

65th International Conference
of Machine Design Departments

Conference Program



Institute of Automotive Engineering and Designing
Faculty of Mechanical Engineering
Slovak University of Technology in Bratislava

Šport Hotel*** Donovaly September 10th – 12th 2025



SLOVAK UNIVERSITY OF
TECHNOLOGY IN BRATISLAVA
FACULTY OF MECHANICAL
ENGINEERING



65TH INTERNATIONAL CONFERENCE OF MACHINE DESIGN DEPARTMENTS (ICMD 2025)

The Sport Hotel Donovaly from September 10. – 12.2025

The 65th International Conference of Machine Design Departments 2025 (ICMD 2025) is organized by the Institute of Automotive Engineering and Design, Faculty of Mechanical Engineering, Slovak University of Technology in Bratislava with Slovak Association of Mechanical Engineers (SASI) and InoHub Energy j.s.a., under the auspices of Dr. h. c. prof. Ing. Ľubomír Šooš, PhD., Dean of the Faculty of Mechanical Engineering.

The aims of the 65th International Conference of Machine Design Department are professional experiences sharing and new theoretical findings discussing. Another aim of the conference is to create and deepen international cooperation among academics and researchers of universities and research institutions and experts working in companies.

The scientific conference covers the following areas:

- Machine Design and Innovation
- Automotive Engineering
- Tribology
- Hydraulics, Fluid Mechanisms
- Construction Engineering
- Mechanical Engineering in Civil Construction
- Modern Materials and Nanotechnology
- Optimization and Design
- Product Innovation
- Experimental Methods and Measuring
- Biomechanics
- Autonomous Systems, Robotics, AI
- Electromobility, Hydrogen Propulsion and other related topics

CONFERENCE PROGRAM

SEPTEMBER 10, 2025 – WEDNESDAY – First day of the Conference

12:00 – 16:30	Hotel check-in
13:00 – 16:30	Conference participants registration
16:30 – 16:45	Opening of the conference – Large Congress Hall Moderator: assoc. prof. Ing. Luboš MAGDOLEN, PhD. Head of the Institute of Automotive Engineering and Design
16:50 – 18:30	Plenary session – Large Congress Hall Chairman: prof. Ing. Ladislav ŠEVČÍK, CSc.
16:50 – 17:20 <i>Large Congress Hall</i>	EXPERIMENTAL INVESTIGATION OF MULTI-CYCLE CRYOGENIC TREATMENT EFFECTS ON BEARING STEEL HARDNESS: POTENTIAL TO REDUCE FAILURE RISK AND ENHANCE RELIABILITY AND SAFETY MIŠKOVIĆ Žarko ¹ , ANTIĆ Jovana ¹ , PEJČIĆ Danilo ¹ , DIX Martin ^{2,3} , PIERER Alexander ² , HEIDRICH Jürgen ² , MILBRANDT Matthias ² ¹ Faculty of Mechanical Engineering, University of Belgrade, Machine Design Department, Kraljice Marije 16, 11120, Belgrade, Serbia ² Fraunhofer Institute for Machine Tools and Forming Technology IWU, Reichenhainer Straße 88, 09126, Chemnitz, Germany ³ Institute for Machine Tools and Production Processes, Chemnitz University of Technology, Reichenhainer Str. 70, 09126, Chemnitz, Germany
17:20 – 17:50 <i>Large Congress Hall</i>	AUTONOMOUS VEHICLES MAGDOLEN L'uboš ¹ ¹ Faculty of Mechanical Engineering, Slovak University of Technology in Bratislava, Institute of Automotive Engineering and Design, Nám. slobody 17, 812 31 Bratislava, Slovakia
17:50 – 18:20 <i>Large Congress Hall</i>	DEVELOPMENT OF A STACK FOR VANADIUM REDOX FLOW BATTERIES SIHLOVEC Rudolf ¹ ¹ INO-HUB Energy j.s.a., Tomášikova 30, 821 01 Bratislava, Slovakia
19:00 – 22:30	Dinner, Winery Reception

SEPTEMBER 11, 2025 – THURSDAY – Second day of the Conference

07:30 – 08:20	Breakfast
08:30 – 12:10	Presentations in sections: <ul style="list-style-type: none"> • Large Congress Hall • Winter Garden • Small Congress Hall • Lobby Bar
08:30 – 10:10 <u>SEPTEMBER 11,</u> <u>2025</u> <u>THURSDAY</u>	Plenary session – LARGE CONGRESS HALL Automotive Engineering Chairman: prof. Dr. Ing. Miloš NĚMČEK
08:30 – 08:50 Automotive Engineering Large Congress Hall	THERMOGRAPHIC DETECTION OF LIVING OBJECTS USING NEURAL NETWORKS DAVID Jiří ¹ , NOVOTNÝ Vojtěch ¹ , BROM Pavel ¹ , ŠVEC Pavel ¹ , BRADÁČ Josef ¹ ¹ Škoda Auto University, Department of Mechanical and Electrical Engineering, Na Karmeli 1457, 293 01 Mladá Boleslav, Czech Republic
08:50 – 09:10 Automotive Engineering Large Congress Hall	DESIGN OF DRIVES FOR THE CORE DRILLING RIG DYNBYL Vojtěch ¹ , STARÝ František ¹ , BRADÁČ Josef ¹ , DAVID Jiří ¹ , ŠVEC Pavel ¹ ¹ Škoda Auto University, Department of Mechanical and Electrical Engineering, Na Karmeli 1457, 293 01 Mladá Boleslav, Czech Republic
09:10 – 09:30 Automotive Engineering Large Congress Hall	COMPUTATIONAL AND ANALYTICAL STUDIES ON HYBRID COMPOSITES REINFORCED WITH BIO-FIBERS & FILLERS RAJESH Mishra ¹ , VIJAY Chandan ¹ , MULLER Miroslav ¹ , JIRKU Petr ¹ , KOLAR Viktor ¹ , SHABNAM Nazari ² , IVANOVA Tatiana Alexiou ² ¹ Department of Material Science and Manufacturing Technology, Faculty of Engineering, Czech University of Life Sciences Prague, Kamycka 129, 16500 Prague, Czech Republic ² Department of Sustainable Technologies, Faculty of Tropical AgriSciences, Czech University of Life Sciences Prague, Kamycka 129, 16500 Prague, Czech Republic

<p>09:30 – 09:50 Automotive Engineering Large Congress Hall</p>	<p>ENHANCING BRAKE STABILITY IN FLOATING CALIPER BRAKE ASSEMBLY THROUGH COMPLEX EIGENVALUE ANALYSIS: A WEIGHTED BOLT APPROACH</p> <p>BEŇO Pavel¹, BRODNIANSKÁ Zuzana¹, LIPNICKÝ Marek¹</p> <p><i>¹ Faculty of Technology, Technical University in Zvolen, Department of Mechanics, Mechanical Engineering and Design, Študentská 26, 960 01 Zvolen, Slovakia</i></p>
<p>09:50 – 10:10 Automotive Engineering Large Congress Hall</p>	<p>DYNAMIC ANALYSIS OF PASSENGER CAR REAR-VIEW MIRRORS</p> <p>JÍROVÁ Radka¹, PEŠÍK Lubomír¹</p> <p><i>¹ Faculty of Mechanical Engineering, Technical University of Liberec, Department of the Design of Machine Elements and Mechanism, Studentská 2, 46117 Liberec, Czech Republic</i></p>
<p>10:10 – 10:30</p>	<p>Coffee break</p>
<p>10:30 – 12:10 <u>SEPTEMBER 11, 2025</u> <u>THURSDAY</u></p>	<p>Plenary session – LARGE CONGRESS HALL</p> <p>Automotive Engineering Chairman: assoc. prof. Ing. Pavel BEŇO, PhD.</p>
<p>10:30 – 10:50 Automotive Engineering Large Congress Hall</p>	<p>NEW PRINCIPLE OF COOLING SYSTEM OF BATTERY CELLS</p> <p>ŠEVČÍK Ladislav¹, PETRŮ Michal¹</p> <p><i>¹ Faculty of Mechanical Engineering, Technical university of Liberec, Department of machine design, Studentská 2, 461 17 Liberec, Czech Republic</i></p>
<p>10:50 – 11:10 Automotive Engineering Large Congress Hall</p>	<p>DESIGN OF RUBBER HOSE DEFECT TESTING EQUIPMENT</p> <p>SRB Pavel¹, VOSÁHL0 Josef¹</p> <p><i>¹ Faculty of Mechanical Engineering, Technical University of Liberec, Department of Machine Parts and Mechanism, Studentská 2, 46001 Liberec, Czech Republic</i></p>

<p>11:10 – 11:30 Automotive Engineering <i>Large Congress Hall</i></p>	<p>NEW METHODOLOGY FOR THE DEVELOPMENT OF RUBBER-METAL ELEMENTS FOR ELECTRIC DRIVE UNIT MOUNTS</p> <p>DANKO Ján¹, MILESICH Tomáš¹, DOBROVOLNÝ Juraj¹, BERNÁTH Martin¹</p> <p>¹ <i>Institute of Automotive Engineering and Design, Faculty of Mechanical Engineering, Slovak University of Technology in Bratislava, Nám. Slobody 17, 81231 Bratislava, Slovakia</i></p>
<p>11:30 – 11:50 Automotive Engineering <i>Large Congress Hall</i></p>	<p>THE EFFECT OF PRINTING PARAMETERS ON THE CONDUCTIVITY OF CONDUCTIVE FILAMENTS IN THE 3D PRINTING PROCESS</p> <p>STARÝ František¹, MALÍKOVÁ Marie Jennifer¹, ŠVEC Pavel¹, DAVID Jiří¹, BROM Pavel², DYNYBYL Vojtěch¹</p> <p>¹ <i>Škoda Auto University, Department of Mechanical and Electrical Engineering, Na Karmeli 1457, 293 01 Mladá Boleslav, Czech Republic</i> ² <i>Škoda Auto University, Department of Quantitative Methods, Na Karmeli 1457, 293 01 Mladá Boleslav, Czech Republic</i></p>
<p>11:50 – 12:10 Automotive Engineering <i>Large Congress Hall</i></p>	<p>MECHANICAL TESTING OF SLA MATERIALS TOUGH AND RIGID UNDER TENSILE AND FLEXURAL LOADS</p> <p>STRUZ Jiri¹, HRUZÍK Lukas¹, SNIHOTTA Patrik¹, PAVLIK Jan¹</p> <p>¹ <i>Faculty of Mechanical Engineering, VSB-Technical University of Ostrava, Department of Machine Parts and Mechanisms, 17. Listopadu 2172/15, 70800 Ostrava, Czech Republic</i></p>
<p>08:30 – 10:10 SEPTEMBER 11, 2025 THURSDAY</p>	<p>Plenary session – WINTER GARDEN</p> <p>Optimization and Design</p> <p><u>Chairman:</u> prof. Ing. Róbert GREGA, PhD.</p>
<p>08:30 – 08:50 Optimization and Design <i>Winter Garden</i></p>	<p>VERIFICATION AND COMPARISON OF RUBBER MATERIAL SIMULATIONS ACROSS MULTIPLE SIMULATION TOOLS</p> <p>KOZÁRIK Daniel¹, SMETANKA Lukáš¹, ŠTEININGER Ján², HRČEK Slavomír¹</p> <p>¹ <i>Department of Design and Mechanical Elements, Faculty of Mechanical Engineering, University of Žilina, Univerzitná 8215/1, Žilina 010 26, Slovakia</i></p>

	<p>² <i>Institute of Competitiveness and Innovations, University of Žilina, Univerzitná 8215/1, Žilina 010 26, Slovakia</i></p>
<p>08:50 – 09:10 Optimization and Design <i>Winter Garden</i></p>	<p>ADVANTAGES OF COMBINING MECHANICAL ENGINEERING AND ELECTROTECHNICS KNOWLEDGE FOR THE MODERN ENGINEER</p> <p>DAJBYCH Oldřich¹, SEDLÁČEK Aleš¹</p> <p>¹ <i>Czech University of Life Sciences Prague, Faculty of Engineering, Department of Mechanical Engineering, Kamýcká 129, 165 00 Praha, Czech Republic</i></p>
<p>09:10 – 09:30 Optimization and Design <i>Winter Garden</i></p>	<p>TOLERANCE ANALYSIS OF STRUCTURAL FUNCTIONAL GROUPS</p> <p>VÁCLAV Vaněk¹</p> <p>¹ <i>UWB in Pilsen, Faculty of Mechanical Engineering, Department of Machine Design, Univerzitni 22, 301 00 Pilsen, Czech Republic</i></p>
<p>09:30 – 09:50 Optimization and Design <i>Winter Garden</i></p>	<p>COMPUTATION OF FITTING FUNCTIONS FOR DESCRIBING HEMP OIL OUTPUT PARAMETERS UNDER COMPRESSION LOADING</p> <p>KABUTEY Abraham¹, MUSAYEV Mahmud¹, KIBRET Sonia Habtamu¹, SOE Su Su¹, DAJBYCH Oldřich¹, HERÁK David¹</p> <p>¹ <i>Faculty of Engineering, Czech University of Life Sciences Prague, Department of Mechanical Engineering, Kamýcká 129, 165 00 Praha, Czech Republic</i></p>
<p>09:50 – 10:10 Optimization and Design <i>Winter Garden</i></p>	<p>MECHANICAL BEHAVIOUR OF SLOTTED BOLTED JOINTS IN PHOTOVOLTAIC PANEL ASSEMBLIES: A FINITE ELEMENT STUDY</p> <p>KANAVAL Antonín¹, DIÁZ-SALAMANCA Diego², MUÑIZ-CALVENTE Miguel², DUB Martin¹</p> <p>¹ <i>Faculty of Mechanical Engineering, Czech Technical University in Prague, Department of Designing and Machine Components, Technická 4, 166 07 Praha, Czech Republic</i></p> <p>² <i>Escuela Politécnica de Ingeniería de Gijón, Universidad de Oviedo, Dept. de Construcción e Ingeniería de Fabricación, Gijón Campus Edificio Polivalente Module 1 Ground Floor s/n 33203 Gijón, Spain</i></p>

10:10 – 10:30	Coffee break
10:30 – 12:10 <u>SEPTEMBER 11,</u> <u>2025</u> <u>THURSDAY</u>	Plenary session – WINTER GARDEN Optimization and Design <u>Chairman:</u> prof. Ing. David HERÁK, PhD.
10:30 – 10:50 Optimization and Design <i>Winter Garden</i>	FEM ANALYZES AND EXPERIMENTAL VERIFICATION OF THE LOAD CAPACITY OF PRESTRESSED BOLTED JOINTS OF PHOTOVOLTAIC PANELS DYNAMICALLY LOADED BY WIND MUÑIZ-CALVENTE Miguel ¹ , DÍAZ-SALAMANCA Diego ¹ , KANAVAL Antonín ² , KANAVAL Jan ² <i>¹ University of Oviedo, Department of Construction and Manufacturing Engineering, Gijón 33203, Spain</i> <i>² Faculty of Mechanical Engineering, Czech Technical University in Prague, Department of Designing and Mechanical Components, Technická 4 ,166 07 Prague 6, Czech Republic</i>
10:50 – 11:10 Optimization and Design <i>Winter Garden</i>	VIBRATION ENERGY REDISTRIBUTOR DESIGN AND CHARACTERISTICS IDENTIFICATION ŽULOVÁ Lucia ¹ , GREGA Robert ¹ , KRAJŇÁK Jozef ¹ , URBANSKÝ Matej ¹ <i>¹ Faculty of Mechanical Engineering, Technical University of Košice, Department of Engineering for Design of Machines and Transport Equipment, Letná 9, 042 00 Košice, Slovakia</i>
11:10 – 11:30 Optimization and Design <i>Winter Garden</i>	KVANT AND GUNT PRODUCT PRESENTATION KEVÉLY Mikuláš ¹ <i>¹ FMFI UK, KVANT spol. s.r.o. Mlynská dolina 842 48 Bratislava, Slovakia</i>
11:30 – 11:50 Optimization and Design <i>Winter Garden</i>	APPLICATION OF GENERAL SPECIFICATIONS AND 3D SCAN VERIFICATION PETR Karel ¹ <i>¹ Faculty of Mechanical Engineering, Czech Technical University in Prague, Department of Designing and Machine Components, Technická 4, 160 00 Prague, Czech Republic</i>

<p>11:50 – 12:10 Optimization and Design <i>Winter Garden</i></p>	<p>ALTERNATIVE USE OF A FEATHER KEY FOR TORQUE TRANSFER</p> <p>VEREŠ Matúš¹, BRUMERČÍK František¹, BAŠŤOVANSKÝ Ronald¹, KOHÁR Róbert¹, MADAJ Rudolf¹, ŠTEININGER Ján²</p> <p>¹ Faculty of Mechanical Engineering, University of Žilina in Žilina, Department of Design and Mechanical Elements, Univerzitná 8215, 010 26 Žilina, Slovakia ² Institute of Competitiveness and Innovations, University of Žilina in Žilina, Univerzitná 8215, 010 26 Žilina, Slovakia</p>
<p>08:30 – 10:10 SEPTEMBER 11, 2025 THURSDAY</p>	<p>Plenary session – SMALL CONGRESS HALL</p> <p>Machine Design and Innovation Chairman: assoc. prof. Ing. Ján DANKO, PhD.</p>
<p>08:30 – 08:50 Machine Design and Innovation <i>Small Congress Hall</i></p>	<p>3D SCANNING IN ENGINEERING APPLICATIONS</p> <p>KLAPETEK Lukáš¹</p> <p>¹ Faculty of Mechanical Engineering, VSB-Technical University of Ostrava, Department of Machine Parts and Mechanisms, 17. Listopadu 2172/15, 70800 Ostrava, Czech Republic</p>
<p>08:50 – 09:10 Machine Design and Innovation <i>Small Congress Hall</i></p>	<p>USE OF ARTIFICIAL INTELLIGENCE IN INSPECTION CALCULATIONS OF MACHINE COMPONENTS</p> <p>CÉZOVÁ Eliška¹</p> <p>¹ Faculty of Mechanical Engineering, Czech Technical University in Prague, Department of Designing and Machine Components, Technická 4, 166 07 Prague 6, Czech Republic</p>
<p>09:10 – 09:30 Machine Design and Innovation <i>Small Congress Hall</i></p>	<p>BIOSYSTEMS ENGINEERING AND ITS INTERACTIONS WITH THE FUNDAMENTAL PRINCIPLES OF MECHANICAL ENGINEERING</p> <p>HERAK David¹, DAJBYCH Oldrich¹, KABUTEY Abraham¹</p> <p>¹ Department of Mechanical Engineering, Faculty of Engineering, Czech University of Life Sciences Prague, Kamycka 129, 165 00, Prague, Czech Republic</p>

<p>09:30 – 09:50 Machine Design and Innovation <i>Small Congress Hall</i></p>	<p>BLADE DESIGN OPTIMIZATION FOR ABRASIVE BLASTING APPLICATIONS VOSÁHLO Josef¹, SRB Pavel¹ ¹ Faculty of Mechanical Engineering, Technical University of Liberec, Department of Machine Parts and Mechanism, Studentská 2, 46001 Liberec, Czech Republic</p>
<p>09:50 – 10:10 Machine Design and Innovation <i>Small Congress Hall</i></p>	<p>AUTOMATION OF GEAR MESH STIFFNESS MEASUREMENT USING OPEN-SOURCE TECHNOLOGIES FLEK Jan¹, KARAS Tomáš¹, KADEŘÁBEK Petr¹ ¹ Faculty of Mechanical Engineering, Czech Technical University in Prague, Department of Designing and Machine Components, Technická 4, 160 00 Praha 6, Czech Republic</p>
<p>10:10 – 10:30</p>	<p>Coffee break</p>
<p>10:30 – 12:10 <u>SEPTEMBER 11, 2025</u> <u>THURSDAY</u></p>	<p>Plenary session – SMALL CONGRESS HALL Hydrogen Propulsion and other related topics Chairman: assoc. prof. Ing. Juraj ONDRUŠKA, PhD.</p>
<p>10:30 – 10:50 Hydrogen Propulsion and other related topics <i>Small Congress Hall</i></p>	<p>TRANSPORT PHENOMENA IN THE CATHODE TRACT OF A HYDROGEN PEM FUEL CELL PUTALA Rastislav¹, FERENČEY Viktor ² ¹ Institute of Power Machines and Equipment, Faculty of Mechanical Engineering, STU in Bratislava, Nám. slobody 17,812 31 Bratislava, Slovakia ² Hydrogen Fuel Cells Slovakia, j.s.c. Bratislava, Slovakia</p>
<p>10:50 – 11:10 Hydrogen Propulsion and other related topics <i>Small Congress Hall</i></p>	<p>DESIGN OF EQUIPMENT FOR CARBON CAPTURE SNIEHOTTA Patrik¹ ¹ VŠB – Technická univerzita Ostrava Katedra částí a mechanismů strojů 17. listopadu 2172/15, 708 00 Ostrava, Czech Republic</p>

<p>11:10 – 11:30 Hydrogen Propulsion and other related topics <i>Small Congress Hall</i></p>	<p>CONTROL OF BEAM DEFLECTION MEASUREMENT BY INDUCTIVE LINEAR TRANSDUCER ROMANIUK Vitalii¹, NATMELAZE Nino¹, MAŠČENIK Jozef¹, KRENICKÝ Tibor¹ ¹ <i>TUKE Fakulta výrobných technológií so sídlom v Prešove, Katedra navrhovania a monitorovania technických systémov, Bayerová 31, 08 001 Prešov, Slovensko</i></p>
<p>11:30 – 11:50 Hydrogen Propulsion and other related topics <i>Small Congress Hall</i></p>	<p>EXPERIMENTAL ANALYSIS OF NEW TYPE OF PNEUMATIC COUPLING KAČÍR Matúš¹, GREGA Robert¹, URBANSKÝ Matej¹, ŽULOVÁ Lucia¹ ¹ <i>Faculty of Mechanical Engineering, Technical University of Košice, Department of Engineering for Design of Machines and Transport Equipment, Letná 9, 042 00 Košice, Slovakia</i></p>
<p>11:50 – 12:10 Hydrogen Propulsion and other related topics <i>Small Congress Hall</i></p>	<p>PARAMETRIC DESIGN OF THE STRUCTURAL ELEMENTS OF THE SPINDLE HOŠTÁK Peter¹, ŠOOŠ Ľubomír¹ ¹ <i>Faculty of Mechanical Engineering, Institute of manufacturing systems, environmental technology and quality management, Slovak University of Technology in Bratislava, Nám. slobody 17, 812 31 Bratislava, Slovakia</i></p>
<p>08:30 – 10:10 SEPTEMBER 11, 2025 THURSDAY</p>	<p>Plenary session – LOBBY BAR Automotive Engineering <u>Chairman</u>: assoc. prof. Ing. Luboš MAGDOLEN, PhD.</p>
<p>08:30 – 08:50 Automotive Engineering <i>Lobby Bar</i></p>	<p>IMPACT OF THE INPUT DATASET SIZE ON ACCURACY OF REDUCED ORDER MODELS OF RUBBER-METAL ELEMENTS DOBROVOLNÝ Juraj¹, DANKO Ján¹, MAGDOLEN Ľuboš¹ ¹ <i>Faculty of Mechanical Engineering, Institute of Automotive Engineering and Design, Slovak University of Technology in Bratislava, Nám. slobody 17,812 31 Bratislava, Slovakia</i></p>

<p>08:50 – 09:10 Automotive Engineering Lobby Bar</p>	<p>EFFECT OF HIGH-ENERGY SYNGAS COMBUSTION UNDER CONSTANT CO₂ AND N₂ CONDITIONS CHRÍBIK Andrej¹, LUKNÁR Lukáš¹ <i>¹ Faculty of Mechanical Engineering, Institute of Automotive Engineering and Design, Slovak University of Technology in Bratislava, Nám. slobody 17,812 31 Bratislava, Slovakia</i></p>
<p>09:10 – 09:30 Automotive Engineering Lobby Bar</p>	<p>OPTIMIZATION OF A BIOGAS-FUEL TURBOCHARGET COMBUSTION ENGINE USED IN AGRICULTURAL EQUIPMENT LUKNÁR Lukáš¹, CHRÍBIK Andrej¹ <i>¹ Faculty of Mechanical Engineering, Institute of Automotive Engineering and Design, Slovak University of Technology in Bratislava, Nám. slobody 17,812 31 Bratislava, Slovakia</i></p>
<p>09:30 – 09:50 Automotive Engineering Lobby Bar</p>	<p>CONCEPT OF A PARAMETRIC SIMULATION WORKFLOW FOR RUBBER-METAL MOUNTS IN ELECTRIC DRIVETRAIN APPLICATIONS BERNÁTH Martin¹, DANKO Ján¹, BUCHA Jozef¹, DOBROVOLNÝ Juraj¹ <i>¹ Faculty of Mechanical Engineering, Institute of Automotive Engineering and Design, Slovak University of Technology in Bratislava, Nám. slobody 17,812 31 Bratislava, Slovakia</i></p>
<p>09:50 – 10:10 Automotive Engineering Lobby Bar</p>	<p>VIRTUAL MODEL OF THE KYBURZ VEHICLE USING THE FMI STANDARD BUCHA Jozef¹, DANKO Ján¹, MAGDOLEN Ľuboš¹ <i>¹ Faculty of Mechanical Engineering, Institute of Automotive Engineering and Design, Slovak University of Technology in Bratislava, Nám. slobody 17,812 31 Bratislava, Slovakia</i></p>
<p>10:10 – 10:30</p>	<p>Coffee break</p>
<p>10:30 – 12:10 SEPTEMBER 11, 2025 THURSDAY</p>	<p>Plenary session – LOBBY BAR Automotive Engineering Chairman: assoc. prof. Ing. Andrej CHRÍBIK, PhD.</p>

<p>10:30 – 10:50 Automotive Engineering Lobby Bar</p>	<p>ANALYSIS OF THE DESIGN OF A PROTECTIVE FRAME DEVELOPED FROM CARBON COMPOSITE</p> <p>KUČERA Ľuboš¹, KOHÁR Róbert¹</p> <p><i>¹ Faculty of Mechanical Engineering, University of Žilina, department of design and machine elements, Univerzitná 8215/1, 010 26 Žilina, Slovakia</i></p>
<p>10:50 – 11:10 Automotive Engineering Lobby Bar</p>	<p>WEAR OF NANO-COATINGS APPLIED IN THE TRANSMISSION MECHANISMS</p> <p>TÓTH František¹, KADNÁR Milan¹, HARNIČÁROVÁ Marta², VALÍČEK Jan², TKÁČ Zdenko³</p> <p><i>¹ Faculty of Engineering, Slovak University of Agriculture in Nitra, Institute of Design and Engineering Technologies, Trieda Andreja Hlinku 2, 949 76 Nitra, Slovakia</i></p> <p><i>² Faculty of Engineering, Slovak University of Agriculture in Nitra, Institute of Electrical Engineering, Automation, Informatics and Physics, Trieda Andreja Hlinku 2, 949 76 Nitra, Slovakia</i></p> <p><i>³ Faculty of Engineering, Slovak University of Agriculture in Nitra, Institute of Agricultural Engineering, Transport and Bioenergetics, Trieda Andreja Hlinku 2, 949 76 Nitra, Slovakia</i></p>
<p>11:10 – 11:30 Automotive Engineering Lobby Bar</p>	<p>NUMERICAL ANALYSIS OF CONTACT OF CONICAL PIPES</p> <p>JANČO Roland¹</p> <p><i>¹ Institute of Applied Mechanics and Mechatronics, Faculty of Mechanical Engineering, Slovak University of Technology in Bratislava, Nám. slobody 17,812 31 Bratislava, Slovakia,</i></p>
<p>12:10 – 12:20</p>	<p><u>Group Photo / Meadow in front of the hotel</u></p>
<p>12:20 – 13:00</p>	<p>Lunch</p>
<p>13:10 – 19:00</p>	<p>Accompanying event (tourism, cable car to Nová Hoľa, tour to the Harmanecká cave, wellness at the hotel, etc.)</p>
<p>13:20</p>	<p>Bus departure to Harmanecká cave</p>
<p>18:30 – 19:15</p>	<p>Meeting of department heads</p>
<p>19:30 – 02:00</p>	<p>Banquet</p>

SEPTEMBER 12, 2025 – FRIDAY – Last day of the Conference

07:30 – 08:20 Breakfast

08:30 – 10:50 Plenary session – LOBBY BAR

**SEPTEMBER 12,
2025
FRIDAY**

Automotive Engineering

Chairman: prof. Ing. Miroslav BOŠANSKÝ, CSc.

08:30 – 08:50

Automotive
Engineering
Lobby Bar

**METHODOLOGY FOR CREATING AN OVERTAKING
MANEUVER IN THE SIMULINK SIMULATION
ENVIRONMENT**

KEVICKÝ Igor¹, MAGDOLEN Luboš¹, MILESICH Tomáš¹

¹ Faculty of Mechanical Engineering, Institute of Automotive Engineering and Design, Slovak University of Technology in Bratislava,
Nám. Slobody 17, 812 31 Bratislava, Slovakia

08:50 – 09:10

Automotive
Engineering
Lobby Bar

**INVESTIGATION OF THE POSSIBILITY OF MODERNIZING
EXISTING PLANETARY GEARS THROUGH THE USE OF
GEARS WITH HCR ENGAGEMENT**

BOŠANSKY Miroslav¹, PROTASOV Roman¹, ONDRUŠKA Juraj¹,
VORONTSOV Borys²

¹ Faculty of Mechanical Engineering, Institute of Automotive Engineering and Design, Slovak University of Technology in Bratislava,
Nám. slobody 17, 812 31 Bratislava, Slovakia

² Institute of Mechanical Engineering, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”,
Peremohy prosp., 37, Kyiv, 03056, Ukraine

09:10 – 09:30

Automotive
Engineering
Lobby Bar

**INVESTIGATION OF A COMBINED SYSTEM FOR AXIAL
PRELOAD OF HIGH-SPEED SPINDLE BEARINGS**

PROTASOV Roman¹, ONDRUŠKA Juraj¹, BOŠANSKY Miroslav¹,
BABICS Jozef²

¹ Faculty of Mechanical Engineering, Institute of Automotive Engineering and Design, Slovak University of Technology in Bratislava,
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² Faculty of Mechanical Engineering, Institute of manufacturing systems, environmental technology and quality management, Slovak University of Technology in Bratislava, Nám. slobody 17, 812 31 Bratislava, Slovakia

<p>09:30 – 09:50 Automotive Engineering Lobby Bar</p>	<p>EVALUATION OF COOLING PARAMETERS FOR HIGH-SPEED SPINDLES WITH HYBRID DRIVE</p> <p>ONDRUŠKA Juraj¹, PROTASOV Roman¹, BOŠANSKY Miroslav¹, BABICS Jozef²</p> <p>¹ Faculty of Mechanical Engineering, Institute of Automotive Engineering and Design, Slovak University of Technology in Bratislava, Nám. slobody 17, 812 31 Bratislava, Slovakia</p> <p>² Faculty of Mechanical Engineering, Institute of manufacturing systems, environmental technology and quality management, Slovak University of Technology in Bratislava, Nám. slobody 17, 812 31 Bratislava, Slovakia</p>
<p>09:50 – 10:10 Automotive Engineering Lobby Bar</p>	<p>EFFICIENT FUSION OF DUAL LIDAR DATA STREAMS WITH MAINTAINED ORGANIZED STRUCTURE</p> <p>MILESICH Tomáš¹, KEVICKÝ Igor¹, BUCHA Jozef¹</p> <p>¹ Faculty of Mechanical Engineering, Institute of Automotive Engineering and Design, Slovak University of Technology in Bratislava, Nám. slobody 17, 812 31 Bratislava, Slovakia</p>
<p>10:10 – 10:30 Automotive Engineering Lobby Bar</p>	<p>TRENDS IN PROGRESSIVE REVERSE ENGINEERING AND RAPID PROTOTYPING METHODS FOR MACHINE COMPONENT PRODUCTION</p> <p>ŠALKOVIČOVÁ Terézia¹, ONDRUŠKA Juraj¹, KOREC Filip¹, PROTASOV Roman¹</p> <p>¹ Faculty of Mechanical Engineering, Institute of Automotive Engineering and Design, Slovak University of Technology in Bratislava, Nám. slobody 17, 812 31 Bratislava, Slovakia</p>
<p>10:30 – 10:50 Automotive Engineering Lobby Bar</p>	<p>DESIGN, STRENGTH ANALYSIS AND PRODUCTION OF GEARS FOR MINING MACHINES</p> <p>PERMJAKOV Oleksandr¹, KLOCHKO Oleksandr¹, USTYNENKO Oleksandr¹, RIABCHENKO Serhii², DERGOUSOV Vadym³, BEREZHNYI Roman³, <u>NEZHBOVS'KYI Volodymyr³</u>, UDOVIKOV Yurii⁴</p> <p>¹ Institute of Education and Science in Mechanical Engineering and Transport, National Technical University "Kharkiv Polytechnic Institute", 61002 Kharkiv, Ukraine</p>

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11:00 – 11:30	Official closing of the Conference
12:00 – 13:30	Lunch

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