

CMES 2022 Conference Programme

Thursday, 24th November 2022

- 10.00** Departure from Lublin to Zamosc (from Lublin University of Technology)
- 13.30** Registration opening at the Academy of Zamość
- 14.00-15.00** Lunch
- 15.00-15.20** Opening of the conference at the Academy of Zamość
- 15.20-16.00** Special Lectures
- 16.00-16.15** Coffee break
- 16.15-17.15** Session I – Conference room at Academy of Zamość
- 18.00-19.10** Session II – poster session - Hotel “Renesans” Restaurant
- 20.00** Gala Dinner - Hotel “Renesans” Restaurant

Friday, 25th November 2022

- 9.00** Registration
- 9.30-10.00** Special Lecture – Conference room at Academy of Zamość
- 10.00-11.00** Session III
- 11.00-11.15** Coffee break
- 11.15-12.30** Session IV
- 12.30-12.45** Coffee break
- 12.45-14.00** Session V
- 14.00-14.15** Group photo
- 14.15-15.30** Lunch break - Hotel “Renesans” Restaurant
- 15.45-17.15** Session VI / Special Session VII (Energy Harvesting session)
- 17.45-18.45** Session VIII – poster session - Hotel “Renesans” Restaurant
- 19.30** Dinner - Hotel “Renesans” Restaurant

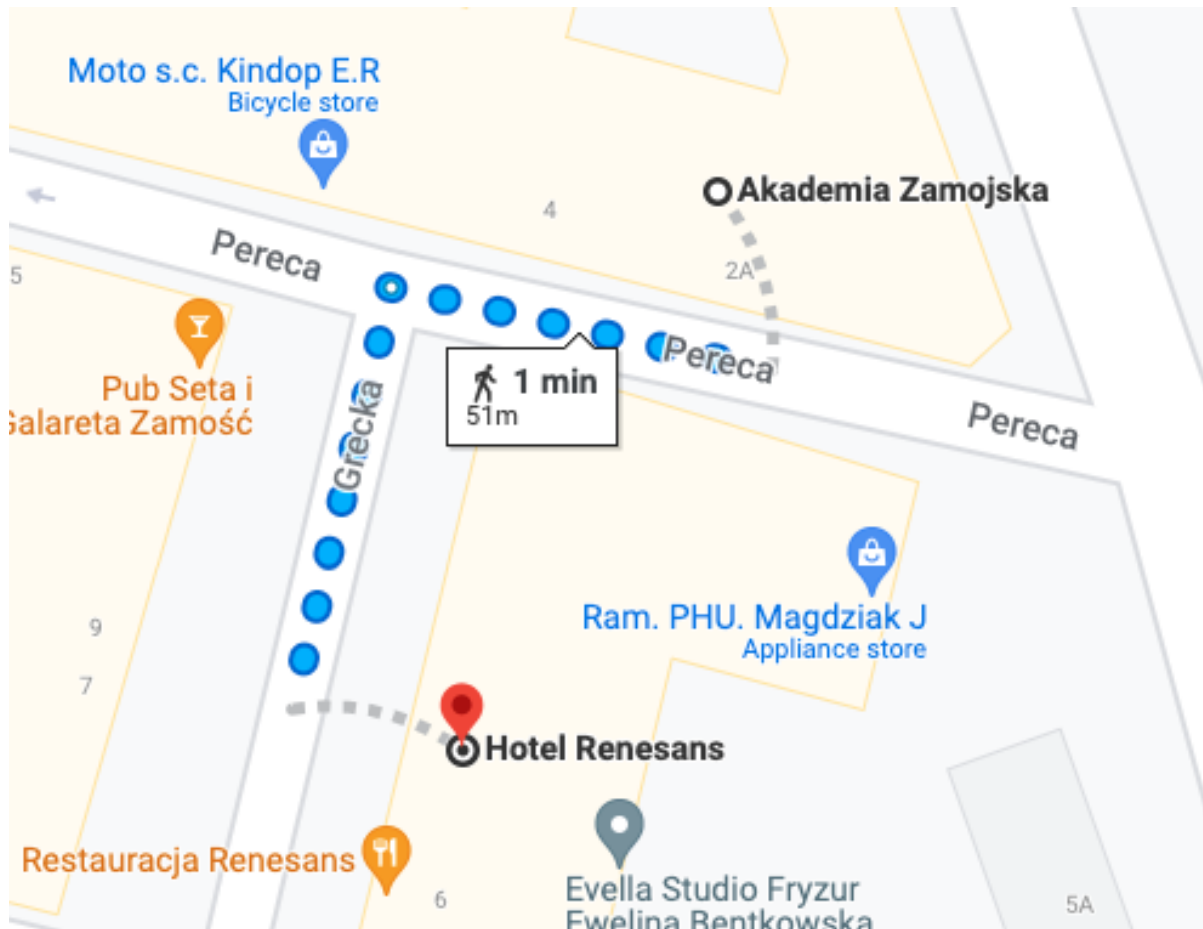
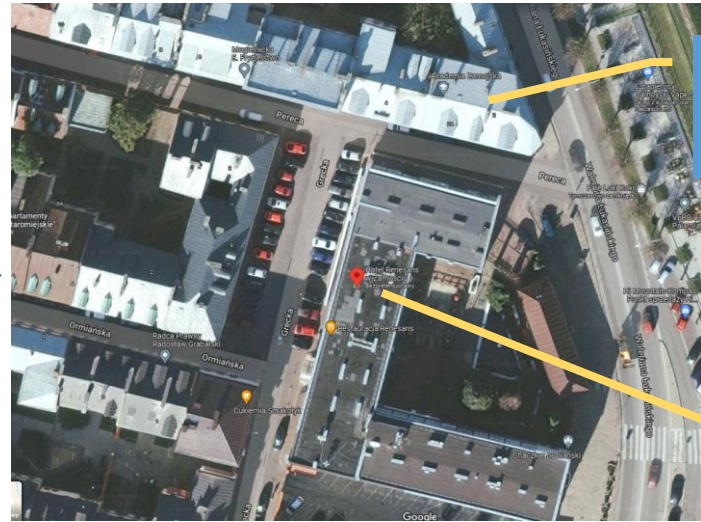
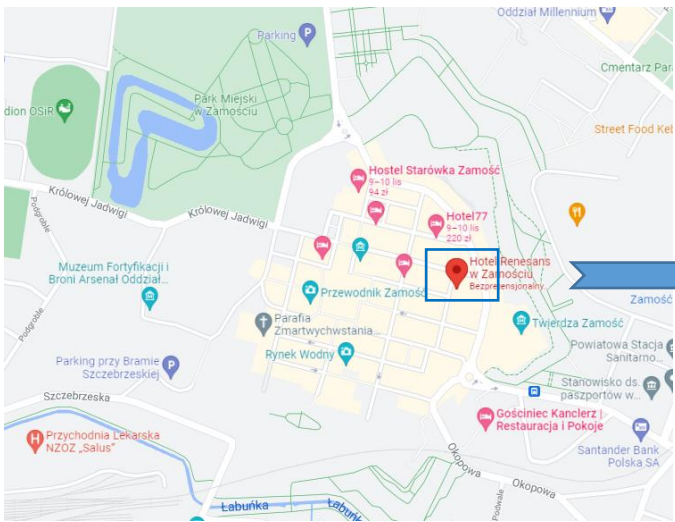
Saturday, 26th November 2022

- 8.45-9.45** Session IX – poster session - Hotel “Renesans” Restaurant
- 9.45-10.00** Conference summary
- 11.00-14.00** The sightseeing tour of Zamość
- The Arsenal Museum Of Fortifications And Weaponry - A Division Of Zamość Museum
- The Old City of Zamość - UNESCO World Heritage Centre
- 14.00-15.00** Lunch
- 15.00** Departure to Lublin via conference bus

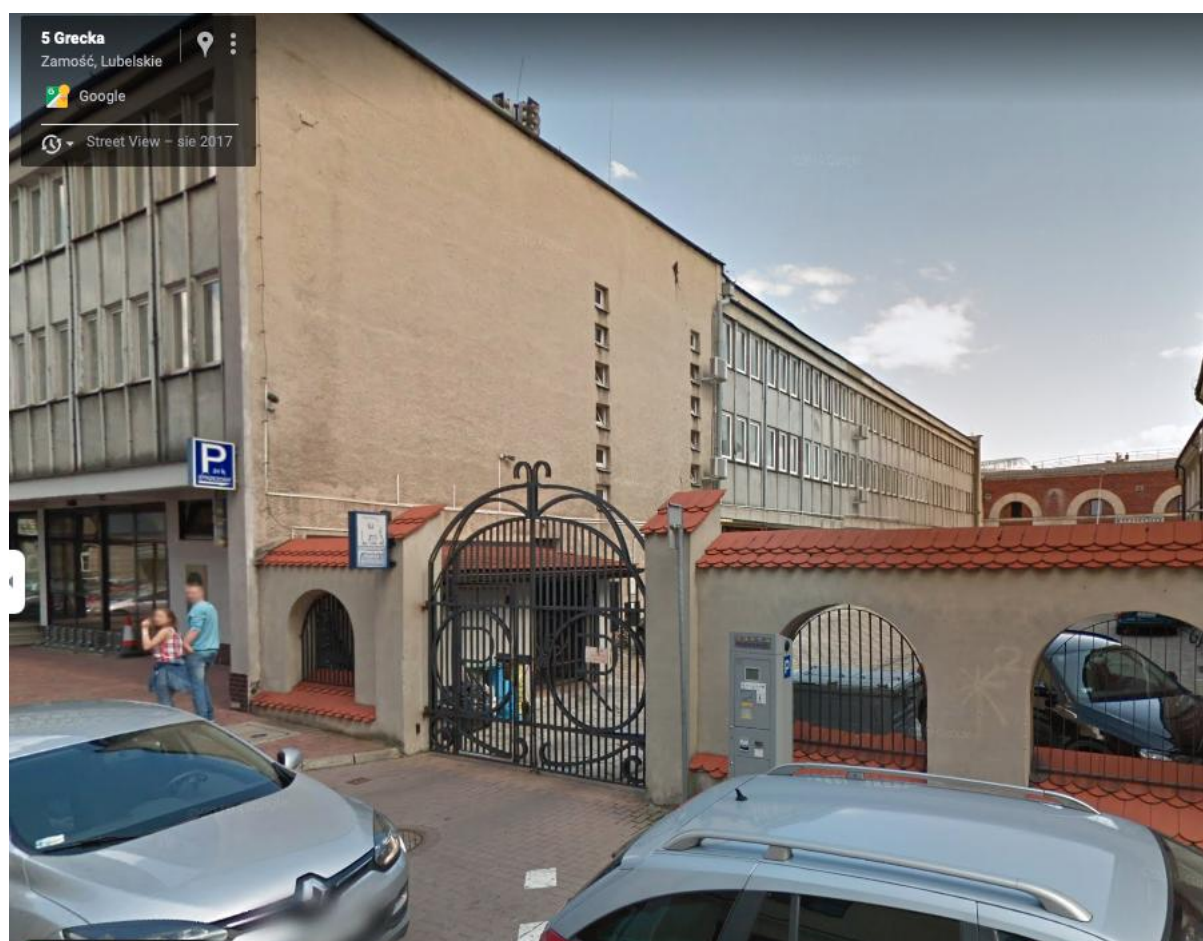
Maps

Thursday's and Friday's oral presentations take place at Academy of Zamość (Rektorat) next to Hotel "Renesans"

Poster sessions take place in a conference room at Hotel „Renesans” Grecka 6 street



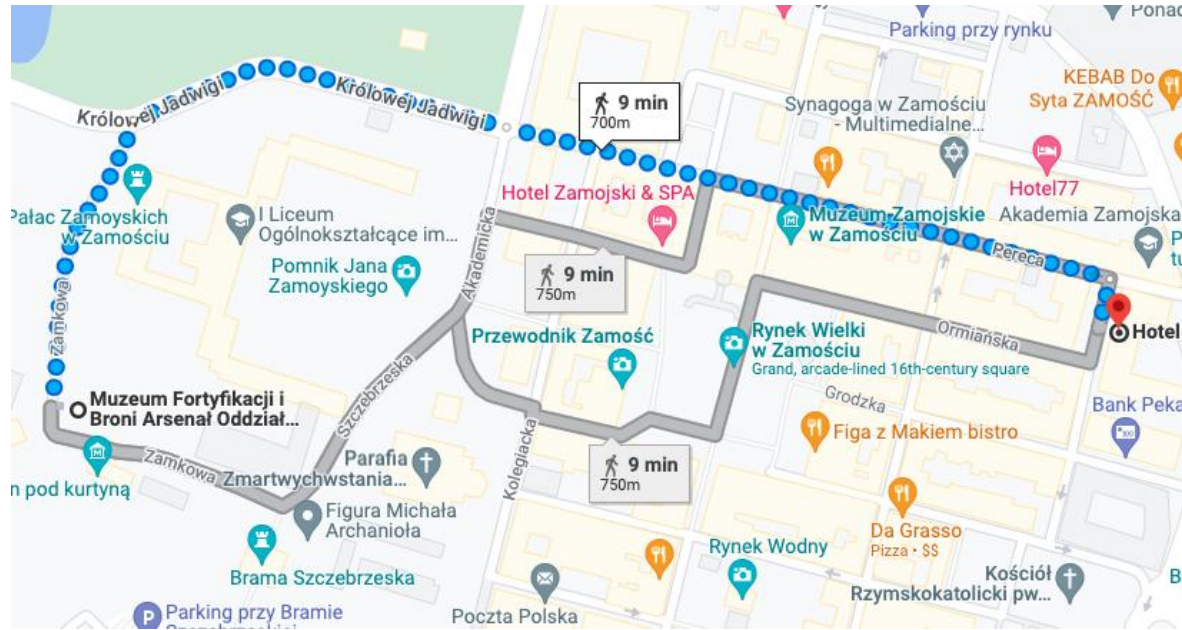
Route map: <https://goo.gl/maps/Dwk7RXZa8oKxqyg7>



Parking gate: <https://goo.gl/maps/MZ5kB7dqWx4xR4wV7>

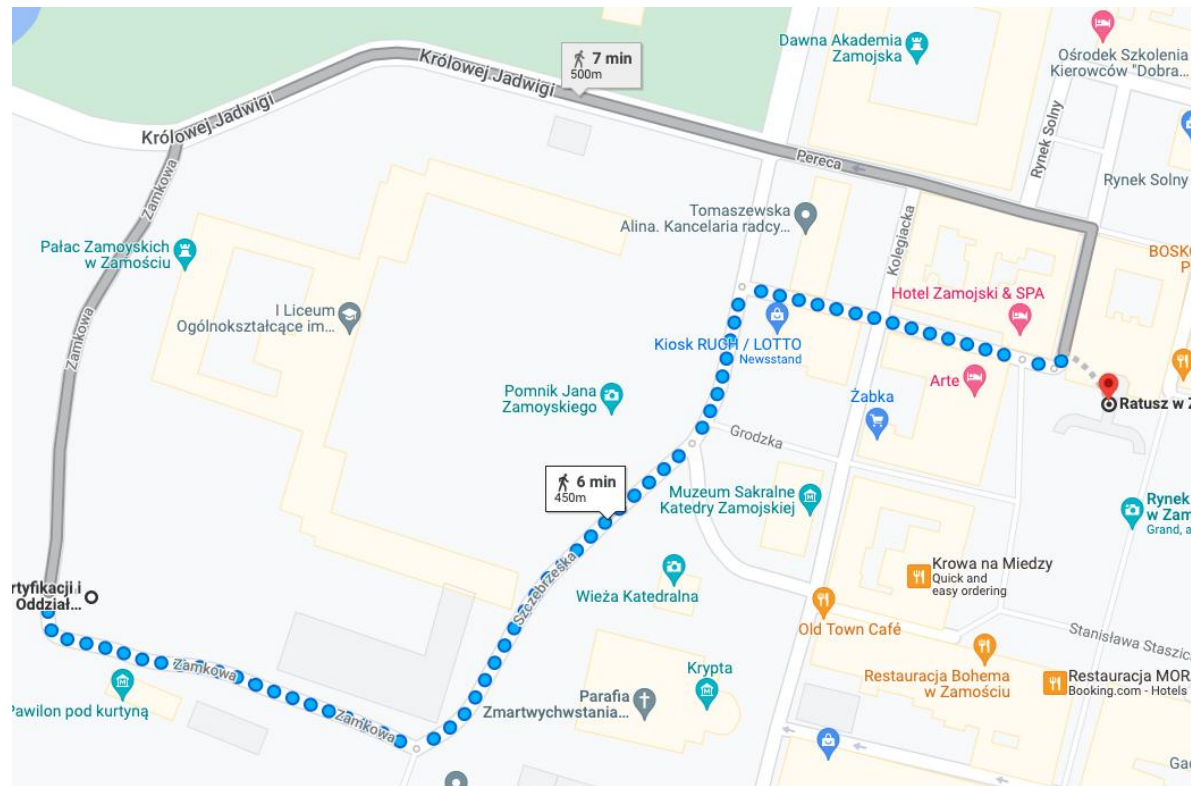
Sightseeing tours – routes

The Arsenal Museum Of Fortifications And Weaponry



Route map: <https://goo.gl/maps/NvUaHbnEQxJB82J98>

The Old City of Zamość



Route map: <https://goo.gl/maps/R2T1fi7kNJUNrRb36>

Thursday 24.11.2022

10.00	Departure to Zamość (from Lublin University of Technology, ul. Nadbystrzycka 36D)	
13.30	Registration opening at the Academy of Zamość	
14.00-15.00	Lunch	
15.00–15.20	Opening of Conference and Welcome Speeches – conference room at Academy of Zamość (next to Hotel Renesans)	
15.20–16.00	<i>Special Lectures</i> 1) <i>Chromaticity of graphs and hypergraphs and their selected applications in engineering science</i> – Ewa Łazuka, PhD 2) <i>Different approaches for data analysis applied in bioindication methods of water quality assessment</i> – Grzegorz Łagód, PhD DSc. Eng.	
16.00–16.15	Coffee break	
16.15–17.15	Session I - room A <i>Tomasz Jachowicz, Zbigniew Czyż</i>	
	<u>Jarosław Gil</u> Andrzej Polański	Application of Gillespie algorithm for simulating evolution of fitness of microbial population
	<u>Paweł Mirek</u>	Modeling of a primary air distribution in a plenum chamber of the 700 MWth circulating fluidized bed boiler
	Weronika Kruszelnicka Jan Diviš Jakub Hlosta <u>Łukasz Gierz</u> David Žurovec	Calibration of selected bulk biomaterials parameters for DEM simulation of comminution process. Case study: corn and rice grains
	Patrycja Brzeskot <u>Leszek Łatka</u>	Development of the automatic method of detection and grouping of external welding imperfections
18.00–19.10	Session II - poster session - conference room Hotel "Renesans" <i>Grzegorz Łagód, Mariusz Walczak</i>	
	P – 1 Jurijus Zaranka Jonas Matijošius Urtė Radvilaitė <u>Jacek Caban</u>	Establishing emergency sections on land roads in order to improve the quality of transport services, creating comfortable conditions for international and local traffic
	P – 2 <u>Tomasz Miłek</u>	Effect of workpiece slenderness on the numerical flow lines distribution in the cross-section of a circular-symmetric part hot die forged with a steam-air hammer
	P – 3 <u>Maciej Kowal</u>	CFRP Fatigue strengthening of old steel material
	P – 4 <u>Karolina Beer-Lech</u> Anna Skic Kamil Skic Zbigniew Stropek	Characterization of the structural and physical properties of the thermoplastic starch film with kaolinite and beeswax addition
	P – 5 Mirosław Szala	Cavitation erosion phenomenological model of thermally sprayed coatings
	P – 6 <u>Edyta Łukasik</u> Emilia Łabuć	Analysis of the possibility of using the singular value decomposition in image compression
	P – 7 Andrzej Wasiak <u>Olga Orzynicz</u> Karol Tucki Antoni Świć	Hydrogen enriched hydrocarbons as new energy resources – as studied by means of computer simulations
	P – 8 Łukasz Semkło <u>Łukasz Gierz</u>	Numerical and experimental analysis of a centrifugal pump with different rotor geometries
	P – 9 <u>Bogdan Szturomski</u> <u>Radosław Kiciński</u> Aneta Szturomska Jacek Krawczyk	Repair of closed fermentation chamber and its influence on strength properties of the tank – case study
	P – 10 <u>Katarzyna Falkowicz</u>	The influence of composite lay-up on the stability of channel-section profiles weakened by cut-outs
	P – 11 Marina Kirichenko-Babko Jaroslav Danko Jaroslava Danylkiv Roman Babko <u>Dariusz Majerek</u>	Application of unsupervised machine learning techniques to assessment of quality habitat
	P – 12 <u>Karol Tucki</u> Remigiusz Mruk	Experimental research on the influence of the composition of the fuel mixture on the operating parameters of a single-cylinder CR Diesel engine
20.00	Gala Dinner at the Restaurant of the Hotel "Renesans"	

Friday 25.11.2022

09.00 – 09.30	Registration opening	
09.30 – 10.00	<i>Special Lecture - Modern trends in manufacturing systems design in the aspect of Industry 4.0 and Industry 5.0 challenges – Arkadiusz Gola, PhD DSc. Eng.</i>	
10.00 – 11.00	Session III – room A <i>Radosław Kiciński, Arkadiusz Gola</i>	
	<u>Łukasz Sobaszek</u>	A Lean robotics approach to the scheduling of robotic adhesive dispensing process
	<u>Jakub Pizoń</u>	Cobots implementation in the era of Industry 5.0 using modern business and management solutions
	Justyna Kujawska <u>Monika Kulisz</u> Zulfiya Aubakirova	Application of artificial neural networks model to predict the levels of sulfur dioxides in the air of Zamość, Poland
	Mehdi Sharif Shourjeh <u>Jakub Drewnowski</u> M.J. Mehrani Przemysław Kowal Bartosz Szeląg	Advances in analysis, quantification and modelling of N ₂ O emission in SBRs under various DO set points
11.00 – 11.15	Coffee break	
11.15 – 12.30	Session IV – room A <i>Łukasz Gierz, Monika Kulisz</i>	
	<u>Marcin Badurowicz</u>	Use of IoT Edge approach for road quality analysis
	Błażej Badzio Agnieszka Bodziak Bartłomiej Brodawka Karol Buchajczuk <u>Maria Skublewska Paszkowska</u> Mariusz Dzieńkowski Paweł Powroźnik	Analysis of the usability and accessibility of websites in view of their universal design principles
	<u>Klaudia Słomczyńska</u> Paweł Mirek Marcin Panowski	Solar heating for Pit Thermal Energy Storage (PTES) – comparison of solar thermal and photovoltaic systems in TRNSYS 18
	<u>Michał J. Gęca</u> Mony Soeurn	Mathematical analysis of an electric car in the aspect of application of renewable energy sources
	<u>Łukasz Kokosza</u> Zbigniew Mitura	Modelling of diffraction of X-rays in perovskite superlattices
	12.30 – 12.45	Coffee break
12.45 – 14.00	Session V – room A <i>Leszak Łatka, Mirosław Szala</i>	
	<u>Magdalena Marchewka</u> Jarosław Zubrzycki	Construction aspects of intraocular artificial lenses
	<u>Sylwester Samborski</u> Izabela Korzec	Application of the acoustic emission technique for damage identification in the FRP composites
	<u>Jarosław Zubrzycki</u> Quirino Estrada Michał Staniszewski Magdalena Marchewka	Influence of 3D printing parameters by FDM method on the mechanical properties of manufactured parts
	<u>Kuraś Paweł</u> Gerka Alicja	Using inconsistency reduction algorithms in comparison matrices to improve the performance of generating random comparison matrices with a given inconsistency coefficient range
	Mariusz Walczak Mirosław Szala <u>Wojciech Okuniewski</u>	Assessment of corrosion resistance of X5CrNi18-10 steel modified by different shot peening parameters
	14.00 – 14.15	Group photo
14.15 – 15.30	Lunch break Hotel “Renesans” Restaurant	
15.45 – 17.15	Session VI – room A <i>Katarzyna Falkowicz, Sylwester Samborski</i>	
	<u>Paweł Ruchała</u> Wit Stryczniewicz	Tip vortex trajectory in the proximity of the heliport
	<u>Grzegorz Suchanek</u> Roman Filipek	Computational Fluid Dynamics (CFD) aided design of a multi-rotor flying robot for locating sources of particulate matter pollution
	<u>Paolo Sebastiano Valvo</u>	Derivation of symmetric secant stiffness matrices for nonlinear Finite Element Analysis
	<u>Quirino Estrada</u>	Bending crashworthiness of bionic thin-walled structures inspired by sugar cane stalks

	Elva Reynoso Dariusz Szwedowicz Alejandro Rodriguez-Mendez Elvis Coutiño Tomàs De la Mora Lara Wiebe Jesus Silva Carmen Torres	
	<u>Paolo Fiscaro</u> Angelo Pasini Paolo Sebastiano Valvo	Simulation of deployable cable nets for active debris removal in space
15.45 – 17.15	Special Session VII – room B – Energy Harvesting <i>Grzegorz Litak</i>	
	<u>Bartłomiej Ambrożkiewicz</u> , Zbigniew Czyż, Paweł Stączek, Andrés Omar Tiseira, Jorge García-Tiscar	Performance analysis of a piezoelectric energy harvesting system
	<u>Rohit Chawla</u>	Dynamics of a fluid-elastic system with impact
	<u>Damian Gaśka</u> Jerzy Margielewicz	Nonlinear dynamics of energy recovery systems in new design solutions based on elastic elements
	<u>Grzegorz Litak</u>	Subharmonic responses of a nonlinear energy harvester with asymmetric double well potential
17.45 – 18.45	Session VIII – poster session – conference room Hotel “Renesans”; <i>Leszak Łatka, Jakub Pizoń</i>	
P – 1	Tomasz Krakowski Hubert Ruta <u>Paweł Lonkwic</u> Arkadiusz Tofil	Construction and verification for metrological properties of the prototype magnetic head for NDT testing of lift guide rail wear under test conditions
P – 2	<u>Anna Skic</u> Paweł Kołodziej Iwona Puzio Grzegorz Tymicki Karolina Beer-Lech Krzysztof Gołacki	Methodological aspects of rat bone mechanical impact
P – 3	Kacper Pacholczak <u>Stanisław Flaga</u>	Demonstrator of a digital twin for education and training purposes as a web application
P – 4	<u>Michał Awtoniuk</u> Dariusz Majerek Artur Myziak Cyprian Gajda	Industrial application of deep neural network for aluminum casting defect detection in case of unbalanced dataset
P – 5	Jerzy Montusiewicz Marcin Barszcz Sylwester Korga	Procedural analysis of the parameters of 3D printing technology in the process of manufacturing objects for visually impaired people
P – 6	Michał Staniszewski <u>Jacek Zaborko</u> Roman Babko Joanna Szulżyk-Cieplak Marcin K. Widomski Bartosz Szelaąg Grzegorz Łagód	Evaluation of the efficiency of the mixing system of the laboratory SBR-type reactor
P – 7	<u>Mateusz Sawa</u> , Mirośław Szala, Piotr Jakliński, Konrad Pietrykowski	Airframe design and CFD analysis of light unmanned reconnaissance aircraft
P – 8	Krzysztof Zając Karolina Płatek Paweł Wachel <u>Leszek Łatka</u>	Fractal dimension as robust estimate of low carbon steels hardness
P – 9	<u>Weronika Henzler</u> Natalia Fedec Eryk Grzywina Mateusz Sawa Mirośław Szala	Correlation between the geometric structure and hardness of AISI316 steel overlay welds deposited via plasma transferred arc (PTA)
P – 10	<u>Zbigniew Czyż</u> Szymon Bartkowski	CFD analysis of water discharge from firefighting aircraft
19.30	Dinner Hotel “Renesans” Restaurant	

Saturday 26.11.2022

8.45 – 9.45	Session IX - poster session – conference room of Hotel “Renesans” <i>Michał Awtoniuk, Zbigniew Czyż</i>	
P – 1	<u>Katarzyna Falkowicz</u>	Numerical buckling analysis of thin-walled channel-section composite profiles weakened by cut-outs
P – 2	<u>Klaudia Słomczyńska</u> Paweł Mirek Marcin Panowski	Modeling of a transient low-temperature waste heat recovery in the plate heat exchanger in Flownex Simulation Environment
P – 3	<u>Paweł Magryta</u> Konrad Pietrykowski Piotr Borowiec	FEM simulation of different engine mount models in an aircraft piston diesel engine
P – 4	<u>Jakub Rzeczkowski</u>	Experimental determination of the mode I fracture toughness in FRP laminates with hybrid delamination interfaces
P – 5	<u>Mirosław Szala</u> Grzegorz Winiarski, Tomasz Bulzak, Łukasz Wójcik	Microrstructure and hardness development of hollow component with outer flange made of 42CrMo4 steel using cold forging in combination with unconventional extrusion
P – 6	<u>Michał Szafran</u> Kazimierz Drozd Mirosław Szala	Wear mechanisms development of steels tested using different abrasive types
P – 7	<u>Aleksander Świetlicki</u> Mariusz Walczak Mirosław Szala	Shot peening surface modification of additive manufactured 17-4PH steel - mechanical properties and corrosive behavior
P – 8	<u>Klaudia Tarach</u> <u>Nikoła Woźniak</u> Mirosław Szala	Hardness, microstructure, and cavitation erosion resistance of Ti6Al4V titanium alloy
P – 9	<u>Piotr Wolszczak</u> Grzegorz Litak Andrzej Koszewnik Andrzej Rysak Michael Müller Sonia Bradai Slim Naifar Olfa Kanoun	Energy harvester with two coupled beams of different flexibility
9.45 – 10.00	Conference summary	
11.00 – 14.00	The sightseeing tour of Zamość - The Arsenal Museum Of Fortifications And Weaponry - A Division Of Zamość Museum, approx. 1.5h - The Old City of Zamość - UNESCO World Heritage Centre; approx. 1.5h	
14.00 – 15.00	Lunch	
15.00	Departure to Lublin via conference bus	