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# CALL FOR PAPERS

**ABSTRACT DEADLINE: JUNE 21, 2005**

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

## MRS Symposium R: Assembly at the Nanoscale—Toward Functional Nanostructured Materials

A fundamental challenge in the development of nanotechnology is the assembly of nanoscale building blocks into functional nanostructured materials. The aim of this symposium is to bring together researchers from chemistry, physics, biology, surface science, and materials science to advance the progress in the engineering of nanoscale assemblies. The scope of the symposium spans from the properties and characterization of novel nanostructured materials to developing functional multidimensional nanostructures whose applicability ranges from life sciences to device engineering.

We will invite speakers and solicit contributions toward the goal of exploring new functionalities of materials and developing novel approaches to materials processing for multi-dimensional nanostructures. We would like to target an important issue of developing materials and fabricating nanostructured devices by understanding and exploring processing techniques with the promise to transport or modify material on the nanometer scale. If successful, the payoff of these efforts will include new generations of nanoscale bio/chemical sensors using nanostructured materials, biophotonic devices, including, e.g., quantum dots (QDs), light-emitting diodes, molecular electronic devices, flat-panel displays, smart cards, smart biomaterials, and drug-delivery devices.

Topics of interest for this symposium include, but are not limited to:

- Surface science studies of 1D and 2D supramolecular assemblies
- Properties and applications of self-assembled 3D structures and nanostructures, such as photonic bandgap materials, sensors, and nanocomposites
- Novel fabrication methodologies: self-assembly strategies, biomimetics, and predictive approaches
- Fundamental problems in QDs: growth (by self assembly), physics, top-down fabrication (e.g., lithography, as well as other less conventional approaches)
- Unconventional approaches to patterning, such as soft lithography, embossing, dip-pen lithography, scanning probe lithography, and template-directed patterning
- Organic/inorganic interfaces for molecular and nano-electronic applications
- Nanoscale building blocks synthesized with colloidal particles, nanowires, nanotubes, quantum dots, block copolymers, and DNA

Joint sessions are anticipated with Symposia O: *Nanoparticles and Nanostructures in Sensors and Catalysis*, and P: *Quantum-Confined Semiconductor Nanostructures—Fabrication, Physical Properties, and Applications*.

A tutorial complementing this symposium is tentatively planned. Further information will be included in the program that will be available in September.

**Invited speakers** (tentative list) include: **Johannes Barth** (Univ. of British Columbia, Canada), **Angela Belcher** (Massachusetts Inst. of Technology), **Peter Beton** (Univ. of Nottingham, United Kingdom), **Steve Chou** (Princeton Univ.), **Huajian Gao** (Max Planck Inst., Germany), **Peter Grütter** (McGill Univ.), **Chad Mirkin** (Northwestern Univ.), **Carlo Montemagno** (Univ. of California-Los Angeles), **John Rogers** (Univ. of Illinois, Urbana-Champaign), **Hidemi Shigekawa** (Univ. of Tsukuba, Japan), **Geoff Strouse** (Univ. of California-Santa Barbara), **Zhou Wei** (Nanyang Technological Univ., Singapore), **George Whitesides** (Harvard Univ.), **Younan Xia** (Univ. of Washington), and **Peidong Yang** (Univ. of California-Berkeley).

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