



Conference Tools for Materials Science & Technology 2013

[Login](#) [Register as a New User](#) [Help](#) [Submit An Abstract](#) [Propose A Symposium](#) [Propose A Proceedings](#) [Presenter/Author Tools](#) [Organizer/Editor Tools](#)

About this Symposium

Meeting [Materials Science & Technology 2013](#)

Symposium **Structure – Property Relationships in Low-Dimensional Metallic Nanostructures**

Sponsorship

Organizer(s) [Frederic Sansoz](#), The University of Vermont
Yinmin Morris Wang, Lawrence Livermore National Laboratory
Ronald Miller, Carleton University
[Jun Lou](#), Rice University

Scope The mechanical properties of low-dimensional metallic nanostructures such as thin films, nanowires, nanopillars and nanoparticles are essential for nanodevices in electronics, optoelectronics, photonics, mechanical systems, and life sciences. Gaining predictive understanding of such properties, however, requires deeper knowledge of structure – property relationships in nanoscale metallic materials, and underlying deformation processes at the atomic and quantum scales. To this end, it is critically important to examine how size, surface structure, microstructure, and environment affect crystal plasticity and fracture at small scale. Also, modulating the densities of defects and coherent interfaces like twin boundaries opens new possibilities for controlling and improving mechanical characteristics in metallic nanomaterials. Furthermore, as this emerging area continues to evolve, new concepts and methodologies are explored, new fabrication, microstructure analysis, and nanomechanical testing techniques are used, and new modeling and simulation tools are developed. The symposium will focus on experimental, theoretical and computational studies of new structure – property relationships in nano-sized metallic materials. These studies will include, but are not limited to, the following subject areas:

- Size and strain-rate effects on crystal plasticity and fracture at the nanoscale
- Surface effects on dislocation nucleation, propagation and exhaustion
- Strengthening and fracture mechanisms at small length scale
- Mechanical and physical properties of nanotwinned systems
- Properties of nanomaterials under extreme environment
- Nanostructured materials for energy harvesting and storage

Abstracts Due 03/15/2013

Proceedings Plan Undecided

IF YOU WOULD LIKE TO SUBMIT AN ABSTRACT . . .

. . . you are welcome to do so. Just click on the button. Note: To submit an abstract, you must be registered and logged into the system.

[Submit an Abstract](#)

Questions about ProgramMaster? Contact programming@programmaster.org