

Preview: 2003 MRS Spring Meeting

San Francisco Marriott and Argent Hotels • San Francisco, California

Meeting: April 21–25 • Exhibit: April 22–24

Meeting Chairs:

Terry J. Garino

Sandia National Laboratories

Hans-Joachim L. Gossmann

Axcelis Technologies

Lisa C. Klein

Rutgers University

Albert Polman

FOM-Institute AMOLF

The 2003 Materials Research Society Spring Meeting will be held Monday–Friday, April 21–25, in San Francisco, California, at the San Francisco Marriott and Argent hotels. The meeting will include 26 technical symposia, a plenary session on Wednesday evening, an equipment exhibit, poster sessions, and special events. Tutorials will be offered for Symposia A, E, I, and O and for SUCCEED, an educational program in materials engineering.

Symposium X, *Frontiers of Materials Research*, features talks on topics ranging from nanocrystals (P. Alivisatos, Univ. of California, Berkeley) to patents (D. Longo, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP) to “*Quo vadis, Silicon?*” (M. Jeong, IBM). In addition, the Outstanding Young Investigator Award talk by award recipient Timothy J. Deming (Univ. of California, Santa Barbara) on “*Synthetic Polypeptides: New Developments in an Old Field*” will be presented as part of Symposium X on Wednesday.

Topics relating to nanostructured materials are rapidly becoming a mainstay at MRS meetings, as reflected in the cluster of symposia on **Nanostructured Materials**. Symposium P on self-assembled nanostructures includes sessions on mesostructured materials, polymeric materials, biological and biomimetic systems, and nanobuilding blocks. Symposium Q covers unconventional approaches to nanostructures with a focus on applications. Quantum dots and nanoparticles will be covered on Monday, including a series of invited talks. M. Sailor (University of California, San Diego) will present an invited talk on “*Smart Dust: Photonic Crystals Derived from Nanocrystalline Porous Silicon*.” Sessions on Friday cover properties and applications of nanostructures. H. Dai (Stanford University) will discuss high-performance carbon nanotube electronics in the afternoon.

Using energetic beams to nanostructure materials is the focus of Symposium T. The

first two talks, by R. Legras (Univ. Catholique de Louvain) on nanopores and nanowires and by J. Chen (Hahn-Meitner Institut) on nanowire field-effect transistor in etched ion tracks of flexible materials, will establish the tone for the symposium. On Tuesday afternoon, L. Wang (Univ. of Michigan) will discuss radiation effects versus ion implantation on the formation of nanophases under an ion beam. Talks on Wednesday will highlight metallic and magnetic nanostructures, and nanocrystals in silica. Symposium U will focus on mechanical properties derived from nanostructuring materials. C. Koch (North Carolina State Univ.) will begin the symposium with an exposition on ductility of nanocrystalline metals. W. Gerberich (Univ. of Minnesota) will discuss mechanical behavior of films, nanospheres, and nanobumps. A session on Wednesday will cover testing of nanoscale materials, including a talk by K.J. Hemker (Johns Hopkins Univ.) on micro-sample tensile testing.

The cluster on **Molecular Materials and Biomaterials** includes Symposium N on BioMEMS. Two sessions on Wednesday on cell arrays and tissue engineering include a number of invited talks, while sessions on Thursday and Friday cover bio-nano systems. Symposium O on materials inspired by biology incorporates a tutorial on tissue engineering on Monday. A Wednesday afternoon session on biomineralization and hard tissue biomimetics includes a talk on the hardening of polychete worm jaws by copper and zinc. The session on Friday morning covers molecular recognition and templates. The other symposia in the cluster include molecular-scale electronics, organic-polymeric devices, and nanotube-based devices. The scheduled talks in Symposium M reflect the tremendous progress made recently on nanotube-based devices.

In the 10 symposia that constitute the cluster on **Electronic and Optical Materials**, several symposia such as Symposium A on amorphous and nanocrystalline silicon and Symposium E on advanced interconnects and low- κ dielectrics are a continuation of long-running MRS symposium series. The optoelectronics of Group-IV-based materials is the topic of Symposium I. A tutorial on Monday on crystalline silicon as an optical material will initiate proceedings. A session on Tuesday afternoon covers devices including an invited talk by M. Castagna (STMicroelectronics,

Italy) on high-efficiency light-emitting devices in silicon.

Laser processing of materials, including recent advances in femtosecond processing, are covered in Symposium Y on advanced optical processing. Electrochemical deposition and corrosion are the focus of Symposium Z, which runs on the last two days of the meeting. The emphasis will be on developing fundamental mechanisms, at the nanometer-length scale, to help develop models.

Special Events

A seminar on **Materials Research to Meet 21st Century Defense Needs** will be presented by the U.S. National Materials Advisory Board on Tuesday afternoon.

Poster sessions will be held in the Marriott Tuesday through Thursday evenings from 8:00 p.m. to 11:00 p.m. The Meeting Chairs will sponsor a **Best Poster Award** competition, selecting recipients each night on the basis of the posters' technical content, appearance, graphic excellence, and presentation quality.

Gold and silver **Graduate Student Awards** will be presented to graduate students for symposium papers that exemplify significant and timely research. On Wednesday evening, all finalists will be honored at the awards ceremony.

A **student mixer** will be held on Monday evening, and chapter officers and faculty advisors are invited to attend a meeting of **MRS University Chapter representatives**. Those interested in starting new chapters are also welcome. More information on both events will be available in the *Program & Exhibit Guide*.

MRS will host a **Career Center** for meeting attendees. Services include access to current job postings, a resume file for prospective employers, and on-site interview opportunities.

See the following pages for a matrix of symposium sessions, a list of tutorials, profiles of exhibitors, and information on hotel and transportation arrangements. For additional information on the meeting, contact MRS Member Services, Materials Research Society, 506 Keystone Drive, Warrendale, PA 15086-7573, USA; e-mail info@mrs.org, tel. 724-799-3003, and fax 724-779-8313. The deadline to preregister for the meeting is **April 4, 2003**. The MRS Web site can be accessed for updated information on confirmed talks and details of special events, and for preregistration: www.mrs.org. 