

# Prospective Nuclear Reactors and Energy Plants

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

Degree or qualification is awarded: **Master's degree**

Language of study: **Russian, English**

Mode of study: **full-time**

Duration: **2 years**

Availability of free education: **yes**

Price: **207 610 rubles per semester**

Programme curator: **Vladimir S. Kharitonov**

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

E-mail: [ONPetukhova@mephi.ru](mailto:ONPetukhova@mephi.ru)

**Graduation department:** Department of Theoretical and Experimental Physics of Nuclear Reactors (#5),  
Department of Thermal Physics (#13)

**Objectives:** The master's program includes disciplines of the obligatory federal component, the discipline of the university component, the discipline of choice, practice, research and work over the final qualifying work. A special place in the curriculum is given to the disciplines that help to understand Modern challenges facing the nuclear industry. The program is designed to prepare highly skilled specialists who are able to successfully work in the field of activities related to design, construction and operation of nuclear power plants and other nuclear power plants, generating, converting and using thermal and nuclear energy.

**Objects of professional activity:** nuclear reactors, fusion and power plants, thermohydraulic and neutron-physical processes in the nuclear reactor cores and blankets thermonuclear reactors, thermal measurements and control, coolants and nuclear reactor materials, nuclear fuel cycle, nuclear power plant safety systems, control systems nuclearphysical installations, software complexes and mathematical models for theoretical and experimental research of phenomena and regularities in the field of thermophysics and energy, promising methods of energy conversion.

Master's training is carried out in close connection with the research work carried out on department and in the leading organizations of SC "Rosatom" (SSC RF FEI, OKB "Gidropress", NIKIET, VNIIAES, Concern "Rosenergoatom", etc.), SRC "Kurchatov Institute", institutes of the Russian Academy of Sciences. Master's degree is connected with priority Federal State programs: "Training of personnel for scientific centers", "Nuclear energy technologies of the new generation for the period 2010 - 2020", "Innovative Development Program of the State Committee of Rosatom "National technological base".

**Graduates are in demand** in science intensive industries, where they are introduced and improved technological processes with complex innovative solutions.

## Specializations within this programme

### Nuclear reactors and materials

#### Objects of the professional activity:

The atomic nucleus, elementary particles, nuclear reactors, reactor materials and heat transfer fluids, perspective, and special types of nuclear power plants (NPP), a system for converting thermal and nuclear energy into electrical energy, nuclear materials and systems to ensure their safety, the radiation impact of ionizing radiation on human beings and environment, mathematical models of theoretical and experimental studies of phenomena and laws in the field of reactor physics, nuclear reactors, nuclear materials, physical and mathematical models of processes in nuclear plants, propagation and interaction of light with objects animate and inanimate nature, the security of nuclear materials, facilities and facilities of the nuclear industry and energy.