PHOTOVOLTAICS & SOLAR ENERGY TECHNOLOGY
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ADMISSION REQUIREMENTS

120 ECTS credits – full-time study – 2 years

Eligibility: candidate must hold a Bachelor’s Degree in the corresponding field

An academic year includes 2 semesters beginning on 1st September and 5th February, winter holidays (2 weeks: January), summer holidays (2 months: July, August). Master’s Thesis defense is in June.

You can apply for the program via master@etu.ru by sending the following documents:

• Passport copy
• Diploma copy
• Transcript of records copy
• Certificate of English proficiency copy

International Students Office
+7(812)234-35-53
master@etu.ru
2343553@etu.ru

www.etu.ru
PHOTOVOLTAICS & SOLAR ENERGY TECHNOLOGY

ABOUT THE PROGRAM

Students get knowledge of underlying physical principles and material science aspects of photovoltaics, technology and metrology of solar modules, equipment, design and maintenance of solar power plants. Special attention is dedicated to silicon photovoltaics, including the most efficient HIT structures. 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.

In 2015 program «Heterostructure Solar Photovoltaics» successfully underwent independent assessment and was awarded EUR-ACE® label by ENAEE – European Network for Accreditation of Engineering Education.

CURRICULUM

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PHOTOVOLTAICS & SOLAR ENERGY TECHNOLOGY

Fundamental Disciplines
- Renewable Energy Sources
- Solar Energy Materials
- Micro- and Nanotechnology Processes
- Microprocessor Technology
- Modern Problems of Electronics

Special Disciplines
- Diagnostics of Solar Energy Materials and Structures
- Optical and Physical Methods of Diagnostics of Solar Energy Materials
- Metrology of Solar Cells and Modules
- Technology of Solar Cells and Modules
- Equipment and Automation of Solar Power Plants
- Laser Technologies in Manufacturing of Solar Modules

General Educational Disciplines
- Foreign Language
- Basics of Scientific Research
- Computer Technology and Simulation in Electronics
- Commercialization of Results of Scientific Research and Development

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Students of the Master’s program have the opportunity to take internships at partner universities:

- Lappeenranta University of Technology (Lappeenranta, Finland)
- Satbayev Kazakh National Technical University (Almaty, Kazakhstan)
- Otto von Guericke University (Magdeburg, Germany)
- Brandenburg University of Technology Cottbus-Senftenberg (Brandenburg, Germany)
PHOTOVOLTAICS & SOLAR ENERGY TECHNOLOGY

EDUCATION & RESEARCH FACILITIES

- LABORATORY OF LASER TECHNOLOGIES IN INSTRUMENT ENGINEERING
- LABORATORY OF SOLAR PHOTOENERGY NAMED AFTER ACAD. ZHORES ALFEROV
- LABORATORY OF THIN-FILM SOLAR MODULES
- LABORATORY OF CONDENSED MATTER PHYSICS
- LABORATORY OF QUANTUM ELECTRONICS AND LASER TECHNOLOGY

RESOURSE 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
ABOUT THE DEPARTMENT

Department of Photonics was established in 1931 and it is one of the oldest and the most renowned departments in the University. Many outstanding Russian scientists and engineers have graduated from the Department of Photonics for the last decades and the most renowned of the Department’s alumni is the laureate of the Nobel Prize in Physics (2000) Prof. Zhores Alferov.

Faculty of the Department consists of:
- 9 Full Professors, DSc
- 15 Associate Professors, PhD
- 5 Assistant Professors, PhD