COST Action MecaNano General Meeting 2025

19-21 May 2025, AGH University of Krakow, Poland

Academic Centre for Materials and Nanotechnology, Kawiory 30, 30-055 Krakow, Poland

Local organizers: Wiktor Bednarczyk (bednarczyk@agh.edu.pl), Grzegorz Cios, Piotr Bała, Anna Smyk

Monday, May 19th	
13:00	**Welcome reception**
14:00	**Opening talk**
14:10	**Keynote Talk - Urszula Stachewicz, *AGH University of Krakow, Poland***
	Structure-properties relationship in electrospun polymer and composite fibers
14:50	**Aleksija Djuric, *University of East Sarajevo, Bosnia and Herzegovina***
	Influence of Adhesive Type on the Tensile-Shear Strength of CFRP-DP500 Steel Joints
15:10	**Sophie Vanpee, *UCLouvain, Belgium***
	Nanoindentation Analysis of individual phases in model Carbon Fiber-Reinforced PEEK composite
15:30	**Johanna Byloff, *EMPA - Swiss Federal Laboratories for Materials Science and Technology***
	Thin Film Interface Engineering using Atomic Layer Deposition: Improved Electromechanical Properties and Adhesion
15:50	**Coffee break**
16:20	**Francesco Maresca, *University of Groningen, Netherlands***
	Multi-scale modelling of fracture from atomistics to micromechanics
16:50	**Laurent Pizzagalli, *Institut Pprime, l'Université de Poitiers, France***
	Molecular dynamics calculations of the mechanical properties of nanopillars made of pyrocarbons
17:10	**Konrad Perzynski, *AGH University of Krakow, Poland***
	Prediction of crack evolution in thin films and coatings based on the digital material representation concept
17:30	**Ashish Chauniyal, *Ruhr University Bochum, Germany***
	Using data-based methods for microstructure characterization
17:50	**Bal Burak, *Abdullah Gül University, Turkey***
	Molecular dynamics based mobility laws
18:10	**Social networking**

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Tuesday, May 20th	
9:00	**Marc Legros, *CEMES-CNRS, Toulouse, France***
	In situ TEM straining: old tricks and new artefacts. An intrinsically small-scale testing method
9:30	**Vivek Devulapalli, *EMPA - Swiss Federal Laboratories for Materials Science and Technology***
	Fracture behaviour in Cu-Al multilayer thin films with amorphous AlO interlayers: Insights from in-situ TEM tensile testing
9:50	**Pierre Godard, *Institut Pprime, Université de Poitiers, France***
	[110] tensile testing of single crystalline gold thin films with nanotwins: in situ TEM and XRD studies
10:10	**Luke Hewitt, *United Kingdom Atomic Energy Authority, United Kingdom***
	In-situ strain measurement of micro-mechanical specimens using DIC
10:30	**Tijmen Vermeij, *EMPA - Swiss Federal Laboratories for Materials Science and Technology***
	In situ Transmission Kikuchi Diffraction (TKD) Tensile Testing
10:50	**Coffee Break**
11:20	**Martina Freund, *RWTH Aachen, Germany***
	Plasticity of Ca-Mg-Al C14 and C15 Laves Phases and its Temperature and Chemistry Dependency
11:50	**Sang-Hyeok Lee, *RWTH Aachen, Germany***
	Dislocations in Laves phases: Atomistic Mechanisms of Motion and Reaction
12:10	**Kamila Hamułka, *EMPA - Swiss Federal Laboratories for Materials Science and Technology***
	Strain rate dependence of slip vs. twinning in c-axis compression of α-titanium
12:30	**Hannah Howard, *University of California, Santa Barbara, USA***
	Dislocation-localized phase evolution in FCC alloys and the resulting dislocation mechanics evaluated by spherical nanoindentation
12:50	**Stefan Zeiler, *Montanuniversität Leoben, Austria***
	A versatile electrochemical charging cell for studying hydrogen-related effects in materials
13:10	**Lunch break (organized locally)**
14:40	**Edoardo Rossi, *Università degli Studi Roma Tre, Italy***
	Decoding Microstructures: Machine Learning for High-Speed Nanoindentation Mapping
15:10	**Pedro Camanho, *University of Porto, Portugal***
	Physically recurrent neural networks for micromechanical analyses of composite materials undergoing plasticity and distributed damage
15:30	**Laia Ortiz-Membrado, *Universitat Politècnica de Catalunya, Spain***
	Deep Learning Mechanical Properties Classification of Metal-Ceramic Composites Using Nanoindentation Curves
15:50	**Ruomeng Chen, *Forschungszentrum Jülich, Germany***
	Understanding microstructure-property correlation of pearlitic steel by nanoindentation and machine learning-based modeling
16:10	**Hanna Szebesczyk, *Wrocław University of Science and Technology, Poland***
	Application of high-throughput materials science methods for rapid screening and optimization of ultra-strong light-weight alloys for automotive
16:30	**Coffee break**
16:50	**Poster session (poster list will announced in a later date)**
19:00	**Official Dinner (Paid separately) - *Klub Studio, Witolda Budryka 4, 30-072 Kraków, Polska***

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Wednesday, May 21st	
9:00	**Bo-Shiuan Li,** ***National Sun Yat-sen University, Taiwan***
	Small-Scale Mechanical Testing of Semiconductor Materials
9:30	**Roozbeh Neshani,** ***UCLouvain, Belgium***
	Lab-on-a-chip nanomechanical study of annealing and stress-induced grain growth effects on plasticity and time-dependent deformation in sputtered Pt thin films.
9:50	**Basit Ali,** ***Koç University, Istanbul, Turkey***
	MEMS Platforms for Automated and High-Throughput Micromechanical Testing of Silicon Nanowires
10:10	**Gaurav Mohanty,** ***Tampere University, Finland***
	High strain rate nanoindentation up to 10,000/s and associated deformation mechanisms
10:30	**Hannah Lichtenegger,** ***Montanuniversität Leoben, Austria***
	Hardness values as a function of the degree of deformation for tungsten and doped tungsten fine wire
10:50	**Coffee Break**
11:20	**Fatima-Zahra Moul-El-Ksour,** ***École Centrale de Lyon, CNRS, France***
	High Temperature Scanning Indentation: Latest Results On Amorphous Selenium
11:40	**Francesc Barbera Flichi,** ***Universitat Politècnica de Catalunya, Spain***
	Small scale deformation of cemented carbides at high temperature
12:00	**James Gibson,** ***United Kingdom Atomic Energy Authority, United Kingdom***
	Irradiation Hardening in Advanced Reduced Activation Ferritic-Martensitic Steels for Future Fusion Applications
12:20	**Chunli Wu,** ***Technion - Israel Institute of Technology, Izrael***
	The Effect of Oxidation on the Compressive Strength of Ni Nanoparticles: a Nano-Mechanics Perspective
12:40	**Anastaiia Walrave,** ***Aix Marseille Université, CNRS, Marseille, France***
	Small-Scale Plasticity in ZnO: Combined Experimental and Computational Insights
13:00	**The end of the Meeting**