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ABSTRACT DEADLINE: NOVEMBER 1, 2005

REMINDER: *In fairness to all potential authors, late abstracts will not be accepted.*

MRS Symposium Z: Mechanics of Nanoscale Materials and Devices

A variety of novel nanoscale structures (such as nanowires, nanotubes, nanodots, nanopillars, and nanopatterned films) and nanostructured materials with grain-size or layer thickness in the nanometer range have been discovered and designed recently. These nanostructures are also being integrated in nano-electromechanical systems (NEMS); and nanostructured materials are increasingly being used in magnetic, electronic, and tribological applications. The mechanical behaviors of nanoscale materials and devices defy the well-established continuum mechanics-based descriptions in many aspects. Understanding the mechanics of the nanostructures and nanodevices is not only a scientific curiosity but also a technological necessity. This symposium brings together materials scientists engaged in the fundamental research on mechanical properties of nanoscale materials and development of nanomechanical devices.

Specific topics of interest covering both experimental and theoretical work include, but are not limited to:

- Deformation and fracture mechanisms in nanoscale materials
- Novel nanomechanical characterization methods, including *in situ* techniques
- Modeling approaches of mechanics of nanoscale materials
- Novel structures, new materials, or new fabrication approaches for NEMS
- Materials properties of nanoscale structures, such as internal dissipation, surface forces/adhesion, and tribology
- Technological applications of nanostructured materials and NEMS

Invited speakers include (partial list): **Dustin Carr** and **Eliot Fang** (Sandia National Labs), **R.G. Hoagland** (Los Alamos National Lab), **Luke Hsiung** (Lawrence Livermore National Lab), **Young Huang** (Univ. of Illinois-Urbana), **Oliver Kraft** (Univ. of Karlsruhe, Germany), **En Ma** (Johns Hopkins Univ.), **Raj Mohanty** (Boston Univ.), **Eric Stach** (Purdue Univ.), **Jerry Tersoff** (IBM T.J. Watson Research Ctr.), **Helena van Swygenhoven** (Paul Scherrer Inst., Switzerland), **Dieter Wolf** (Argonne National Lab), and **Boris Yakobson** (Rice Univ.).

Symposium Organizers

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