

PhD Students' Day FMST 2025

When: 31.10. 2025, from 8:00

Where: VŠB-TUO, B3 room

Section 1

- Thermal Engineering and Fuels in Industry
- Metallurgical Technology
- Materials Science and Engineering
- Management of Industrial Systems

Committee:

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Time		Name	Paper
Study programme: Thermal Engineering and Fuels in Industry			
8:10	8:25	Petra Maierová	Properties and stability of steelmaking slags
8:25	8:40	Dharma Rooban Moorthi	Helical pillared graphene nanostructures: promoting thermal retention through molecular dynamics analysis
8:40	8:55	Jana Růžička	Study of the optimization of the casting process for steel flywheel rotors using MAGMASOFT® simulation software
Study programme: Metallurgical Technology			
8:55	9:10	Jiří Cupek	CFD analysis of non-metallic inclusion behaviour under unsteady steel flow in the CCS tundish
9:10	9:25	Matěj Geryk	Evaluation of the quality of material produced by additive technology and the resulting quality of castings using investment casting technology on a meltable model using a digital microscope
9:25	9:40	Šimon Kielar	The influence of hybrid bentonites and carbon additives on the quality and technological properties of moulding sand
9:40	9:55	Kateřina Miczková	Possibilities of recycling and utilisation of foundry waste in the circular economy
9:55	10:10	Lukáš Pavlásek	New low-carbon aluminium alloy concept for the automotive industry
Study programme: Management of Industrial Systems			
10:10	10:25	Ondřej Balek	Creative destruction revisited: Innovation and stability in the 21st century

10:25	10:40	Jingjing Duan	Measurement and analysis of Sci-Tech finance efficiency in the middle reaches of the Yangtze River economic belt
10:40	10:55	Weixue Han	TMT heterogeneity and ESG: The roles of agency costs and firm ownership
10:55	11:15	Coffee break	
11:15	11:30	Filip Havlíček	Use of a pulsed cleaning laser in unconventional machining of metallic materials
11:30	11:45	Lucie Hofrichterová	Industrial decarbonization in the era of climate responsibility
11:45	12:00	Matěj Hrouda	Assessment of logistics processes preparedness in an industrial company
12:00	12:15	Jaroslav Josefi	Typology of risks in the transformation of maintenance processes to Industry 5.0 conditions
12:15	12:30	Natálie Kawuloková	Implementing circular economy in industrial enterprises: Opportunities and challenges
12:30	12:45	Tomáš Kramný	Analysis of risk quantification methodologies
12:45	13:00	Radek Lhotský	Using VSM 4.0 to identify opportunities for process digitalisation
13:00	13:15	Jan Pečman	Qualitative aspects of transport infrastructure: From technical parameters to sustainable use
13:15	13:30	Kristýna Pustějovská	Decoupling: Balancing the economy and nature
13:30	13:45	Jan Pszczolka	Optimization of stress-relieving heat treatment in beadwire production and quality control
13:45	14:00	Lukáš Raszka	Lightweight deep learning approach for underwater gas leak Detection
14:00	14:15	Mitra Rastegaralam	Circular economy and its implementation in industrial enterprises
14:15	14:30	Jiří Záruba	Change in material delivery logic in the automotive industry
BEST PRESENTATION AWARD			

PhD Students' Day FMST 2025

When: 31.10. 2025, from 8:00

Where: VŠB-TUO, B4 room

Section 2

- Nanotechnology
- Chemical Metallurgy
- Chemical and Environmental Engineering

Committee:

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Time		Name	Paper
Study programme: Materials Science and Engineering			
8:10	8:25	Marek Harok	Properties and behaviour of carbon–flax hybrid composites
8:25	8:40	Muhammad Ahmad Iqbal	Effect of graphene reinforcement on the microstructure of Cr-Co-Fe-Ni complex concentrated alloy consolidated by spark plasma sintering
8:40	8:55	Łukasz Kantor	Computer modelling of SiC crystal growth by the PVT method
8:55	9:10	Vít Kvasnička	High full-electrode-mass energy density from ZIF-8-derived ZnS/Graphene-Acid electrodes for solid-state supercapacitors
9:10	9:25	Ondřej Mušálek	Electrochemical measuring unit for the development of energy storage materials
9:25	9:40	Senye Liu	Liquid-phase grinding carbonated activation of solid waste and its application to cementitious materials
9:40	9:55	Michael Pánek	Coarse CAC-Based Composites as Process-Smart Materials for 3D Concrete Printing
9:55	10:10	Klára Sklenaříková	Experimental observation of composite structure with pre-cured preforms
Study programme: Nanotechnology			
10:10	10:25	Petr Běčák	Potential use of trimetallic nanoclusters
10:25	10:40	Barbora Hermanová	Biodegradable alternatives for conventionally used polymers in membranes for water treatment

10:40	10:55	Filip Komers	PEM electrolyzers
10:55	11:15	Coffee break	
11:15	11:30	Jonáš Molek	Structure Compatibility Calculation - computational determination of preferred out-of-plane and in-plane orientation of heteroepitaxial films
11:30	11:45	Ondřej Sakreida	Synthesis of carbonaceous material/graphene via electron beam from polymers
11:45	12:00	Sajjan Kumar Sathish	Suitable materials for applications in solid state battery
Study programme: Chemical Metallurgy			
12:00	12:15	Václav Kaloč	Structural changes in FeSi–NiAl composite induced by heat treatment
12:15	12:30	Sára Leinweberová	Recent progress in heat transfer salts for concentrated solar power systems
12:30	12:45	Dalibor Novák	Effect of B ₂ O ₃ addition on the wetting characteristics of polycomponent oxide system
12:45	13:00	Martin Šarman	Manganese oxide (Mn ₃ O ₄) decorated with silver nanoparticles for supercapacitor electrodes
Study programme: Chemical and Environmental Engineering			
13:00	13:15	Patrik Kopčan	Photocatalytic performance of natural palygorskite and sepiolite for hydrogen generation
13:15	13:30	Tereza Motúzová	Monitoring of pesticides in the environment
13:30	13:45	Zuzana Pěgřimočová	g-C ₃ N ₄ -based nanocomposites for sensitive SERS detection of chemical contaminants in water
13:45	14:00	Lucie Řepečká	Properties of humic acids from different natural sources
14:00	14:15	Adéla Šlachtová	Comparative catalytic performance of Pt/TixCeySzOn and transition metal–lanthanide oxide catalysts for dichloromethane oxidation
BEST PRESENTATION AWARD			