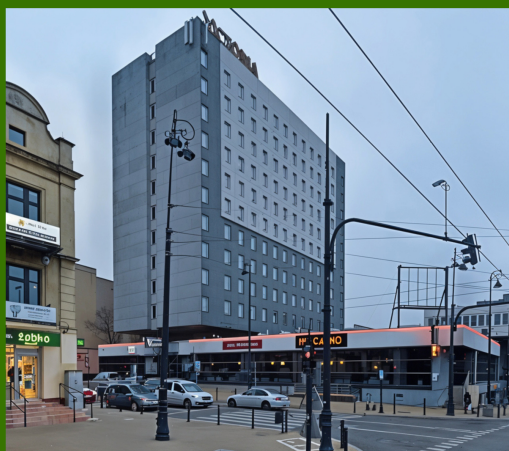# 11th International Conference

September 12-15, 2024

Electromagnetic Devices and Processes in Environment Protection

Lublin
VICTORIA Hotel

Conference Program

ElmECO

	9^{00} – 10^{00}	Registration	

10^{15} – 11^{15} Opening session

11^{30} – 12^{30} Anniversary session: "60th anniversary of Faculty of Electrical Engineering and Computer Science of Lublin University of Technology" and 30th anniversary of ELMECO Conference.

12^{30} – 14^{00} Lunch

<table>
<tr><td colspan="3" align="center">ORAL SESSION 1</td></tr>
<tr><td>14^{00} – 14^{20}</td><td>O1</td><td>BARTEK GŁOWACKI, Decentralised energy infrastructure integrated with superconductivity, hydrogen and natural gas</td></tr>
<tr><td>14^{20} – 14^{40}</td><td>O2</td><td>MARIUSZ STĘPIEŃ, Recent development of HTS large scale applications for energy transition</td></tr>
<tr><td>15^{00} – 15^{20}</td><td>O3</td><td>WALID HELOU, Overview of the high power continuous-wave Ion Cyclotron Range of Frequencies system of the ITER tokamak</td></tr>
<tr><td>15^{20} – 15^{40}</td><td>O4</td><td>UMANAND LOGANATHAN, Energy internet - the next generation smart grid</td></tr>
<tr><td>15^{40} – 16^{00}</td><td>O5</td><td>OLEKSII GIRKA, The high voltage RF resonator test facility for the new vacuum feedthrough of the ASDEX Upgrade ICRF antennas</td></tr>
</table>

16^{00} – 16^{30} Coffee break

<table>
<tr><td colspan="3" align="center">ORAL SESSION 2</td></tr>
<tr><td>16^{30} – 16^{50}</td><td>O6</td><td>AGNIESZKA ŁĘKAWA-RAUS, Functional electronic materials based on wood, carbon nanotubes, and graphene</td></tr>
<tr><td>16^{50} – 17^{10}</td><td>O7</td><td>ALEKSANDER VAHL, Via bottom-up synthesis of nanoobjects and nanocomposites towards brain-inspired electronics</td></tr>
<tr><td>17^{10} – 17^{30}</td><td>O8</td><td>DANIIL NIKITIN, Gas-aggregated nanoparticles and where to apply them: from optics to neuromorphic science</td></tr>
<tr><td>17^{30} – 17^{50}</td><td>O9</td><td>ZBIGNIEW KOŁACIŃSKI, How to destroy cancer cells with nanotechnology?</td></tr>
</table>

19^{00} – 21^{30} Dinner

Thursday, 12/09/24

		ORAL SESSION 3	
	$9^{00} - 9^{20}$	O10	KENJI EBIHARA, Ozone nano-mist generation by dielectric barrier discharges and automatic remote insect pest disinfection system in agriculture
	$9^{20} - 9^{35}$	OL1	THAN NU NU SAN, Visualization and Calibration Free Quantification of Two-Dimensional Sound Pressure Distribution with Optical Wave Microphone CT Scanning
	$9^{35} - 9^{50}$	OL2	HTET LIN AUNG, Estimation the direction of arrival sound source using optical wave microphone and raspberry pi camera module
Friday, 13/09/24	$9^{50} - 10^{05}$	OL3	SI THU HAN, Phase distribution of acoustic pressure visualized by optical wave microphone within the distance of one-cycle wavelength of acoustic wave
	$10^{05} - 10^{20}$	OL4	NWAY HTET HTET MYO, Synchronized Investigation of pressure wave influence on atmospheric pressure plasma jet and plasma-induced liquid flow using optical wave microphone and high-speed camera
	$10^{20} - 11^{40}$		Poster session + coffee break
		ORAL SESSION 4	
	$11^{40} - 12^{00}$	O11	ANDRZEJ DEMENKO, Development of Methods for Modeling Low-Frequency Electromagnetic Field
	$12^{00} - 12^{20}$	O12	NATALIIA ISTOMINA, Multi-agent simulation of switched reluctance motors
	$12^{20} - 12^{40}$	O13	DARIUSZ ZIELIŃSKI, Eliminating the current pulsations at the terminals of electrochemical energy storage during the asymmetrical operation of a 4-wire converter
	$12^{40} - 13^{00}$	O14	WOJCIECH JARZYNA, Improving the efficiency of a three-phase transformer with a 4-wire DC/AC converter for voltage symmetry in asymmetrical networks with PV sources
	$13^{00} - 14^{00}$		Lunch
	$14^{30} - 18^{00}$		Excursion #1
	$19^{00} - 24^{00}$		Gala dinner

		ORAL SESSION 5	
Saturday, 14/09/24	$9^{00} - 9^{20}$	O15	MAKIKO KOBAYASHI, Sol-Gel Composite Material Development for Energy Harvesting
	$9^{20} - 9^{35}$	OL5	SEIRYU UEDA, Proposal for Security System using Optical Wave Microphone with long-distance laser beam
	$9^{35} - 9^{50}$	OL6	RYOTA ONO, Wearable Piezoelectric Microphone Using Sol-Gel Composite
	$9^{50} - 10^{05}$	OL7	YUKINO TOKUSHIGE, Effect Of Mixing Ratios On Different Grain Sizes in Pb(Zr,Ti)O3/ Pb(Zr,Ti)O3
	$10^{05} - 10^{20}$	OL8	MAKO NAKAMURA, Nitrogen Spray Corona Discharge Method for Poling under High Humidity
	$10^{20} - 10^{35}$	OL9	VOLODYMYR HERA, Research of dependences of engine oil viscosity on electrical parameters for quality control in a cyber-physical measurement system
	$10^{35} - 11^{00}$		Coffee break
			ORAL SESSION 6
	$11^{00} - 11^{20}$	O17	MAASAKI YAMAZATO, Antibacterial properties of iodine-doped amorphous carbon films
	$11^{20} - 11^{40}$	O18	SHINI-CHI AOQUI, Observation of Seed Condition Change by Atmospheric Pressure Plasma Irradiation
	$11^{40} - 12^{00}$	O19	MARIUSZ NAJGEBAUER, Pro-ecological aspects of soft magnetic material applications
	$12^{00} - 12^{20}$	O20	OLEKSANDER BOIKO, Key factors enhancing the electrical properties of nanofluids. A mini-review of the applications in the energy-related sectors
	$12^{20} - 13^{30}$		Lunch
	$15^{00} - 16^{15}$		Session in Lublin Scientific Society: KRZYSZTOF KLUSZCZYŃSKI, Reflective lecture and piano concert *Modelling, Simulation and Music*
	$16^{15} - 17^{30}$		Excursion #2 (Old City)
	$17^{30} - 18^{30}$		Visiting of Perła Brewery and local beverages testing
Sunday, 15/09/24	$09^{00} - 10^{00}$	CS	CLOSING SESSION
	$10^{00} - 11^{00}$	RF	REFRESHMENTS

ElmECO

Poster Session Schedule

P1   KRZYSZTOF HABELOK Comparison Study of Critical Current Angular Dependence in YBCO Tapes

P2   GRZEGORZ KOMARZYNIEC Cooperation of the plasma reactor with a converter power supply equipped with a five-limb matching transformer of special design

P3   JANUSZ KOZAK Study on Recovery Time of Conduction-Cooled Resistive Superconducting Fault Current Limiter

P4   KATARZYNA WOJTERA Exploring the Interaction of Ferromagnetic Nanoparticles with RF Electromagnetic Fields for Medical Purposes

P5   MICHAŁ JELEŃ Modern training courses increasing awareness of environmental protection

P6   MICHAŁ MAJKA The new model of conduction-cooled current leads for superconducting fault current limiters

P7   KATARZYNA MRÓZ Application of machine learning methods to the analysis of brain neural networks: perspectives and potential benefits

P8   MARIUSZ HOLUK Radiated Emission of PLC Controllers Used in Drive Systems

P9	RYSZARD GOLEMAN Characteristics of a compact induction motor model with 50Hz/150Hz frequency converter and 3/2 number of phases
P10	PAWEŁ SURDACKI Analysis of the properties of HTS 2G SCS and SF windings during failure states of superconducting transformers
P11	TOSHIYUKI NAKAMIYA Phase distribution of ultrasonic field visualized by optical wave microphone CT scan
P12	JOANNA KOZIEŁ Analysis of electricity consumption in road lighting installations
P13	MICHAŁ LECH Photographic analysis of a low-current, vacuum electric arc using an ultrafast camera
P14	JOANNA MICHAŁOWSKA Determination of the typical course values of aircraft parameters for the new measurement system in the case of aircraft takeoff and landing
P16	HENRYKA DANUTA STRYCZEWSKA Overview of cold plasma and high temperature superconductors application in medicine
P17	KRZYSZTOF NALEWAJ Effects of the operation of a cogeneration system on the example of an installation in a sugar factory
P18	MICHAŁ AFTYKA The influence of the type of plasma reactor power supply on the possibility of regulating the discharge power in process gases
P19	RADOSŁAW GAD System for Decision Monitoring Technical Objects