Laser Physics

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

Degree or qualification is awarded: Master degree

Language of study: **Russian** Mode of study: **full-time** Duration: **2 years** Availability of free education: **yes** Price: **196 820 rubles per semester**

Programme webpage at the university website: <u>http://eis.mephi.ru/AccGateway/index.aspx?report_url=/Accreditation/program_annotation&report_param_pid=95</u>

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Field of study: "Nuclear Physics and Technologies".

Duration of training: 2 years, 120 credits.

Course delivery language: russian.

Basic department: Laser Physics (No. 37).

The aim of the Laser Physics master's educational program is the training in the field of humanitarian science, economics, mathematics, and natural science, as well as advanced professional training allowing graduates to work in the field of nuclear and radiation physics, laser physics, and laser technology application and to have the social mobility in the labor market.

Program leader: N. N. Evtikhiev, Professor, Ph. D., Head of the Department of Laser Physics.

The Master's Program "Laser Physics" has the module structure and is aimed at providing high competence for a graduate. The program feature is the combination of the theoretical and experimental courses³/₄ "Theoretical Quantum Electronics", "Theoretical Solid State Physics", "Fiber Lasers", "Laser Technology", "Laser Diagnostics", "Short Laser Pulses Generation and Amplification", etc.³/₄ and practical training in the laboratory "Laser Physics and Application of Lasers". Part of the curriculum is also implemented in English. The training is individual, takes into account the preliminary training of students and their future work. The first year is the year of scientific research and the second one is the year of practice in laboratories at MEPhI, Laser Center, at research institutes of the Russian Academy of Sciences and the atomic industry. Abroad internship is also possible.

The graduate's professional activity includes the theoretical research, development and application of lasers and laser systems for precise measurements and diagnostics, and new laser technologies, including nanotechnologies. The educational program gives competence for fundamental and applied research in the field of laser physics, solid state physics, physics of isotopes and molecular mixtures, high speed processes, medical physics and biophysics, nuclear devices, radiation security, control systems for nuclear experiments.

The Department of Laser Physics graduates work at advanced research centers in Russia, United States, Germany, Great Britain, etc., as well as at Hi-Tech companies. They are ready to work in the innovation part of the Russian industry.

Specializations within this programme

Nuclear Physics and Technologies

Objects of professional activity: lasers and applications, laser technology,

physical instruments and installations for plasma diagnostics, substances in gaseous and condensed state, nanomaterials for the separation of isotopic and molecular compounds, mathematical models of theoretical, experimental and applied research of phenomena and laws in the field of laser physics, plasma gas and condensed matter, distribution and the interaction of radiation with matter.