**Abstract of the progaramme**

**18.05.02 Chemical technology of modern power materials (Specialist degree programme)**

**Programme title:** 18.05.02 Chemical technology of modern power materials. Specialization: “Сhemical technology of materials of a nuclear fuel cycle”

**Objectives of the programme:** Training specialists with practical skills of planning, carrying out, processing, interpreting a complex physical and chemical experiment results, training of the engineers who are capable to develop new radiochemical techniques, work on the modern analytical and radiometric equipment which is used at the enterprises of a nuclear fuel cycle, possess the common cultural, all-professional, professional, professional and specialized competences promoting their social mobility and providing their demand in the professional sphere.

**Training course duration:** 5 and a half years of full-time education.

**Basic department**: Chemistry and chemical technologies (Ch and ChT OTI NRNU MEPhI).

**Graduates’ professional activity field:** development, design and operation of technological processes and the equipment for extraction of materials of the nuclear and fuel cycle (NFC) of nuclear power from natural and technogenic raw materials, processing of the spent nuclear fuel (SNF) and radioactive waste (RAW), division of materials and radioactive and chemical processes in the heat carriers of the nuclear power stations (NPS); development and operation of the methods of analytical control and radioactive safety on the enterprises connected with the use of atomic energy.

**Graduates’ professional activity objects:** radioactive safety, ores, concentrates and the secondary raw materials containing uranium, zirconium, radioactive elements, rare metals of nuclear use, their chemical compounds and materials on their basis; the natural and technogenic raw materials containing isotopes of easy elements; technological processes of their extraction, concentration and purification; the equipment, devices and methods of ensuring analytical control of carrying out these processes in laboratory and industrial conditions; technological processes of the treatment of SNF and RAW and the methods of ensuring radiation safety and rehabilitation of territories connected with use of nuclear objects.

**Features of the curriculum:** graduates with qualification the engineer possess all necessary competences. An obligatory element of educational process is students’ educational and research work. Basic disciplines are Physical chemistry, Physical and chemical methods of the analysis, Radiochemistry. Special disciplines: Technology of the main materials of modern power, Chemistry of artificial radionuclides and their technology, Bases of nuclear technology, Processing and burial of radioactive waste, Radiochemical processing of the irradiated nuclear fuel, Fundamentals of nuclear physics and dosimetry.

**The list of the enterprises and organizations for practical training and employment of graduates:**

FSUE “MAYAK” Production Association (Rosatom State Corporation), USDI “VNIPIET” (Rosatom State Corporation), Ozersk; FSUE Southern Urals Biophysics Institute (FMBA RF), Ozersk; the Russian Federal Nuclear Center - All-Russian Scientific Research Institute of Experimental Physics (RFNC-VNIIEP), Snezhinsk; postgraduate course of Saint Petersburg State University, D. Mendeleev University of Chemical Technology of Russia; Institute of Physical Chemistry and Electrochemistry, Russian Academy of Sciences; the Urals Federal University.