Program

Nanomechanical Testing in Materials Research and Development X

October 4 - 9, 2026

Rhodes, Greece

Conference Chair

Verena Maier-Kiener
Montan Universität Leoben, Austria



Engineering Conferences International

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In Memoriam: Dr. Warren C. Oliver (1955–2026)

It is with deep sadness that the Nanomechanical Testing and Nanoindentation community mourns the loss of Dr. Warren C. Oliver, who passed away suddenly on July 5th, 2026 at the age of 70.

Few individuals have shaped our field as profoundly as Warren. A pioneer of instrumented indentation and co-inventor of one of the first nanoindenters, he laid the very foundations upon which the nanomechanical testing community stands. Together with George Pharr, he developed the analysis method that bears their names. This contribution was so fundamental that, more than three decades later, it remains one of the most highly cited works in materials science and an everyday tool in laboratories worldwide. There is hardly a member of our scientific community whose research does not, in some way, build upon his work.

Warren's career combined scientific depth with entrepreneurial spirit. After a PhD at Stanford University, postdoctoral research in Switzerland, and a decade at Oak Ridge National Laboratory, he founded Nano Instruments Inc. and later Nanomechanics Inc., pushing the boundaries of nanomechanical testing throughout his career. His numerous publications and patents earned him election to the U.S. National Academy of Engineering.

But for many of us, Warren was much more than a name on a seminal paper. Over the decades he built close ties with researchers across our community, and many of us knew him personally - as a collaborator, a mentor, or a friend. He remained scientifically active to the end, working with colleagues in our community on new measurement methods, including high-temperature and high-strain-rate indentation. Those who had the privilege of exchanging with him will remember a remarkably kind and generous person: open to discussion, endlessly curious about every subject, and never sparing with a pertinent piece of advice or his characteristic enthusiasm. Many of us are deeply grateful for his guidance and encouragement.

As we advance the field he helped create, may we honor his memory by carrying forward the creativity, curiosity, and kindness that defined him. Our thoughts are with his wife Cheryl, his children, and all his family, friends, and colleagues during this difficult time.

Benoit Merle - Chair of CostAction MecaNano (CA21121)

Previous conferences in this series

Instrumented Indentation Testing in Materials Research & Development
October 9 – 15, 2005
Crete, Greece
Conference Chairs:
George M. Pharr, University of Tennessee, USA
Carl McHargue, University of Tennessee, USA

Nanomechanical Testing in Materials Research & Development II
October 11 - 16, 2009
Barga, Italy
Conference Chair:
Mathias Göken, University Erlangen-Nurnberg, Germany

Nanomechanical Testing in Materials Research & Development III
October 9 – 14, 2011
Lanzarote, Canary Islands, Spain
Conference Chair:
Gerhard Dehm, University of Leoben, Austria

Nanomechanical Testing in Materials Research & Development IV
October 6 - 11, 2013
Albufeira, Portugal
Conference Chair:
Johann Michler, EMPA, Switzerland

Nanomechanical Testing in Materials Research & Development V
October 4-9, 2015
Albufeira, Portugal
Conference Chair:
Marc Legros, CEMES-CNRS, France

Nanomechanical Testing in Materials Research & Development VI
October 1-6, 2017
Dubrovnik, Croatia
Conference Chair:
Karsten Durst, Technical University of Darmstadt, Germany

Nanomechanical Testing in Materials Research & Development VII
September 29 – October 4, 2019
Torremolinos/Malaga, Spain
Conference Chair:
Jon Molina-Aldareguia, IMDEA Materials Institute, Spain

Previous conferences in this series

Nanomechanical Testing in Materials Research & Development VIII
October 2-7, 2022
Split, Croatia
Conference Chair:
Sandra Korte-Kerzel, RWTH Aachen University, Germany

Nanomechanical Testing in Materials Research & Development IX
October 6-11, 2024
Sicily, Italy
Conference Chair:
Marco Sebastiani, Universita degli studi Roma Tre, Italy

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Locations and Notes

- *Technical sessions will be in the Imperial Ballroom.*
- *Poster Sessions will be in the Imperial Foyer.*
- *Breakfasts and lunches will be in Castellania.*
- *Dinner on Monday is in Mediterraneo. All other dinners are on the Sunset Deck.*
- *Audio, still photo and video recording by any device (e.g., cameras, cell phones, laptops, PDAs, watches) is strictly prohibited during the technical sessions, unless the author and ECI have granted prior permission.*
- *Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).*
- *Speakers – Please leave at least 3 minutes for questions and discussion.*
- *Please do not smoke at any conference functions.*
- *Turn your mobile telephones to vibrate or off during technical sessions.*
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- *Emergency Contact Information: Because of privacy concerns, ECI does not collect or maintain emergency contact information for conference participants. If you would like to have this information available in case of emergency, please use the reverse side of your name badge.*

Sunday, October 4, 2026

09:30 – 10:00 Check-in for Optional Tutorial Session

10:00 – 13:00 **Tutorial Session**
Accelerated Materials Discovery: Introduction to Thin Film Libraries and High-throughput Nanomechanics
Andrea M. Hodge, University of Southern California, USA

Dynamic in situ Micromechanics – Fundamentals and Beyond Markus Alfreider, Montanuniversität Leoben, Austria

13:00 - 14:30 Lunch on your own

14:30 – 15:45 Conference Check-In (Hotel Lobby)

15:45 – 16:00 **Conference Welcome Remarks** – Verena Maier-Kiener

16:00 – 16:20 **Nanoindentation: The Great Legacy of Warren Oliver**
George Pharr, Texas A&M

Session 1A: Machine Learning and Mechanical Mapping
Moderators: Verena Maier-Kiener, Montanuniversität Leoben, Austria & Sandra Korte-Kerzel, RWTH Aachen, Germany

16:20 – 16:50 **Highlight Talk 1**
Using data science and AI to enhance experimental micromechanics
Christoph Eberl, Fraunhofer IMW, Freiburg, Germany

16:50 – 17:10 **Correlative mechanical microscopy of deformation**
Jeffrey Wheeler, EMPA Dübendorf, Switzerland

17:10 – 17:40 **Highlight Talk 2**
From 3d to 4d nanoindentation mapping: Machine learning for high-dimensional mechanical data analysis and correlative interpretation
Edoardo Rossi, Department of Civil, Computer Science and Aeronautical Technologies Engineering, Roma Tre University, Italy

17:40 – 18:00 **Probing phase complexity in combinatorial thin film libraries via high-throughput characterization**
Marco Sebastiani, Department of Civil, Computer Science and Aeronautical Technologies Engineering, Rome Tre University, Italy

18:00 – 18:20 **Expanding the Ashby Chart for nanoengineered complex concentrated alloy thin films: Overcoming strength–plasticity trade-off**
Mattheo Ghidelli, LSPM-CNRS, Paris, France

19:00 – 21:30 Opening reception and cocktail dinner (Sunset Deck)

Monday, October 5, 2026

07:30 – 08:30	Breakfast buffet
	Session 2A: Activating Plasticity: The Role of Beams, Fields, and Light Moderator: Karsten Durst, TU Darmstadt, Germany
09:00 – 09:30	**Highlight Talk 3** **From artifact to opportunity: Electron-beam-induced activation of viscous flow in oxide glasses** Sebastian Bruns, Technical University Darmstadt, Germany
09:30 – 09:50	**Electro-plasticity and photo-plasticity of ionic crystals and semiconductors at the micrometre scale** Yu Zou, University of Toronto, Canada
09:50 – 10:10	**Electron-beam–assisted mechanical deformation in oxide ceramics** In-Suk Choi, Seoul National University, South Korea
10:10 – 10:30	**Stress relaxation of amorphous silicates under electron irradiation – mechanism and dynamics of plastic flow in the glassy state** Etienne Barthel, SIMM/ESPCI, France
10:30 – 10:50	**Ion irradiation induced hardening and toughening of amorphous alumina protective coating** Sergio Sao Jao, CNRS Laboratoire Georges Friedel, MINES Saint-Etienne, France
10:50 – 11:20	Coffee break
	Session 2B: From Stress Fields to Structural Transformations Moderator: Daniel Kiener, Montanuniversität Leoben, Austria
11:20 – 11:50	**Highlight Talk 4** **Metastable group-iv allotropes via nanoindentation: Converging theory and experiments** Emilio Scalise, University Milano-Biccoca, Italy
11:50 – 12:10	**A new approach to study the deformation behavior of bulk metallic glass from the atomic to the micrometer scale using micropillar compression** Udo Schwarz, Yale University, USA
12:10 – 12:30	**Thermally activated plasticity of silicon up to 900 °C - from twinning to perfect dislocation slip** Gerald Schaffar, KAI-Infineon, Austria
12:30 – 12:50	**Fracture of brittle materials and interfaces at the nanoscale** Oriol Gavalda Diaz, Imperial College, UK
12:50 – 13:10	**80nm-resolved in situ x-ray diffraction reveals multiaxial stress transfer at the indenter-sample interface** Michael Meindlhumer, Montanuniversität Leoben, Austria
13:10 – 13:30	**From brittle to metal-like plasticity in transition metal nitrides probed by in-situ micropillar compression** Rainer Hahn, TU Wien, Austria

Monday, October 5, 2026 (continued)

13:30 – 14:30	Lunch buffet
14:30 – 15:30	Networking time
	Session 3A: Beyond the Scratch: New Frontiers in Small-Scale Tribology Moderator: Ruth Schwaiger, FZ Jülich, Germany
15:30 – 16:15	**Keynote Talk** **Scratching across grains & boundaries: A hunt for design guidelines** Cem Tasan, MIT, USA
16:15 – 16:35	**Beyond just scratching the surface: Dislocation engineering regulated tribological responses in oxides** Oliver Preuss, Institute for Applied Materials (IAM), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
16:35 – 16:55	**Tribological behavior of graphene-reinforced ceramic composites - nanofriction experiments under water vapor in environmental transmission electron microscopy** Karine Masenelli-Varlot, INSA Lyon, Universite Claude Bernard Lyon 1, CNRS, France
16:55 – 17:30	Coffee Break
17:30 – 18:00	**Highlight Talk 5** **A predictive framework linking surface topography to friction in nano to meso contacts** Christian Greiner, Institute for Applied Materials (IAM), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
18:15 – 19:15	**Poster Preview Session (odd-numbered posters)** Moderators: Megan Cordill and Benoit Merle (40 seconds each speaker)
19:15 – 21:00	Buffet dinner
21:00 – 23:00	**Poster Session** with social time Organizers: Benoit Merle, University of Kassel, Germany and Megan Cordill,Erich Schmid Institute of Materials Science, Leoben, Austria

Tuesday, October 6, 2026

07:30 – 09:00	Breakfast buffet
	Session 4A: Designing Energy Materials through Nanomechanics
	Moderator: Christoph Kirchlechner, KIT, Germany
09:00 – 09:30	**Highlight Talk 6** **Mechanics of materials for rechargeable batteries** Matt Pharr, Texas A&M, USA
09:30 – 09:50	**Nanomechanics of functional nanostructures: From Kirkendall-based thermal insulators to reactive multilayers** Ralph Spolenak, ETH Zurich, Switzerland
09:50 – 10:10	**Effect of oxygen on the deformation mechanism of inorganic fullerenes studied by TM in situ approaches** Lucile Joly-Pottuz, University of Lyon, France
10:10 – 10:40	**Highlight Talk 7** **Nanomechanical testing as the rate-limiting step in solid-state battery development** Ruth Schwaiger, Forschungszentrum Jülich, Germany
10:40 – 11:00	**Elastic strain engineering applied to enhance the electrocatalytic activity of intermetallic compounds for the hydrogen evolution reaction** Jon Molina, IMDEA-Materials Institute, Spain
11:00 – 11:30	Coffee break
	Session 4B: Beyond Failure: Understanding and Controlling Degradation Pathways Moderator: Jon Molina, IMDEA Madrid, Spain
11:30 – 12:00	**Highlight Talk 8** **Measuring adhesion energies of critical interfaces in aerospace** Megan Cordill, Austrian Academy of Sciences, Erich-Schmid-Insitute Leoben, Austria
12:00 – 12:20	**Plastic flow and fracture of chromium-coating deposited on a Zr-based nuclear fuel cladding** Guillaume Kermouche, Mines Saint-Etienne, Laboratoire Georges Friedel, CNRS UMR 5307, France
12:20 – 12:50	**Highlight Talk 9** **Tritium-based Micromechanics (TRITIME) for a mechanistic understanding of hydrogen embrittlement** Christoph Kirchlechner, Institute for Applied Materials (IAM), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

Tuesday, October 6, 2026 (continued)

12:50 – 13:10	**Advancing hydrogen resistance using innovative ECO/polymer composite coatings** Maria Jazmin Duarte Correa, Max Planck for Sustainable Materials, Düsseldorf, Germany
13:10 – 13:30	**Circularity by design: Nanomechanical pathways to understand and control residual effects in martensitic steels** Eloho Okotete, Institute for Applied Materials (IAM), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
13:30 – 14:30	Lunch buffet
14:45 – 15:00	Board buses for excursion
15:00 – 22:30	Excursion to Rhodes Town (dinner on your own)

Half Day Tour of Rhodes Town

Rhodes Town, located on the north-eastern tip of Greece's largest Dodecanese island, is a fascinating city. Best known for its UNESCO-listed Old Town, the city features one of the best-preserved medieval settlements in Europe. Our tour begins the at summit of Monte Smith Hill, known for its panoramic views, where remnants of the Temple of Apollo and the restored edifices of the Ancient Stadium and Odium dominate over the modern city of Rhodes. Only a few minutes from the Acropolis, we enter the Medieval Old Town encircled by high stone walls, with narrow cobbled streets and Gothic architecture built by the Knights of Saint John.

One of the most impressive buildings within the Walls is the Palace of the Grand Master. This colossal 14th-century fortress dominates the Old Town, originally serving as the Knights' headquarters and later an Ottoman palace. After being largely destroyed by a gunpowder explosion in the late 1800’s, the structure was completely rebuilt and restored by the Italians in the early 1900’s. The Street of the Knights is one of the most perfectly preserved cobblestone streets in Europe. The street is lined with Inns of Knights, Consulates and Chapels and leads the way to the Hospital of the Knights.

After the tour, you will have free time in the Old Town to do additional sightseeing, shopping and dining, before returning to the hotel on your own. Don't miss out on local specialties like pitaroudia (chickpea fritters) and souma (a local grape spirit).

Wednesday, October 7, 2026

07:30 – 09:00	Breakfast buffet
	Session 5A: Blueprints of Nature: Mechanics Across Biological and Geological Scales Moderator: Ralph Spolenak, ETH Zürich, Switzerland
09:00 – 09:30	**Highlight Talk 10** **Investigating structure-property relationships of bone and the effects of metabolic diseases using experimental micromechanics** Jakob Schwiedrzik, EMPA Dübendorf, Switzerland
09:30 – 09:50	**Nature's blueprints: Nanomechanical insights from bone, teeth and shells** Michael Wurmshuber, FAU Erlangen, Germany
09:50 – 10:10	**Deformation mechanisms of talc: Insights from nanomechanical testing and numerical modelling** Patrick Cordier, Université de Lille, France
10:10 – 10:40	**Highlight Talk 11** **Bridging planetary science and materials physics: Micromechanics of meteorites** Szilvia Kalacska, CNRS LGF, Mines St. Etienne, France
10:40 – 11:00	**Investigation of sapphire strength across the scales** Sylvain Meille, INSA Lyon, France
11:00 – 11:30	Coffee break
	Session 5B: Capturing Plasticity in the Fast Lane Moderator: Guillaume Kermouche, Mines St Etienne, France
11:30 – 12:00	**Highlight Talk 12** **Microparticle impact as a window on dislocation-drag plasticity** Luciano Borasi, Northwestern University, USA
12:00 – 12:20	**Acoustic signatures of high-strain-rate microcompression in Zn single crystals** Peter Ispanovity, ELTE Eötvös Loránd University, Hungary
12:20 – 12:40	**Constant strain rate nanoindentation at high strain rates: How do you know the hardness is right?** Benoit Merle, University of Kassel, Germany
12:40 – 13:00	**Do strain rate sensitivity exponents and deformation mechanisms change in constant strain rate nanoindentation between 10^3 and 10^4 s^{-1}?** Gaurav Mohanty, Tampere University, Finland
13:00 – 13:20	**Nanoindentation under cryogenic conditions at extreme strain rates** Hendrik Holz, Max Planck for Sustainable Materials, Düsseldorf, Germany
13:20 – 14:30	Lunch buffet
14:30 – 15:30	Networking time

Wednesday, October 7, 2026 (continued)

	Session 6A: Seeing Deformation: Correlative Electron Microscopy in Nanomechanics Moderators: Jeff Wheeler, EMPA, Switzerland & Tim Rupert, John Hopkins University, USA
15:30 – 16:00	**Highlight Talk 13** **Revealing deformation mechanisms in nanocrystalline thin films using 4D STEM** Christoph Gammer, Austrian Academy of Sciences, Erich-Schmid-Insitute Leoben, Austria
16:00 – 16:20	**Expanding the capabilities of the scanning electron microscope: Diffraction, imaging, and in-situ** Dan Gianola, University of California, Santa Barbara
16:20 – 16:40	**Correlative analysis of the elementary deformation mechanisms in metallic thin films by lab-on-chip, nano-dic and acom-tem** Hosni Idrissi, Université catholique de Louvain, Belgium
16:40 – 17:00	**High-throughput analysis of material libraries: Analysis of chemical composition, microstructure, mechanical, optical and electrical properties in a single benchtop instrument** Johann Michler, EMPA Thun, Switzerland
17:00 – 17:30	Coffee Break
17:30 – 17:50	**From dislocation structure to local strength: A correlative ECCI–micropillar study in ferritic steel** Subin Lee, Institute for Applied Materials (IAM), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
17:50 – 18:10	**Microscale tension–torsion coupled testing of additively manufactured metallic microarchitectures** Rajaprakash Ramachandramoorthy, Max Planck for Sustainable Materials, Düsseldorf, Germany
18:10 – 18:30	**3D printed metal micro- and nanomechanical testing platforms** Lalith Kumar Bhaskar, Max Planck for Sustainable Materials, Düsseldorf, Germany
18:30 – 19:30	**Poster Preview Session (even-numbered posters)** Moderators: Megan Cordill and Benoit Merle (40 seconds each speaker)
19:30 – 21:00	Buffet dinner
21:00 – 23:00	**Poster session** with social time Organizers: Benoit Merle, University of Kassel, Germany and Megan Cordill,Erich Schmid Institute of Materials Science, Leoben, Austria

Thursday, October 8, 2026

07:30 – 09:00	Breakfast buffet
	Session 7A: From Complexions to Plasticity: Grain Boundary-Mediated Deformation Moderator: Dan Gianola, UC Santa Barbara, USA
09:00 – 09:30	**Highlight Talk 14** **Micromechanical testing to probe plasticity and failure of grain boundary and dislocation complexions** Timothy Rupert, Johns Hopkins University, USA
09:30 – 09:50	**Tailoring grain boundary states in severely deformed Ti-Nb based nanocrystalline systems** Markus Alfreider, Montanuniversity Leoben, Austria
09:50 – 10:10	**Grain boundary hardening vs. softening in nanocrystalline Cu-X Solid Solutions: A multi-method nanomechanical investigation from RT to 300°C** Karsten Durst, Technical University of Darmstadt, Germany
10:10 – 10:30	**Enhancing strength and deformability in nanocomposites via thick 3-D bimetallic interfaces** Nathan Mara, University of Minnesota, USA
10:30 – 11:00	**Highlight Talk 15** **Nanoindentation pop-ins revisited: Recrystallization and twinning in molybdenum at room temperature** Eugen Rabkin, Technion Haifa, Israel
11:00 – 11:30	Coffee break
	Session 7B: Decoding Complex Materials through Micromechanics and Modeling Moderator: Mathias Göken, FAU Erlangen-Nürnberg, Germany
11:30 – 12:00	**Highlight Talk 16** **Determination of material parameters using inverse analysis of indentation results** Alexander Hartmaier, ICAMS, RUB, Germany
12:00 – 12:20	**Transformation-induced misfit strains and their impact on micromechanical response in Ti-Al-Nb lamellar colonies** Henri Ovri, Hereon, Hamburg, Germany
12:20 – 12:40	**Nanomechanics of coupled defects in Laves intermetallics** Sandra Korte-Kerzel, Institut für Metallkunde und Materialphysik, RWTH Aachen University, Germany
12:40 – 13:00	**From the nucleation of prismatic dislocation loops to basal: Various aspects of small scale plasticity in Cr2AlC MAX phase revealed by micromechanichal testing** Christoph Tromas, Pprime Institute, University of Poitiers, France
13:00 – 13:20	**Nanoindentation mapping of cemented carbides as complex biphasic materials: From surface statistics to volumetric mechanical correlation by FEM simulation and tomography** Emilio Jimenez Pique, Spain

Thursday, October 8, 2026 (continued)

13:20 – 14:30	Lunch buffet
14:30 – 15:30	Networking Time
	Session 8A: Tracking Failure: From Crack Initiation to Final Fracture Moderator: Marco Sebastiani, Roma Tre, Italy
15:30 – 15:50	**Assessing local cyclic failure of materials: From threshold to final fracture** Daniel Kiener, Department Materials Science, Chair of Materials Physics, Montanuniversität Leoben, Austria
15:50 – 16:10	**Small-scale fatigue crack growth: A versatile tool - from characterizing material properties to elucidating deformation mechanisms and beyond** Jutta Luksch, Saarland University, Saarbrücken, Germany
16:10 – 16:30	**Cantilever bending coupled to DIC to obtain constitutive laws for deformation under constant strain rate and stress: Experiments and instrument development** Vikram Jayaram, Indian Institute of Science, India
16:30 – 16:50	**Understanding the grain boundary sliding mechanism via in situ high temperature pillar compression** Divya Sri Badla, Institute for Applied Materials (IAM), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
16:50 – 17:20	Coffee Break
	Session 8B: Twinning and Size Effects in Thin Films and Crystalline Materials Moderator: Andrea Hodge, USC, USA
17:20 – 17:50	**Highlight Talk 17** **Understanding the deformation of single-crystalline gold thin films with nanotwins: Contribution of atomic-scale simulations** Sandrine Brochard, Pprime Institute, University of Poitiers, France
17:50 – 18:10	**The fracture toughness and thickness dependence of thin films** Mathias Göken, FAU Erlangen, Germany
18:10 – 18:30	**Influence of sample size, strain rate and temperature on deformation of an Fe-2.4 wt.% Si bi-crystal and its paired single crystals** Chunhua Tian, Institut für Metallkunde und Materialphysik, RWTH Aachen University, Germany
18:30 – 18:50	**In situ TKD coupled with DIC for investigating twinning mechanisms in HCP metals** Xavier Maeder, EMPA Thun, Switzerland
20:00 – 22:30	Conference Banquet

Friday, October 09, 2026

07:30 – 09:00	Breakfast and departures

Poster Presentations

1. **Effect of hydrogen on the mechanical properties of iron-chromium alloy: an in situ experimental approach**
   Szilvia Kalacska, CNRS Laboratoire Georges Friedel, MINES Saint-Etienne, France

2. **Spherical time-dependent plasticity studies of advanced fusion steels**
   James Gibson, UK Atomic Energy Authority, UK

3. **Probing viscoelasticity up to 1 kHZ using high-dynamic nanoindentation**
   Christian Minnert, Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland

4. **Contact renewal accelerates atom-by-atom wear of microcrystalline diamond**
   Ozan Sahin, Advanced Research Center for Nanolithography, Netherlands

5. **Assessment of high strain rate nanoindentation analysis methods**
   Kevin Schmalbach, Bruker, USA

6. **Scratch testing at elevated temperatures on glasses – A comparison between nanoindentation and scratch testing**
   Dennis Bedorf, SURFACE, Germany

7. **Microstructural heterogeneity and phase interactions in ferritoperlitic steel: A nanoindentation and hardness mapping approach**
   Etienne Andre, Centrale Lyon, France

8. **Multi-scale micromechanical testing for a new polymer core solder ball interconnections reliability in operating conditions**
   Yvan Marthouret, Ecole Nationale Supérieure des Mines De Saint-Etienne, France

9. **Micromechanical characterization of materials for Solid Oxide Cells under relevant conditions**
   Sandra García González, Ciefma, UPC, Spain

10. **A dynamic nanoindentation method for determining the brittle-to-ductile transition temperature**
    Stefan Zeiler, Montanuniversität Leoben, Austria

11. **Annealing-induced grain boundary relaxation in nanocrystalline Ti-Nb alloys - insights from mechanical spectroscopy and correlative characterisation**
    Lukas Lang, University of Leoben, Austria

12. **Strain-rate-dependent microscale deformation of an intermetallic–Mg interface under shear loading**
    Leiming Du, Max Planck Institute for Sustainable Materials, Germany

13. **The role of grain boundaries in hydrogen microstructure interactions**
    Clara Reinhart, Max-Planck-Institut für Nachhaltige Materialien, Germany

14. **Nanoindentation of bone in dry and wet conditions: Effect of strain rate, indent spacing, degradation and local mineralization**
    Dennis Droßel, FAU Erlangen-Nürnberg, Germany

15. **Prediction of compressive flow curves from nanoindentation and pile-up data utilizing machine learning**
    Matthias Glosemeyer, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

16. **DFXM characterisation of dislocation avalanches with concurrent acoustic emission measurements**
    Péter Ispánovity, ELTE Eötvös Loránd University, Hungary

17. **A new method to determine surface mechanical properties as a function of indentation depth: application to High Temperature Scanning Indentation technique**
    Fatima-Zahra MOUL-EL-KSOUR, Ecole Centrale De Lyon / LTDS, France

18. **Determination of surface mechanical properties by microshear: Application at very high strain rates**
    Gaylord Guillonneau, LTDS, ECL, CNRS, France

19. **Nanohardness and microcantilever strength of compositionally complex ultra-high temperature boride/carbide ceramics**
    Jan Dusza, Institute of Materials Research - Slovak Academy of Sciences, Slovak Republic

20. **Micromechanical testing of a machining-induced white layer on a 15-5PH stainless steel**
    Guillaume Kermouche, Mines Saint-Etienne, France

21. **Multimaterial 3d printing: Solving the challenge of brittle interfaces by geometry**
    Nerea Abando, ETH Zurich, Switzerland

22. **In situ TEM crack propagation in nanocrystalline Cu-W-Re down to the atomic scale**
    Jianxiao Cui, Structure and Function of Materials (IMD-1), FZ Jülich, Germany

23. **High-temperature wear in furnace component for hot stamping: from industrial analysis to lab testing design**
    Giselle Ramirez Sandoval, Universitat Politècnica De Catalunya, Spain

24. **Orientation-dependent deformation mechanisms in niobium alloy c103**
    Aurelia Moriyama-Gurish, Yale University

25. **Evaluating the mechanical properties of intermetallic phases in multicomponent zinc alloys via EBSD and micro-scale testing**
    Wiktor Bednarczyk, AGH University of Krakow, Poland

26. **Resolving the influence of vacancies and chemical composition on plasticity in B2 FeAl alloys via micropillar compression on diffusion couples**
    Jung Soo Lee, Max Planck Institute for Sustainable Materials, Germany

27. **Screening room-temperature plasticity of perovskite oxides via solid solution and scale-bridging indentation tests**
    Alexander Frisch, KIT, Germany

28. **Impact of rotational tribological testing on microstructural evolution**
    Antje Dollmann, KIT, Germany

29. **Unlocking structure-property relationships in sodium-based electrolytes by Cryo-EBSD**
    Nicolo Maria Della Ventura, Max Planck Institute for Sustainable Materials, Germany

30. **Interfacial hydrogen mediates microscratch-induced deformation in pearlite**
    Kaili Feng, Max Planck Institute for Sustainable Materials, Germany

31. **Nanoindentation assessment of mechanical behavior of γ'- lean Ni-based superalloy – Haynes 282**
    Anjali Gawande, Indian Institute of Science, India

32. **Deformation-induced structural transformations in freestanding pre-notched CoCrFeNi thin films**
    Abira Rashid, Indian Institute of Technology Gandhinagar, India, India

33. **3D printed metal MEMS devices: Fabrication, optimization, and characterization**
    Nhat Hoang Van, Max Planck for Sustainable Materials, Germany

34. **Hydrogen–dislocation interaction in bcc FeCr alloys by in situ micropillar compression**
    Jazmin Duarte, Max Planck for Sustainable Materials, Germany

35. **Effect of grain boundary doping on thermomechanical behavior of Cu thin films**
    Piyush Jagtap, Indian Institute of Technology, Roorkee, India

36. **Ab initio simulations of small nanoparticles' mechanical properties: Strength and plasticity mechanisms**
    Sandrine Brochard, Institut Pprime, France

37. **Hydrogen effects on plasticity in BCC materials: A Tritium-based micromechanical study**
    Maral Sarebanzadeh, Karlsruhe Institute of Technology, Germany

38. **Probing the HEDE mechanism in hydrogen embrittlement via Tritium-based in-situ microcantilever fracture**
    Johannes Reibenspies, Karlsruhe Institute of Technology, Germany

39. **Advanced characterization protocols for advanced heterogeneous materials based on high-speed nanoindentation mapping**
    Giulia Gigante, Roma Tre University, Italy

40. **Experimental and computational analysis of the ultra-high mechanical damping in nanopillar arrays of Cu–Al–Ni shape memory alloys**
    Ander Abadin, University of the Basque Country, Spain

41. **New insights on the initial plasticity in metallic glasses via nanoindentation**
    Valeria Lemkova, Saarland University, Germany

42. **Polishing-induced residual stresses at the sub-microscale in commercially pure titanium**
    Kento Takahashi, KU Leuven, Belgium

43. **Multi-scale characterization using nanoindentation maps of tooth enamel across species**
    Wout Van Wesemael, KU Leuven, Belgium

44. **Investigation of electron beam effect on dislocation-mediated plastic deformation of ZnO single crystals under in-situ micropillar compression**
    Ryosuke Kinoshita, The University of Osaka, Japan

45. **Fracture toughness of V alloyed TiN coatings using micro pillar splitting**
    Urmila Regar, Linköping University, Sweden

46. **A back-side electrochemical hydrogen charging platform for in situ SEM and nano-/micromechanical testing**
    Amir Hamzehei, Max Planck Institue for Sustainable Materials, Germany

47. **Isolating athermal hydrogen-metal interactions via cryogenic nanoindentation**
    Amir Hamzehei, Max Planck Institue for Sustainable Materials, Germany

48. **Liquid-encapsulated copper microspheres: Impact of global and local stress state on fracture behavior**
    Jeongin Paeng, Max Planck Institute for Sustainable Materials, Germany

49. **Advanced computer vision techniques for deformation analysis of in situ micromechanical tests**
    Julius Keckes, Montanuniversität Leoben, Austria

50. **Intrinsic mechanical properties of thin films via in-situ SEM micro-tensile testing**
    Thomas Astecker, TU Wien, Austria

51. **Mechanically driven Li dendrite penetration in garnet solid electrolyte**
    Yuwei Zhang, Max Planck Institute for Sustainable Materials, Germany

52. **Isolating shear-coupled grain boundary migration via double-notched pure shear pillars in Cu Σ5 bicrystals**
    Daeho Kim, Max-Planck-Institut Für Nachhaltige Materialien GmbH, Germany

53. **Instrumented indentaiton testing on engineering materials: Effect of temperature**
    Hannah (Huixing) Zhang, National physical laboratory, UK

54. **Nanoindentation fatigue as a tool for investigating mechanical grain growth kinetics in nanocrystalline metals**
    Florentin Gaub, Saarland University, Germany

55. **Correlative nanoindentation and microscratching for particle-matrix interface characterization**
    Nora Kleser, Saarland University, Germany

56. **Slip and deformation in high entropy carbides: A micromechanics based study**
    Gaurav Mohanty, Tampere University, Finland

57. **From electrodeposition to deformation: Microstructure and strain rate Effects of 3D printed copper micro-tensile samples**
    Alvaro Diego Bedoya Zapata, Max Planck Institute for Sustainable Materials, Germany

58. **Experimental considerations for correlating indentation hardness with tensile yield stress for thermoplastic polymers**
    Jacob Hempel, Texas A&M, USA

59. **Damage evolution in die-cast Al-Mg-Si alloys: Resolving the role of elongated intermetallic compounds by in-situ SEM-DIC**
    Felix Schulze, TU Darmstadt, Germany

60. **Microstructure and mechanical properties of tungsten fabricated by electron beam powder bed fusion**
    Lei Zhu, Universitat Politècnica De Catalunya, Spain

61. **Micromechanical characterization of cemented carbides with alternative binders under elevated temperatures and varying strain rates**
    Francesc Barberà Flichi, Universitat Politècnica De Catalunya, Spain

62. **Hydrogen effects on the micromechanical behaviour of palladium: Microstructure–property correlations**
    Syed Abdur Rahman, University of Oxford, UK

63. **Atomistic simulation of the compression of Si/SiO2 core-shell nanoparticles: Impact of oxide thickness and morphology on mechanical response**
    Sandrine Brochard, Institut Pprime, France

64. **Correlative microstructural and micromechanical characterization of a ductile disordered phase in a high-aluminum refractory alloy**
    Jin Wang/ Ruth Schwaiger, Forschungszentrum Juelich, Germany