



KAUNAS UNIVERSITY OF TECHNOLOGY



Programme

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Kaunas University of Technology
in cooperation with Lithuanian Academy of Science, IFToMM National
Committee of Lithuania, Baltic Association of Mechanical Engineering

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WELCOME SESSION

Join Zoom Meeting

<https://litedm.zoom.us/j/94782090945>

9.00-9.30 h

Chairperson – dr. Sigita Urbaitė

9.05-9.10 *Words of Welcome*

Prof. Habil. Dr. Vytautas Ostaševičius (Member of Lithuanian Academy of Sciences, Director of Mechatronics Institute, Kaunas University of Technology)

9.10-9.30 *Invited speech*

Prof. Valdas Eidukynas (Head of 3D Experience Excellence Centre, Kaunas University of Technology)

Section A

Join Zoom Meeting

<https://litedm.zoom.us/j/94782090945>

9.30-12.30 h

Moderator – Prof. Dr. Paulius Griškevičius

9:30-9:45	Investigation of aerodynamic parameters for aerosols removal in the classifier [A.1] <i>Tautvydas JUKNEVIČIUS</i> Vilnius Gediminas Technical University, Lithuania
9:45-10:00	PID, Fuzzy PID controls and dynamics of RCM surgical system taking into account inputs from in vitro experiments on cardiovascular tissue [A.2] <i>Grzegorz ILEWICZ</i> Institute of Micomechanics and Photonics, Warsaw University of Technology, Poland
10:00-10:15	Towards Accurate Power Modelling in Mobile Robots: Comparative Insights from Simulation and Hardware Implementations [A.3] <i>Bilal KHAN</i> U.S.-Pakistan Centre for Advanced Studies in Energy, University of Engineering and Technology, Pakistan
10:15-10:30	Experimental Investigation and Variance Analysis of Kerf Quality in Laser Cutting of Thin ABS Parts Manufactured by Fused Filament Fabrication [A.4] <i>Gokhan BASAR, Oguzhan DER</i> Osmaniye Korkut Ata University, Turkey
10:30-10:45	The Non-linear Modelling of the axial force-displacement behaviour of the Human vertebra subject to the axial load [A.5] <i>Darius ZABULIONIS, Olga CHABAROVA, Jelena SELIVONEC</i> Vilnius Gediminas Technical University, Lithuania
10:45-11:00	Speed Control Based on Motion Blending Trajectory and Repetitive PID for Nonlinear Servo Motor Systems [A.6] <i>Melihcan KOCABIYIK, Fatih ADIGÜZEL</i> Department of Control and Automation Engineer, Yildiz Technical University, Turkey
11:00-11:15	Compliant Mechanism as Bicycle Spokes [A.7] <i>Prathmesh Hitesh SHAH, Inga SKIEDRAITĖ</i> Kaunas University of Technology, Lithuania
11:15-11:30	Soil Liquefaction Analysis with Machine Learning and SHAP Analysis [A.8] <i>Yaren AYDIN, Gebrail BEKDAŞ</i> Istanbul University – Cerrahpaşa, Turkey
11:30-11:45	Design and Simulation of an Innovative Vegetable Slicer Machine [A.9] <i>Surendra Kumar SAINI, Erastus Weyulu SHUUDENI</i> University of Namibia, Namibia
11:45-12:00	The Impact of Nano Hydroxyapatite and Alumina on the Mechanical and In Vitro Degradation Properties of Biodegradable Mg4Zn1Mn Alloy Fabricated via Powder Metallurgy [A.10] <i>Demet ZALAOĞLU, Emre ÖZER, Mehmet AYVAZ, Mustafa ÜBEYLİ, Umut AKSU, Musa ERYILMAZ</i> Osmaniye Korkut Ata University, Turkey
12:00-12:15	Comparison of Control Performance with Optimum Isolator Parameters for Different Structural Systems Under Various Earthquakes [A.11] <i>Ayla OCAK, Sinan Melih NİGDELİ, Gebrail BEKDAŞ</i> Istanbul University – Cerrahpaşa, Turkey
12:15-12:30	Festo and Mitsubishi Simulation Stand [A.12] <i>Tomas IGNATAVIČIUS, Ginas ČIŽAUSKAS, Kęstutis PILKAUSKAS</i> Kaunas University of Technology, Lithuania
12:30-12:45	Application Possibilities of Double Disc Ultrasonic Vibration System for Particle Agglomeration [A.13] <i>Audrius ČEREŠKA, Regimantas BAREIKIS, Algimantas ROTMANAS</i> Vilnius Gediminas Technical University, Lithuania

Section B

Join Zoom Meeting

<https://litedm.zoom.us/j/97996338348>

9.30-12.45 h

Moderator – Assist. Prof. Joris Vėžys

9:30-9:45	Seismic Performance Assessment of an Existing Retrofitted Reinforced Concrete Building [B.1] <i>Mehmet Fırat KARAPINAR, Baris SAYIN, Baris GUNES, Kamran SAMADI</i> Istanbul University-Cerrahpaşa, Turkey
9:45-10:00	Control of Applied Friction Pendulum Type Isolators According to Regulations [B.2] <i>Batuhan KAHVECİOĞLU, Sinan Melih NİGDELİ, Tuna Hamza ADIGÜZEL, Gebrail BEKDAŞ</i> Istanbul University – Cerrahpaşa, Turkey
10:00-10:15	Hyper- State of Lower Pair Kinematics Chains and Automatic Differentiation of Nilpotent Algebra [B.3] <i>Daniel CONDURACHE, Mihail COJOCARI, Ionut POPA</i> Gheorghe Asachi Technical University of Iasi, Romania
10:15-10:30	Seismic Performance Assessment of an Existing Historic Masonry Building and Proposal for a Retrofitting Method [B.4] <i>Mehmet Fırat KARAPINAR, Baris SAYIN, Kamran SAMADI, Baris GUNES</i> Istanbul University-Cerrahpaşa, Turkey
10:30-10:45	Simulation of a Multiple Drop Test of Lithium-Ion Battery Elements [B.5] <i>Adam RURAŃSKI, Waclaw KUŚ</i> Silesian University of Technology, Poland
10:45-11:00	Mitigation of Seismic Responses in Soft-Story Structures Using MTMDs Optimized by Den Hartog Technique [B.6] <i>Farah ALNAYHOUM, Sinan Melih NİGDELİ, Gebrail BEKDAŞ</i> Istanbul University – Cerrahpaşa, Turkey
11:00-11:15	Study on Lean Readiness Assessment and Key Influential Factors in Successful Deployment of Lean Manufacturing in Namibian SMEs [B.7] <i>Surendra Kumar SAINI, Tavonga Lesley SHUMBA, Ester ANGULA</i> University of Namibia, Namibia
11:15-11:30	Archimedes Optimization Algorithm for Reinforced Concrete Slab Cost Minimization [B.8] <i>Yaren AYDIN, Sinan Melih NİGDELİ, Gebrail BEKDAŞ</i> Istanbul University – Cerrahpaşa, Turkey
11:30-11:45	A Review on Impregnation Methods of Continuous Fiber Tow for Additive Manufacturing of Composite Structures [B.9] <i>Muhammad Abuzar KHAN, Marius RIMAŠAUSKAS</i> Kaunas University of Technology, Lithuania
11:45-12:00	Evaluation of the Suitability of the Strengthening Project for an Existing RC Building: A Case Study [B.10] <i>Kamran SAMADI, Baris SAYIN, Baris GUNES, Mehmet Fırat KARAPINAR</i> Istanbul University-Cerrahpaşa, Turkey
12:00-12:15	Rheological Characterization of Newtonian and Non-Newtonian Fluids in Complex Microfluidic Channel Under Acoustic and Non-Acoustic Conditions [B.11] <i>Muhammad WAQAS, Arvydas Palevičius</i> Kaunas University of Technology, Lithuania
12:15-12:30	A Case Study on the Seismic Performance of an Existing Masonry-Timber Building [B.12] <i>Kamran SAMADI, Baris SAYIN, Baris GUNES, Mehmet Fırat KARAPINAR</i> Istanbul University-Cerrahpaşa, Turkey
12:30-12:45	Evaluation of the Seismic Performance Level of a Reinforced Concrete Structure [B.13] <i>Mehmet Fırat KARAPINAR, Baris SAYIN, Baris GUNES, Kamran SAMADI</i> Istanbul University-Cerrahpaşa, Turkey

Section C

Join Zoom Meeting

<https://litedm.zoom.us/j/99377133146>

9.30-12:45 h

Moderator – Assoc. Prof. Vitalis Leišis

9:30-9:45	Coupled FE model of dragonfly wing [C.1] <i>Muhammad Usman YOUSAF, Rimvydas GAIDYS</i> Kaunas University of Technology, Lithuania
9:45-10:00	Investigation of the Seismic Performance of the Structure and Foundation of an Existing RC Building: A Case Study [C.2] <i>Kamran SAMADI, Baris SAYIN, Baris GUNES, Mehmet Fırat KARAPINAR</i> Istanbul University-Cerrahpaşa, Turkey
10:00-10:15	Research on Maintenance Procedures for Unmanned Aerial Vehicles [C.3] <i>Azad ISMAYILOV, Kazimieras JUŽENAS</i> Kaunas University of Technology, UAB FL Technics, Lithuania
10:15-10:30	Seismic Performance Assessment of a Previously Strengthened RC Building: A Case Study [C.4] <i>Kamran SAMADI, Baris SAYIN, Baris GUNES, Mehmet Fırat KARAPINAR</i> Istanbul University-Cerrahpaşa, Turkey
10:30-10:45	CNN Based Assistive Assembly Stand [C.5] <i>Mykolas Benjaminas MEŠKAS, Vidas RAUDONIS</i> Kaunas University of Technology, Lithuania
10:45-11:00	A Predictive Model-Based Method For Steel Tensile Strength Estimation [C.6] <i>Tuna Hamza ADIGÜZEL, Sinan Melih NİGDELİ, Gebrail BEKDAŞ</i> Istanbul University – Cerrahpaşa, Turkey
11:00-11:15	Influence of Mesh Refinement on the Displacement in a Plane Stress Model [C.7] <i>Ibrahima Kalil CAMARA, Sinan Melih NİGDELİ, Gebrail BEKDAŞ</i> Istanbul University – Cerrahpaşa, Turkey
11:15-11:30	Design and Stress Analysis of Transmitting Gears used in Lathe Machine [C.8] <i>Surendra Kumar SAINI, Junestus Iлека NEGONGO</i> University of Namibia, Namibia
11:30-11:45	Optimum Carbon Fibre Reinforced Polymer (CFRP) Reinforcement Design for Enhancing Shear Capacity of Reinforced Concrete Columns via Jaya and Teaching-Learning-Based Optimization Metaheuristic Algorithms [C.9] <i>Ammar KHALBOUS, Sinan Melih NİGDELİ, Gebrail BEKDAŞ</i> Istanbul University – Cerrahpaşa, Turkey
11:45-12:00	Sensitivity of Initial Conditions in Multibody Systems: A Computational Framework and Applications [C.10] <i>Ayman Ali Ahmed NADA</i> Egypt-Japan University of Science and Technology, Egypt
12:00-12:15	Machine Learning Techniques for the Mechanical Properties of Recycled Aggregate Concrete [C.11] <i>Farnaz AHADIAN, Sinan Melih NİGDELİ, Gebrail BEKDAŞ</i> Istanbul University – Cerrahpaşa, Turkey
12:15-12:30	Design and Structural Performance of a Foldable Chair using Finite Element Analysis [C.12] <i>Surendra Kumar SAINI, Andreas IMENE</i> University of Namibia, Namibia
12:30-12:45	Finite Element Analysis of Crack Propagation Using Cohesive Zone Modelling [C.13] <i>Evaldas NARVYDAS, Gintautas DUNDULIS, Nomeda PUODŽIŪNIENĖ</i> Kaunas University of Technology, Lithuania