

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, Ph.D.

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	Filip Havlíček	Design, CNC manufacturing and experimental validation of a test fixture for automotive suspension bushings
9:40	9:55	Jan Pečman	Energy efficiency and emissions performance as a new criterion for road design
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	Dmytro Malinin	Metallurgical waste as a source of secondary raw materials
10:55	11:15	Coffee break	
11:15	11:30	Šimon Kielar	Properties of green sand mixtures with the addition of foundry dust
11:30	11:45	Lukáš Pavlásek	High-temperature behaviour of a new low-carbon aluminium alloy for brazed heat exchangers
11:45	12:00	Kateřina Miczková	From waste characterisation to material recovery: a cascade approach to metallurgical waste recycling

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	Jiří Jablunka	Effect of Surface Modification of CeO ₂ with Ethylenediamine (EDA) and Diethylenetriamine (DETA) for CO ₂ Photoreduction
13:45	14:00	Zuzana Pěgřimočová	Facile preparation of 3D g-C ₃ N ₄ /Ag nano-micro-particles for SERS
14:00	14:15	Kateřina Kupková	Silica-Supported catalysts for NH ₃ selective catalytic oxidation (NH ₃ -SCO)
14:15	14:30	Adam Kožušník	Advanced biogas purification methods
14:30	14:45	Petr Janoš	Research organisations as implementation intermediaries: A systematic response to the circular economy implementation gap
14:45	15:00	Lubomír Machalla	Development and validation of an HPLC method for studying Empagliflozin Interactions with Montmorillonite
15:00	15:15	Michal Zym	Ammonia decomposition on heterogeneous catalyst

Study programme: Thermal Engineering and Fuels in Industry

15:15	15:30	Dharma Rooban Moorthi	Enhancing latent heat storage in phase change materials with advanced carbon-based matrices
15:30	15:45	Jana Růžička	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

Ing. Gabriela Kratošová, Ph.D.

Time		Name	Presentation title
Study programme: Nanotechnology			
9:10	9:25	Mina Rastegaralam	PTB7: An efficient thermoelectric polymer
9:25	9:40	Shamal Sabah Kareem	Advanced methods for the preparation of high-quality graphene: liquid shear exfoliation as work in progress
9:40	9:55	Shaho Salah Hwayyiz	Schwarzite-like carbon structures
9:55	10:10	Jakub Toběrný	Modelling of ultrafast spin dynamics for enhancement of spintronic terahertz emission
10:10	10:25	Oliver Jan Hejtman	Quantum cascade surface emitting laser
10:25	10:40	Barbora Hermanová	Role of PEG in tuning structure and photocatalytic activity of composite cellulose acetate membranes
10:40	10:55	Filip Komers	Sustainable cellulose based proton exchange membranes for water electrolyzers
10:55	11:15	Coffee break	
11:15	11:30	Jonáš Molek	Structure compatibility calculation: Determination of a structurally more suitable crystalline matrix for the graphitic carbon formation
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 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	Insulation degradation in SiC PVT crystal growth and its effect on the thermal behaviour of the hot zone
13:00	13:30	Lunch	
13:30	13:45	Michal Kresta	Hydrogen embrittlement behaviour of additively manufactured 316L stainless steel in as-built and annealed conditions
13:45	14:00	Muhammad Ahmad Iqbal	Microstructure–property correlation in as-cast and heat-treated CoCrFeNi high-entropy alloy
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	Vijay Prabhakaran Nallan	C(SP2)-S cross-coupling reactions with cobalt and visible light
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	Marek Harok	Influence of epoxy resin-to-hardener ratio on the mechanical behaviour of carbon fibre-reinforced composites
BEST PRESENTATION AWARD			