The main part of NTU "KhPl" is located in the campus, in which there are about 30 buildings with well-equipped classrooms, laboratories and computer classes, one of the best libraries in Ukraine, dining room, cupboards, and other infrastructure facilities. Not far from the school campus comfortable dormitories are located. In his spare time, students have the opportunity to practice different sports in one of the best in Ukraine, sports complex with 50-meter swimming pool, indoor track and field arena, specialized facilities, etc. In the Palace of students there are numerous clubs and groups, in which students develop their creative abilities.
The Department provides education in three levels of higher education:
- **Bachelor** – 4 years;
- **Master** – Bachelor + 1.4 year or 1.9 year;
- **Doctor of Philosophy (PhD)** – Master + 4 years.

**Specialisations (Fields of study):**
- **Electrical Apparatus** (switchgear, controlgear, fuses, assemblies of such devices, etc.);
- **Electrical Home Appliances** (heating, conditioning, cooking, etc.).

**Head of Department:** Prof. Dr.-Eng. Borys V. Klymenko
In 2016 Department received a grant from the Alexander von Humboldt Foundation (Germany) for the purchase of scientific equipment in the amount of 20 000 Euros. Thanks to the funding from the Foundation the Department acquired numerous examples of modern electrical devices (electromechanical and semiconductor switching, control and protection devices of the production of leading European companies, such as ABB, Legrand, GE, etc.), examples of modern measuring techniques (digital oscilloscopes, the imager, sound meter, fluxmeter, multimeters, etc.), examples of innovative technological equipment and Appliances (one of the first in NTU "KhPI" 3D printer, induction cooker, etc.). Purchased equipment is used for radical modernization of scientific and educational laboratories of the Department for the purpose of educational process and scientific research on a level with the highest world standards.
KEY DISCIPLINE THAT STUDENTS STUDY
ON BACHELOR LEVEL OF HIGHER EDUCATION
(SPECIALIZATION "ELECTRICAL APPARATUS"):

- Informatics
- Information technologies
- Technical mechanics
- Mechanical engineering technology
- Computer aided design
- Theoretical foundations of electrical engineering
- Theory of electromagnetic field
- Electrical engineering materials
- Fundamentals of metrology and electrical measurements
- Electric machines
- Foundations of electronics
- Fundamentals of electric drive
- Fundamentals of electric power industry
- Electromagnetic and induction-dynamic devices
- Electromechanical switching devices and assemblies
- Semiconductor switching devices and automation elements
- Contact-arcing systems and thermal processes in electrical apparatus
- Microprocessors and microcontrollers
- Microcontroller programming
- Microprocessor devices
DEPARTMENT OF ELECTRICAL APPARATUS
PROFESSIONAL EDUCATION

KEY DISCIPLINE THAT STUDENTS STUDY
ON BACHELOR LEVEL OF HIGHER EDUCATION
(SPECIALIZATION "ELECTRICAL HOME APPLIANCES"):

- Informatics
- Information technologies
- Technical mechanics
- Mechanical engineering technology
- Computer aided design
- Theoretical foundations of electrical engineering
- Theory of electromagnetic field
- Electrical engineering materials
- Fundamentals of metrology and electrical measurements
- Electric machines
- Foundations of electronics
- Fundamentals of electric drive
- Fundamentals of electric power industry
- Fundamentals of electrical home appliances
- Electrical apparatus
- Household electromechanical apparatus
- Electric power supply of civil constructions
- Electrical home appliances
- Automation elements in electrical home appliances
- Servicing and repairs of electrical home appliances
- Microprocessors and microcontrollers
- Microcontroller programming
- Microprocessor devices
DEPARTMENT OF ELECTRICAL APPARATUS
PROFESSIONAL EDUCATION

KEY DISCIPLINE THAT STUDENTS STUDY
ON MASTER LEVEL OF HIGHER EDUCATION
(SPECIALIZATION "ELECTRICAL APPARATUS"):  
- Methods of mathematical and computer modeling  
- Fundamentals of scientific research  
- Microprocessor devices in electrical apparatus  
- Certification and accreditation of electrical apparatus  
- Information technologies and software packages in computer aided design  
- Current state and prospects of development of electrical apparatus  
- Resource saving and ecologically safe technologies  
- Production technology of electrical apparatus  
- Information technologies in production of electrical apparatus  
- Hybrid switching devices  
- Design of electrical apparatus  
- Reliability and diagnostics of electrical apparatus  
- Novel methods of information search and processing
KEY DISCIPLINE THAT STUDENTS STUDY ON MASTER LEVEL OF HIGHER EDUCATION (SPECIALIZATION "ELECTRICAL HOME APPLIANCES"):

- Methods of mathematical and computer modeling
- Fundamentals of scientific research
- Electronic and microprocessor devices in electrical home appliances
- Testing, certification and accreditation of electrical home appliances
- Information technologies and software packages in computer aided design
- Current state and prospects of development of electrical home appliances
- Automatic control systems of electrical home appliances
- Methods of investigations and testing of electrical home appliances
- Resource saving and ecologically safe technologies
- Production technology of electrical home appliances
- Design of electrical home appliances
- Reliability and diagnostics of electrical home appliances
- Novel methods of information search and processing
In addition to professional education, our students:

- Prepared programming skills and calculations using mathematical packages Matlab, Simulink, Maple, FEMM, Electronic Workbench;
- Studying the design and construction packages AutoCAD modeling software, 3D Compass;
- Learn microcontrollers and programming and the development of microprocessor-based devices;
- Get in-depth knowledge of operating systems Windows, Linux;
- Learn to develop their own websites and presentations of ABBYY, Adobe, Power Point;
- Learn how to work with Access databases and receive Internet application skills.
The main scientific activities of the department are:
development of advanced designs of LV and MV vacuum switching devices with
polarized electromagnetic actuators;
study of electromagnetic and thermal processes in induction heating for
industrial and household purpose systems.

Along these lines, the Department actively cooperates with domestic manufac-
Since 1998, the Department holds an annual International Symposium "Problems
of power engineering, electrical engineering and electromechanics" (SIEMA).
The Department collaborates with the offices of Europe's leading electrical
engineering companies. It has become a tradition to hold workshops
at the symposium of these companies, which presented their latest developments.

Inter-institutional agreement in the framework of Erasmus+
between National Technical University "KhPI" and the Polytechnic School
of the University of Nantes (France) for 2019-2020 is prepared.
Graduates are employed in manufacturing plants, project organizations, research institutes of electrical engineering, energy, and urban electric transport, as well as in private companies, specializing in the development, production and sale of modern electrical equipment and appliances.
CONTACTS

Kyrpychova str. 2, Kharkiv, 61002, Ukraine
National Technical University
“Kharkiv Polytechnic Institute”
Electrotechnical building, room 217
+38 057 707 62 81
+38 050 653 49 82, b.v.klymenko@gmail.com
+38 067 359 46 96, a.m.grechko@gmail.com