optimal characteristics; and fundamental research of substance properties.

The objects of professional activities of graduates are condensed media, nuclear reactor materials, nuclear materials and systems of radiation safeguard, phase transitions in the condensed matter state, modern electronic circuit engineering, nondestructive testing systems, and development of technologies for using instrumentation and devices for substance analysis. The graduates can work as scientific employees and research engineers (bachelors not entering the master's study can work as laboratory assistants, technical personnel, and engineers; masters not entering the post graduate study can work as laboratory assistants and research engineers).

Programs, for which the staff training is planned are "Personnel Training for Science Centers", "Nuclear Power Technologies of New Generation for the Period of 2010-2020", "Program of Innovative Development of State Corporation Rosatom", "National Technological Base".

The educational plan is of the complex type. The basic modules include physics and mathematics training and study of experimental methods, study of projecting and innovations, informational technologies, and engineer science.

The peculiarities of the educational process are as follows:

the unified basic training for humanitarian, nature science and general professional disciplines takes two years. The plan of the educational process is based on unified basic and nature science training corresponding to requirements of Standard SES 3; the main special disciplines are “Applied Nuclear Physics,” “Physics of Nuclear Radiation,” “Nuclear Physics Methods for Condensed Matter Investigation,” “Kinetic Phenomena in Condensed Matter,” and others.

Practices.

- Computer practicum (distributed educational practice carried out during the theoretical study in terms 3-7).
- Practical training is carried out during two weeks from July 6 till July 19 for 3rd year bachelors.
- The practice before diploma (Distributed. For bachelors of the 8th term during the theoretical study in the SRWS frames and during first 4 weeks of the graduate work.).

The list of enterprises for carrying out the practices: High-Technology Research Institute of Inorganic Materials named after A.A. Bochvar, National Research Centre "Kurchatov Institute", Scientific Research Institute of Technical Physics and Automation, Joint Institute for Nuclear Research (Dubna), Petersburg Nuclear Physics Institute named after B.P. Konstantinov (St. Petersburg), Institute for Theoretical and Experimental Physics named after A.I. Alikhanov, and other enterprises of the branch.

Specializations within this programme