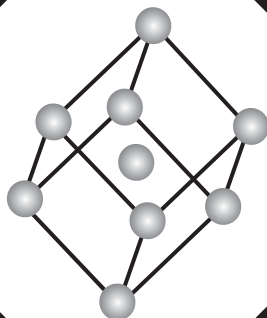


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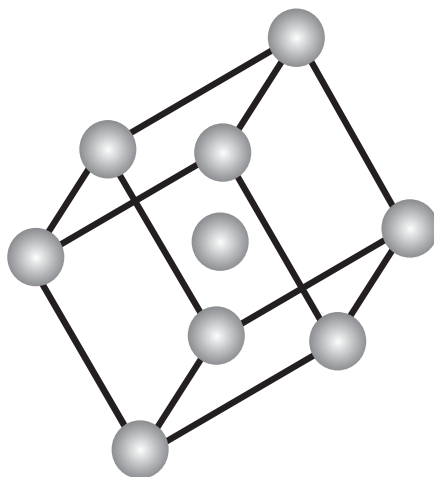
SIM 2026

SZKOŁA INŻYNIERII MATERIAŁOWEJ
SCHOOL OF MATERIALS ENGINEERING

PROGRAMME

6-7 MAY 2026, KRAKOW

AGH University of Krakow



SIM

SZKOŁA INŻYNIERII MATERIAŁOWEJ
SCHOOL OF MATERIALS ENGINEERING

6-7 MAY 2026, KRAKOW



CONFERENCE ORGANISING COMMITTEE

Conference Chair

dr hab. inż. Janusz Krawczyk, prof. AGH

V-ce Chairs of the Conference

dr hab. inż. Katarzyna Major-Gabryś, prof. AGH

dr hab. Bartosz Handke, prof. AGH

dr hab. inż. Remigiusz Kowalik, prof. AGH

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prof. dr hab. inż. Piotr Bała

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dr hab. inż. Katarzyna Major-Gabryś, prof. AGH

dr hab. inż. Krzysztof Źaba, prof. AGH

SCHOOL OF MATERIALS ENGINEERING

FRAME PROGRAMME OF SIM CONFERENCE 2026

Day 1 – 6 May 2026 – Wednesday

08:00–10:00	Registration, Building B4, ground floor	
09:30–10:00	Opening of the conference Chair of the Discipline Council of Materials Engineering Prof. Agnieszka Kopia	
10:00–10:50	Room A (B4-122) – Plenary lecture	
	Prof. dr hab. inż. Beata Leszczyńska-Madej Interface Stability in Al–SiC Composites: From Powder Metallurgy to FAST/SPS Processing	
10:50–11:00	Organisational break	
11:00–12:30	Room A (B4-122) Section 1: Steel	Room B (B4-209) Session 2: Functional materials
	Lunch	
14:00–15:30	Room A (B4 – 122) Section 3: Advanced non-ferrous alloys	Room B (B4-209) Section 4: Alloys – Alloys and Joining
	Coffee break	
16:00–17:15	Room A (B4-122) Section 5: Modelling	Room B (B4-209) Section 6: Corrosion
	Social gathering – SIM PIZZA KLUB STUDIO (Krakow, Witolda Budryka 4)	

Day 2 – 7 May 2026 – Thursday

09:00–10:30	Room A (B4-122) Section 7: Advanced materials manufacturing processes	Room B (B4-209) Section 8: Surface Engineering
	Coffee break	
11:00–12:15	Room A (B4-122) Section 9: Advanced Material Structures	Room B (B4-209) Section 10: Coatings
	Room A (B4-122) Closing of the Conference – Chair of the Conference, Prof. Janusz Krawczyk	
13:00–14:00	Lunch	



DETAILED SCHEDULE OF SIM CONFERENCE 2026

Day 1 – 6 May 2026 – Wednesday

08:00–10:00	Registration, Building B4, ground floor	
09:30–10:00	Opening of the conference Chair of the Discipline Council of Materials Engineering Prof. Agnieszka Kopia	
10:00–10:50	Room A (B4-122) – Plenary lecture	
	Prof. dr hab. inż. Beata Leszczyńska-Madej Interface Stability in Al–SiC Composites: From Powder Metallurgy to FAST/SPS Processing	
10:50–11:00	Organisational break	
11:00–12:30	Room A (B4-122) Section 1: Steel	Room B (B4-209) Session 2: Functional materials
	T. Hamryszczak Effect of selected hot-rolling parameters on HSLA steel properties	J. Matysek Effect of coprecipitation conditions on the physicochemical properties and gold-coating efficiency of magnetic Fe ₃ O ₄ nanoparticles for theranostic applications
11:15–11:30	P. Mendala Quantitative evaluation of the microstructure of X70 steel grade	E. Szlęzak Hydrogel capsules decorated with silver and copper nanoparticles for theranostic applications
11:30–11:45	M. Elmosalamy Hot-workability behavior of medium-Mn and high-Mn lightweight steels	J. Kwiatkowska Stability of Ti ₃ SiC ₂ MAX phase in HEA–Ti ₃ SiC ₂ –SiC hybrid composites under high-pressure sintering conditions
11:45–12:00	M. Elmeligy Influence of heat treatment on mechanical properties and surface oxides in hot-rolled Al-containing lightweight steels	Z. Chen Durable cathode materials enabled by perovskite / Ruddlesden-Popper interface engineering for solid oxide electrolysis cells
12:00–12:15	F. Kassaye Designing heat treatment and thermomechanical processing schedules for quenching and partitioning medium-Mn steels	J. Gwizdak The effect of the solvent used for self-assembled monolayers in formamidinium lead iodide perovskite solar cells
12:15–12:30	T. Kaźmierski Characterization of the microstructure of DP600 steel in relation to its formability, determined by the Nakazima method	S. Muzaffar Tailoring Cu–Ag bimetallic catalysts for enhanced CO ₂ conversion on gas diffusion electrodes
12:30–14:00	Lunch	

SCHOOL OF MATERIALS ENGINEERING

Day 1 – 6 May 2026 – Wednesday

14:00–15:30	Room A (B4 – 122) Section 3: Advanced non-ferrous alloys	Room B (B4-209) Section 4: Alloys – Alloys and Joining
14:00–14:15	P. Lewartowski Innovative zinc alloys for hot-dip galvanising of thin-walled materials	K. Ścibisz Non-metallic inclusions in electrical steels
14:15–14:30	D. Orzeł Microstructure and mechanical properties of a Zn-0.2Cu alloy after channel die compression	M. Kanczewska Microstructure and strain-rate sensitivity in compositionally graded W-Cr alloys: insights from high-throughput characterization of thin-film material libraries
14:30–14:45	J. Kosińska Characterization of TiTaNbZr HEA as emerging material for solid-state hydrogen storage	S. Karski Optimization of parameters of the resistance welding process of steel nuts using AI methods
14:45–15:00	J. Bicz The effect of cooling rate on the structure and properties of novel hypereutectic high entropy alloys containing Mo, Nb and V	M. Klimek Microstructural changes of S355 steel welded joints resulting from different fire scenarios
15:00–15:15	A. Kopeć-Surzyn High-entropy alloys	J. Silezin-Tałach Influence of welding parameters on weld geometry and selected properties in robotic CMT-PMC twin welding of 6082-T6 aluminium alloy
15:15–15:30	W. Skonieczna Microstructural analysis and selected properties of an industrially forged preform of a Ni-based superalloy produced from elemental powders	
15:30–16:00	Coffee break	



Day 1 – 6 May 2026 – Wednesday

16:00–17:15	Room A (B4 – 122) Section 5: Modelling	Room B (B4-209) Section 6: Corrosion
16:00–16:15	M. Wilczyński Short-range chemical ordering in Al-Cu alloys with Mg and Ag additions: modelling and experiment	Ł. Błajszczak Passivity of 316L stainless steel in Ringer and 0.05 M H ₂ SO ₄ solution
16:15–16:30	M. Malikowski Modeling the impact of helium on grain boundary properties in Fe-Cr alloys using machine-learning interatomic potentials	A. Chaczyk Corrosion properties of brazed joints of lead-free copper alloys
16:30–16:45	Z. Będowska A physics-informed neural network framework for modeling elastic deformation across variable material properties	L. Böttger Locally resolved corrosion characterization of complex functional surfaces – a methodological extension of the microcell technique
16:45–17:00	M. Dadura Adaptive collocation strategies outperform static sampling in PINNs	J. Wawrzynek A novel experimental test rig for erosion–corrosion analysis in slurry flow conditions
17:00–17:15	Ł. Ruba More than shape: material effects in plasmonic nanoantenna simulations for single-electron transistor	K. Morgiel Increasing heat resistance of SiMo ductile cast iron through Al addition
17:15–19:00	Break	
19:00	Social gathering – SIM PIZZA KLUB STUDIO (Krakow, Witolda Budryka 4)	

SCHOOL OF MATERIALS ENGINEERING

Day 2 – 7 May 2026 – Thursday

09:00–10:30	Room A (B4 – 122) Section 7: Advanced materials manufacturing processes	Room B (B4-209) Section 8: Surface Engineering
09:00–09:15	A. Iwańczak The influence of PBF-LB/M process parameters on the structure and properties of the CuAl10Fe1 alloy	J. Polis Effect of deposition temperature on the structural and optoelectrical properties of magnetron-sputtered ZnO thin films
09:15–09:30	B. Truczka Laser powder bed fusion of Inconel 625/CoCrMo gradient material: effect of process parameters on defect formation and mechanical properties	K. Dudek Catalytic activity of biomass-based Ni@C-type composites for CO ₂ methanation
09:30–09:45	B. Solarz Structural properties and hardness of a component produced additively by robotic GMAW from AlMg5 alloy	W. Kuklewski Mixed transition metal oxides as efficient catalysts for low-temperature water splitting
09:45–10:00	R. Mędza Sintering of Incoloy 800HT using PAIS: possibilities and effects	Z. Zając Carbon-based coatings for hemocompatibility improvement in cardiovascular assist devices
10:00–10:15	K. Kij Pushing SIMS toward quantification: matrix effects in multicomponent alloys	M. Tokarz Design, manufacture and analysis of porous structures using custom experimental apparatus
10:15–10:30	M. Góra Extrusion systems for lightweight 3D concrete printing: nozzle geometry optimisation and dynamic inline mixing	R. Karpiński Electrophoretic deposition and properties of chitosan and sodium alginate coatings with cardamom essential oil and cellulose nanofibers obtained on titanium substrates
10:30–11:00	Coffee break	



Day 2 – 7 May 2026 – Thursday

11:00–12:15	Room A (B4 – 122) Section 9: Advanced Material Structures	Room B (B4-209) Section 10: Coatings
11:00–11:15	L. Ząbek Effect of the nitrogen, CO ₂ and air plasma on the surface and microstructure of Al ₂ O ₃ /Cu composites	H. Kamiński Aqueous Sm-Co electrodeposition with L-arginine and glycine as a complexing agent
11:15–11:30	D. Babyn More than shape: Plasmonic antennas as a novel platform for optically driven single-electron transistors	T. Cudak Comparison of non-crosslinked and crosslinked SA-based coatings fabricated by electrophoretic deposition on stainless steel substrates
11:30–11:45	A. Sierant Spin dynamics in double quantum dots embedded at the LaAlO ₃ /SrTiO ₃ interface	P. Pietraszek Template-assisted electrodeposition of 3D Zn-based structures
11:45–12:00	H. Szebesczyk Pushing the limits of aluminum alloys: combinatorial synthesis and exploration of Al–Mg–Zr system	M. Ziętala Effect of glow discharge nitriding on HVOF-sprayed Incoloy 800HT coatings produced from ultrasonically atomized powder: microstructure and tribological behaviour
12:00–12:15	P. Szewczyk A comparison of the microstructure and mechanical properties of bimetallic materials manufactured using the FDMS and DED methods	
12:30–13:00	Room A (B4-122) Closing of the Conference Chair of the Conference, Prof. Janusz Krawczyk	
13:00–14:00	Lunch	

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