

Optical and Optoelectronic Devices and Systems (Postgraduate)

Saint Petersburg Electrotechnical University "LETI"

Degree or qualification is awarded: **PhD**

Language of study: **English**

Mode of study: **full-time**

Duration: **2 years**

Availability of free education: **yes**

Price: **220 000 rubles per year**

Programme webpage at the university website:

<https://etu.ru/en/study/post-graduate-study/optical-and-optoelectronic-devices-and-systems>

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English-taught PhD program "Optical and Optoelectronic Devices and Systems" belongs to the direction "Photonics, Instrumentation Technology, Bioengineering Systems and Technologies". The PhD program provides a strong foundation in Optoelectronics, Informational Optics, and Photonics, allowing PhD students to acquire essential skills and analytical abilities required in the relevant scientific areas. PhD students have access to the most modern and sophisticated technological and metrological equipment, carry out scientific research and get skills of practical work with real metrological instruments and technological apparatuses. Research thrust area includes Optoelectronics, Photophysics, and Laser technologies.

Main research directions

- Development of Devices with Nanoparticles (DSc S.A.Tarasov);
- Thin-film and Heterostructure Solar Modules Based on Silicon (DSc A.S. Gudovskikh, PhD G.A.Konoplev, PhD D.N. Redka);
- Development and Application of Optoelectronic Systems for Remote Sensing of the Environment (DSc A. A. Buznikov);
- Laser Technologies in Instrument Engineering (PhD A.A. Malashchenko);
- Development of Optoelectronic Devices for Studying of the Biological Body Fluids Spectra (PhD G.A. Konoplev);
- Photophysics of Media with Nanoobjects (DSc N.V. Kamanina);
- 3D Laser Scanning Technology and Virtual Reality (PhD D.N. Redka);
- Development of Laser Technologies for the Cultural Heritage Restoration (PhD V.A. Parfenov).

Main subjects

- Special Disciplines
- Problems of Modern Photonics
- Informational Optics
- Optical and Optoelectronic Devices and Systems
- Computer Technologies in Education and Knowledge Representation
- General Educational Disciplines
- History and Philosophy of Science

- Foreign Language (English/German/French/Russian)
- Fundamentals of verbal communication in foreign languages
- Pedagogy of Higher Education

Practices

- Pedagogical Practice
- Scientific Organizational Practice

Education & research facilities

- Laboratory of Laser Technologies in Instrument Engineering
- Laboratory of Quantum Electronics and Laser Technology
- Laboratory of Thin-film Solar Modules
- Laboratory of Solar Photoenergy named after acad. Zhores Alferov
- Laboratory of Condensed Matter Physics Partners
- R&D center TFTE;
- Hevel Solar;
- "Northern Dawn" ("Severnaya Zarya").

Resource center

- Physics and technology of high efficiency solar modules based on silicon;
- Metrology and characterization of solar cells and modules;
- New materials and structures for photovoltaics;
- Physics and technology of nanostructured heterophase materials for optoelectronic systems of information receiving and processing;
- Photodetectors;
- Laser technique and technology;
- Development and applications of optoelectronic systems for environmental and biomedical tasks.

Specializations within this programme