

Submission Deadline—June 28, 2011



Advances in Mechanics of One-Dimensional Micro/Nanomaterials

Fabrication of one-dimensional materials—nanotubes, nanowires, and nanopillars—is an area of significant interest, as these materials have promising applications in electronics, composites, optics, and MEMS. In many application venues, including flexible systems, the mechanical properties of 1-D materials can determine both reliability and performance. Experimental and theoretical modeling of 1-D materials subjected to mechanical straining demonstrates unexpected behaviors, including crystal structure transformation, brittle-to-ductile transition, and remarkable ductility. Both experimentalists and modelers will come together in a **February 2012 focus issue of *Journal of Materials Research*** to discuss the latest on deformation, failure, and mechanics of 1-D materials across micro- and nanoscales.

Contributed papers are solicited in the following areas:

- ◆ Mechanical properties of nanotubes, nanowires, and nanopillars
- ◆ Mechanical failures in nanotubes, nanowires, and nanopillars
- ◆ Deformation and strengthening mechanisms in nanotubes, nanopillars, and nanowires
- ◆ Theoretical modeling and simulation of fracture and deformation

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MANUSCRIPT SUBMISSION

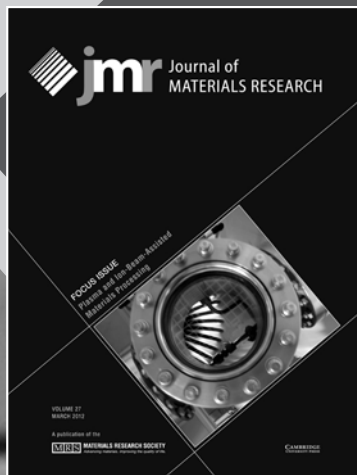
To be considered for this issue, new and previously unpublished results significant to the development of this field should be presented. **Manuscripts must be submitted via the *JMR* electronic submission system by June 28, 2011.** Manuscripts submitted after this deadline will not be considered for the issue due to time constraints on the review process. Submission instructions may be found at www.mrs.org/jmr-instructions. Please select "Focus Issue: *Advances in Mechanics of One-Dimensional Micro/Nanomaterials*" as the manuscript type. All manuscripts will be reviewed in a normal but expedited fashion. **Papers submitted by the deadline and subsequently accepted will be published in the Focus Issue.** Other manuscripts that are acceptable but cannot be included in the issue will be scheduled for publication in a subsequent issue of *JMR*.

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CALL FOR PAPERS

Submission Deadline—July 15, 2011



Plasma and Ion-Beam Assisted Materials Processing

Advanced methods of plasma-based deposition and functionalizing surface treatments enable local control of material chemistry with a high degree of freedom through complex interactions and out-of-equilibrium conditions. **In March 2012, *Journal of Materials Research* will publish a special Focus Issue** highlighting the state of the art of plasma chemistry and physics for materials synthesis. Current progress in low energy (>5kV) ion-beam processing of surfaces, thin films, and nanostructures will also be featured.

Contributed papers are solicited in the following areas:

- ◆ Plasma-based ion implantation, subplantation, etching, and deposition
- ◆ Ionized physical vapor deposition
- ◆ Progress in plasma-based methods for TCO synthesis and growth
- ◆ Filtered cathodic arc deposition of metastable nitrides and carbides
- ◆ High-power impulse magnetron sputtering of novel thin-film materials
- ◆ Phase formation in oxide layers synthesized by pulsed deposition techniques
- ◆ New applications of plasma-immersion ion implantation and deposition
- ◆ Hybrid physical vapor deposition for preparation of nanocomposite films
- ◆ Plasma-assisted chemical vapor deposition
- ◆ Surface functionalization using atmospheric DBD treatments

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The Society's interdisciplinary approach to the exchange of technical information is qualitatively different from that provided by single-discipline professional societies because it promotes technical exchange across the various fields of science affecting materials development. MRS sponsors two major international annual meetings encompassing many topical symposia, as well as numerous single-topic scientific meetings each year. It recognizes professional and technical excellence, conducts tutorials, and fosters technical exchange in various local geographical regions through Section activities and Student Chapters on university campuses.

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MRS is an Affiliated Society of the American Institute of Physics and participates in the international arena of materials research through associations with professional organizations such as the International Union of Materials Research Societies.

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