

Photonics, Instrumentation, Optical, Biotechnical Systems and Technologies

National Research ITMO University

Degree or qualification is awarded: **Ph.D in Photonics, Instrument-Making, Optical, Biotechnical Systems and Technologies**

Language of study: **Russian**

Mode of study: **full-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **299 000 RUB per year**

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Upon completion of their Ph.D. program, graduates will be able to work in the following fields: study of the physical phenomena and laws in the field of photonics, laser physics, wave optics, integrated and fiber optics, nonlinear optics, optoelectronics, optical materials science, biomedical optics, plasmonics; engineering, focused on the design, manufacture and application of devices and systems for receiving, recording and processing of information of technical and biological objects; expertise and administrative activities related to photonic devices.

The graduates will have an understanding of photonic devices and technologies, electrooptical devices, optical information and electrooptical systems; telecommunications and information processing technology of technical and biological objects; devices, systems and electronic components for photonics and instrumentation; devices and systems of biomedical optics, medical-biological and ecological purposes; expert assessments and opinions on issues in the field of photonics, instrumentation, optical, biotechnical and biomedical systems and technologies.

The types of professional activity are: research activities in the field of laser physics, wave optics, integrated and fiber optics, nonlinear optics, optoelectronics, plasmonics, biomedicine, bioengineering, the development of optical communication systems; creation of new materials (metamaterials) for photonics, optical, optoelectronic, biotechnical and biomedical applications; work on advisory councils and commissions.

Specializations within this programme

Instruments and methods of measurement (according to the types of measurement)

Navigational devices

Optical and optoelectronic devices and systems

Instruments and methods of environment, substance, material and product monitoring

Instrumentation technology