

POSTERS

Thermodynamic analysis of a real gas turbine cycle compared to the ideal Bryton-Joule cycle

- Piotr Banaszekiewicz, Janusz A. Szymczyk

Theoretical and experimental modelling of shell-and-tube heat exchanger with segmental baffles

- Janusz T. Cieśliński, Paweł Dąbrowski, Kamil Stasiak, Krzysztof Tesch, Bartosz Dawidowicz, Maciej Fabrykiewicz, Jacek Kropiwnicki

Comparative analysis of the operational and design parameters selected of commercial 1 kW PEM fuel cells

- Bartosz Dawidowicz

Experimental analysis of carrot root drying kinetics and shrinkage using image data analysis

- Blanka Jakubowska

Analysis of the effect of graphite morphology and austempering parameters on selected mechanical properties

- Aneta Jakubus, Marek Sławomir Soiński, Dana Bolibruchová, Grzegorz Stradomski, Maciej Nadolski

Analysis of new possibilities for manufacturing pneumatic cylinder piston sealing rings using additive methods

- Ryszard Jasiński, Kacper Dynowski

An attempt to evaluate the welding of ductile cast iron

- Marcin Kłos, Ryszard Wójcik, Aneta Jakubus

Impact of bore-to-stroke ratio on cooling output of cryogenic Stirling device

- Jacek Kropiwnicki, Michał Śmieja

Air-cooled photovoltaic-thermal roofs: Evaluation of heat transfer enhancement by impinging jets

- Jakub Łukasik, Jan Wajs

Evaluation of centrifugal casting conditions on the mechanical properties of CuZn39Pb2 brass

- Maciej Nadolski, Grzegorz Stradomski, Bartosz Barczyk, Aneta Jakubus

Optimisation of laser cutting parameters for high-quality cast iron

- Dariusz Perkowski, Aneta Jakubus, Ryszard Wójcik

Demand Side Response in Intelligent Electricity Demand Management Systems – Technological and Economic Analysis

- Hanna Sylwia Piwowarska, Marian Piwowarski

Virtual Laboratories for Mechanical Engineering in the Indian Virtual Labs Project: Analysis of Selected Exercises in Mechanical Vibrations and Dynamics

- Jerzy Podhajecki

Hydrogen as an Alternative Fuel for Dual-Fuel Diesel Engines: Challenges and Opportunities

- Denys Stepanenko

Principle of conservation of momentum in steady state flows and Newton's second law

- Janusz A. Szymczyk, Heiko Meironke, Thomas Panten

Preliminary studies on the identification of the combustion process in a compression-ignition engine based on vibroacoustic signals

- Michał Śmieja, Denys Stepanenko, Jakub Banach, Jacek Kropiwnicki, Zbigniew Kneba



XXVII International Symposium RESEARCH-EDUCATION- TECHNOLOGY

Gdansk, May 28th – 29th 2026

The Final Program



Gdansk University of Technology
Faculty of Mechanical Engineering
and Ship Technology



Patronage of the Rector
of Gdansk University of Technology

Prof. Krzysztof Wilde

THURSDAY, May 28th

08.30 Registration – building no. 18

09.00 Opening ceremony – room 008

9.30 – 10.50 Session 1

Chairman: Prof. Jacek Kropiwnicki

(15 min. presentation + 5 min. discussion)

09.30 *Bionic Low-Friction Coating for Underwater Drones*

- Debayan Das, Lars-Uve Schrader

09.50 *Comparative Experimental Study of Lift and Drag Characteristics of a Hydrofoil in Towing Tank and Wind Tunnel*

- Heiko Meironke, Thomas Panten, Moritz Schieler

10.10 *Human-robot collaboration to support door hinge disassembly tasks*

- Marek Galewski, Michał R. Mazur, Panorios Benardos, George-C. Vosniakos, Emmanuel Stathatos, Zdzisław Kwizdański

10.30 *Influence of active power generation from Renewable Energy Sources on HV/MV transformer operation parameters*

- Tadeusz Trumiński, Jerzy Podhajewski, Janusz A. Szymczyk

10.50 – 11.20 Poster session/Coffee break

11.20 – 13.00 Session 2

Chairman: Prof. Lars-Uve Schrader

(15 min. presentation + 5 min. discussion)

11.20 *Evaluation of the critical cooling rate for precipitation hardening of EN AW-6061 and its precipitation hardening response*

- Sinja Helea Rupp, Benjamin Wolfram, Petra Maier

11.40 *Modelling interface effects in bicontinuous composites*

- Jana Wilmers, Ilya Okulov, Swantje Bargmann

12.00 *Effects of laser power and scanning speed on the melt pool dimensions of AlSi10Mg powders in laser powder bed fusion*

- Normen Fuchs, Khausik Narasimhan, Alexander Raßloff, Ulrike Gebhardt, Markus Kästner

12.20 *Holistic approach to optimizing the thermoforming process: materials, process, and environment*

- Doroła Bujak, Anna Konstanciak

12.40 *Effect of tool geometry and welding parameters on shear strength and microstructural characteristics of AA6061-T6/PMMA friction stir lap joints*

- Lingerew Melaku, Jacek Tomków

13.00 – 14.00 Lunch – building no. 18

14.00 – 16.00 Session 3

Chairman: Prof. Heiko Meironke

(15 min. presentation + 5 min. discussion)

14.00 *Directions of development of satellite positive displacement machines*

- Pawel Śliwiński

14.20 *Project of an automated system to assist in fatigue testing of flexible suspension cables*

- Joanna E. Kostrzewa, Wojciech Zajac

14.40 *Water Electrolyser – Oxygen removal and Hydrogen drying / Water Electrolyzer System Performance – Evaluation of VDI 4635-3.1*

- Albrecht Eicke, Lars Jürgensen, Andreas Krüger, Sławomir Smoleń / Lars Jürgensen, Sławomir Smolen, Albrecht Eicke, Andreas Krüger

15.00 *Load forecasting using multiple linear regression and neural networks*

- J. Bosse, B. Ingwersen, S. Foppe, L. Wilde, Ingo Haug

15.20 *AdBlue pumping system - testing methodologies and performance evaluation*

- Zbigniew Kneba

15.40 *Investigation and elimination of cavitation in the feedwater pumps of a combined cycle power plant*

- Piotr Banaszkiwicz, Janusz A. Szymczyk

19.00 Dinner - Hotel Eureka

(Sopot, Emilii Plater 7/9/11)

FRIDAY, May 29th

10.00 – 11.00 **Walking tour briefing** – building no. 18, room 212

- prof. Michał Klugmann

11.30 – 12.30 Guided Tour of the Old Sobieski Reservoir

13.00 – 14.00 Lunch – building no. 18

14.00 – 15.30 *Secrets of Gdańsk University of Technology – a tour of forgotten places*
- prof. Michał Klugmann

Gdańsk University of Technology

Campus Map available at:



campus.pg.edu.pl



<https://wimio.pg.edu.pl/en/ret2026>