

PhD Students' Day FMST 2026

When: 30. 10. 2026, from 9:00

Where: VŠB-TUO, room B4

Section 1

- Thermal Engineering and Fuels in Industry
- Metallurgical Technology
- Chemical Metallurgy
- Chemical and Environmental Engineering
- Management of Industrial Systems

Committee:

Doc. Abdelmohsen Abdellatif

Dr. Basudev Swain

Dr. Facundo Barraque

Ing. Omar Ameir, Ph.D.

Time		Name	Presentation title
Study programme: Management of Industrial Systems			
9:10	9:25	Tomáš Kramný	Enhancing FMEA with Agentic AI: An Assessment of Opportunities and Limitations
9:25	9:40	Jan Pečman	Energy efficiency and emissions performance as a new criterion for road design
9:40	9:55	Mitra Rastegaralam	Assessment of corporate preparedness for the implications of implementing new legislation on sustainable economic practices
9:55	10:10	Jaroslav Josefi	Proposal of a Conceptual Framework for the Transformation of Maintenance Processes towards Industry 5.0
10:10	10:25	Radek Lhotský	Digital-twin-based framework for scenario-driven control of production inputs in a combined electroplating line
10:25	10:40	Adam Gřunděl	Methodological framework for strategic management and implementation of artificial intelligence in healthcare
Study programme: Metallurgical Technology			
10:40	10:55	Šimon Kielar	Properties of green sand mixtures with the addition of foundry dust
10:55	11:15	Coffee break	
11:15	11:30	Lukáš Pavlásek	High-temperature behaviour of a new low-carbon aluminium alloy for brazed heat exchangers
11:30	11:45	Kateřina Miczková	From waste characterisation to material recovery: a cascade approach to metallurgical waste recycling

11:45	12:00	Dmytro Malinin	Metallurgical waste as a source of secondary raw materials
Study programme: Chemical Metallurgy			
12:00	12:15	Václav Kaloč	Effect of directional solidification on microstructure and tribological properties of FeSi–NiAl composites
12:15	12:30	Sára Leinweberová	Experimental investigation of the liquidus temperatures and flow behaviour of NaNO ₃ -KNO ₃ melts
12:30	12:45	Martin Šarman	Recent advances in NiCo ₂ O ₄ -based electrodes for supercapacitors using non-aqueous electrolytes: Materials, electrochemical performance, and future perspectives
Study programme: Chemical and Environmental Engineering			
12:45	13:00	Patrik Kopčan	Influence of geological source on UV-C-driven photocatalytic hydrogen generation over natural sepiolite-rich clays
13:00	13:30	Lunch	
13:30	13:45	Tereza Motúzová	Monitoring of DEET in surface water, sediments and plants growing on the banks
13:45	14:00	Jiří Jablunka	Effect of Surface Modification of CeO ₂ with Ethylenediamine (EDA) and Diethylenetriamine (DETA) for CO ₂ Photoreduction
14:00	14:15	Zuzana Pěgřimočová	Facile preparation of 3D g-C ₃ N ₄ /Ag nano-micro-particles for SERS
14:15	14:30	Kateřina Kupková	Silica-Supported catalysts for NH ₃ selective catalytic oxidation (NH ₃ -SCO)
14:30	14:45	Adam Kožušník	Advanced biogas purification methods
14:45	15:00	Michal Zym	Ammonia decomposition on heterogeneous catalyst
15:00	15:15	Lubomír Machalla	Development and validation of an HPLC method for studying Empagliflozin Interactions with Montmorillonite
Study programme: Thermal Engineering and Fuels in Industry			
15:15	15:30	Petr Janoš	Research organisations as implementation intermediaries: A systematic response to the circular economy implementation gap
15:30	15:45	Dharma Rooban Moorthi	Enhancing latent heat storage in phase change materials with advanced carbon-based matrices
15:45	16:00	Jana Růžicka	Production of tungsten heavy alloy clinkers in a rotary tube furnace
BEST PRESENTATION AWARD			

PhD Students' Day FMST 2026

When: 30. 10. 2026, from 9:00

Where: VŠB-TUO, room B5

Section 2

- Nanotechnology
- Materials Science and Engineering

Committee:

Prof. Ing. Bohumír Strnadel, DrSc.

Dr. Praveenkumar Kesavan

Doc. Dr. Mgr. Kamil Postava

Prof. Ing. Grażyna Simha Martynková, Ph.D.

Time		Name	Presentation title
Study programme: Nanotechnology			
9:10	9:25	Barbora Hermanová	Role of PEG in tuning structure and photocatalytic activity of composite cellulose acetate membranes
9:25	9:40	Filip Komers	Sustainable cellulose based proton exchange membranes for water electrolyzers
9:40	9:55	Jonáš Molek	Structure compatibility calculation: Determination of a structurally more suitable crystalline matrix for the graphitic carbon formation
9:55	10:10	Shamal Sabah Kareem	Advanced methods for the preparation of high-quality graphene: liquid shear exfoliation as work in progress
10:10	10:25	Shaho Salah Hwayyiz	Schwarzite-like carbon structures
10:25	10:40	Mina Rastegaralam	PTB7: An efficient thermoelectric polymer
10:40	10:55	Jakub Toběrný	Modelling of ultrafast spin dynamics for enhancement of spintronic terahertz emission
10:55	11:15	Coffee break	
11:15	11:30	Oliver Jan Hejtman	Quantum cascade surface emitting laser
11:30	11:45	Dušan Poštulka	Structures for high power semiconductor devices
11:45	12:00	Muhammad Aashir Awan	Nanomaterial precision engineering with electron beams
12:00	12:15	Pavel Kuzník	Electron beam induced graphitization of doped precursor films
Study programme: Materials Science and Engineering			
12:15	12:30	Vít Kvasnička	Boosting Iodide/Iodine redox dynamics in zinc-ion hybrid capacitors via nitrogen-superdoped graphene

12:30	12:45	Matěj Jendrišák	Deposition methods govern the electrochemical performance of graphene-derivative functionalized screen-printed electrodes: A practical framework for electrode surface characterization
12:45	13:00	Łukasz Kantor	SiC crystal growth by the PVT method
13:00	13:30	Lunch	
13:30	13:45	Muhammad Ahmad Iqbal	Microstructure–property correlation in as-cast and heat-treated CoCrFeNi high-entropy alloy
13:45	14:00	Michal Kresta	Hydrogen embrittlement behaviour of additively manufactured 316L stainless steel in as-built and annealed conditions
14:00	14:15	Senye Liu	Dual-scale carbonation and full-component utilization of steel slags for sustainable cementitious materials
14:15	14:30	Michael Pánek	Electrical response of binary carbon additive systems in cement-based composites
14:30	14:45	Lukáš Pacas	A depth-resolved residual-stress concept for short-crack fatigue assessment of EA1N railway axles
14:45	15:00	Klára Sklenaříková	Online monitoring of composite material components
15:00	15:15	Václav Strung	Preparation and mechanical properties of in-situ alloyed Ni-Co-Cr-Fe-based HEAs produced by LPBF
15:15	15:30	Jan Rygel	Effect of Zr addition on the mechanical properties of AlSi10Mg prepared by LPBF method
15:30	15:45	Filip Havlíček	Title to be announced.
15:45	16:00	Marek Harok	Title to be announced.
BEST PRESENTATION AWARD			