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ABSTRACT DEADLINE: NOVEMBER 1, 2005

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

MRS Symposium P: Semiconductor Nanowires—Fabrication, Physical Properties, and Applications

Semiconductor nanowires as one-dimensional structures and building blocks for nano-devices have received increasing attention in recent years. A variety of methods has been employed during these recent years for the manufacturing of nanowires. Controlling the one-dimensional growth on a nanometer scale is rather challenging but offers unique opportunities for combining materials, manipulating properties, and designing novel devices. Ways are needed to grow nanowire at the desired position, with a specific length and diameter, and a controlled material composition. Developing methods for control of one-dimensional growth of such nanostructures means to have simultaneous control over dimensions, morphology, shape, and uniformity on a nanometer scale.

Tremendous progress in nanofabrication has been achieved which is partly based on the development of self-organization methods for nanostructuring and on template approaches. Examples include the development of nanosphere lithography, templates based on porous structures, or nanomanipulation. The progress in growth has led to the demonstration of the first successful devices based on nanoscale semiconductors. All of these advances have generated an intense interest in the physical, chemical, and material science communities in developing new nanoscale materials and novel nanoscale characterization tools, furthering our understanding of the physics and chemistry of nanoscale phenomena and developing novel functionalities.

The objective of this symposium is to bring together scientists and engineers working on nanostructures based on nanowires to discuss the most recent progress in the fabrication of these novel nanoscale materials; the current understanding regarding the structural, electronic, and optical behaviors of these nanostructures; and the potential of these nanomaterials for future applications.

Topics of the symposium will include:

- Novel methods for templating and self-organized nanostructuring
- Approaches for size, position, and arrangement control for the patterned metal arrays
- Growth of semiconducting nanowires and nanowire arrays
- Theory of the growth and properties of one-dimensional structures
- Nanoscale spatial-resolved characterization
- Optical, transport, sensing, and other properties
- Novel concepts for nanowire devices (heterostructures, doping, contacting, etc.)
- Realization of functionalities and devices based on nanowires

Invited speakers include: **P. Alivisatos** (Univ. of California-Berkeley), **S. De Franceschi** (TASC National Lab, Italy), **U. Gösele** (Max-Planck-Inst., Halle, Germany), **F.M. Ross** (IBM T.J. Watson Research Ctr.), **L. Samuelson** (Univ. of Lund, Sweden), **Z.-L. Wang** (Georgia Inst. of Technology), **G.-C. Yi** (POSTECH, Korea). *Additional invited speakers will be selected from the contributed abstracts.*

Symposium Organizers

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