

Programme to **ICMD 2022** from 13th to 15th September 2022.

12.9. 2022

17^{.00} – 23^{.00} Arrival, Registration

13.9. 2022

7^{.30} – 9^{.00} Breakfast, Registration

10^{.00} – 12^{.15} **Start of ICMD 2022 - Plenary Session (Doc. M. Petru)**

10^{.00} – 10^{.15} **Doc. Michal PETRU** - Chair of ICMD 2022: preface

Dr. Jan VALTERA – Vice-dean of Faculty of Mechanical Engineering:
opening speech of the conference ICMD 2022

10^{.15} – 10^{.45} **Prof. Olga PARASKA** (UKR) - An Innovative Solution to Optimize
Ultrasound Diagnostics by Introducing a Portable Ultrasound Device to
the European Medical Market

10^{.45} – 11^{.15} **Prof. Mohd Yazid YAHYA** (MYS) - Blast Protection Analysis of Glass
Fibre-Reinforced Polypropylene Aluminium Laminate

11^{.15} – 11^{.45} **Prof. M. R. AYATOLLAHI** (IRN) - A Three-dimensional Crack Under
Complex Loading Conditions

11^{.45} – 12^{.15} **Prof. Ladislav SEVCIK** (CZE) - The New Areas of Component Design
Machine

12^{.15} – 12^{.30} Photography

12^{.30} – 13^{.30} Lunch

Room A – Modern Material and Technology (Doc. J. Mlynek)

13^{.30} – 15^{.00} Presentations:

M. ABD RASED - Study on Composite Material Structure Profile Design in
Electric Vehicle Application

Reza MOEZZI - Effect of Blade Pitch Angle on A 2-Bladed Horizontal Axis
Tidal Current Turbine Performance

Nesrine AMOR - The Use of Artificial Neural Network for Dye Removal

Petr KULHAVY - Study of Mechanical Properties of Carbon Composites
Connected by Adaptive Fastening System

Muhammad Tayyab NOMAN - Efficient Antimicrobial Nanocomposite with
Enhanced Comfort Properties

Frantisek NOVY - Fatigue Failure of the Self-trailer Frame

15^{.00} – 15^{.30} Coffee Break



EUROPEAN UNION
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Operational Programme Research,
Development and Education



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Room A – Machine design and Innovation (Prof. L. Pesik)

15.³⁰ – 17.⁰⁰ Presentations:

Lubos HES - Fabric Friction Tester on Rotational Principle with High Repeatability

Zdenek FOLTA - Crane Structure Deformation Sensor

Lubos KUCERA - Specifics of Design of Special Metrological Devices

Vojtech DYNBYL - Force Analysis of a Bevel Gear in The Drive of a Milling Head and Design of Bearings

Radka JIROVA - Pneumatic Suspension of the Base Desk with Frequency Regulation

17.⁰⁰ – 17.³⁰ Coffee Break

Room A – Electromobility and other related topics (Prof. V. Dynybyl)

17.³⁰ – 19.⁰⁰ Presentations:

Jaroslav MLYNEK - Modelling the Winding of Composite Frames for The Automotive Industry

Jan KOCI - Concept of autonomous vehicle control and data acquisition

Josef BROUSEK - Mechanical Components Design for an Autonomous-Ready Vehicle

Ladislav SEVCIK - Composite Frame of The Electric Car Body with Inserts M8_5 BN 4575

Petr BUZEK - Design of Recycling Technology to Obtain Energy, without Impact on The Environment

19.⁰⁰ – 24.⁰⁰ **Dinner, wellness, free programme**





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7^{.30} – 9^{.00} Breakfast

Room A – Electromobility and other related topics (Doc. R. Mishra)

9^{.00} – 10^{.30} Presentations:

Michal Petru - Numerical Simulation on Mechanical Performance of Hybrid Natural Fiber Polymer Composite for Construction Parts to Modular Platform for Autonomous Chassis of Specialized Electric Vehicles for Freight And Equipment Transportation

Rajesh MISHRA - Numerical Modeling and Experimental Analysis of Lightweight Composite Structures for Automotive Ap-plications

Shi HU - Sandwich Structured Carbon Fiber Composites with Enhanced EMI Shielding Performance

Hana KRIZOVA - Thermo-chromic and Electrical Properties of Silica/DEA-CuCl₄ Sensory Composite

10^{.30} – 11^{.00} Coffee Break

Room B – Engineering Analyses (Prof. D. Herak)

9^{.00} – 10^{.30} Presentations:

Abraham KABUTEY - Analysis of Output Oil Yield and Energy Utilization of Bulk Pumpkin Seeds Under Constant Loading

Vaclav VANEK - Root Parenting Layout of GPS and Fixation of Floating Tolerance Fields Movement in Defined Directions

Karel PETR - Application and Explanation of General Geometric Tolerances According to ISO 22081

Jozef BRONCEK - Dimensional and Geometrical Analysis of Components According to Geometrical product specification (GPS)

Milos NEMCEK - Calculation of Coordinates of an Internal Gearing Fillet Manufactured by a Pinion-type Shaper Cutter with Rounded Tip

Jakub FIACAN - Mathematical Analysis of Propeller Flight Simulation.

10^{.30} – 11^{.00} Coffee Break





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Room A – Electromobility and other related topics (Prof. L. Kucera)

11.⁰⁰ – 12.³⁰ Presentations:

Pavel Jandura - Development of the Modular DC Fast Charging Station for Electric Vehicles

Miroslav NOVAK - Li-ion Battery Cell Aging Modeling based on Impedance Spectroscopy

Daniel KAJZR - Autonomous Vehicle Control Working Sample

Jindrich CYRUS - Autonomous Vehicle Control

Petr BILEK - Simulation and Testing of Pacemaker Electromagnetic Compatibility in an Electric Traction Environment

Miroslav NOVAK - BLDC Motor Analysis in Ansys Electronics Software

Room B – Experimental Methods and Measuring (Prof. M. Nemcek)

11.⁰⁰ – 12.³⁰ Presentations:

Ales LUFINKA - Technical Solution of The Experiment for Transfer Function Measurement During Multi-Axis Excitation

Martin MAZAC - Vibration Assessment of Ski Lift Gearbox

Eliska CEZOVA - Automated Processing of Experimental Data and Reports Using Free Software

Jan STEININGER - Testing of Axleboxes for Railway Vehicles on The TBRB 01 Test Bench in Accordance with EN 12 082

Jozef KRAJNAK - Investigation of Temperature Change for Two Flexible Pneumatic Elements Dynamically Loaded

Jan KANAVAL - Experimental Measurement of Friction Coefficients Under the Bolt Head and Under the Nut of the Bolted Connection

Room C – Meeting of Heads of Departments

11.⁰⁰ – 12.³⁰ Discussion on the problematic of ICMD

12.³⁰ – 13.³⁰ Lunch

14.⁰⁰ – 18.⁰⁰ Trips, wellness, free programmes

19.⁰⁰ – 24.⁰⁰ **Gala Dinner**





Programme to **ICMD 2022** from 13th to 15th September 2022.

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7.³⁰ – 9.⁰⁰ Breakfast

Room A – Machine design and Innovation and Tribology (Doc. J. Broncek)

9.⁰⁰ – 10.¹⁵ Presentations:

Jozef BRONCEK - Investigation of the Tribological Properties WC-Co Coatings

Lukas HRUZIK - Decrease in The Roughness of the Shaft Surface During Application of the Clamping Sleeve

Matus CUCHOR - Evaluation of Tribological Properties of Thin Coatings Formed by Solid Lubricants in Specific Conditions

Norbert RADEK - Operational Properties of Masking Coatings Used in Military Technology

Norbert RADEK - Selected Surface Properties After Laser Cleaning of Coatings

10.¹⁵ – 10.⁴⁵ Coffee Break

Room B – Engineering Analyses (Prof. F. Novy)

9.⁰⁰ – 10.¹⁵ Presentations:

Jiri STRUZ - Comparison of Topological Optimization Postprocessing in Ansys Workbench and Altair Inspire

Jozef ONDRIGA - Preparation of Synthetic Data to be Used as Inputs for Neural Network Using CAD System.

Rajesh MISHRA - Compression Behavior Of Composite Rocket Launcher Developed by Robotized Filament Winding: Optimization of Processing Parameters

Oldrich DAJBYCH - Approximate Functions for Geometric Constants of The Rectangular Cross-Section in Torsion

Reza MOEZZI - Transition from Pandemic: "Positive" Post Traumatic Growth for A Meaningful Life

10.¹⁵ – 10.⁴⁵ Coffee Break





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Room A – Machine design and Innovation (Doc. I. Masin)

10^{.45} – 12^{.00} Presentations:

Ivan MASIN - Trends of Evolution of Autonomous Work Vehicles

Pavel JANDURA - Review Karakuri Systems

Josef HYKL - The Emission Impact of the Innovative Grate in the Stove

Peter WEIS - Augmented Reality in Education

Room B – Electromobility and other related topics (Dr. P. Jandura)

10^{.45} – 12^{.00} Presentations:

Pavel JANDURA - LiDAR Localization in Rugged Environment

Lukas KRČMAR - Design of Traction Battery for Autonomous Vehicle

Ondrej MACH - Vehicle Control Unit of the Autonomous Electric Platform

12^{.00} – 13^{.00} **Closing of ICMD 2022**

13^{.00} – 14^{.00} Lunch

