Physics of high-speed processes

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**
Duration: **4 years**
Availability of free education: **yes**
Price: **316 290 rubles per semester**

Programme curator: **Sergey A. Gubin**
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: Chemical Physics (No. 4).

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

Goal of the program is to produce graduates capable of successfully working in the field of industrial, scientific and research activities related to the design, analysis and evaluation of safety and efficiency of existing and future nuclear power plants; provide basic humanitarian graduate, mathematics, natural sciences and professional knowledge, specialized competencies; give graduates skills in the professional field and to prepare for the Master Degree on the stage of training.

Programs, planned for training: "Training for science centers", "A new generation of nuclear energy for the period 2010-2020", "Program of Innovative Development of Rosatom", "National Technological Base", etc.

The curriculum includes the training sessions traditional for the Chemical Physics Department in the basic branches (the Institute of Chemical Physics of the Russian Academy of Sciences and the All-Russia Research Institute for Fire Protection) in the form of lectures, workshops, labs, special practice, research work of students, externship, diploma projects. Along with the basic underlying physical, mathematical, and engineering disciplines, there is a significant amount of special disciplines: hydro and gas dynamics, physics of explosive processes, thermodynamics of fast processes, experimental methods for studying fast processes, and computer simulation of fast processes.

Practice:

- Research and Manufacturing Practice (2 weeks: July 6 - 19 at the 3rd course).
- Research and Practice (during the 7th and 8th semesters).

The list of enterprises for practice: the Institute of Chemical Physics of the Russian Academy of Sciences; the All-Russia Research Institute for Fire Protection of the Ministry of the Russian Federation for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters; Russian Federal Nuclear Center – All-Russia Research Institute of Technical Physics named after Academician E. I. Zababahin; Russian Federal Nuclear Center – All-Russia Research Institute of Experimental Physics; National Research Centre "Kurchatov Institute", All-Russia Research Institute of Automatics named after N. L. Dukhov, Gydropress Experimental and Design Organization; Rosenergoatom Concern; the Institute of Problems of Chemical Physics of the Russian Academy of Sciences; and other scientific and technical centers of Rosatom.

Specializations within this programme

Nuclear physics and technologies

The area of professional activity:

- use of modern physical equipment and automatic control systems with the use of computer technology;
- research and technology solutions for industrial and scientific problems, mathematical models for the theoretical and experimental study of fast kinetic processes, including combustion and explosion of energy-intensive systems;
- creating, editing, debugging and application of the experimental units and assemblies for experimental studies of fast processes;
- providing explosive and fire safety of industrial facilities (including nuclear facilities), modeling the effects of industrial accidents;
- use and development of new innovative technologies and solutions for the study of the properties and applications of nanomaterials with desired properties.