CONFERENCE PROGRAMME - GRE 2018

25 June 2018 (Monday)

8:00-10:00	Registration and welcome coffee
10:00-10:30	**OFFICIAL OPENING**
10:30-13.45	**PLENARY SESSION**
10.30-11.00	**Areas and scope of application of the results of the first research task** *Development of technologies for high-efficiency "zero-emission" coal-fired power plants with flue-gas CO^2 capture* **of the strategic project Advanced Power Generation Technologies;** *Prof. T. Chmielniak, Prof. A. Rusin*
11.00-11.30	**Simulation of work of a power plant boiler under fast load changes;** *Prof. J. Taler; W. Zima, D.Sc.*
11.30-12.00	**Chemical Looping Combustion of solid fuels: Polish-Norwegian research project;**- *T. Czakiert, D.Sc.; Prof. W. Nowak*
12.00-12.30	**Quo Vadis: where is the energy sector going? From large-scale energy generation to distributed generation, and what is Poland's way?;** *Prof. J. Kiciński*
12.30-13.00	**Breakthrough innovations in the power sector;** *Prof. W. Nowak*
13.00-13.30	**Selected aspects of hydrogen-based electricity generation;** *Prof. J. Kotowicz*
13.30-13.45	**Modernization of TWW-200 generators as a chance to rebuild the power system's capacity;** *Rafał Maniara, D.Sc., Eng., Technology and Development Director, Ethos Energy Poland S.A.*
13:45-15:00	LUNCH AT THE HOTEL RESTAURANT
15:00-17:00	**DISCUSSION PANEL** with invited guests **Moderator:** *Waldemar Skomudek, D.Sc., Eng., professor at the Opole University of Technology, Dean of the Faculty of Production Engineering and Logistics*
17:00-17:30	COFFEE BREAK
17:30-19:00	**POSTER SESSION:** exhibition presentation and workshops in the exhibition hall
19:00-20:00	BREAK
20:00-24:00	GALA DINNER AT THE HOTEL RESTAURANT
26 June 2018 (Tuesday)	
8:00-9:00	BREAKFAST AT THE HOTEL RESTAURANT
9:00-14.00	**PROBLEM SESSIONS:** **- Future directions of increasing energy and environmental efficiency of power generation and consumption** - **Measurements and research in the field of renewable energy sources conversion** **- Cyber-security, operation and diagnostics**
14:00-14:45	LUNCH AT THE HOTEL RESTAURANT
14:45-16:15	**PROBLEM SESSION – cont.**
16:15:16.30	COFFEE BREAK
16:30-17:30	**POSTER SESSION / summary**
18:00-22:00	SOCIAL EVENT: GRILL PARTY

SESSION: Future directions of increasing energy and environmental efficiency of power generation and consumption

1	Prof. Olga Chernousenko, *D.Sc., Eng.,* National Technical University of Ukraine "Kyiv Polytechnic Institute"	Integrated residual-life assessment of WP rotors of 200 MW steam turbines
2	Prof. Andrzej Rusin, *D.Sc., Eng.* Institute of Power Engineering and Turbomachinery, Silesian University of Technology	Selecting optimal flexible operating conditions for power generating units, in view of their durability
3	Prof. Ałła Denisowa, *D.Sc., Eng.* Prof. Vladimird Nikulshin, *D.Sc., Eng.* Anatoliy Andrusczenko, Odessa National Polytechnic University	Energy-saving electrical heating systems with night accumulation of heat
4	Prof. Anton Mazurenko, *D.Sc., Eng.* Prof. Ałła Denisowa, *D.Sc., Eng.*	Power generating capacity and heat generating capacity interdependence control in a gas-turbine CHP plant

	Prof. Gennadiy Balasanian, *D.Sc., Eng.* Wladuslaw Spinow, *D.Sc., Eng.* Odessa National Polytechnic University	
5	Prof. Ałła Denisowa, *D.Sc., Eng.*, Odessa National Polytechnic University, Prof. Aleksandr Doroshenko, *D.Sc., Eng.* Odessa National Academy of Food Technologies Lidia Ivanowa, M.Sc. Eng., Odessa National Polytechnic University	Efficiency of low-temperature evaporative water coolers
6	Prof. Vladimird Nikulshin, *D.Sc., Eng.* Prof. Ałła Denisowa, *D.Sc., Eng.*, Sergiy Melnik, M.Sc. Eng., Odessa National Polytechnic University	Advanced thermodynamic analysis on exergy flow graphs
7	Prof. Anton Mazurenko, *D.Sc., Eng.*, Prof. Ałła Denisowa, *D.Sc., Eng.*, Prof. Gennadiy Balasanian, *D.Sc., Eng.*, Wladuslaw Spinow, *D.Sc., Eng.*, Odessa National Polytechnic University	Effectiveness of sliding mode control of gas-turbine CHP installations
8	Prof. Ałła Denisowa, *D.Sc., Eng.*, Prof. Anton Mazurenko, *D.Sc., Eng.*, Wladuslaw Spinow, *D.Sc., Eng.*, Odessa National Polytechnic University	Increased efficiency of interaction between CHP installations and heat supply systems
9	M.K. Bezrodny, A.V. Novykh, N.O. Prytula, T.O. Misiura, National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute»	Thermodynamic efficiency of combined heat pump system of heating and ventilation with use of heat of ventilating emissions and wastewater
10	G. Varlamov, *D.Sc., Eng.*, W. Skomudek, A. Kapustjansky, O. Daschenko.	Modern challenges of the fuel and energy complex of Ukraine and the task of their solution
11	S. Kaim, *D.Sc., Eng.*	Carbon dioxide storage and the risk of artificially caused seismic events in Poland
12	S. Kaim, *D.Sc., Eng.*	Molecular theory of gas and dust outbursts in coal mines, and the safety of blasting works
13	Piotr Żymełka, Maciej Żyrkowski, Tomasz Janda, Henryk Kubiczek, PGE Energia Ciepła S.A.	Optimized planning of electricity and heat generation in gas-fuelled CHP plants, based on mathematical modelling
14	Piotr Ostrowski, *D.Sc., Eng.*, profesor at Silesian University of Technology, Izabella Maj, M.Sc.	WR25 boiler's integration with an *OTERM* alternative fuel gasification installation
15	Anna Maciejczyk, M.Sc. SBB ENERGY S.A.	SBB Energy SA innovative solutions for flue gas denitrification: the example of Opole Power Plant

SESSION: Power measurement and testing in power conversion of Renewable Energy Sources

1	Prof. Jan Kiciński, *D.Sc., Eng.*, corresp. member of the Polish Academy of Sciences*;* Patryk Chaja, *D.Sc., Eng.*	Polish Academy of Sciences' KEZO research centre – new opportunities in the field of research on power conversion of RES
2	Prof. Fedir Matiko, *D.Sc., Eng.,* Prof. Yevhen Pistun, *D.Sc., Eng.,* Vitalii Roman, Halyna Matiko, Lviv Polytechnic National University, Lviv, Ukraine	Analysis and Minimization of Natural Gas Volume Imbalances in Gas Transmission and Distribution Systems
3	Roman Fedoryshyn, *D.Sc., Eng.,* Prof. Yevhen Pistun, *D.Sc., Eng.,* Prof. Fedir Matiko, *D.Sc., Eng.*	Effect of Flow Temperature Measurement Error on the Accuracy of Natural Gas Metering
4	Urszula Warzyńska, *D.Sc., Eng.,* prof. Wacław Kollek, *D.Sc., Eng.,* Piotr Osiński, *D.Sc., Eng.,* Institute of Logistics, Transport and Hydraulic Systems Operation, Faculty of Mechanical	Measuring pressure pulsation in gas pipelines

	Engineering, Wroclaw University of Technology	
5	Mateusz Turkowski, *D.Sc., Eng.,* professor at Warsaw University of Technology; M. Szudarek, A. Szczecki, Warsaw University of Technology, Institute of Metrology and Biomedical Engineering	Uncertainty analysis in diagnostics and operation of long-distance pipelines
6	Mirosław Kabaciński, *D.Sc., Eng.,* Prof. Janusz Pospolita, *D.Sc., Eng.*	Fluid stream measurement in boiler technology
7	Andrzej Mrowiec, *D.Sc., Eng.,* Faculty of Technology, State Higher School of Vocational Education in Kalisz	Measuring volumetric flow rate of oil with the use of micro-flange
8	Dariusz Kasprzak, *D.Sc., Eng.,* State Higher School of Vocational Education in Kalisz Andrzej Mrowiec, *D.Sc., Eng.,* Faculty of Technology, State Higher School of Vocational Education in Kalisz	Pressure sensors with a diaphragm: correlation measurements
9	Jakub Osuchowski, M.Sc. Paweł Michalski, *D.Sc., Eng.,* Bogdan Ruszczak, *D.Sc., Eng.,* Faculty of Electrical Engineering, Automatics and Information Technology, Opole University of Technology	Assessment of possibilities of object classification, location and detection in digital images
10	Jakub Osuchowski, M.Sc.	Visual methods to detect power line insulation damages
11	Sławomir Szymocha, M.Sc.	Industrial area pollution level measurements with UAV-based systems
12	Sławomir Szymocha, M.Sc.	Use of UAV-based system as a tool for crisis situations
13	HERON ELECTRIC	Polish electric car: the power of Polish inspiration

SESJA: Cybersecurity, operation and diagnostics

1	Jan Sadecki, *D.Sc., Eng.,* Tomasz Turba, *M.Sc., Eng.,* Michał Podpora, *D.Sc., Eng.,* Opole University of Technology	Cyber-security of the power sector, as a part of the education offer of the Opole University of Technology
2	Mariusz Gola, *D.Sc., Eng.,* Artur Fonfara, *M.Sc., Eng.*	Cyberspace: an analysis of risks for contemporary people
3	Gerard Bursy, *D.Sc., Eng.*	Virtual network security
4	Jakub Wojtanowski, M.*Sc., Eng.*	SSL security: threats and vulnerabilities
5	V. Khoma, *D.Sc., Eng.* A. Smolczyk, *D.Sc., Eng.*	Cyber-security in the context of critical infrastructure security
6	M. Podpora, *D.Sc., Eng.,* Tomasz Turba, *M.Sc., Eng.*	Nested honeypot implementation into IT infrastructure of a company (power plant?), as a component of internal network security system
7	M. Podpora, *D.Sc., Eng.,* Tomasz Turba, *M.Sc., Eng.,* Agnieszka Różańska, *M.Sc., Eng.,* Aleksandra Kawala-Janik, *D.Sc., Eng.,* Opole University of Technology	Issues and changes relating to the implementation of the GDPR (the EU's latest data protection regulation): a review
8	M. Podpora, *D.Sc., Eng.,* Aleksandra Kawala-Janik, *D.Sc., Eng.,* Marcin Majer, *M.Sc., Eng.,* Tomasz Turba, *M.Sc., Eng.,* Opole University of Technology	Use of open-source intelligence in the recruitment and verification of company's employees and contractors
9	Łukasz Miszuda, *M.Sc., Eng.*	Electromagnetic field measurement with a flying platform
10	Paweł Rydlik, *M.Sc., Eng.*	Rotor rewind station as a place for synchronous generators' rotor balancing and electrical and mechanical testing
11	Piotr Paduch, *D.Sc., Eng.,* Prof. Sławomir Szymaniec, *D.Sc., Eng.*	Apparatus-related aspects of electric power generating machines' winding insulation diagnosis based on partial discharge measurements
12	Henryk Majchrzak, *D.Sc., Eng.*	Peak demand balancing in power systems

Poster session:

1. Laboratory: PV cell and solar collector operation testing
2. Laboratory: Heat pump operating parameter testing
3. Laboratory: Phase-change material and heat storage testing
4. Laboratory: Cogeneration heat and power plant demonstration and research
5. Laboratory: Environmental diagnostics and testing
6. Laboratory: Micro-rotors and bearings for micro-scale power plants
7. Laboratory: Thermal processing of biomass and biofuels
8. Laboratory: Wind power
9. Laboratory: Flue gas cleaning
10. Laboratory: Rapid prototyping
11. Laboratory: Functional materials
12. Laboratory: Micro-scale CHP demonstration systems
13. Laboratory: Energy monitoring and management in buildings
14. Laboratory: the Polish electric car
15. Thermal and physical properties and elementary composition of biomass from perennial energy plants, depending on the harvesting time: *Mariusz Stolarski*