

Department of Engineering Electrophysics



**Institute of Education and Science in Power Engineering,
Electronics and Electromechanics**

National Technical University “Kharkiv polytechnic institute”

<http://web.kpi.kharkov.ua/ief/>

Head of the Department

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Specialties

Bachelor

141.13 «Renewable sources of energy and high voltage techniques and electrophysics»

Master

141.13 «Nontraditional and renewable sources of energy»

141.14 « High voltage techniques and electrophysics»

Ph.D.

141 «Electroenergetics, electrical engineering and electrical mechanics»

Renewable energy is

- ▶ Wind power (wind turbines);
- ▶ Bioenergy (biofuel).
- ▶ Solar energy (photovoltaics modules and solar heat collectors);
- ▶ Small hydroelectricity.
- ▶ Geothermal energy (heat pumps);
- ▶ Energy efficiency;



High Voltage Technologies is

- ▶ Electric power transmission;
- ▶ Electromagnetic safety of computer systems;
- ▶ Lightning safety.
- ▶ Electromagnetic pulse forming;
- ▶ Water cleaning system;
- ▶ Ozone generators;
- ▶ Food processing by pulsed electric field (PEF).



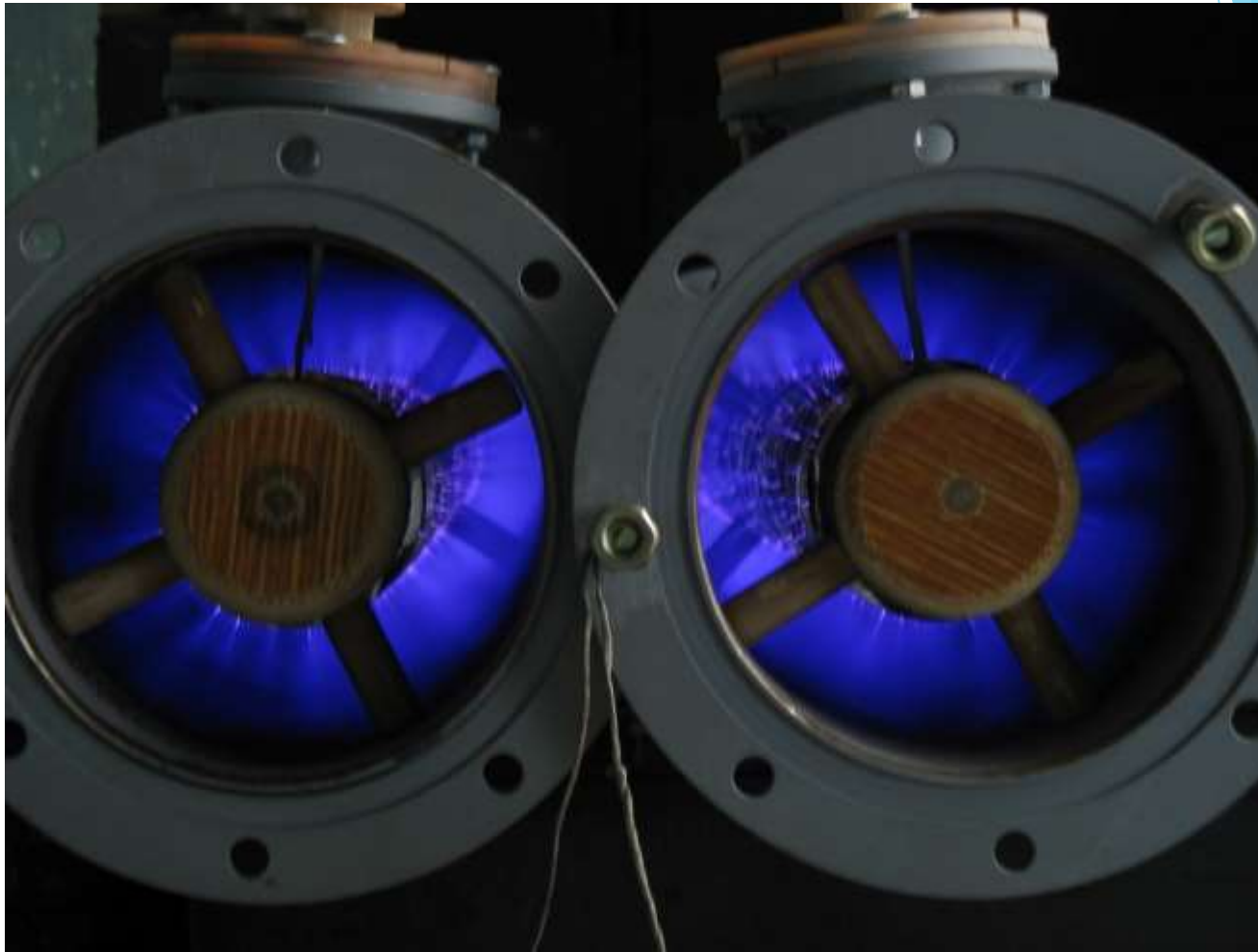
Our graduates are working in different electricity companies (of traditional energy as well as renewable), engaged in sciences, develop modern electrical and electronic equipment in construction and engineering companies in Ukraine and abroad.



Students practice

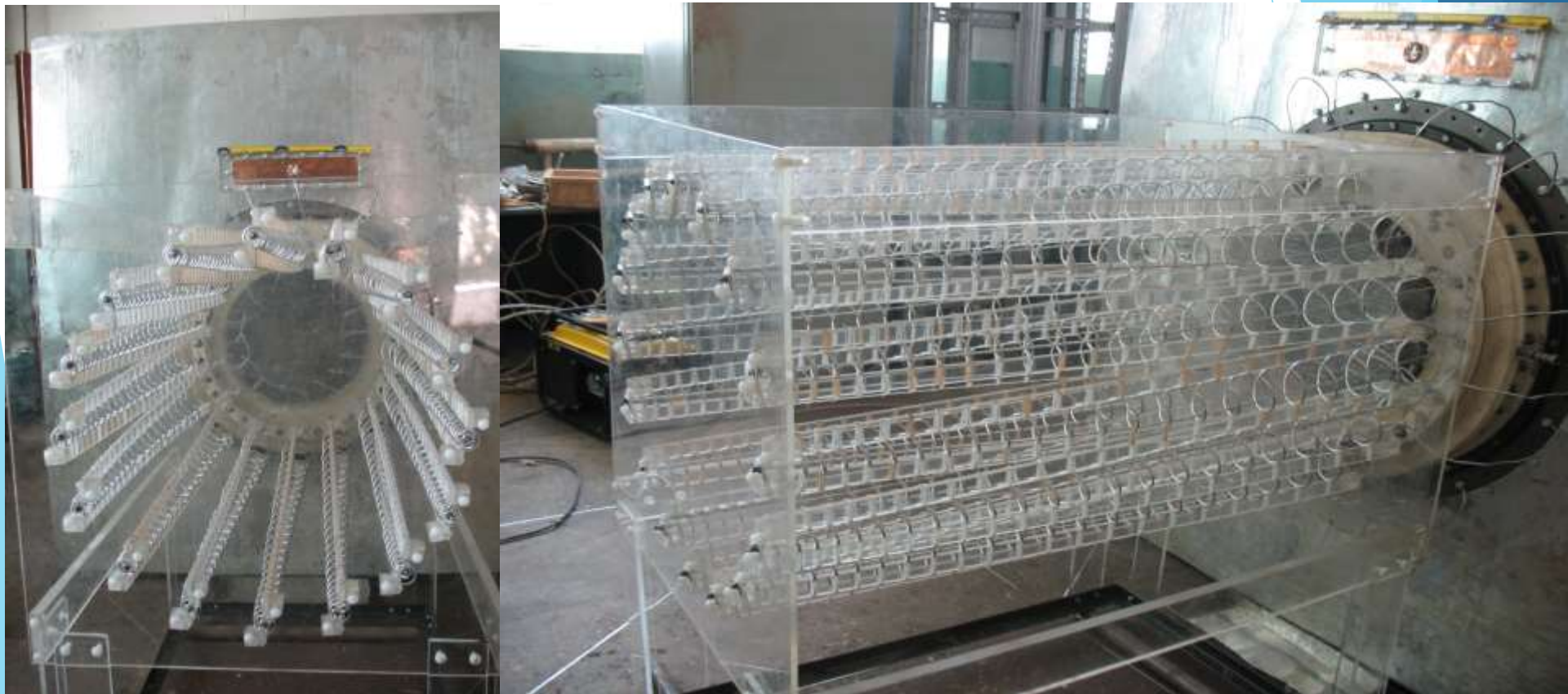


Some achievements of Engineering Electro Physics Department



Working ozone generator which uses pulsed corona discharge with enhanced ionization zone

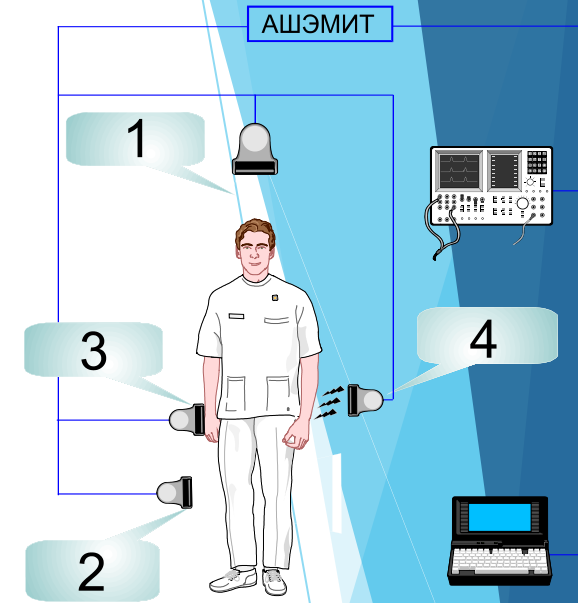
Multiaerial generator of strong electromagnetic pulses for wireless electric power transmission which uses Tesla Transformers



Device for wideband pulsed electromagnetic therapy



The device contains a pulse oscillator generating pulses with an amplitude of up to 12 kV. The device is designed for application in nonthermal electrophysiotherapy for treatment and prevention of a wide range of diseases. The active factors are nanosecond pulses of electromagnetic field, a current, and a voltage caused by spark discharges. The pulse repetition frequency ranges from zero (single pulse) to 300 Hz. The device successfully passed a preliminary medical approbation.



There are four ways to treat:
1 – global impact; 2 – local impact;
3 – point impact; 4 – spark impact.



Contacts

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