



Lublin University of Technology, Faculty of Mechanical Engineering

Conference Programme

of the 11th International Scientific Symposium

“Advances in techniques of production and machine construction”

June 01-03, 2026, Lublin, Poland

Venue: Faculty of Mechanical Engineering, Nadbystrzycka 36, 20-618 Lublin

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Hotel Ibis Styles Lublin Stare Miasto, Solidarności 7, 20-841 Lublin

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Conference Programme

June 01, 2026 (Monday)

Faculty of Mechanical Engineering – Lecture hall A3

12.00 - 13.00	Registration
13.00 - 13.30	Opening Ceremony

Session 1

Chair: Sylwester Samborski

13.30 - 13.50	Ilmars Blumbergs: <i>Experimental investigation and CFD simulation of pellet ash trajectories within a combustion chamber</i>
13.50 - 14.10	Marcin BERTA, Zbigniew HUMIENNY: <i>Bonus tolerance for assemblability</i>
14.10 - 14.30	Górski Filip, Kuczko Wiesław, Grohs Aleksandra, Zawadzki Przemysław, Żukowska Magdalena: <i>Evaluation of additively manufactured, anatomically individualized therapeutic hand orthoses designed using implicit and explicit modelling methods</i>
14.30 - 14.50	Michał Kowalik: <i>3D Printing Across Scales: Applications and Challenges</i>
14.50 - 15.10	SMIT PANCHOLI: <i>AI-assisted optimization of LPBF process parameters for maraging steel on an EOSINT M280 system</i>

15.10 - 16.00	Lunch
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Session 2 "Industry"

Chair: Mirosław Szala

16.00 - 16.20	Jan Podgórski: <i>SHIM-POL. Shimadzu's innovative solutions for dynamic testing in materials engineering</i>
16.20 - 16.40	Robert Kaczmarczyk: <i>Smart Solutions Sp. z o.o. 3D and CT systems for quality control and non destructive testing</i>
16.40 - 17.00	Zbigniew Kominek: <i>Implementation of Advanced Technologies in Robotic Production Line Manufacturing</i>
17.00 - 17.20	Mariusz Kamiński: <i>Advanced Materials, Smart Manufacturing and Sustainable Transport: New Research Capabilities at Lublin University of Technology</i>

17.20 - 18.00	Transfer to Ibis Hotel
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19.30 - 00.00	Gala dinner
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June 02, 2026 (Tuesday)

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Session 3

Chair: Filip Górski

09.30 - 09.45	<u>Magdalena Żukowska</u> , Agnieszka Andrzejewska, Emilia Smolarek, Błażej Gabryszewski, Radosław Wichniarek: <i>Methodology for designing and manufacturing casting molds for thin-walled anatomical models</i>
09.45 - 10.00	<u>Emil Sasimowski</u> , Marta Grochowicz: <i>Preparation and selected properties of hybrid poly (butylene succinate) composites with calcium carbonate and wheat bran</i>
10.00 - 10.15	Marian Bartoszuik: <i>Study of the properties of the machining process of gray cast iron using a modified tool holder</i>
10.15 - 10.30	<u>Leszek Łatka</u> , Karolina Płatek, Monika Nowakowska: <i>Influence of SPS processing parameters on TiO₂ coating microstructure and photocatalytic performance</i>
10.30 - 10.45	<u>Mateusz Papis</u> , Michał Kowalik, Grzegorz Szuszkiewicz: <i>Influence of the Scale of Additively Manufactured Replicas of Cultural Objects on the Perception of Blind and Visually Impaired People</i>
10.45 - 11.00	Jakub Rzeczkowski: <i>Autonomous detection system for quality and assembly faults in bevel gearboxes based on machine learning algorithms</i>

11.00 - 11.30	Coffee break
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Session 4

Chair: Monika Kulisz

11.30 - 11.45	Aleksander Czajka: <i>Metrological approach to shape and dimension analysis of perforated surfaces</i>
11.45 - 12.00	Łukasz Rzepka: <i>Advanced On-Machine Measurement Techniques for Precision Aerospace Manufacturing</i>
12.00 - 12.15	Agnieszka Skoczylas: <i>Shaping the Geometric Surface Structure in the Impulse Shot Peening Process</i>
12.15 - 12.30	Michał Bembenek, <u>Przemysław Frankiewicz</u> : <i>Mapping of stability zones in Metal Active Gas surfacing using current and acoustic signatures for weld bead quality assessment</i>
12.30 - 12.45	Aleksy Figurski: <i>Application of compliant mechanisms in the design of industrial grippers</i>
12.45 - 13.00	Adam Cisowski: <i>Experimental investigation of stress concentration at interlayer notches in 3D-printed concrete using Digital Image Correlation</i>

13.00 - 14.00	Lunch
14.00 - 15.00	Poster session
15.00 - 17.00	Presentation and tasting of regional products
18.30 - 00.00	Dinner

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June 03, 2026 (Wednesday)
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Session 5

Chair: Wojciech Macek

10.00 - 10.15	<u>Damian Markuszewski</u> , Zbigniew Humienny: <i>An Experimental Study on the Design of 3D-printing parametrers to manufacture the required fits Components.</i>
10.15 - 10.30	Tomasz Łusiak, Jacek Dudziak, Piotr Fiedoruk: <i>Badania numeryczne samolotu M28 z innowacyjnym rozwiązaniem skrzydła</i>
10.30 - 10.45	Jacek Nowiński: <i>Wyznaczenie właściwości i efektywności mocowania detalu typu uszczelnienie silnika lotniczego wykonanego z materiału Inconel 718</i>
10.45 - 11.00	Piotr Maciak, Eric Witkowski: <i>Analiza wpływu właściwości i obróbki poszycia na charakterystyki aerodynamiczne modelu skrzydła na podstawie badań tunelowych</i>
11.00 - 11.15	Bernadetta Kowalczyk, Izabela Marta Żaczek: <i>Design and experimental verification of propeller performance characteristics for an UAV with a MTOW of up to 25 kg</i>
11.15 - 11.30	Zbigniew Koruba, <u>Piotr Szmidt</u> : <i>The influence of the dynamics of an autonomous anti-aircraft system on the effectiveness of tracking and intercepting an air target</i>
11.30 - 11.45	<u>Błażej Gabryszewski</u> , Filip Górski, Joanna Nyczak, Emilia Smolarek, Magdalena Żukowska, Dominik Kłak: <i>Low-cost phantom for training in the conicotomy procedure</i>

11:45 - 12.00	Summary and closing of the Symposium
12.10 - 13.00	Lunch

Poster session:

1. Wiesław Kuczko, Filip Górski, Przemysław Zawadzki, Aleksandra Grohs, Paweł Woźniak, Piotr Giża: *Dynamic Anthropometry Using 4D Scanning as a Tool for Personalized Hand Orthotics.*
2. Weronika Henzler: *Methodology for Simulating Spray Washing Processes.*
3. Marta Żyłka, Monika Lubas: *Analysis of the Opposed Motion of Two Pneumatic Cylinders in a System for Passive Rehabilitation of the Lower Limbs.*
4. Barbara Ciecierska, Jacek Mucha, Kazimiera Dudek: *Analysis of the impact of laser processing of the EN-AW 5754 alloy on the stress state in the surface layer.*
5. Saulius Baskutis, Tomas Kačinskas: *Study of PEEK versus Filled PEEK against Steel under Variable Velocity and Load Conditions.*
6. Barbara Ciecierska, Jacek Mucha: *Analysis of the possibility of reducing the overlap of the adhesive joint after laser treatment of the selected steel surfaces.*
7. Cezary Jarka, Andrzej Komorek, Jacek Janiszewski, Robert Bąbel, Julia Komorek, Paweł Żeglarski: *3D printing in the construction of a high-performance quadrocopter.*
8. Mirosław Szala: *Cavitation erosion of conventionally manufactured and additively deposited stainless steel.*

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9. Klaudia Jańczak, Bartłomiej Burlaga, Mikołaj Szymański, Julia Kasprzyk, Robert Roszak: *The influence of infill orientation and annealing on the mechanical properties of FDM-printed PEEK for medical applications.*
10. Olga Orynych, Paweł Ruchała: *Multiannual Trends on Wind Energy Across Area of Poland in XXI century Based on Statistical Analyses.*
11. Emilia Smolarek, Filip Górski, Magdalena Żukowska, Łukasz Słowik, Joanna Bliska-Stokłosa: *Design and manufacturing of patient-specific surgical guides: comparative analysis for mandibular reconstruction.*
12. Justyna Rybarczyk, Filip Górski, Wiesław Kuczko, Krzysztof Łukaszewski, Agata Mrozek: *Zastosowanie analizy MES do oceny wytrzymałości ortez stawu skokowego wykonanych z materiałów termoplastycznych i kompozytowych.*
13. Norbert Radek: *Performance properties of coating systems for military applications.*
14. Zbigniew Czyż: *Design and Integrated Aerodynamic and Structural Investigation of a Multirotor UAV with Autorotation Capability.*
15. Krzysztof Żak: *Surface integrity and cutting forces in turning of additively manufactured and bulk precipitation-hardened martensitic steel.*
16. Monika Lubas, Marta Żyłka, Wojciech Żyłka: *Experimental Investigation of the Mechanical Properties of the PZL M-20 Mewa Aircraft Skin Material.*
17. Zbigniew Koruba, Łukasz Nocoń: *Impact of noisy line-of-sight measurements (filtered using an iir_split filter) on the guidance performance of a thrust-vector-controlled anti-tank guided missile with a cascaded PID controller.*
18. Bartłomiej Majewski, Damian Markuszewski: *The influence of thermoplastic material annealing on selected mechanical properties.*
19. Adam Gąska, Piotr Gąska, Maciej Gruza, Wiktor Harmatys: *Blended-learning approach for training of dimensional metrology in digitalized manufacturing processes.*
20. Tomasz Łusiak, Gabriela Suska, Piotr Fiedoruk: *Wykonanie symulatora śmigłowca do celów dydaktycznych i badawczych.*
21. Tomasz Łusiak, Jakub Paprocki, Jacek Dudziak: *Badania numeryczne wiatrakowca z innowacyjnym rozwiązaniem skrzydła.*
22. Michał Szaśniadek, Waldemar Woźniak, Natalia Szczotkarz, Sławomir Michalski, Jarosław Jabłoński, Krzysztof Glonek: *Technologiczno-ekonomiczna analiza porównawcza cięcia laserowego i wykrawania elementów z cienkiej blachy.*
23. Damian Markuszewski, Paweł Ciężkowski, Paweł Woliński, Mehmet Sait Şahinalp, Mateusz Remez: *Diagnosis of the structure and properties of concrete using vibration analysis and X-ray tomography.*
24. Rafał Chatys, Łukasz Nowakowski, Mariusz Kłonica: *Effect of Milling Parameters on Edge Quality and Delamination of an Epoxy-Based Glass Fibre Reinforced Polymer Laminate.*
25. Łukasz Grabowski: *Numerical Investigation of the Influence of Blade Geometry on the Efficiency of the Combustion Process in a Turboshaft Aircraft Engine.*
26. Mariusz Kamiński: *Impact of Multi-Source Features on Machine Learning Classification of Ion-Implanted Inconel 718.*
27. Norbert Radek, Marek Michalski, Wojciech Pauli, Paweł Szydźiak, Łukasz Orman, Marcin Szczepaniak, Wojciech Przybył, Hubert Danielewski: *Performance properties of coating systems for military applications.*

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28. Oskar Sarnecki, Mariusz Kłonica: *Application of additive manufacturing method in threaded connections.*
29. Nikola Woźniak, Mirosław Szala: *Assessment of the quality of protective coatings on aluminum profiles.*
30. Klaudia Tarach, Mirosław Szala: *The effect of cavitation erosion on the microstructure and hardness of the Ti6Al4V alloy.*
31. Julia Wójtowicz, Mirosław Szala: *Comparative analysis of aluminium profiles extruded from primary and recycled ingots.*
32. Małgorzata Szymiczek, Monika Chomiak, Damian Markuszewski: *Dynamic Analysis of a Beam-Cable System with a Flexible Support Based on Guitar Structure.*
33. Kamila Wilczyńska, Damian Markuszewski: *The influence of the vibratory feeder bowl geometry on the kinematics of element transport.*
34. Tomasz Tramś, Waldemar Woźniak, Michał Sąsiadek, Maciej Niedziela, Tomasz Jachowicz, Paweł Zajac: *Evaluation of the Technological Suitability of PE Regranulates from Post-Production Waste.*

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