





## Wednesday 29 May morning

9:00-12:00	MecaNano workshop	for registered participants (MecaNano members)
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## Wednesday 29 May afternoon – MecaNano special section

12:00-13:45	Registration	
13:45	Opening	
<b>Properties at micro/nano scale</b>  		
14:00	Marc Legros <i>(invited)</i>	Micromechanical Assessment of Fracture Properties of Austenitic Stainless Steel Grain Boundaries Oxidized in a Pressurized Water Reactor Environment
14:40	Szilvia Kalacska <i>(keynote)</i>	Irreversible evolution of dislocation pile-ups during cyclic microcantilever bending
15:10	Stanislav Žák	Nanoindentation with sub-surface particle sensing
15:30	Ronan Henry	Multi-scale fracture testing of Ni-20Cr alloy printed by Laser Power Bed Fusion
15:50	Coffee break	

<b>Nanoindentation challenges</b>  		
16:15	Megan Cordill <i>(keynote)</i>	A shallow jump in to how nanoindentation can be used effectively
16:45	Jiri Nohava	Investigation of shape and area function of indenters in various states
17:05	Yvan Marthouret	Indentation of rough surfaces
17:25	sponsors	NenoVision
17:45		MTM
18:05		Alemnis
18:30-21:30	<i>welcome toast and poster session</i>	

## Thursday 30 May morning

Properties of surfaces, layers and particles I		
8:30	Andreas Mortensen <i>(keynote)</i>	Local mechanical properties of oxide inclusions
9:00	Sandor Lipcsei	Micromechanical properties of MnO-SiO <sub>2</sub> -Al <sub>2</sub> O <sub>3</sub> inclusions in iron
9:20	Davide Vacirca	Boosting mechanical properties of thin film high entropy alloys through nanoengineering design strategies
9:40	Radek Musalek	Local Cohesion of Splats in Hybrid Plasma Spray Coating as Observed by In-Situ Experiment
10:00	Šárka Houdková	Wear behavior of selected HVOF sprayed WC-Cr <sub>3</sub> C <sub>2</sub> -M coatings under different types of mechanical loading
10:20	<i>Coffee break</i>	

Properties of surfaces, layers and particles II		
10:40	Guillaume Kermouche <i>(keynote)</i>	On the use of nanomechanical testing to characterize transformations of materials induced by surface manufacturing processes
11:10	Frantisek Lofaj	The comparison of micromechanical properties of the compositionally complex transition metal nitride coatings deposited by different reactive sputtering techniques
11:30	Dávid Ugi	Plastic instabilities and strain recovery in amorphous LiPON thin layer
11:50	Thomas Lindner	Surface functionalization in selective laser melted 17-4 PH by plasma polishing and interstitial diffusion hardening
12:10	Aliasghar Najafzadehkhoe	Contact damage of multi-material laminar ceramics: effect of layers architecture and residual stress
12:45	<b>Photo</b>	
13:00	<i>Lunch</i>	

Micromechanical testing of irradiated concrete		
11:10	Jiří Němeček <i>(keynote)</i>	Fracture properties of Calcium-Silicate-Hydrates exposed to $\gamma$ -irradiation and different relative humidities
11:40	Jiří Němeček	Micromechanical characterization of $\gamma$ -irradiated cement paste exposed to different relative humidity conditions
12:00	Jan Procházka	Optimization of FIB milling procedure for micromechanical testing of cement pastes
12:20	Ondřej Libera	Nanomechanical properties of neutron irradiated concrete

## Thursday 30 May afternoon

Experimental challenges and coupled methods I		
14:20	Benoit Merle <i>(invited)</i>	High strain rate persistence of the strength anomaly in L12 intermetallic compound Ni <sub>3</sub> Si evidenced by nanoindentation at elevated temperatures
15:00	Mohammed Tahir Abba	Experimental Progress in High Constant Strain Rate Nanoindentation
15:20	Thomas Chudoba	Fatigue testing of coatings by using the dynamic capabilities of a nanoindenter
15:40	Marcel Sos	Nanoindentation methods for analysis of thermally activated processes at elevated temperatures
16:00	Renato Pero	High Strain Rate Nanoindentation – Recent Advances and Perspectives
16:20	<i>Coffee break</i>	

Microelectronic materials		
15:10	Kiran Mangalampalli <i>(keynote)</i>	On the phase-engineered novel phase of Silicon
15:40	Swarnendu Banerjee	3D Tomography on Advanced Photovoltaic (PV) Structures – Examples of Good Practice
16:00	Sergio Sao Joao	Multi scale in-situ micromechanical testing of Polymer Core Solder Ball (PCSB) coatings for BGA interconnections

Experimental challenges and coupled methods II		
16:50	Péter Dusán Ispánovity	Unraveling acoustic emission by coupling it to micromechanics
17:10	Antoine Ollivier	High-resolution measurement of strain by tracking of nanoparticles
17:30		Anton Paar
17:50	sponsors	Keyence
18:10		Jeol
19:00	<i>Gala Dinner</i>	

## Friday 31 May morning

<b>Micromechanical testing of polymers</b>		
8:30	Jaroslav Lukes	Comparison of Spherical Indentation Analysis for Soft Polymers in Bio Applications
8:50	Miroslav Šlouf	Macro-, micro- and nanomechanical characterization of crosslinked polymers with very broad range of mechanical properties
9:10	Veronika Gajdošová	Comparison of macroscale, microscale and nanoscale creep behavior of UHMWPE and PEEK polymers used in total joint replacements
9:30	Marina Melo de Lima	Comparison of Berkovich and spherical tip indentation for determining the Young's modulus of polymer thin films encapsulated by a dielectric capping
9:50	<i>Coffee break</i>	

<b>Challenging materials</b>		
10:20	Tamás Csanádi	The effect of crystal anisotropy on fracture toughness and strength of ZrB <sub>2</sub> microcantilevers
10:40	Ali Talimian	Scratch behavior of chemically tempered alkali borosilicate glass: measurements using Berkovich and conical indenter
11:00	Pavol Hvizdoš	Nanohardness, fracture resistance, and enhanced wear resistance of dual-phase high-entropy carbide/boride ceramics
11:20	B. Erdem Alaca	Understanding Intrinsic Stress Effects on Vibrational Response of Silicon Nanowires
11:40	Krishna Sarath Kumar Busi	Understanding and validating the fracture behavior of damage tolerant diamond-metal laminates
12:00	<i>Closing</i>	

## Posters

Elisaveta Georgieva Kirilova	Multi-parameter optimization of layered WS <sub>2</sub> -polymer nanocomposite under mechanical loading
Rayka Kirilova Vladova	Parametric analysis for interface shear stress in MoS <sub>2</sub> /PET nanocomposite under thermo-mechanical loading
Magdalena Mrózek	Addition of dental fillings with nanoparticles to improve their mechanical properties
Josef Daniel	Effect of selected HVOF-sprayed coatings parameters on dynamic impact wear
Maroš Martinkovič	Utilization of the Shear Test to measure the Local Mechanical Properties of Duplex Steels Welds
Pavel Kovačócy	Influence of Laser Beam Welding Parameters on Local Mechanical Properties of Duplex Stainless Steel Joints
Bruno Passilly	About the choice of the indenter to determine mechanical properties of superalloys by using high temperature microhardness tester
Radek Šlesinger	Efficient mapping of mechanical properties using Gaussian processes
Michael Huszar	Modulus estimation of polymers via nanoindentation – impact of surface roughness and peak force
Matej Kubiš	Nanoindentation analysis of high fluence helium ion irradiated Eurofer 97 and ODS Eurofer steels
Wojciech Żórawski	Mechanical Properties of Cold-Sprayed Ti-6Al-4V Coatings on Al 7075 Alloy
Jan Tomášтик	A nanoindentation study of TiN films deposited using magnetron sputtering under various condition
Medard Makrenek	A new approach to the properties of matter in terms of nanoindentation research on the example of selected materials
Jadranka Blazhevskaja Gilev	Mechanical and thermal reinforcement of the polymer based graphene nanoribbon composites
Michal Krafka	Changing the integrity of the material surface by combining Laser Surface Texturing and PVD Magnetron Sputtering technologies
Jaroslav Kovář	Finite element analysis of the pile-up and correction of projected contact area
Wiktor Bednarczyk	Solid solution strengthening of Zn-based alloys measured by micro-pillar compression
Petra Christöfl	Nanoindentation creep behavior of UHMWPE and PEEK polymers used in total joint replacements
Aleš Materna	Estimation of Mechanical Properties of Neutron-Irradiated 08Ch18N10T Steel from Hardness Testing
Pavel Komarov	AFM-in-SEM: Understanding mechanical properties of low dimensional materials
Zoltán Száraz	Nano- and micromechanical testing of helium implanted reactor materials