

National technical University “Kharkiv polytechnic institute”

Faculty “Physics and Technical”

Department of “Engineering Electrophysics ”

Specialty

“RENEWABLE SOURCES OF ENERGY AND
HIGH VOLTAGE TECHNOLOGIES
AND ELECTROPHISICS”



Head of Department



Doctor of Technical Sciences, Professor
Rezynkin Oleg Lukyanovich

Areas of studying:



The study of the principles and technology transformation of all types of renewable energy sources (solar energy, wind energy, energy of biomass, hydropower energy, geothermal energy).

Designing modern energy systems.



Creation of new development based on renewable energy sources and their promotion on the market of high technologies.

Improvement of traditional energy systems with new energy-efficient, economical, environmentally friendly technologies.



Areas of studying:

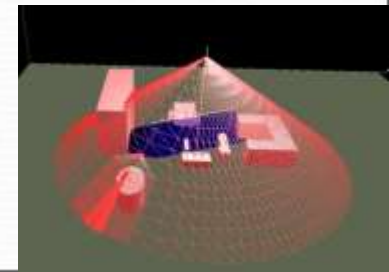
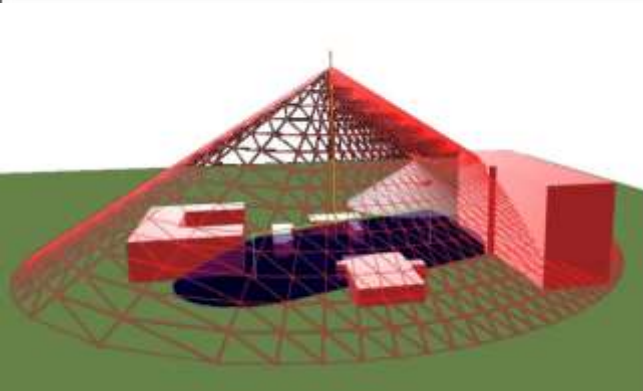
Electromagnetic protection for various technical objects and protection buildings from lightning strikes.

The practical application high-voltage installations in new developments.

Recovering the debit of oil wells.

Non-contact magnetic-pulse pressing of metallic parts of various configurations.

Techniques for treating industrial emissions and disinfecting water and increase the shelf life of food of the influence of strong electric fields.



Employment perspectives:

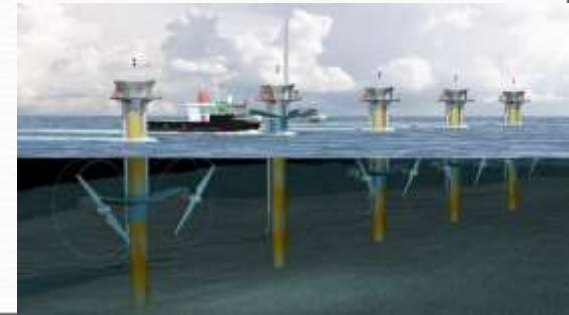
High-voltage stations and substations.

Solar-electric power stations, wind-electric power station, hydroelectric power station, complexes of producing methane.

Engineering and projecting company.

Scientific research institutes, laboratories and companies engaged in renewable energy systems and traditional power systems.

Companies that projecting high-voltage installations and engaged in their installation, maintenance, problems the transmission of electricity over long distances.



General academic disciplines for the students of our department (bachelor's level)



Power generating equipment of alternative energy installations.

Bio energy technological systems.

Wind energy industry.

Application of solar energy.

The accumulation and the transfer energy over long distance.

Fundamentals of energy saving.



General academic disciplines for the students of our department (bachelor's level)

Electrical engineering devices.

Reliability and diagnostics of electrical equipment.

Bases of designing of high-voltage pulse installations.

Electrophysical technological installations.

High-voltage measurement.



General academic disciplines for the students of our department (master's level)

Hydrogen power engineering.

Nanotechnology in the renewable energy sector.

**Computer design of resource and energy saving
high-voltage pulse installations.**

The calculation and design magnetic pulse installations.

The high frequency currents and ultrasound applications in technic.

Technique of strong electric and magnetic fields.



Our scientific developments:

