**03.03.01 Applied mathematics and physics**

**Program Summary**

**Program title**: Quantum optics and laser physics, Electrophysics, Physics of fundamental interactions.

**Program goals**: to prepare highly qualified specialists in the field of applied physics for research and industrial organizations of the nuclear weapons complex, nuclear and other high-tech industries.

**Duration of full-time program** - 4 years.

**Department**: Department of experimental physics; Department of quantum electronics, Department of nuclear and radiation physics, SPTI NRNU MEPhI.

**Areas of expertise**: research, development, design, innovation with the use of mathematics and physics as main approaches in solving fundamental and applied problems of theoretical and experimental physics.

**The objects of professional activity**: physics of gas discharge, physics of charged particle accelerators, physics and technology of microwaves, laser physics, laser technology, nuclear physics, nuclear installations, devices, physical electronics, condensed matter physics, technical electrodynamics, spectroscopy, nonlinear optics, laser fusion, quantum mechanics, the propagation of detonation and shock waves, theoretical physics, etc.

**Curriculum features**: the curriculum is built on the basis of NRNU MEPhI higher education standards taking into account the professional requirements of the RFNC-VNIIEF. It includes the humanities, natural science disciplines, general technical courses, in accordance with the requirements of educational standards, as well as special disciplines, study of which is necessary to work at the RFNC, such as: laser physics, physical optics, fundamentals of gas dynamics, pulsed reactors, electrodynamics of continuous media, electron-ion devices, electrical measurements.

**Companies for internship and graduate employment**: Institute of Theoretical and Mathematical Physics, Institute of Laser Physics Research, Institute of Nuclear Physics Research, Institute of Physics of High Energy Density and Directed Streams of Radiation of the RFNC-VNIIEF; Sarov Technopark, etc.