

## Master in radiopharmaceutical chemistry

Nuclear medicine-convergence of sciences. It combines elements of physics, biology, medicine, cognitive and engineering sciences and, of course, chemistry. Radiopharmaceutical chemistry involves a whole range of tasks in diagnostics and therapy fields, such as compound determination, radionuclide selection, its synthesis, molecule preparation, preclinical and clinical testing. On 2021 we decided to provide new MSc program, jointly with the leading international companies of the Nuclear industry in this field- Rosatom Healthcare and Rosatom Overseas, Fukushima university and Imperial college of London.



Imperial College  
London



### The Program include the following Topics:

- Basic radiochemistry
- Methodology of Chemistry
- Modern issues of Chemistry
- Chemistry and the environment
- Radionuclides in the environment
- Modern physicochemical research methods
- Intellectual property protection
- Effective communication
- Labeled compounds
- Radiation safety and radiation control of personnel and patients when using radiopharmaceuticals
- Transportation of ionizing radiation sources
- Legislation in the field of handling ionizing radiation sources
- Biological effects of ionizing radiation
- Drug development
- Management of radioactive waste generated during the production and use of radiopharmaceuticals
- Methodology of Chemistry

- Computer technologies in science and education
- Methods for the production, isolation and purification of radionuclides
- Radiopharmaceuticals for diagnostics, therapy and theranostics in nuclear medicine
- Methods for the synthesis and quality control of radiopharmaceuticals
- GMP requirements for the production of radiopharmaceuticals
- Project management
- Practice in Rosatom facilities

After completing the Master's program , graduates will be able to manage the process of creating a radiopharmaceutical, making a great contribution to society and health in the world.

Duration: 2 years

Tuition fee: 502 500 RUR per year

For more information: Andrey Putyatin [avputyatin@gmail.com](mailto:avputyatin@gmail.com)

Welcome on board.

## **Project management in the field of decommissioning of Nuclear facilities including Radioactive waste management**

Decommissioning of the nuclear facilities is one of the most problematic area in the nuclear industry. Only 1 of 3 projects is successfully implemented. This is due to various factors, such as different mistakes in project management, planning, economics, and others. That's why we decided to provide some solution to the industry.

The Master's program of project management in the field of decommissioning of nuclear facilities incl radioactive waste management. which combines features to solve current problems. We implement this program jointly with Imperial College London and IDOM Nuclear Services from Spain.



TVEL  
ROSATOM

## **The Program include the following Topics:**

- Basic radiochemistry
- Chemistry and environment
- Methodology of Chemistry
- Computer technologies in science and education
- Modern Radiochemistry
- Transition step
- NFC objects and their design features for the Nuclear facilities decommissioning
- NPP and RR and their design features for the Nuclear facilities decommissioning
- RW storage facilities and their design features for Nuclear facilities decommissioning
- Methods of deconstruction and deactivation of building structures
- Methods of deconstruction and deactivation of thermomechanical and electrical equipment,
- RW management after decommissioning
- Land recultivation
- Final site clearance
- Management of projects and programs in the field of Nuclear facilities decommission
- Financial and economic modelling
- Cost management
- Stakeholders relations management
- Safety assessment
- Nuclear legacy
- Basics of Law
- Project management
- Effective communication
- Practice in Rosatom facilities

After completing the Master's program, graduates can manage the process of decommissioning of nuclear facilities. Understanding all the features of working with similar projects to offer the most effective solution.

Duration: 2 years

Tuition fee: 502 500 RUR per year

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## Master in Spent Nuclear Fuel management

"The Sustainable Nuclear Fuel Cycle" is a new product of Rosatom State Corporation, which makes management of spent nuclear fuel and its reprocessing products efficient and stable. Our program will allow you to get comprehensive knowledge about the whole process of working with spent nuclear fuel.



TENEX  
ROSATOM



BELARUSIAN  
STATE  
UNIVERSITY

### The Program include the following Topics:

- Basic radiochemistry
- Nuclear fuel cycle
- Migration of radionuclides in the environment
- Nuclear legacy and rehabilitation of territories
- Modern physico-chemical methods of analysis
- Justification of safety in production planning
- Methods of SNF management
- Transportation of SNF and RW
- Radiation safety and personnel control
- Biological effect of ionizing radiation
- Physical chemistry of solutions
- Fundamental aspects of decommissioning of production facilities
- SNF and RW control methods
- Physical chemistry of melts
- Computational methods for radiochemical tasks
- Current trends in the SNF and RW management
- Regulation features for SNF and RW
- Handling of Radioactive waste generated during the processing of spent nuclear fuel
- World practice of SNF management
- Intellectual property protection
- Project management

After completing their studies, students will gain a comprehensive understanding of all the features of working with spent nuclear fuel, and will be able to manage projects in this area.

Duration: 2 years

Tuition fee: 502 500 RUR per year

For more information: Andrey Putyatin [avputyatin@gmail.com](mailto:avputyatin@gmail.com)

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