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TMS 2020

149th Annual Meeting & Exhibition

February 23-27, 2020 • San Diego, California, USA



Submit an abstract to:

Nanostructured and Heterostructured Materials

Mechanical Behavior at the Nanoscale V

Understanding the mechanics of materials in small volumes is of fundamental importance because it simultaneously allows for the exploration of new properties at the smallest of length scales as well as provides a basis for understanding multiscale phenomena that originate at these length scales acknowledging an interplay between size and properties. This symposium will focus on the mechanical properties of small-volume and low-dimensional materials, as well as bulk materials that are comprised of or are aggregates of these materials including bulk nanostructured materials and nanoscale based hierarchical materials. Studies that discuss sample size effects, changes in mechanical properties at the nanoscale, applications of nanoscale mechanical testing and the associated characterization, as well as modeling that addresses the mechanical properties of these materials are welcome. Properties of interest include, but are not limited to: elasticity, strength, plastic flow, fatigue, and fracture.

Topics will include:

- Size effects on elasticity, strength, plastic flow, fracture and fatigue in low dimensional materials including nanopillars, nanowires, nanoparticles, thin films, multilayered materials, graded materials, and architecture-designed materials
- Changes in deformation types or patterns due to changes in scale including those due to size affected phase transformations, changes in density and types of interfaces, as well as available deformation sources
- Nanomechanical testing of emerging materials, including high-entropy alloys, complex metallic alloys, nano-twinned metals, for understanding their bulk properties
- Ex-situ and in-situ (SEM, TEM, XRD, neutron, etc.) mechanical characterization methods
- Modeling and simulation at all scales, as well as coupled scale modeling, of mechanical behavior of nanostructured materials

ORGANIZERS

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Abstract Deadline is July 1, 2019. Submit online at
www.programmaster.org/TMS2020.

Questions?
Contact programming@tms.org