



Faculty of Engineering
Department of Mechanical Engineering

**11th INTERNATIONAL SCIENTIFIC CONFERENCE ON
ADVANCES IN MECHANICAL ENGINEERING
(ISCAME 2025)**

6-7 November, 2025 Debrecen, Hungary

CONFERENCE PROGRAMME

organized by

**Department of Mechanical Engineering
Faculty of Engineering, University of Debrecen**

and

**Working Commission in Mechanical Engineering
Specialized Committee in Engineering
Regional Committee in Debrecen, Hungarian Academy of Sciences**

and

Scientific Association of Mechanical Engineers



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

COMMITTEES OF ISCAME 2025

Chair of ISCAME

Tamás MANKOVITS, Hungary
University of Debrecen

Scientific Program Committee of ISCAME

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Sándor PÁLINKÁS , Hungary University of Debrecen	Ana PETROVIC , Serbia University of Belgrade	Tibor POÓS , Hungary Budapest University of Technology and Economics
Milan RACKOV , Serbia University of Novi Sad	Istvánné RÁTHY , Hungary Óbuda University	Ziad SAGHIR , Canada Toronto Metropolitan University
Jasmina SKERLIC , Serbia University of Priština	Tamás SZABÓ , Hungary University of Miskolc	Gábor SZAKÁCS , Germany Helmholtz-Zentrum
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László S. TOTH , France University of Lorraine	László TÓTH , Hungary University of Miskolc	Natasa TRISOVIC , Serbia University of Belgrade
Matej VESENJAK , Slovenia University of Maribor	Zoltán WELTSCH , Hungary Széchenyi University	László ZSIDAI , Hungary Hungarian University of Agricultural and Life Sciences

Organizing Committee of ISCAME

Szandra KALMÁRNÉ SITKU , Hungary University of Debrecen	Lilla CSONKÁNE DÓRÓ , Hungary University of Debrecen	Mihály CSÜLLÖG , Hungary University of Debrecen
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INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

WELCOME MESSAGE

On behalf of the ISCAME Scientific and Organizing Committee I am pleased to welcome you to Debrecen for the 11th International Scientific Conference on Advances in Mechanical Engineering organized by the Department of Mechanical Engineering, Faculty of Engineering of the University of Debrecen, the Working Commission of Mechanical Engineering (Specialized Committee in Engineering, Regional Committee in Debrecen, Hungarian Academy of Sciences) and the Scientific Association for Mechanical Engineering. The ISCAME is part of the 11th Mechanical Engineering Days.

The main goal of ISCAME is to yearly bring together engineers working on research, development and practical application in the field of mechanical engineering. Furthermore, the purpose of this Conference is to provide opportunities for scientists and engineers to meet and to discuss current research, new concepts and ideas and establish possibilities for future collaborations in all aspects of mechanical engineering.

I am pleased to inform you that **267 experts** from higher education have registered for this year's conference from altogether **23 countries** representing **39 nations**. In the framework of ISCAME **138 presentations** will be given and **64 posters** will be exhibited.

This year we have invited four experts to give plenary lectures. Our first speaker is **Ana TRISOVIC**, a researcher at the **FutureTech Lab of the Massachusetts Institute of Technology** in the United States. Our second speaker is **Ziad SAGHIR**, a professor at the **Toronto Metropolitan University**, and **Catharinus HELFRICH**, Product Compliance and Reliability Manager at the Dutch bicycle manufacturer **ACCELL Global**. Our fourth speaker is Professor **László TOTH**, who will introduce us to the science of **structural integrity**. The accompanying program of ISCAME is the **GÉPÉSZ60** exhibition, which presents the mechanical engineering education in Debrecen, which is the same age as the **60-year-old Faculty of Engineering**.

We invite you to be an active participant in this Conference and to contribute to any topic of your scientific interest. We hope that the 11th International Scientific Conference on Advances in Mechanical Engineering will have an important impact on the research in all topics included in its program.

It is also an honour for us to have a privilege to invite you to the 11th Mechanical Engineering Industrial Exhibition and Job Fair. The Department of Mechanical Engineering of the University of Debrecen will host – parallel to ISCAME – the event, called “Mechanical Engineering Industrial Exhibition and Job Fair” where **40 companies** will exhibit. The list of our exhibiting partners can be found at the end of the program booklet. This professional program will surely benefit the visitors who want to get up-to-date knowledge with the latest technology.

We want to express our appreciation to all members of the committees involved in the preparation of this Conference and to all the staff who are managing the different aspects of the Conference and to all the contributing authors and participants who will create the real Conference.

Yours Sincerely,

Tamás MANKOVITS
Chair of ISCAME, Head of Department
Department of Mechanical Engineering
Faculty of Engineering, University of Debrecen



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

TECHNICAL PROGRAMME

(11th ISCAME and 10th Mechanical Engineering Exhibition and Job Fair)

Thursday, 6th of November 2025 (2-4 Ótmető, Debrecen)

- 09:00 – 15:00 **Mechanical Engineering Exhibiton and Job Fair** (Aula of the Faculty of Engineering)
list of the exhibiting companies: [Mechanical Engineering Exhibition and Job Fair](#)
- 09:00 – 16:00 **ISCAME registration** (Aula of the Faculty of Engineering)
- 11:30 – 12:10 **Opening of the Mechanical Engineering Professional Days** (Aula of the Faculty of Engineering)
Zoltán BÁCS chancellor, University of Debrecen
Sándor CZOMBA state secretary, Ministry of Economic Development
Géza HUSI dean, Faculty of Engineering, University of Debrecen
Lajos BARCSA vice mayor, City of Debrecen
Ferenc MIKLÓSSY president, Chamber of Commerce and Industry of HB County
András LISKA president, Chamber of Engineers of HB County
Tamás MANKOVITS head of department, Dep. of Mechanical Engineering, University of Debrecen
Welcoming words
- 11:00 – 18:00 **ISCAME poster exhibition** (1st floor, Gallery of the Faculty of Engineering)
- 11:30 – 14:00 **lunch** (Restaurant, Faculty of Engineering)
- 12:15 – 12:45 **Opening of the GÉPÉSZ60 Exhibition** (Library, Faculty of Engineering)
- 14:00 – 15:40 **ISCAME opening and plenary lectures** (4th floor, Lecture Hall 413)
- 16:00 – 17:30 **ISCAME sessions**
APPLIED AND THEORETICAL MECHANICS I.
FLUID MECHANICS
INDUSTRIAL PROCESSES I.
MANUFACTURING SCIENCE I.
MATERIALS SCIENCE AND TECHNOLOGY I.
- 18:00 – 20:00 **ISCAME cultural program** – meeting point (main entrance of the Faculty of Engineering)
- 20:00 – 23:00 **ISCAME banquet** - Restaurant Régi Vigadó (Nagyverdő, Debrecen) – entrance only with invitation card

Friday, 7th of November 2025 (2-4 Ótmető, Debrecen)

- 08:30 – 13:00 **ISCAME registration** (Aula of the Faculty of Engineering)
- 09:00 – 14:00 **ISCAME poster exhibition** (1st floor, Gallery of the Faculty of Engineering)
- 09:30 – 12:00 **ISCAME sessions**
ARTIFICIAL INTELLIGENCE IN ENGINEERING PROBLEMS
ENERGY INDUSTRY
ENGINEERING OPTIMIZATION I.
INDUSTRIAL PROCESSES II.
MACHINE AND PRODUCT DESIGN
MATERIALS SCIENCE AND TECHNOLOGY II.
POLYMER ENGINEERING
- 11:00 – 11:30 **ISCAME poster session** (1st floor, Gallery of the Faculty of Engineering)
- 11:30 – 14:00 **lunch** (Restaurant, Faculty of Engineering)
- 12:45 – 12:55 **ISCAME group photo** (meeting at the Aula of the Faculty of Engineering)
- 13:00 – 13:30 **ISCAME poster session** (1st floor, Gallery of the Faculty of Engineering)
- 13:00 – 15:30 **ISCAME sessions**
APPLIED AND THEORETICAL MECHANICS II.
ENGINEERING OPTIMIZATION II.
MAINTENANCE AND CONDITION MONITORING
MANUFACTURING SCIENCE I.
MATERIALS SCIENCE AND TECHNOLOGY III.
MATERIALS SCIENCE AND TECHNOLOGY IV.



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

DETAILED PROGRAMME OF ISCAM 2025

Thursday, 6th of November 2025 (2-4 Ótmető, Debrecen)

09:00 – 16:00	ISCAME registration (Aula of the Faculty of Engineering)
11:00 – 18:00	ISCAME poster exhibition (1 st floor, Gallery of the Faculty of Engineering)
12:15 – 12:45	Opening of the GÉPÉSZ60 Exhibition (Library, Faculty of Engineering)
14:00 – 15:40	ISCAME opening and plenary lectures (Lecture Hall 413, 4 th floor)
14:00 – 14:20	László CSERNOCH vice rector for scientific affairs, University of Debrecen Tamás MANKOVITS chair, ISCAM Imre KOCSIS chair, Specialized Committee in Engineering HAS Géza HAIDEGGER , Scientific Association of Mechanical Engineers <i>Welcoming words</i>
14:20 - 14:40	Ana TRISOVIC Massachusetts Institute of Technology, United States of America <i>Transformative Role of Foundation Models in Science</i>
14:40 – 15:00	Ziad SAGHIR Toronto Metropolitan University, Canada <i>Investigation of the heat enhancement and the flow circulation of water within a TPMS structure having different heights</i>
15:00 – 15:20	Catharinus HELFRICH ACCELL GLOBAL B.V., Netherlands <i>Reliability within the (e-)bike industry</i>
15:20 – 15:40	László TÓTH Bay Zoltán Applied Research Nonprofit Ltd., Hungary <i>Structural Integrity - What does it mean?</i>



Plenary speakers of the ISCAM 2024



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

16:00 – 17:30	Session APPLIED AND THEORETICAL MECHANICS I. (Technical Mechanics Laboratory, 1st floor, room U.1.08)
Chairman:	Natasa TRISOVIC , University of Belgrade, Serbia
Secretary:	Gábor RUZICKSA , University of Debrecen, Hungary
16:00 – 16:15	Péter BÉDA, Gyula BÉDA <i>Connection of Mechanics and Fractional Derivatives</i>
16:15 – 16:30	Ahnaf HABIB, Tamás MANKOVITS <i>MATLAB-Based Finite Element Solver for 2D Prismatic Beams: An Educational Approach</i>
16:30 – 16:45	Maliha Binte HASAN, Natasa TRISOVIC, Tamás MANKOVITS <i>Machine Learning-Based Investigation of the Compressive Behavior of Ti6Al4V Lattice Structures</i>
16:45 – 17:00	Zsolt VADAI, Balázs TÓTH <i>p-Version Spatio-Temporal Finite Element Algorithm Based on the Hamiltonian Formulation for Elastodynamic Problems</i>
17:00 – 17:15	Dániel KOICS, Olivér HORNYÁK <i>Challenges of Benchmarking Finite Difference Methods</i>
17:15 – 17:30	Katreen EBRAHEM, Szabolcs SZÁVAI <i>FEA of Stress Shielding in the Adjacent Vertebral Bones Following Lumbar Total Disc Arthroplasty</i>
16:00 – 17:30	Session FLUID MECHANICS (Emerson Pneumatic Laboratory, ground floor, room E.0.21.)
Chairman:	László KÖNÖZSY , Cranfield University, United Kingdom
Secretary:	Tibor PÁLFI , University of Debrecen, Hungary
16:00 – 16:15	Esztella BALLA, Márton PRICZ, Miklós BALOGH <i>Numerical Investigation of the Flow in the Wake of a Rectangle Cylinder with 3:2 Side Ratio</i>
16:15 – 16:30	László KÖNÖZSY <i>Theoretical Developments for Solving the Incompressible Navier-Stokes Equations with Pseudo-Transient Methods</i>
16:30 – 16:45	Kinga Andrea KOVÁCS, Gergely KRISTÓF <i>Towards Improved Turbulence Modelling</i>
16:45 – 17:00	Dániel NAGY, Ferenc HEGEDŰS <i>Evaluation of Spherical Bubble Models</i>
17:00 – 17:15	Péter KALMÁR, Kálmán KLAPCSIK <i>Numerical Investigation of Recording Errors in Nonspherical Bubble Dynamics</i>
17:15 – 17:30	János POLYÁK, Boglárka BALOG, Péter NAGY-GYÖRGY <i>Characterization of Pressure Drop in Pipe Flow of Shear-Thickening Fluids</i>
16:00 – 17:30	Session INDUSTRIAL PROCESSES I. (Metallographic Laboratory, 1st floor, room E.120.)
Chairman:	Lajos GULYÁS , University of Debrecen, Hungary
Secretary:	István DOMOKOS , University of Debrecen, Hungary
16:00 – 16:15	Bendegúz KIS, Péter LÁNG, László HÉGELY <i>Comparison of Semi-Batch Dividing-Wall Columns</i>
16:15 – 16:30	Ömer FARUK KARAMAN, László HÉGELY <i>Multi-Objective Optimization of a Batch Distillation Process</i>
16:30 – 16:45	Tibor POÓS, Csanád GYÓRI <i>Determination of the LTA Zeolite's Fluidization Curves and Porosity at Different Moisture Contents</i>
16:45 – 17:00	Tibor POÓS, András SZIGEDI <i>Impact of Coolant Type on Heat Transfer Coefficient in Reactor Jacket</i>
17:00 – 17:15	Zsombor Gábor KASZÁS, Gábor VARGA, Tibor POÓS <i>Development of a Non-Destructive Repair Technique for Enamelled Reactors using 3D Printed Tantalum Patch</i>
17:15 – 17:30	Krisztián HRICZÓ <i>Analysis of Entropy Variation Due to Heat and Mass Transfer in Ferrofluid Flow</i>



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

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- 16:00 – 17:30 **Session MANUFACTURING SCIENCE I.**
(Machine Elements Laboratory, 1st floor, room E.121.)
Chairman: **Sándor BODZÁS**, University of Debrecen, Hungary
Secretary: **Zoltán GÉRESI**, University of Debrecen, Hungary
- 16:00 – 16:15 **Balázs MIKÓ, Viktor RÁCZI**
Cylindricity Error by Least Square and Minimum Zone Fitting
- 16:15 – 16:30 **Luboslav STRAKA, Andrii ZALYVCHYI**
The Influence of the Machined Surface Quality on the Energy Consumption in the Electrical Discharge Process
- 16:30 – 16:45 **Mohammad Zaher AKKAD, Orhan CAKIR**
Non-Traditional Manufacturing Methods as a Tool for Sustainability: An Analytical Review of Opportunities and Challenges
- 16:45 – 17:00 **Tazrian Kabir ARWA, Sándor BODZÁS**
Analytical, Constructional and Computational Approach of a Flat Form Tool and its Clamping Device Design
- 17:00 – 17:15 **Zoltán WELTSCH, Miklós BERCZELI, Eszter KÓKAI**
Development of High-Energy Density Surface Treatment Adhesive Equipment
- 17:15 – 17:30 **Marwen HABBACHI, Attila BAKSA**
Evolution of the Friction Coefficient in Incremental Sheet Metal Forming
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- 16:00 – 17:30 **Session MATERIALS SCIENCE AND TECHNOLOGY I.**
(SMARTMAT Material Technology Laboratory, 4th floor, room E.414.)
Chairman: **Lars C. HERZBACH**, BMW Manufacturing Hungary Ltd., Hungary
Secretary: **István BUDAI**, University of Debrecen, Hungary
- 16:00 – 16:15 **Tímea VÁRADY, Marko PILJEVIC, Rosa Maria NOTHNAGEL, Zsolt KÜRTI, Markus VARGA, Tamás MANKOVITS, Sándor MANÓ**
Investigation of the Rheological and Tribological Characteristics of Human Synovial Fluid from Knee Surgery Patients
- 16:15 – 16:30 **Simon SEDMAK, Ana PETROVIC, Mihajlo ARANDELOVIC, Branislav DJORDEVIC**
Fracture Behaviour of a Ferritic-Austenitic Steel Welded Joint
- 16:30 – 16:45 **László TÓTH**
A Brief History of ESIS and ESIS Hungary
- 16:45 – 17:00 **Balázs BORBÁS, Radka GOREJOVÁ, Lóránd CSÁMER, Tamás MANKOVITS, Sándor MANÓ, Alexandra KEMÉNY**
Electrochemical Deposition of Hydroxyapatite Coatings on Additively Manufactured Ti-6Al-4V Substrates
- 17:00 – 17:15 **Béla KONDÁS, Valéria MERTINGER, Tamás BUBONYI**
Analysis of Strain Ageing on Mild Steel Samples with Help of Micro-Tensile Testing
- 17:15 – 17:30 **Mundher ABDUL-ZAHRA DOOKHI, Mohammed Qasim ALOMARY, Dhulfiqar Hakeem DHAYEF**
Experimental Investigation of Bilayer Composite Behavior under Artificial Internal Cracks
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18:00 – 20:00 **ISCAME cultural program** – meeting point (main entrance of the Faculty of Engineering)

20:00 – 23:00 **ISCAME banquet** - Restaurant Régi Vigadó (Nagyerdő, Debrecen) – entrance only with invitation card



City Centre of Debrecen and the Main Building of the University of Debrecen



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Friday, 7th of November 2025 (2-4 Ótomető, Debrecen)

08:30 – 13:00 **ISCAME registration** (Aula of the Faculty of Engineering)
09:00 – 14:00 **ISCAME poster exhibition** (1st floor, Gallery of the Faculty of Engineering)
11:00 – 11:30 **ISCAME poster session** (1st floor, Gallery of the Faculty of Engineering)

09:30 – 11:45 **Session ARTIFICIAL INTELLIGENCE IN ENGINEERING PROBLEMS**

(Engineering Diagnostics Laboratory, ground floor, room E.0.12)

Chairman: **Krisztián DEÁK**, University of Debrecen, Hungary

Secretary: **István DOMOKOS**, University of Debrecen, Hungary

09:30 - 09:45 **Mohammed ALMURUMUDHE, Olivér HORNYÁK**

Supervised Frame-Level Convolutional Neural Networks for Anomaly Detection in Surveillance Videos

09:45 - 10:00 **Erika B. VARGA, Attila BAKSA**

Quantitative Evaluation of Process Discovery Enhancement using Clustering-based Techniques

10:00 – 10:15 **Elly OGUTU ISAYA, Márton TAKÁCS**

Tool Life Estimation and Optimization using a Stacking Regressor and Whale Optimization Algorithm (WOA) in Micromilling

10:15 – 10:30 **István DOMOKOS, Sándor PÁLINKÁS**

Development of a Non-Destructive Ripeness Assessment Tool for Field-Grown Melons

10:30 – 10:45 coffee break

10:45 – 11:00 **Attila ARADI, Attila Károly VARGA**

Machine Hearing Application in Robot Cell: Acoustic Anomaly Detection and OEE Optimization with Machine Learning

11:00 – 11:15 **Alexandru-Silviu GOGA**

AI Portfolio Orchestration: Beyond Human Cognition

11:15 – 11:30 **Alexandru-Silviu GOGA**

When Ecosystems Meet Industry: AI-Driven Portfolio Management Through Predator-Prey Dynamics

11:30 – 11:45 **Mohammad Amir PARVEZ, Samad DADVANDIPOUR**

Applying AI to Predict Highly Cost-Property Prices: A Comparative Modelling Approach

09:30 – 12:00 **Session ENERGY INDUSTRY**

(Robert Bosch AS Laboratory, ground floor, room E.0.22.)

Chairman: **József MENYHÁRT**, University of Debrecen, Hungary

Secretary: **Máté BERECSKI**, University of Debrecen, Hungary

09:30 - 09:45 **Manaf Noofal Taha AHMED, Péter BENCs**

Summer-to-Autumn Hot-Water Storage Using Evacuated-Tube Solar Collectors for Space Heating

09:45 - 10:00 **Salman Fadi BRBHAN, Zoltán SZAMOSI**

Improved Heat Flux Distribution and Thermal Stability in Linear Fresnel Solar Receivers with a New Design Absorber

10:00 – 10:15 **Andicha ZAIN, Egi YULIORA, Faisal ANANDA**

An Efficient Numerical Methods for Transient Heat Transfer in Multilayered Building Walls using Natural Materials: A Case Study in Bengkalis, Riau, Indonesia

10:15 – 10:30 **Dávid ILLÉS, Róbert KOVÁCS, Mátyás SZÜCS**

Experimental Investigation and Effective Numerical Modeling of Heat Transfer in Phase Change Materials

10:30 – 10:45 **Gábor SZIJÁRTÓ, Károly KOVÁCS**

Model-Based Lightning-Current Distribution and Surge Protection for LV Networks

10:45 – 11:00 coffee break

11:00 – 11:15 **József BENCSIK, Zsolt CONKA**

Development of a Time-Synchronized Micro-PMU System for Low-Voltage Grid Fault Prediction

11:15 – 11:30 **József MENYHÁRT**

SWOT Analysis of Vehicle-to-Grid Integration: Opportunities and Challenges in Hungary and EU

11:30 – 11:45 **Thidaphone KHOUMANYKETH**

Vehicle Traction Battery Modelling of Nissan Leaf on MATLAB/SIMULINK

11:45 – 12:00 **Gábor HASULYÓ**

Modeling and Detecting Hydrogen Leaks at the Filling Station



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary



ISCAMÉ sessions in 2024

09:30 – 11:45 **Session ENGINEERING OPTIMIZATION I.**

(Technical Mechanics Laboratory, 1st floor, room U.1.08.)

Chairman: **Sándor HAJDU**, University of Debrecen, Hungary

Secretary: **Dániel NEMES**, University of Debrecen, Hungary

09:30 - 09:45 **Luboslav STRAKA, Juraj HAJDUK**

Optimizing Engine Consumption and Performance

09:45 - 10:00 **Lívía VASS, Tamás BÁNYAI**

Development of a Method for Selecting the Optimal Location of Urban Consolidation Centers

10:00 – 10:15 **Péter MADARASI, József MENYHÁRT**

AI-Powered KPI Optimization: Bridging the Gap Between Industry Data and Operational Excellence

10:15 – 10:30 **Borbála SALLAI, Benedek Bence HEGEDŰS, Anikó PLUZSIK, Tamás KOLTAI, Pál BURAI**
Data Envelopment Analysis of Reinforced Concrete Structures

10:30 – 10:45 coffee break

10:45 – 11:00 **Omar AL AQRA BAWI**

Shape Optimization of a Rubber Bumper with a Genetic Algorithm

11:00 – 11:15 **KM Euphe HASSAN**

Surrogate Model Based Parameter Tuning of Tabu Search Algorithm for the Shape Optimization of Automotive Rubber Bumpers

11:15 – 11:30 **Shukrullo SANGOV, Dávid HURI**

Shape Optimization of Rubber Bumper using Particle Swarm Optimization (PSO) Algorithm

11:30 – 11:45 **Tabassum Tasnim PROMY, Dávid HURI**

Inverse Material Model Calibration of a Rubber Bumper

09:30 – 11:00 **Session INDUSTRIAL PROCESSES II.**

(Plastics and Rubbers Material Testing Laboratory, 3rd floor, room E.320.)

Chairman: **Ferenc SZODRAI**, University of Debrecen, Hungary

Secretary: **Zoltán GÉRESI**, University of Debrecen, Hungary

09:30 - 09:45 **Hamza ALI NOUFAL ABU-ZIENAH, Tibor POÓS**

Heat Transfer Coefficient Determination in Open-Surface Evaporation

09:45 - 10:00 **Antel ANWAR, László HÉGELY, Péter LÁNG**

Reducing the Energy Demand of Semi-Batch Distillation by Constant Distillate Composition Policy

10:00 – 10:15 **István DÉNES, Sándor SEMPERGER**

Aspects of Preparation to NIS 2 Audit for Important Entities

10:15 – 10:30 **Michael MATONYA, István BUDAI**

Applications of Object-Centric Process Mining

10:30 – 10:45 **Thabet SABRI**

Production Line Digitalisation

10:45 – 11:00 **Márton SZOKODY, Tibor POÓS**

Selecting Thermal Pipe Insulation via Discrete Optimization



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

09:30 – 12:00	Session MACHINE AND PRODUCT DESIGN (Machine Elements Laboratory, 1st floor, room E.121.)
Chairman:	Levente CZÉGÉ , University of Debrecen, Hungary
Secretary:	Tibor PÁLFI , University of Debrecen, Hungary
09:30 - 09:45	Jessica DIAS, Krisztina MUTH, György BARKÓ <i>Agrotechnical Space Research Projects at MATE, Institute of Technology</i>
09:45 - 10:00	Zsolt TIBA, Dániel FEKETE SZÜCS, Krisztián VIDA <i>Load Bearing Capacity of YLO Linear Actuators and Drawing Conclusions</i>
10:00 – 10:15	Zainab ALI <i>Comparative Analysis of CFD and Katsui Correlation in Predicting Roughness-Induced Resistance on KVLCC2</i>
10:15 – 10:30	Dániel NEMES, Richárd GARAY <i>Statistical Modelling of Geometric Accuracy of FDM Printing for Machine Design Applications</i>
10:30 – 10:45	Tamás TORNAL, Igor FÜRSTNER, László GOGOLÁK <i>Reverse Engineering and Digital Manufacturing Using 3D Scanning and Printing</i>
10:45 – 11:00	coffee break
11:00 – 11:15	János JUHÁSZ <i>Advancing E-Commerce Logistics Network Design: Insights from a Systematic Literature Review</i>
11:15 – 11:30	Muhammad Ali SADIO, György KOVÁCS <i>A Comprehensive Review on the Optimization of Composite Sandwich Structures</i>
11:30 – 11:45	Manuel VITE-TORRES, I.A. SALAZAR-VELAZQUEZ, O. FIGUERIOA GARCIA, E.A. GALLARDO-HERNANDEZ, J. R. LAGUNA-CAMACHO, J.L. AMADOR-GONZALEZ <i>Experimental Study of Severe Abrasion "GOUGING" using Structural Steel and Tool Grade Steel</i>
11:45 – 12:00	Bálint SIKTÁR, György HEGEDŰS, József KAKUK <i>Comparison of AC Powered Hedge Cutters based on the Properties of the Eccentric Mechanism</i>
09:30 – 12:00	Session MATERIALS SCIENCE AND TECHNOLOGY II. (Metallographic Laboratory, 1st floor, room E.120.)
Chairman:	Ali Reza EIVANI , Iran University of Science and Technology, Iran
Secretary:	Gábor BALOGH , University of Debrecen, Hungary
09:30 - 09:45	Norbert BABCSÁN <i>Hungarian Materials Industry Technology Platform</i>
09:45 - 10:00	Ali Reza EIVANI <i>An Overview on Biodegradable Magnesium Composites with Calcium-based Reinforcement Particles</i>
10:00 – 10:15	Bahram TURAPOV, Gábor KALÁCSKA <i>Abrasion between Rotary Shaft/Seal Pairs under Extremes of Lunar Highland Regolith Exposure</i>
10:15 – 10:30	Marcell KISS <i>Tribological Application of Unpreloaded Mechanical Seal in Presence of MGS-1 Regolith</i>
10:30 – 10:45	Amanuel Ayyale GOBOSHO, Helga KOVÁCS <i>Investigating the Enrichment of Rare Earth Elements and Noble Metals in Thermal Treatment Residues of Different Base Materials</i>
10:45 – 11:00	coffee break
11:00 – 11:15	Judit BABCSÁN KISS <i>Influence of Advanced Property-Modification Technologies on the Tribological Performance of Si₃N₄-Based Technical Ceramics</i>
11:15 – 11:30	Miklós BERCZELI, Zoltán WELTSCH, Eszter KÓKAI <i>Comparative Adhesion of Anaerobic and Cyanoacrylate Adhesives to Hydrophilic Surface on Mild Steel</i>
11:30 – 11:45	Meraj HOUSHYAR <i>Processing and Bonding Characterization of Multilayer Copper Structure Obtained by Friction-Assisted Lateral Extrusion</i>
11:45 – 12:00	Victoria Alexander CHANG'A, Tamás MANKOVITS <i>CT-Based Reconstruction of Closed-Cell Aluminum Foam</i>



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

- 09:30 – 12:00 **Session POLYMER ENGINEERING**
(SMARTMAT Material Technology Laboratory, 4th floor, room E.414.)
Chairman: **István BUDAI**, University of Debrecen, Hungary
Secretary: **Máté FILE**, University of Debrecen, Hungary
- 09:30 - 09:45 **Yevhen YEKYMOV, Vladimir LEBEDEV**
Crystallinity Transformation in Pulverized Polyphthalamide for Sustainable Polymer Engineering
- 09:45 - 10:00 **Márton TOMIN, Viktória KUNSÁGI**
The Effect of Processing Parameters on the Structural and Mechanical Properties of 3D-Printed Polylactic Acid (PLA) Foams
- 10:00 – 10:15 **Dániel GERE**
Qualification Testing of Semi-Industrial Trial Production of Different PET Films
- 10:15 – 10:30 **Szabolcs KRIZSMA, András SUPLICZ**
Small Series Production of Parts from Recycled Materials using Rapid Tooling
- 10:30 – 10:45 **Maja CSAPÓ, József Gábor KOVÁCS**
Recycled Polymers in Injection Molding: Sustainability Challenges and Industrial Opportunities
- 10:45 – 11:00 coffee break
- 11:00 – 11:15 **Kardo Khalid ABDULLAH, Kolos MOLNÁR**
A Comparative Study on the In Vitro Degradation of PLA Processed by FFF and Film Extrusion
- 11:15 – 11:30 **Máté FILE, Imre KÁLLAI, Dávid HURI, Tamás MANKOVITS**
Modelling and Optimization Possibilities of Stiffening Structures for the Development of Polymer Products
- 11:30 – 11:45 **Winnie Atieno ONYANGO, György CZÉL**
Literature Review of The Wall Slip Effect In Polymer Composites
- 11:45 – 12:00 **Ákos GÖRBE, Tamás BÁRÁNY**
Compatibilization in Thermoplastic Elastomers from Devulcanized Ground Tire Rubber

- 11:00 – 11:30 **ISCAME poster session** (1st floor, Gallery of the Faculty of Engineering)
11:30 – 14:00 **lunch** (Restaurant, Faculty of Engineering)
12:45 – 12:55 **ISCAME group photo** (meeting at the Aula of the Faculty of Engineering)
13:00 – 13:30 **ISCAME poster session** (1st floor, Gallery of the Faculty of Engineering)



A group of ISCAME Participants in 2024



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

13:00 – 14:45 **Session APPLIED AND THEORETICAL MECHANICS II.**

(Technical Mechanics Laboratory, 1st floor, room U.1.08.)

Chairman: **Sándor MANÓ**, University of Debrecen, Hungary

Secretary: **Tamás Antal VARGA**, University of Debrecen, Hungary

13:00 - 13:15 **Tamás Antal VARGA, Bálint FAZEKAS, Tamás MANKOVITS**

Finite Element Analysis of the Impact Effect on a Steel–Rubber Automotive Component

13:15 - 13:30 **Kezia LIMA GASCOIGNE, Tamás MANKOVITS**

Finite Element Investigation of Axisymmetric Rubber Bumper

13:30 – 13:45 **Attila BAKSA, Erika B. VARGA**

Failure Analysis of Thin-Walled Aluminum Tube Extrusion

13:45 – 14:00 **István PÁCZELT, Attila BAKSA**

Note on the Calculation of Hierarchical Rotational Shell Finite Elements

14:00 – 14:15 **Tamás GÖRÖGH**

Articulated Vehicle Systems with Inerter

14:15 – 14:30 **Marine MIKILYAN**

Effect of Magnetic Field on Aeroelastic Stability of High Aspect Ratio Plate

14:30 – 14:45 **Viktor SÁRI-BARNÁ CZ, Bálint FAZEKAS, Tibor János GODA**

Experimental Setup for Emulation of Mass Production Conditions of Automotive Sealing Assembly

13:00 – 14:45 **Session ENGINEERING OPTIMIZATION II.**

(Robert Bosch AS Laboratory, ground floor, room E.0.22.)

Chairman: **Dávid HURI**, University of Debrecen, Hungary

Secretary: **Gábor RUZICKA**, University of Debrecen, Hungary

13:00 - 13:15 **Imola Lenke CSAJBÓK, Dániel NEMES**

Measurement of Vehicle Parameters for Vehicle Dynamics Model Validation

13:15 - 13:30 **Dániel NEMES, Sándor HAJDU**

Possibilities for Representing the Shape and Size of Polytopes when Applying the TP Transition

13:30 – 13:45 **Yassine CHAHBOUB**

A Comparative Study of Direct Method and Backpropagation for GTN Parameter Identification

13:45 – 14:00 **Ahmad AL-AWAMLEH, Áron KOZÁK, Ferenc HEGEDŰS**

Numerical Comparison between the Energy Demand of Free and Forced Bubbles

14:00 – 14:15 **Fuad HADZIKADUNIC, Mate PAVIC**

VSR Application in Some Cases for the Industry Needs

14:15 – 14:30 **Attila KÁLMÁN, Katalin BENE**

Investigating the Operation Efficiency of a Combined Solar-Pumped Hydropower System under Changing Weather Conditions

14:30 – 14:45 **Gábor RUZICKA, Levente CZÉGÉ, Tamás MANKOVITS**

Process Simulation using Parametrized Models

13:00 – 14:30 **Session MAINTENANCE AND CONDITION MONITORING**

(Engineering Diagnostics Laboratory, ground floor, room E.0.12)

Chairman: **Ákos CSERVENÁK**, University of Miskolc, Hungary

Secretary: **Máté BERE CZKI**, University of Debrecen, Hungary

13:00 - 13:15 **Jan RYBÁR, Peter ONDERCO, Jozef LEJA, Stanislav DURIS**

Reference Tramway Track as a Framework for Infrastructure Metrology, Quality Assurance, Maintenance, and Safety

13:15 - 13:30 **Ákos CSERVENÁK**

Diagnostics Possibilities of Drones

13:30 – 13:45 **Dávid BODNÁR, Károly JÁRMAI**

Multi Class Anomaly Detection in an Industrial Robot Arm

13:45 – 14:00 **Ivica JOVANOVIĆ, Milos SEDAK, Dragan ZIVKOVIC**

Failure Analysis of Gearbox on Bucketwheel Excavator in Mining Industry

14:00 – 14:15 **Ferenc Áron KASÓ, Péter Tamás ZWIERCZYK**

Possibilities for Improving the Structural Integrity Evaluation of Steam Generator Heat Exchanger Tubes

14:15 – 14:30 **Nasir Hussain Razvi SYED, Phong DAO**

A Dual-Scheme Cointegration Framework for Condition Monitoring and Fault Detection Using Non-Joint and Mixed-Order Time Series



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

13:00 – 15:15	Session MANUFACTURING SCIENCE II. (Machine Elements Laboratory, 1st floor, room E.121.)
Chairman:	Géza HAIDEGGER , Scientific Association of Mechanical Engineers, Hungary
Secretary:	Attila DEBRECENI , University of Debrecen, Hungary
13:00 - 13:15	Géza HAIDEGGER <i>The VALUE of Manufacturing Platforms</i>
13:15 - 13:30	Afraa KHATTAB <i>Comparative Analysis of Machining Efficiency in Plunge and Face Milling</i>
13:30 – 13:45	Kira KULCSÁR, Kornél SARVAJ CZ <i>Presentation of the WATCH+ Career Orientation Program and Opportunities for Further Development</i>
13:45 – 14:00	Ian Momanyi MOKAYA, Sándor BODZÁS <i>Manufacturing Working Analysis of a Mechanical Wire Bending Machine</i>
14:00 – 14:15	coffee break
14:15 – 14:30	Ibtissam ENNAMOUSS, Sándor BODZÁS <i>Geometric Design and FEM Analysis of Connecting Spur Gear Pair for a Mechanical Wire Bending Machine</i>
14:30 – 14:45	Georgina Ruth ZAWEDDE, Sándor BODZÁS <i>Modern Geometric Inspection and Manufacturing Analysis of Bevel Gear Pairs</i>
14:45 – 15:00	Attila DEBRECENI, Sándor BODZÁS <i>Evaluation of Statistical Learning Methods for FFF 3D Printing Problems</i>
15:00 – 15:15	Mapula Phinah MOLEKWA, Sándor BODZÁS <i>Project Planning and Concept Development for Swing Roof Structures</i>
13:00 – 15:30	Session MATERIALS SCIENCE III. (Metallographic Laboratory, 1st floor, room E.120.)
Chairman:	Zoltán WELTSCH , Széchenyi István University, Hungary
Secretary:	Sándor ANDRÁSKÓ , University of Debrecen, Hungary
13:00 - 13:15	Gabriel BATIN <i>Compression and Toughness Behavior of Bronze-Perlite Syntactic Composites</i>
13:15 - 13:30	Alaa ALRUDHAN, Gabriella BOGNÁR <i>Comparison Between Uniform and Dual permeability of Porous Media Metal Foam</i>
13:30 – 13:45	Sulaiman AL-TIMMIMI, Szabolcs SZÁVAI <i>Enhance the Compressive Strength of the Hybrid Metal Matrix Composite by Adding Nanoparticles</i>
13:45 – 14:00	Mária MÉSZÁROS, Szilvia GYÖNGYÖSI, Csilla CZÉGÉNI <i>Wettability Testing of Stranded Aluminum Conductors</i>
14:00 – 14:15	coffee break
14:15 – 14:30	Ildikó PETROVICKIJNÉ ANGERER <i>The Municipal Environmental Protection Program of the Municipality of Dunaújváros</i>
14:30 – 14:45	Mohanad FADHIL, Péter BAUMLI <i>Oil–Water Separation and Corrosion Resistance Enhancement by Mesh Surfaces Nanocoated</i>
14:45 – 15:00	László József MÓNUS, Enikő Réka FÁBIÁN <i>Application of Timoshenko Beam Theory in Finite Element Simulation of Fiber-Reinforced Composite Material</i>
15:00 – 15:15	Junhao HUANG, Péter KORZENSZKY <i>Modeling the Breakage of Agricultural Particulate Materials</i>
15:15 – 15:30	Áron LÓRÁND, Ágota DRÉGELYI-KISS <i>The Effect of Sub-voxel Surface Determination Method on Precision in Case of POM Shafts</i>



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

- 13:00 – 15:15 **Session MATERIALS SCIENCE IV.**
(SMARTMAT Material Technology Laboratory, 4th floor, room E.414.)
- Chairman: **Sándor PÁLINKÁS**, University of Debrecen, Hungary
Secretary: **István BUDAI**, University of Debrecen, Hungary
- 13:00 - 13:15 **János FAJGER, Raghawendra SISODIA**
Testing and Standardization Practices in Hydrogen Embrittlement Studies: A Brief Review
- 13:15 - 13:30 **Enikő Réka FÁBIÁN**
Technological Processes Effect on Lath Martensitic Low Carbon Steel Properties
- 13:30 – 13:45 **Anas JAWABREH, Péter BARKÓCZY**
Martensitic Structure Formation during Interdiffusion in Ti–Zr Multilayered Alloy
- 13:45 – 14:00 **Jawhara MAROUANI**
Advanced Numerical Investigation of Niobium–Titanium Sheet Rolling Processes
- 14:00 – 14:15 coffee break
- 14:15 – 14:30 **Abdulhakim Shukurea RAHMATO, Péter Zoltán KOVÁCS**
Effect of Forming Speed on the Strength of Similar EN AW5754-H22 Alloy Sheets Joined by Clinching
- 14:30 – 14:45 **Gergő KONC, Gábor GYARMATI**
The Influencing Parameters of the Mechanical Properties Investigated on AlSi9Cu3(Fe) HPDC Alloy
- 14:45 – 15:00 **Gábor GYARMATI, Levente HAJAS**
Analysis of the Property Improvements of Casting Aluminum Alloys Achieved by Different Grain Refinement Methods
- 15:00 – 15:15 **Nour El Imane DJIMAOUI**
Performance of H13 Tool Steel under Rapid Thermal and Mechanical Loading in Friction Stir Welding
- 15:00 – 15:30 **Alexandra KIRI, Zoltán WELTSCH**
Examination of Different Acoustic Measurement Setups for Disc-type Castings



Laboratories supported by partner companies, Department of Mechanical Engineering, Faculty of Engineering



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

11:00 – 11:30 **ISCAME poster session**
 13:00 – 13:30 (1st floor, Gallery of the Faculty of Engineering)
 Chairman: **Andrea KECZÁNNÉ ÜVEGES**, University of Debrecen, Hungary

<u>Dilmurod AKBAROV</u> , István BENDIÁK, Sándor SEMPERGER	<i>Vibration-Based Condition Monitoring of Induction Motors in Industrial Applications of Uzbekistan</i>
<u>Ayodeji AKERELE</u> , Csaba PÓLISKA	<i>Correlation of Slag Ratio, Temperature Regime and Foaming Characteristics in Ceramic Foam Glass Using Heating Stage Microscopy</i>
<u>Mahmood ALHAFADHI</u> , Alsigar MASAR, Zahraa Aamir AUDA, Katalin BIRKÁS, Yassine CHAHBOUB	<i>Numerical Simulation of Temperature Distribution and Residual Stress in Pipe Welding of Stainless-Steel Multi-Pass Butt Joints</i>
Katalin BIRKÁS, <u>Mahmood ALHAFADHI</u>	<i>Scrap Management and Space Optimization in the Context of Developing a PCBA Tester Cell</i>
<u>Mahmood ALHAFADHI</u> , Hind Lafta TUBENA, Zahraa Aamir AUDA	<i>Experimental Investigation of the Pressure Distribution on the Cylinder in Wind Tunnel</i>
<u>Mahmood ALHAFADHI</u> , Mundher ABDUL-ZAHRA DOOKHI, Mohanad KHAIRI	<i>Preparing Superconducting Compound (Pb(Bi)Ba₂Ca₂Cu_(3-x)Zn_xO_{8+δ}) and Studying Its Electrical and Structural Properties</i>
<u>Ali AL-MOSAWI</u> , Fatima Alaa RAHEEM, Mariam Sameer SALIM, Tabarek Mahdi KADHIM, Fatimah Abdulrasool JAAFAR, Zainab Laith NSRALLAH, Maryam JAAFAR	<i>Dynamic Polymer Networks as a New Generation of Smart Materials for Space Applications</i>
<u>Masar ALSIGAR</u> , Mahmood ALHAFADHI, Osamah MAYOOF, Ali LAFTA	<i>Theoretical Foundations of Mechanical Design for Improving Machine Productivity during the Cutting Process</i>
<u>Tamás ANTAL</u> , Zoltán KOVÁCS	<i>Heat Loss Determination and Thermodynamic Analysis of a Cimbria-type Grain Dryer</i>
<u>Pavly AZIZ</u>	<i>Variable Diameter Transmission (VDT): A Novel Approach to Dynamic Gear Ratio Control for Automotive Efficiency</i>
<u>György BARKÓ</u> , Jessica DIAS	<i>Agricultural Aspects of Moon Soil Simulants</i>
György BARKÓ, Jessica DIAS, Krisztina MUTH	<i>Evaluation of Moon Soil Simulant 3D Printed Parts</i>
<u>Larbi BELLAGRA</u> , Ibtissem ALLALI, Miloud BEDDAR	<i>Statistical Modeling of Self Compacting Concrete Based on Mineral Additions</i>
<u>Nóra BENCS-NAGY</u> , János LUKÁCS	<i>Comparative Study of Microstructural Characteristics of P355NH Transporting Pipelines Exposed to Hydrogen</i>
<u>István BENDIÁK</u> , Sándor SEMPERGER	<i>Health Monitoring of Three-Phase Induction Motors to Support Predictive Maintenance and Efficiency</i>
<u>Sándor BODZÁS</u>	<i>The History of Single-Purpose Gear Manufacturing Machine Tools</i>
<u>Viktor BORDÁS</u>	<i>Testing the Applicability of Rigid Polyurethane Foam Systems</i>
<u>István BUDAI</u> , András SZOBOSZLAI, Mouawad Bou AKL	<i>Exploring Gelation Processes for Pharmaceutical Formulation Production</i>
Amer SARAJLIC, <u>Malik CABARAVDIC</u> , Tamás MANKOVITS, Sándor MANÓ	<i>Comparative Analysis of Manufacturing Technologies for Cycloidal Drive Production: FDM 3D Printing vs CNC Laser-Cut Aluminum</i>
<u>Iveta CACKOVÁ</u> , Viliam CACKO, Bálint FERENCZI	<i>Influence of Fiber and CO₂ Laser Cutting Parameters on the Material Properties of Wear-Resistant Hardox 450 Steel</i>
<u>Viliam CACKO</u> , Iveta CACKOVÁ, Bálint FERENCZI	<i>Research on the Wear of Cutting Inserts during the Processing of Waste Construction Glass</i>
<u>Mouna CHEGAAR</u>	<i>Numerical Analysis of a Frictionless Electro-Viscoelastic Contact Problem with Damage</i>



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

<u>Zorana DANCUNO</u>	<i>High-G Ready: Designing the Modern Human Centrifuge for Fighter Pilot Training</i>
<u>Raouache ELHADJ</u>, Mechta AHLEM	<i>Effect of Rotary Friction Welding Parameters on Dissimilar Stainless Steels</i>
<u>Bálint FERENCZI</u>, Iveta ČACKOVÁ, Viliam CACKO	<i>Design and Development of a Modular Automated Pallet Changing System for CNC Machining Centres</i>
<u>Alexandra HAMZA</u>, István KOCSEHA	<i>Influence of Diatomaceous Earth Addition on the Plasticity of Clay Bodies</i>
<u>Mariann Éva HEGEDŰS</u>, Zsolt DOBÓ, Gábor NAGY	<i>Investigation of Ethane Pyrolysis under Different Conditions</i>
<u>Krisztián HORVÁTH</u>, Ambrus ZELEI	<i>Feature Extraction from CMM Gear Inspection Reports for ML-Based NVH Studies</i>
<u>Aida IMAMOVIĆ</u>, Saban ZUNA, Amra TALIC- CIKMIS, Malik CABARAVDIC	<i>Challenges and Prospects in the Development and Recycling of Metallic Materials for Additive Manufacturing of Biomedical and Industrial Components</i>
<u>Emőke IMRE</u>, Adane AKATE, József KOPJÁK	<i>In Situ and Laboratory Dissipation Tests in Estuarine and Deep-Seated Saline Soils</i>
<u>Mohammed Qasim KAREEM</u>, Tamás MIKÓ, Mahmood ALHAFADHI, Mohanad Khairi FADHIL	<i>Manufacturing 3D SLM Parts of 17-4PH using Direct Scanning Strategy with 45° Rotation</i>
<u>Daniel LATES</u>, Paul TRIPON, Eugen MARIN, Dragoş MANEA, Laurenţiu-Constantin VLADUTOIU	<i>Static Analysis of the Hydraulically Actuated Reversing Mechanism of a Reversible Agricultural Plough</i>
<u>Tatjana LAZOVIC</u>, Marina DOJCINOVIC, Daniela POPOVIC, Milan STOJANOVIC	<i>Cavitation Erosion Behavior of 3D-Printed PLA: The Impact of Layer Height</i>
<u>Wei LI</u>, Tamás MANKOVITS, Natasa TRISOVIC	<i>AI for Smarter Structural Dynamics</i>
<u>Tatjana LAZOVIC</u>, Pavle LJUBOJEVIC, Marina DOJCINOVIC, Snezana CIRIC-KOSTIC, Nebojsa BOGOJEVIC	<i>Experimental Analysis of Cavitation Erosion in Laser-Sintered Maraging Steel</i>
<u>Sándor MANÓ</u>, Tamás MANKOVITS	<i>Mechanical Tests in Biomechanics</i>
<u>Marija MATEJIC</u>	<i>Design, Construction and Manufacturing Steel Bending Machine</i>
<u>Marianna MÁTYUS</u>, Tamás József SZABÓ	<i>Characterization of Polymer Composites Reinforced with Metal Particles</i>
<u>Muhammad MIRZA OSAMA ZAHID</u>, Dóra Beáta BUZETZKY, Andrea KECZÁNNÉ ÜVEGES	<i>Development of Chemically Crosslinked Electrospun PVA Nanofibers for Adsorptive Applications in Greywater Treatment</i>
<u>Fadia NAJI</u>	<i>Optimization of Ball End Magneto-Rheological (BEMR) Process Parameters for Enhanced Finishing Quality of Ti64 Alloy</i>
<u>Jan RYBÁR</u>, Peter ONDERCO, Jozef LEJA, Karol KOLLÁR, Rastislav VAJGEL	<i>Monitoring the Technical Condition of Tram Overhead Lines as a Tool for Predictive Maintenance</i>
<u>Annamária POLYÁKNÉ KOVÁCS</u>	<i>Investigation of the Degradation of Long-Chain Polyamide 6.12 under the Influence of Mechanical Recycling</i>
<u>Ivan POPOVIC</u>, Milan DORDEVIC, Jasmina SKERLIC	<i>The Possibility of Reducing the Impact of Greenhouse Gases Through the Application of Evaporative Cooling Systems in Serbia</i>
<u>Milan RACKOV</u>, Sinisa KUZMANOVIC	<i>The Actual Influence of Gear Ratio Size on the Service Life of Rolling Bearings in Universal Gear Reducers with Cylindrical Gear</i>
<u>Ognjen RISTIC</u>, Natasa TRISOVIC, Milos SEDAK	<i>Optimization Coefficients Tuning using Airflow</i>
<u>Emese SARVAJCSZ-BÁNÓCZY</u>, Imre KOCNIS	<i>Developing an EnergyPlus-Based Simulation Model for Energy and Comfort Analysis of an Office Building in Debrecen</i>



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

István BENDIÁK, Sándor SEMPERGER	<i>Health Monitoring of Three-Phase Induction Motors to Support Predictive Maintenance and Efficiency</i>
Hasan SERIN, Umut KUMLU, Gülsen GÜZEL	<i>Hybrid Composites Obtained from Waste Tires and Agricultural Waste and their Mechanical Properties</i>
Ivan SIMONOVIC, Aleksandar MARINKOVIC	<i>Evaluation of Surface Roughness Parameters of Polymer Sliding Bearings Manufactured by SLS, FDM, and SLA</i>
Shubhanshu SINGH	<i>Combustion Behaviour of Plastic Waste - PA, PU, PVC, PMMA, PBT, PS, and PC</i>
Jasmina SKERLIC	<i>Towards Sustainable Architecture: Evaluation of Building Envelopes with Integrated Vegetation Modules</i>
Kristóf SZABÓ	<i>Application of Topological Optimization Methods on an Automatic Tool Changer Mechanism</i>
Kristóf SZABÓ	<i>Development of a Bike Component by Topological Optimization Methods</i>
Eszter SZTAHURA, Csenge Emese TÓTH, Helga KOVÁCS	<i>Analyzing Temperature Dependence during Pyrolysis in Pelletized Biomass</i>
Marcell János TÓTH, Annamária POLYÁKNÉ KOVÁCS	<i>Morphological and Chemical Investigation of TPS Biocomposites using Spectroscopy and Electron Microscopy</i>
Csenge Emese TÓTH, Gábor NAGY	<i>Pyrolysis of Waste Tires with Calcium Carbonate-Rich Waste Additives</i>
Natasa TRISOVIC, Wei LI, Olivera JEREMIC, Nikola MLADENOVIC, Ana PETROVIC	<i>Sensitivity-Based Structural Optimization for Systems with Repeated Eigenvalues</i>
Natasa TRISOVIC, Tamás MANKOVITS	<i>AI-Enhanced Predictive Reanalysis for Structural Dynamics: Bridging Finite Element Models and Machine Learning</i>
Natasa TRISOVIC	<i>Sustainable Structural Optimization through Hybrid AI-FEM Approaches in Dynamic Analysis</i>
Zaga TRISOVIC, Tomislav TRISOVIC, Corneliu Baneasa BIRTOK, Ana Virginia SOCALICI	<i>Energy-Efficient Fruit Drying Using Microwave Heating with Subcooled Air Recirculation</i>
Zaga TRISOVIC, Nikola KARLICIC, Tamás MANKOVITS	<i>Structural and Thermal Design of a Combined Microwave Dryer with Subcooling and Moist Air Recirculation</i>
Zaga TRISOVIC, Ana Virginia SOCALICI, Nikola KARLICIC, Tamás MANKOVITS, Corneliu Baneasa BIRTOK	<i>Prevention of Surface Hardening in Fruit Drying through Hybrid Microwave-Air Recirculation Systems</i>
Katarina COLIC, Natasa TRISOVIC, Tamás MANKOVITS	<i>The Influence of Mechanical and Biological Characteristics on the Use of Metal Alloys in Orthopedic Implants</i>
Abduvali TURDIBOYEV, Dilmurod AKBAROV, Péter KÁDÁR, Oliyaxon ZAYNIYEVA, Anvar NORBOEV	<i>Electric Pulse Processing in the Extraction of Oil from Industrial Seeds</i>
Amar UL HAQUE, Annamária POLYÁKNÉ KOVÁCS	<i>Testing the Chemical Resistance of High-Performance Engineering Plastics from an Automotive Perspective</i>



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

INFORMATION TO CHAIRMEN, TO PRESENTERS AND TO VISITORS

Chairmen, Presenters and on-line registered Visitors are invited for lunch and coffee, but it is connected to registration at the registration desk at the Aula in the building of the Faculty of Engineering on the Conference days.

To Presenters:

- The official language of ISCAME is English;
- Show up to the session 10 minutes before the session begins;
- Each oral presentation will take 15 minutes including discussion;
- The files required for the presentation (PowerPoint or PDF) must be uploaded and tested in the computer placed in the room before the respective presentation session.

To Poster Presenters:

- The official language of ISCAME is English;
- The Poster Exhibition will be opened on Thursday 6 November, 11:00 and can be visited until 7 November, 14:00. It means from Thursday 11:00 onwards posters can be put on display (Location: Faculty of Engineering, 1st floor, Gallery).
- Poster sessions are scheduled on 7 November, from 11:00-11:30 and 13:00-13:30. At these times anyone interested should be received in front of the posters;
- Posters will be displayed on vertical boards with maximum dimensions of 1000mm (width) x 2000mm (height), the recommended poster size is standard A0 with page orientation portrait.

To Chairmen:

- During the presentations enforce time limits strictly so that no author monopolizes someone else's time;
- One presentations are complete the remainder of the time can be used for informal discussion with the audience and session participants. It is your job to field questions from the audience.

In any case please contact:

ISCAME Secretary

Lilla CSONKÁNE DÓRÓ, administrator

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Website: www.mecheng.unideb.hu



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

6-7 November 2025, Debrecen, Hungary

LIST OF THE EXHIBITING COMPANIES

11th Mechanical Engineering Industrial Exhibition and Job Fair, Debrecen

	
	
 	
	
	
	
	
	
	
	



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