26th International Conference
Applied Mechanics 2025

Program

**INSTITUTE OF PHYSICS
OF MATERIALS**
Czech Academy of Sciences

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Conference Program
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Monday – 28. 4.

From	To	Program	
12:00	18:00	On-site Registration - opening hours	
12:30	14:00	Lunch	
		Plenary session – Keynote lectures | Chair: Luboš Náhlík	
14:30	14:35	**Luboš Náhlík | Official welcome**	
14:35	15:25	**Radek Urbiš | On the Development of Vehicle Safety at Škoda (triangle: FEM simulation, construction and testing)**	
15:25	16:15	**Tomáš Bouda | An approach to the calibration of advanced material models in IDIADA**	
16:15	16:30	Coffee break	
		Session A | Chair: Milan Vaško	**Session B | Chair: Michal Hajžman**
16:30	16:50	Ondřej Pavlík* | Optimizing Pre-Stress in Filament Winding for Enhanced Carbon-Fiber Reinforced Polymer Composite Sleeves in High-Speed PMSM Rotors	Michael Jurča* + Jan Konečný* | Development of elastomeric structures on the principle of pneumatic soft gripper and implementation of feedback PID control
16:50	17:10	Zdeněk Padovec | Thermoelastic Stresses in Cylinder/Dome Joint of Wound Composite Shells	Martin Kolář* | Using a neural network for optical position sensing of a point in space
17:10	17:30	Jaroslav Majko* | ASTM/ISO 52924 and tensile testing of 3D printed composites	Ondrej Piroh* | Using image analysis to detect heat treatment of microstructures
17:30	17:50	Martin Ševčík* | Analysis of thin-walled anuloid shape pressure vessel wound from composite material	Lucia Deganová* | Non-Destructive Evaluation of Moisture in Honeycomb Structures Using Pulsed Thermography and Post-Processing Methods
17:50	18:10	Marián Handrik | Influence of Specimen Shape and Dimensions on Tensile Testing of Composite Materials	Barbora Drvárová* | Experimental Investigation of the Impact of Print Orientation on the Damping Ratio of SLS-Manufactured PA 2200 Material
18:10	18:30	Dominik Izák Exner* | Determination of the sensitivity of Carbon Fiber Sensors and their application in deformation measurements	Jan Zavřel | Experimental identification of passive effect model parameters
19:00	21:00	Dinner	

Standard presentation slots: 20 minutes (15 min presentation, 5 min discussion)

* Participants in the Best Presentation contest for Young Scientists (= students under 35 years)

Tuesday – 29. 4. (part 1/2)

From	To	Program	
7:00	9:00	Breakfast	
8:00	12:00	On-site Registration - opening hours	
		Session A | Chair: Roland Jančo	**Session B | Chair: Michal Sivčák**
9:00	9:20	Anna Tošková* | Determination of Multiaxial Low-Cycle Fatigue Life Using Jiang Criterion	Lenka Jakubovičová | Methodology for evaluating experimental data obtained from creep tests
9:20	9:40	Dušan Tichoň* | Can fatigue crack propagation data in welds be simply transferred between bodies of different	Štěpán Dyk | Parametric Study of a Cubic Nonlinear Energy Sink and Its Slow Invariant Manifolds
9:40	10:00	Katarína Pijáková* | Modelling of fatigue processes by coupling Adina and Matlab	Radek Bulín | On the isolated solution branches tracking of nonlinear mechanical systems
10:00	10:20	Mohammad Sami Al Khazali* | Stress Analysis and Fatigue Behavior of S460NL High-Strength Steel Welded Joints	Ján Minárik | Comparison of gradient-based methods in the optimization of natural frequencies
10:20	10:40	Radim Petkov* | Cyclic Plasticity Modelling of Additively Manufactured Inconel 718	Zbyněk Šika | Coupled double pendulum mechanism for eigenmotion concept
10:40	10:55	Coffee break	
		Plenary session | Chair: Martin Fusek	
10:55	11:15	Kristýna Kubášová* | The Future Potential of NiTi Alloys in Osteosynthesis Devices	
11:15	11:35	Adam Kratochvíl | Mechanobiology of Bone Fracture Healing Using Nail Dynamization in Intramedullary Osteosynthesis	
11:35	11:55	Ondřej Zoufalý* | Muscle forces estimation of the upper extremity using the direct collocation method	
11:55	12:15	Zbyněk Sobotka* | Constitutive Model for Human Basilic Vein	
12:15	12:35	Matej Hanzalík* | Parametric FEA simulation of metal strain gauge	
12:35	13:50	Lunch	
		Sponsors session | Chair: Jan Poduška	
13:50	14:10	Danfoss | Richard Petrech | Fatigue calculation of cylinder block in the axial piston pumps	
14:10	14:30	Techsoft | Adam Čala | Methods beyond classical FEM	
14:30	14:50	X-Sight | Bořek Šcerba | Optical Measurement Systems for Experimental Validation of FEA and Material Models	
14:50	15:05	Coffee break	

Tuesday – 29. 4. (part 2/2)

		Plenary session | Chair: Zdeněk Padovec
15:05	15:25	Filip Zogata* | Cyclic Plasticity and LCF Properties of Additive and Conventional SS316L
15:25	15:45	Martin Mánek* | Measurement of mechanical properties of 3D printed polymer under compressive loading
15:45	16:05	Martin Isoz | Towards fast prototyping of Laser Shock Peening treatment
16:05	16:25	Radim Halama | Initial Anisotropy of SS316L Manufactured by SLM
16:25	17:00	**Scientific Committee Meeting – Evaluation of Student Presentations**
17:00	18:30	Free time / Tour
19:00	22:00	19:00 - 19:15 **Best Presentation Awards** 19:15 - 20:30 **Dinner** 20:30 - 21:30 **Wine Tasting (with small refreshments)** 21:30+ **Rest of the evening**

Wednesday – 30. 4.

From	To	Program
7:00	9:30	Breakfast
		Plenary session | Chair: Pavel Hutař
9:30	9:50	Jan Rendl | Parametric study of tilting pad journal bearing setup
9:50	10:10	Michal Hajžman | Effect of model parameters on the dynamic behaviour of a freight wagon for heavy loads
10:10	10:30	Roland Janco | Pressing Joint of Two Conical Pipes Stress Analysis
10:30	10:50	Pavol Dlhý | Residual Stresses and Fatigue Crack Propagation: A Study of Induction Hardened Steel
10:50	11:10	Radek Kubíček
11:10	11:30	Jan Poduška | Numerical modelling of polymer metamaterial structures for fatigue analysis
11:30	11:35	**Luboš Náhlík | Official closing of the conference**
11:35	13:30	Lunch

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