

# Nanotheranostics (in English)

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

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

Language of study: **English**

Mode of study: **full-time**

Duration: **2 years**

Availability of free education: **yes**

Price: **155 610 rubles per semester**

Programme curator: **Zavestovskaya I.N.**

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**Program goal:** to educate Graduates, which will be able to work successfully in the activity fields related to medical physics, nanotechnology for biomedicine and nuclear medicine, with their universal and subject-specialized competencies that contribute to their social mobility and stability on the labor market.

**Basic department:** Department of laser micro and nanotechnology (№ 87), Laboratory of Bionanophotonics.

**The scope of professional activity:** nanotechnology for biomedical applications, nuclear medicine, studies of the propagation and interaction of electromagnetic and ionizing radiation with tissues and organs, research, development and technology to obtain and evaluate medical diagnostic images, design, experimental investigation and implementation of instruments and methods for medicine.

**The objects of the professional activity:** modern medical diagnostic devices, devices for photodynamic and sonodynamic therapy, hyperthermia, contact and contactless radiation therapy, radiation technology in medicine, mathematical models for theoretical and experimental studies of phenomena and effects in the field of propagation and interaction of radiation with living objects

**Features of the teaching plan:** The Program consists of both the basic disciplines and special courses as physical methods in medical diagnostics, nanoparticles for biomedicine, optics of nanosystems etc. A large amount of the teaching time is devoted to scientific research practices that will help to develop skills on modern equipment and machinery, skills of practical use of the methods of physics to solve practical problems in the field of radiology and radiotherapy, radionuclide diagnostics in medicine.

**List of enterprises for practical training and future job:** Rosatom State Corporation, National Research Centre "Kurchatov institute", Research Institute of Neurosurgery named after N. N. Burdenko of the Russian Academy of Medical Sciences, Russian Oncological Scientific Center named after N. N. Blokhin, Research Institute of Emergency Pediatric Surgery and Traumatology, Russian Scientific Center of Radiology etc.

**Specializations within this programme**