



29th International Symposium on Metastable, Amorphous and Nanostructured Materials

June 22–27, 2025 | Bratislava, Slovakia

Scientific Program (tentative)

Sunday, June 22, 2025

Time	Mezzanine, Hall of Mirrors
17:00 – 20:00	Registration
18:00 – 20:00	Welcome Reception

Monday, June 23, 2025

Time	Hall of Mirrors		
8:00 – 9:00	Registration		
9:00 – 9:20	Welcome Address: Matúš Vallo, the Mayor of Bratislava Martin Venhart, the President of the Slovak Academy of Sciences		
9:20 – 10:05	Brian Cantor Multicomponent High-Entropy Cantor Alloys		
10:05 – 10:50	Jürgen Eckert Tuning Disorder and Heterogeneity of Metallic Glasses		
10:50 – 11:20	Coffee break		
	Hall of Mirrors	Justi Hall	Faust Hall
11:20 – 11:50	Dariusz Oleszak Medium and High Entropy Multicomponent Alloys - a wide variety of structures, properties and processing routes	Daniel Şopu Tuning the Degree of Rejuvenation in Metallic Glasses	Kostas Georgarakis Vitrification of metallic liquids-uncovering the structural pathway to metallic glasses
11:50 – 12:10	Rafal Babilas Structure, anticorrosion and mechanical properties of CoCrFeNiMs (Ms=Nb,Mo,B,Si) high entropy alloys prepared by rapid solidification method	Shuang Su Kinetic and thermodynamic studies of ion-induced gradient rejuvenated amorphous microwires	Jerzy Antonowicz Capturing Ultrafast Melting in Palladium
12:10 – 12:30	Kaiju Lu Achieving ultra-strong and ductile CoNi-based FCC multi-principal element alloys via alloying with Mo and W refractory elements	Myeong Jun Lee Fictive temperature-based annealing effects on metallic glasses with different initial structure	Zuzanna Kostera Crystallization kinetics of supercooled liquid Palladium
12:30 – 14:00	Lunch		

	Hall of Mirrors		
14:00 – 14:45	Paola Tiberto From Ribbons to Bulk: Tuning Magnetic Properties in Fe-Si-B Alloys with Advanced Manufacturing		
	Hall of Mirrors	Justi Hall	Faust Hall
14:50 – 15:10	Pere Bruna On the improvement of the corrosion resistance of two families of High-Entropy Metallic Glasses	Oleksandr Roik Short-range order of the liquid Al-Sn-Cu alloys	Purbasha Sharangi Effects of Ni addition on the magnetic and structural properties in Fe-Si-B-Nb alloy by different casting techniques
15:10 – 15:30	Binbin Liu Phase transformation and mechanical properties of silicide-strengthened (TiZrHfNb) _{100-x} Si _x (x=0, 1, 5, 7, 10 and 15) high entropy alloys	Min Kyung Kwak Interfaces in Phase-Separated Pd-Au-Si Metallic Glass Alter Phase Transformation Kinetics	Martin E. Stiehler W-based metallic glasses for nuclear fusion applications
15:30 – 16:00	Coffee Break		
16:00 – 16:20	Chun-Liang Chen Effect of High-Entropy Reinforcements on the Strength and Toughness of Tungsten-Based Alloys	Ying Ian Chen 3D-printed Topologically Structured Electrodes with Exceptional Mechanical Properties and Electrochemical Performance for Flexible Li-ion Batteries	Fushan Li Structure, Properties and Crystallization Behavior of FeSiBPCuNb Soft Magnetic Nanocrystalline Alloy
16:20 – 16:40	Marián Palcut As-cast Al-Fe-Co-Ni-Cu alloys: microstructure, phase constitution, and oxidation resistance	Sang Tae Woo Effect of Nanoimprint-Induced Structural Heterogeneity on the Oxidation Behavior of Zr-Based Metallic Glasses	Krzysztof Pajor Effect of casting conditions on the structure and mechanical properties of bulk metallic glasses
16:40 – 17:00	Vikas Shivam Heterogeneous lamella structure induced precipitation-hardened Fe-rich complex concentrated alloys	Sepide Hadibeik Atomic Disorder in Laser Beam-Shape-Tailored 3D-Printed Zr-Based Bulk Metallic Glass Under In-Situ Heating During High-Energy X-Ray Diffraction	Parthiban Ramasamy Synthesis and characterization of soft magnetic metallic glass nanoparticles via laser ablation
17:00 – 17:20	Emil Babic Electronic structure of high-entropy alloys: prospects and challenges	Xiaoling Fu Interfacial strain concentration and relaxation along crystalline-amorphous boundaries of B2-reinforced bulk-metallic-glass-composites during loading	Prashanth Konda Gokuldoss Additive manufacturing of Ti-Nb-based biomaterial
17:20 – 17:40	Lin Liu Unique deformation mechanisms in an FCC/BCC dual-phase high entropy alloy at high temperatures	Seung Zeon Han Strengthening by heterogeneously nucleated and grown G-phase in Cu-Ni-Si-Mn alloy	Premkumar Murugaiyan Ultra-Fine Nanocrystallization in Fe-Rich FeSiBPNbCu Alloys: Mechanisms and Microstructural Evolution
17:50 – 19:30	POSTER SESSION (Picture Gallery)		

Tuesday, June 24, 2025

Time	Hall of Mirrors		
9:00 – 9:45	Takeshi Egami Atomic Cooperativity and Deformation in Metallic Glasses		
9:45 – 10:30	Jörg F. Löffler Correlative Fast Differential Scanning Calorimetry on Metallic Glasses		
10:30 – 11:00	Coffee Break		
	Hall of Mirrors	Justi Hall	Faust Hall
11:00 – 11:30	Paola Rizzi Surface modification of biocompatible Ti-based amorphous alloys by dealloying to improve implant cytocompatibility	Jozef Bednarčík Structural Aspects of Stress-Induced Magnetic Anisotropy in Fe-based Nanocomposite: Insights from Synchrotron Experiments	Nicoleta Lupu Tailoring Microstructure and Creep-Induced Anisotropy in Co-Based Amorphous Wires for Enhanced Functional Magnetic Properties
11:30 – 12:00	Jan Dusza Hardness and strength of dual-phase boride/carbide high entropy ceramics at nano/micro scale	Martin Cesnek Probing Short-Range Order in Fe-Co-Si-B-Mo-P Amorphous Alloy Using Mössbauer Spectroscopy and High-Energy X-ray Diffraction	Arcady Zhukov Tailoring of soft magnetic properties and Giant Magnetoimpedance effect of amorphous microwires by stress-annealing
12:00 – 12:30	Katalin Balazsi Ceramic biomaterials: From traditional technologies to novel applications	Florian Spieckermann Application of synchrotron-based quantifiers for the characterization of conventionally and additively processed metallic glasses	Kornel Richter Magneto-optical observations of cylindrical magnetic microwires with Matteucci effect
12:30 – 14:00	Lunch		
	Hall of Mirrors		
14:00 – 14:45	Motoki Ohta Nanocrystallization Technology for High Fe Content Amorphous Alloy		
14:45 – 15:30	Wei Hua Wang A New Generation of High-frequency Amorphous/Nanocrystalline Soft Magnetic Materials for Matching Third-generation Semiconductors		
15:30 – 16:00	Coffee Break		

	Hall of Mirrors	Justi Hall	Faust Hall
16:00 – 16:30	Marián Deanko Soft Magnetic Nanocrystalline Materials in Vacuumschmelze Portfolio and their Application	Mo Li Design strategy for metallic glass composites	Eun-Ae Choi A DFT study on the effect of vacancies on the formation of deformation twins in Cu alloys
16:30 – 16:50	Walter J. Botta Crystallisation of Metallic Glasses in Complex Multicomponent Carboborides	Baoshuang Shang Investigating the Formation Condition of Amorphous Solid	Ahmad Oweisi Fordoei Evaluation of hardening and structural change during deformation in as-cast CuZr based bulk metallic glass
16:50 – 17:10	Kostas Georgarakis Sustainable Aerospace Manufacturing: Recycling of Aerospace-Grade Titanium Alloys via Rapid Solidification of Swarf Waste	Carlos Iglesias Fernández-Cuevas Crystallization Temperature Driven Phase Evolution and Magnetic Behaviour in Fe-Ni-P-C Ribbons	Jiri Houska Cu-Zr-Al thin film metallic glasses in a wide range of compositions and growth conditions
17:10 – 17:30	Witor Wolf Characterization of different carbide distributions for a Cr-Co-Ni alloy	Tatiana Damatopoulou On advanced quality electromagnetic yokes based on amorphous ribbons for steel health monitoring	Tomasz Koziel B2 CuZr phase formation in Cu-Zr-Al bulk metallic glass matrix composites
17:30 – 17:50	Ihor Shtablayvi Geometrical porometry as a method for calculating the free volume of condensed systems.	Bing Wang The low temperature relaxation behaviors and their dynamic responses	Jinfu Li Glass-Forming Ability of Cu-Ag Eutectic Alloys
17:50 – 19:30	POSTER SESSION (Picture gallery)		

Wednesday, June 25, 2025

Time	Hall of Mirrors		
9:00 – 9:45	A. Lindsay Greer Opportunities and Problems with Ultrafast Calorimetry of Metallic Glasses		
9:45 – 10:30	John H. Perepezko Examination of Amorphization and Primary Crystallization by High Rate Nanocalorimetry		
10:30 – 11:00	Coffee Break		
	Hall of Mirrors	Justi Hall	Faust Hall
11:00 – 11:30	Jaroslav Ferenc Ultra-rapid Annealing by Joule Heating: the Novel Setup for Precise Thermal Cycle and In-situ Measurements	Matthias Bönisch Negative/zero/positive thermal expansion alloys	Matej Baláž Mechanochemistry - Solvent-free and green methodology to yield nanostructured metal chalcogenides with versatile applications
11:30 – 12:00	Ivan Škorvánek Impact of elevated temperature on soft magnetic properties of rapidly annealed nanocrystalline high-B _s Fe-Co-Cu alloys	Do Hyang Kim Ni-Ti based shape memory alloy nanostructures using amorphous phase as a precursor	Nad'a Mrkývková Perovskite Thin Film Growth: Structural and Optoelectronic Characterization
12:00 – 12:30	Mihai Stoica Transition of fluctuation-modifying to bond-modifying Invar effect in ferromagnetic bulk metallic glasses	Bo Zhang Aging effects of Lunar Glasses	Javier S. Blázquez Dependences of phase distribution and magnetic properties on compositional tailoring in Mn(CoFe)(GeSi) series obtained from mechanically alloyed amorphous precursors
12:30 – 14:00	Conference Photo and Lunch		
	Hall of Mirrors		
14:00 – 14:45	Paul M. Voyles Atomic Mobility in Metallic Liquids and Glasses		
14:45 – 15:30	Eun Soo Park Development of Super Plastic Bulk Metallic Glasses via Tailoring of Icosahedral Ordering		
15:30 – 16:00	Coffee Break		

	Hall of Mirrors	Justi Hall	Faust Hall
16:00 – 16:20	Witor Wolf Tailoring Microstructures and Tribological Performance in Quasicrystalline-Reinforced Coatings and Surfaces	Chae Woo Ryu Medium-range atomic correlation and local chemical order in metallic glasses	Neda Shojae Novel antibacterial Ti-Based Alloys for Biomedical Applications
16:20 – 16:40	ShuYi Liang Creep and Cyclic Tensile Behaviors and Structural Evolution Mechanisms of Metallic Glasses	Alexander Chizhik Longitudinal and transversal flexibility influence on magnetic properties of amorphous glass covered microwires	Fereshteh Sourani High Corrosion Resistance and Biocompatible Zr-Based Bulk Metallic Glasses for Load-Bearing Implants
16:40 – 17:00	Devinder Singh Phase-separated Zr-Al-Fe-Y metallic glasses with suitable mechanical properties for possible implant applications	Iryna V. Matsukevich Effects of melting processing on the characteristics and structure of microporous metal-organic framework ZIF-62 glasses	Petr Zeman Dual-phase nanocomposite coatings based on crystalline ZrN and glassy ZrCu
17:00 – 17:20	Caiyun Liu A remarkable inversion of oxidation rate and unique oxide morphology of Cu ₆₀ Zr ₄₀ metallic glass at 100-300 °C	Felix Römer Influence of remelting in PBF-LB of KUAMET [®] 6B2	Elham Sharifikolouei Frontiers of Amorphous Materials: Metallic glass thin films, microfibers and bulk systems for biomedical applications
17:20 – 17:40	Feng Ye Interface asymmetry and phase transformation of the Cu layer-inserted Al/Cu/Ni/Cu multilayers	Ashwani Chaudhary Comparative Tribological Study of Wrought and LPBF C300 Maraging Steel: Influence of Heat Treatment and Microstructural Characteristics	Zhiyuan Jing Tribo-corrosion behaviors of Al-based amorphous coatings prepared using HVAF spraying techniques

Thursday, June 26, 2025

Time	Hall of Mirrors		
9:00 – 9:45	Demie Kepaptsoglou Advanced Analytical Electron Microscopy for Amorphous and Nanostructured Systems		
9:45 – 10:30	Christoph Gammer Using TEM to Link Structure with Shear Band Evolution in Metallic Glasses		
10:30 – 11:00	Coffee Break		
	Hall of Mirrors		
11:00 – 11:30	Sangjun Kang Large-angle Lorentz 4-Dimensional Scanning Transmission Electron Microscopy for Simultaneous Local Magnetization, Strain and Structure Mapping		
11:30 – 11:50	Junji Saida Analysis of Deformation Behavior of Zr-Cu-Al Bulk Metallic Glass with Gradient Relaxation Structure by Digital Image Correlation		
11:50 – 12:10	Sangjun Kang Direct observation of quadrupolar strain fields forming a shear band in metallic glasses		
12:30 – 14:00	Lunch		
14:00 – 19:00	Excursion – ELESCO, ISMANAM AWARDS		

Friday, June 27, 2025

Time	Hall of Mirrors		
9:00 – 9:45	Tony Spassov High-capacity Metal Hydride / Air Secondary Battery		
9:45 – 10:30	Walter J. Botta Interface Energies and Hydrogen Storage Properties of Mg/Additives/MgH ₂		
10:30 – 11:00	Coffee Break		
	Hall of Mirrors		
11:00 –11:30	Oleksandr Roik Fabrication of multicomponent nanoporous metallic materials by vapor phase dealloying		
11:30 – 12:00	Deliang Zhang The Roles of Nanostructures in Enhancing the Strength-Ductility Synergy of Powder Metallurgy Near-alpha Titanium Alloys		
12:00 – 12:20	Javier S. Blázquez Mechanochemical synthesis: a pathway to novel high-entropy oxide perovskite structures		
12:25 – 12:40	CLOSING CEREMONY		
12:30–13:30	Lunch		

PlenaryLecture	Keynote Lecture	Invited Lecture	Oral Presentation
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POSTERS LIST

Picture Gallery, Monday & Tuesday, 17:50 – 19:30

P-01: Study of the ferromagnetic nanoparticles – biological cells adherence by TEM imaging at room temperature
Gabriel Ababei

P-02: Significant Enhancement of Yield Strength in $\text{Ti80Cr}_{20-x}(\text{CoFeNi})_x$ Alloys Through Phase Stability Modulation and Ultrafine Eutectic Structure
Muhammad Aoun Abbas

P-03: Bulk metallic glasses surface modification by low-temperature plasma nitriding and oxidation
Piotr Blyskun

P-04: Long-term magnetic stability of nanocrystalline FeCuBPSi alloys
Beata Butvinová

P-05: Experimental and thermal study of SAC305-xGa solder alloys
Patrícia Danišovičová

P-06: Exploring the Mechanochemical Reduction of Ilmenite for the production of TiFe Hydrogen Storage Alloys
Stefano Deledda

P-07: Influence of V on the microstructure and mechanical characteristics of $(\text{CrFeNiCu})_{100-x}\text{V}_x$ high entropy alloys
Dilshodbek Bakhtiyarovich Yusupov

P-08: Alloy Design and Optimized Metal Oxide Photo-reactive Nanostructure for Water Splitting
Hae Jin Park

P-09: Effect of MoO_2 Powder Packing Density on Sintering Kinetics and Grain Growth
Haguk Jeong

P-10: Maximum achievable N content in amorphous nitrides
Jiri Houska

P-11: Carbon formation characteristics of IPA decomposed on the nickel impregnated SBA-15
Hung-Lung Chiang

P-12: Variations in the Motion of Magnetic Particles in a Thin Film under Magnetic Fields
Hyo-Soo Lee

P-13: Mechanically Alloying Synthesized Nanostructured Electrodes and Electrolytes for Advanced Batteries
Ying Ian Chen

P-14: Enhanced Antibacterial Activity of Surface-Modified $Zr_{50}Cu_{50}$ Metallic Glass
Ka Ram Lim

P-15: Nanocrystalline and amorphous $Al_{40}Mg_{40}Ti_{20}$ and $Al_{40}Mg_{20}Ti_{40}$ alloys
Marek Krasnowski

P-16: Crystallization Kinetics of Bulk Metallic Glass with Oxidation-Induced Heterogeneity
Min Kyung Kwak

P-17: Nanostructured amorphous arsenoselenides
Zdenka Lukáčová Bujňáková

P-18: Analysis of growth of intermetallic layers (Cu_3Sn , Cu_6Sn_5) at Sn-solder/Cu substrate interface
Tereza Machajdíkova

P-19: Comparison of the tribological and anticorrosion properties of multi-principal element alloys: $CoNiMo$, $CoCrNiMo$, $CoCrCu_{0.1}NiMo$
Katarzyna Młynarek-Zak

P-20: $Fe(Co)$ -B-Sn Metallic Glasses Characterized by Mössbauer Spectrometry and AFM/MFM
Marcel Miglierini

P-21: Soft Explosive Crystallization and Viscous Flow in $Fe_{83}B_{17}$ Amorphous Alloy: Glass Transition Temperature Insights
Javier Alberto Moya

P-22: Investigation of helium ion irradiation response with Zr-based metallic glasses with different glassy structure
Myeong Jun Lee

P-23: Nb-Zr-Pt-Ti high entropy alloy superconducting bulk: synthesis and structure-property correlation
Nitin Srivastava

P-24: Synthesis of amorphous Co-based multi-component thin film by magnetron sputtering
Yulia Nykyruy

P-25: Direct Visualization of Magnetic Domain Walls in Submicronic Amorphous Wires
Tibor-Adrian Óvári

P-26: Structure-Property Relationships in Cu-Zr-Al Alloy: Influence of Crystalline Precipitates on Mechanical Performance
Denis Pikulski

P-27: Development of High Entropy Alloy via Thermo-Calc and remelting technique
Wirginia Pilarczyk

P-28: Structure and electrical resistivity of the Bi-In-Sn-Zn-Cu-Ag alloys
Yuriy Plevachuk

P-29: Oxide nanostructure cathodes and engineered anodes for rechargeable Zn-ion/air batteries
Ranjit Bauri

P-30 Tetragonal-to-Cubic Phase Transition in Gd-doped BaTiO₃ Nanorods: Diamagnetic-to-Ferromagnetic Shift and Enhanced Photocatalytic Properties
Sandeep Kumar Singh Patel

P-31: Enhancing Ductility in Metallic Glasses through High-Pressure Torsion
Sangjun Kang

P-32: Formation of ordered metal arrays as a result of rapid solidification of alloys
Ihor Shtablayvi

P-33: Electrochemical surface nanostructuring of Ti-Cu-(Pd)-based metallic glasses for improved pitting corrosion resistance
Viktoriia Shtefan

P-34: Achieving excellent tensile plasticity in amorphous microwires through ion-induced nonlinear gradient rejuvenation
Shuang Su

P-35: A study on chromaticity and mechanical properties of Cu-Ge-Al alloys with bimodal-sized intermetallic compound
Sung Hwan Hong

P-36: Low temperature plasma assisted fabrication of multi-metallic nanomaterials for electrodes of energy storage systems
Nikolai Tarasenko

P-37: Development of Fe-rich complex concentrated alloys (CCAs) for high-temperature applications
Vikas Shivam

P-38: Hybrid solder joints: characterization of the core/shell Fe/oxide nanosized particles
Andriy Yakymovych

P-39: Influence of configuration entropy and cocktail effect on the corrosion resistance of Pd-based Metallic Glasses
Yating Zhou

P-40: Preparation and Characterization of New High Entropy Alloys
Valentina Zhukova