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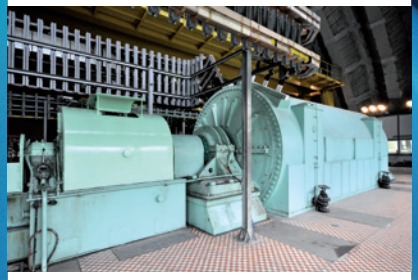
Rok założenia 1946

Polska

Electrotechnical Institute

www.iel.waw.pl

Testing and cerifications



2500 MVA short-circtuit generator.
max. AC Current 50 kA
max. AC Voltage 36 kV

R&D suport for companies

Loco E6ACT Dragon-001.
3kV, 5MW DC/AC Drives,
3kV, 2x160kW Static Converter,
Master Control Systems.

Joint scientific project

Coreless superconducting 15 kV
short-circuit current limiter for
medium voltage distribution grids.

Electrotechnical Institute

View of the main building.

The Electrotechnical Institute is one of the largest technical research institutes in Poland. It is a modern and innovative facility, complying with European standards in respect of scientific and research potential, research and development initiatives, as well as creation of highly processed and technologically advanced products.

For 20 years, the Institute has been testing electrotechnical products in 5 accredited laboratories, and certifying electrotechnical products as part of the PCA accreditation. It operates within the European Union's conformity assessment system as notified body No. 1460 for the low voltage directive (LVD) and the electromagnetic compatibility directive (EMC).

The Scientific Council of the Institute has the authority to grant the Doctor of Philosophy and postdoctoral degrees of technical sciences, and to conduct procedures for granting the scientific degree of a professor. Extramural PhD studies in electrical engineering are also held at the Institute.

The Electrotechnical Institute actively contributes to the development of the Polish economy. It performs tasks in accordance with the state innovation policy, energy security, competitive energy market, and limiting the negative influence of the energy sector on the natural environment. It is prepared to undertake new directions of scientific research and development, which translates directly into its high position on the market.

It cooperates with national and European entities by using Structural Funds of the European Union. It provides companies in the electrical engineering industry with a strong scientific and research support, oriented towards innovative technologies, while striving to maintain and reinforce the high market position of partners and clients of the Institute.

The research and development works of the Institute focus on the following main directions:

- power electronics devices for renewable energy sources and for transfer of energy to power grids,
- systems for acquisition and collection of energy from renewable and alternative sources (e.g. fuel cells, solar collectors, supercapacitors),
- power electronics drives of medium and high power, and electric machines,
- DC and AC electric traction power supply systems,
- modern traction drives of great power, and vehicle control systems,
- hybrid power supply systems for traction vehicles,
- charging stations for vehicles with electric drives,
- energy-saving electrotechnical materials,
- advanced and intelligent materials as well as biomaterials and bioceramics for use in medicine, food industry, and electrical engineering,
- lighting technology with special consideration for energy saving and health,
- switchgear and electrical power devices in the entire range of DC and AC transmission voltages.

Photovoltaic 4,2kWp research instalation

Cooperation offer

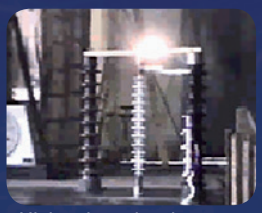
Thank you for your interest in the Electrotechnical Institute, which provides for more than 70 years support for companies in the electrical industry in the following areas:

1. Testing and Certification of electrotechnical products

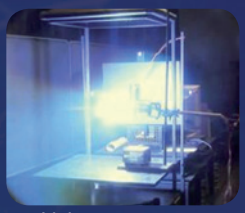
Electrotechnical Institute has accredited laboratories that allow carrying out applied research and the issuance of a certificate confirming that the product complies with the applicable standards in Poland and the entire European Union. Testing and certification relate to lighting equipment, sources of light, lamps, lighting power systems, extension cords, electric toys, road signs with ability to show changeable messages, household equipment, power tools, electrical machines, circuit breakers and residual current devices for household use. Switchgear for high and low voltage DC and AC, fuses, circuit breakers, transformers, busbars and many others.

Exciters of the short-circuit generator
Email: zwarcia@iel.waw.pl

Internal arc fault test
Email: zwarcia@iel.waw.pl



High voltage insulator test
Email: zwarcia@iel.waw.pl



Light sources tests
Email: badania@iel.waw.pl

2. Research and Development support for companies

The staff of the Electrotechnical Institute provides support for research and development (R & D) for companies in various fields of electrical engineering. We develop, modernize, products and equipment. We have experience in the design of energy-efficient LED lighting, battery energy storage, wireless transmission of electricity, low speed wind generators, electrical machines, static converters, electric drives for bicycles, cars and locomotives. We develop high-power converters for use in electric traction, energetics and power generation in order to improve the quality of electricity, and for large renewable energy installations. We design and manufacture high power inductors and high frequency high power transformers especially for power converters. We conduct the consultative work in our field.

2MJ, 150kW supercapacitive energy storage bank for traction substations for regenerative breaking
Email: nte@iel.waw.pl

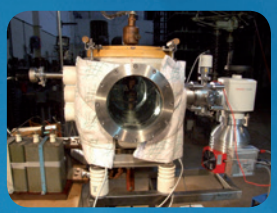
3kV, 5MW, High power DC/AC drive and 3kV, 2x160kW static converters for railway
Email: npm@iel.waw.pl

3000VDC, 1700A traction rectifier
Email: npm@iel.waw.pl

Design and production of energetic and traction insulators
Email: biuro@izolatory.pl

3. Joint scientific and research projects

Electrotechnical Institute conducts research activities under national and international projects, mainly in Europe. The subject of the research are modern electrical engineering materials such as photovoltaic cells, magnetic materials, fuel cells, composite materials, electrotechnical ceramics, powder technologies, piezoelectric materials, electrical insulating mass for special applications, electrical insulating varnishes and enamels, nanotechnology, and more.



Researches of switchgear vacuum chamber
Email: nwm@iel.waw.pl

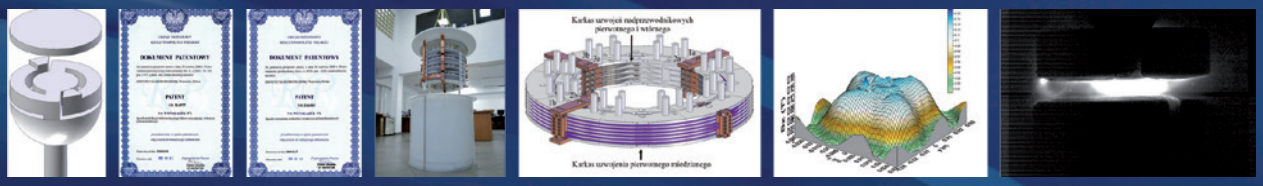
Medium voltage superconductive short-circuit current limiter for electrical grids
Email: j.kozak@iel.waw.pl

1MW, 6kVAC multilevel power converter
Email: npm@iel.waw.pl

Polymer solar cell
Email: ielow@iel.wroc.pl

Latest Patents

- "Superconducting Short-Circuit Current Limiter", email: j.kozak@iel.waw.pl
- "Vacuum Chamber Contact for Electric Switch", email: nwm@iel.waw.pl
- "Method for Modification of Polyesterimide Impregnating Insulating Varnish in Order to Enhance the Resistance to Partial Discharges", email: ielow@iel.wroc.pl
- "Method for Production of Insulators from Polymer-Concrete Composites", email: ielow@iel.wroc.pl
- "Method for Production of Magnetic Absorber for Electromagnetic Radiation Screens, the Magnetic Absorber for Electromagnetic Radiation Screens, and Application of Magnetic Absorber", email: ielow@iel.wroc.pl



Prime Minister Award

The high quality of our research and implementation works has been confirmed by numerous awards. Polish Prime Minister Mr Donald Tusk (presently the President of European Council) has awarded us with the Second Prize of the Prime Minister for outstanding scientific and technical achievements in 2013. The prize was handed over by the next Polish Prime Minister Mrs. Ewa Kopacz.

Prof. Strzelecki's research team during ceremony

Other prizes and awards

1. **Diploma of the Minister of Science and Higher Education in 2015** for the study titled: "Synchronous Electric Machine with Contactless-Supplied Electromagnetic Excitation."
2. **Diploma of the Minister of Science and Higher Education in 2014** for the study titled: "Power Supply System for Discharge Lamps and Method for Its Control."
3. **Special prize awarded by the International Federation of Inventors' Associations (IFIA) and SILVER MEDAL at the 7th International Warsaw Invention Show (IWIS) 2014** for the study entitled: "Superfast Catalysis."
4. **SILVER MEDAL at the 7th International Warsaw Invention Show (IWIS) 2014** for the study titled: "Application of Semiconducting Light Sources in Medicine."

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