

Preview: 2002 MRS Fall Meeting

Hynes Convention Center and Sheraton Boston Hotel • Boston, Massachusetts
Meeting: December 2–6 • Exhibit: December 3–5

Meeting Chairs:

Marie-Isabelle Baraton
University of Limoges

Eric L. Garfunkel
Rutgers University

David C. Martin
University of Michigan

Stuart S.P. Parkin
IBM Almaden Research Center

The Materials Research Society (MRS) will hold its 2002 Fall Meeting at the Hynes Convention Center and the Sheraton Boston Hotel in Boston, Massachusetts, December 2–6, 2002. The meeting will include a technical program, tutorials, a plenary session, an awards ceremony, an equipment exhibit, poster sessions, a career center, funding seminars on international collaborations, and other special activities. Symposium proceedings will be published on the MRS Web site, and are available free to MRS members.

The technical program captures several areas of continued and emerging interest in materials science and engineering. Included are new areas of activity such as flexible electronics, nanoengineered assemblies, and magnetic materials, as well as established research topics and issues of continued concern to researchers such as nuclear-waste management. The 38 symposia are arranged into seven clusters that reflect consistent themes. As several of the symposia will have a significant molecular-electronics component, a “virtual symposium” has been arranged to help guide conference attendees interested in this multidisciplinary area toward these sessions.

The **Polymers and Biomaterials** cluster (Symposia A–D) includes symposia on defect-mediated phenomena, polymer/metal interfaces, bio-inspired hybrids, and electronics on flexible substrates. Symposium A on defect-mediated phenomena in ordered polymers will feature many invited speakers, including E.L. Thomas (Massachusetts Institute of Technology) and M. Muthukumar (University of Massachusetts). Symposium B on polymer/metal interfaces opens with a tutorial. Symposium C begins on Monday with two joint sessions with the “virtual symposium” on arrays, essays, and diagnostics in bio-inspired nanoscale hybrid systems.

Quantum dots, nanocrystalline semiconductors, nanomaterials, and molecular

machines are the focus of the **Nanomaterials and Technology** cluster (Symposia E–J). Symposium I will conclude on Friday morning with a panel discussion on the global view of nanomaterials and nanotechnologies and ways to enhance interactions and applications in these areas. Symposium H, featuring up to 29 invited speakers, and Symposium J will both be preceded by tutorials on lithographic and nonlithographic methods for 3D nanofabrication, and on various aspects of nano- and microelectromechanical systems, respectively. Symposium J will conclude with joint sessions with Symposium Y on surface-engineering issues.

The **Electronic and Photonic Materials** cluster (Symposia K–O) addresses SiN, GaN, materials for advanced complementary metal oxide semiconductors, and microphotonics. On Wednesday, Symposium N will join sessions with Symposium T to present research related to crystalline oxides for gate dielectrics and on theory and modeling. Symposium O will present a tutorial on nanophotonics.

The **Spin, Superconductivity, and Ferroelectricity** cluster (Symposia P–U) includes spintronics, magnetoelectronics, advanced characterization, oxide films, and ferroelectrics. Symposium Q on magnetoelectronics will complement Symposium P on spintronics of semiconducting materials and devices as well as Symposium R on advanced characterization methods of magnetic materials. Symposium Q will hold a small in-room poster session on Wednesday afternoon. A tutorial on advances in superconductivity will be held in Symposium S, including coverage of the fundamental mechanism that causes superconductivity in MgB₂, an area that has seen rapid development since its discovery a little over a year ago. There will also be a tutorial on magnetoelectronics, a field which has grown enormously in the past decade and in which advances in materials continues to play a critical role.

The **Surfaces, Interfaces, and Membranes** (Symposia V–AA) cluster offers sessions on oxide interfaces, thin films, surface engineering, and membranes. Symposia Y and AA each devote a session to industrial applications of surface engineering and membranes, respectively.

Defects in intermetallics, metallic glasses, solid-state ionics, materials for fuel cells, nuclear-waste materials, and thermal-spray coatings are featured in the **Metals,**

Alloys, and Inorganics cluster (Symposia BB–II). Symposium DD comprises contributions to solid-state chemistry, and Symposium EE addresses both the theoretical aspects of and industrial applications for ionic conduction. Symposium HH on thermal-spray coatings will open on Monday morning with invited talks and will hold an in-room poster session late that afternoon. Symposium II on the scientific basis for nuclear-waste management will devote Monday morning to talks on performance assessment and regulatory studies, including discussions of the Yucca Mountain Project. The afternoon will be devoted to presentations on archaeology and waste management, including simulated burial experiments and research on ancient glass.

Other sessions examine femtosecond phenomena, rapid prototyping, and granular materials in the **Materials Science and Society** cluster (Symposia JJ–NN and X). This cluster also includes a symposium on the undergraduate MSE curriculum, with contributions by faculty from the United States, Japan, Canada, and Europe. Symposium KK will provide a tutorial on femtosecond techniques.

Special Events

The plenary speaker will be **Steven Vogel** of Duke University, presenting a talk on Monday, December 2, at 6:00 p.m. in the Sheraton Boston Grand Ballroom. Vogel's book, *Cats' Paws and Catapults* (W.W. Norton & Co., 2000), deals with two major themes: (1) fundamental issues of materials as they apply to the natural world and biomechanics, and (2) how materials and structural design in the natural world differ from materials and design as practiced by humankind. While Vogel is a biologist by origin and outlook, he has published extensively in the fields of natural materials and biomechanics, a timely topic given the materials community's current emphasis on biologically inspired materials.

The **awards ceremony** will convene on Wednesday, December 4, at 6:00 p.m. in the Sheraton Boston Grand Ballroom, at which **Howard K. Birnbaum** of the University of Illinois will receive the Von Hippel Award and present the Von Hippel address. **Robert W. Cahn** of Cambridge University will receive the David Turnbull Lectureship; and MRS Medals will be presented to **Uzi Landman**

of the Georgia Institute of Technology and to **Charles M. Lieber** of Harvard University. Cahn will deliver the Turnbull Lecture on December 2 at 12:45 p.m. in the Sheraton Boston Grand Ballroom. Lieber will give his Medalist presentation on December 4 at 1:30 p.m. in room 311 at the Hynes, and Landman will give his Medalist presentation on December 5 at 12:45 p.m. in the Sheraton Boston Grand Ballroom.

Additional Events

Seminars on International Collaborations will be held to inform meeting attendees about international government programs that fund materials research. Representatives from funding agencies in Europe, South America, China, and the United States will give presentations, followed by panel discussions to help facilitate successful proposal submissions. The times and locations will be listed in the *Program & Exhibit Guide*.

Symposium X talks, featuring presentations for the technical nonspecialist, will be held Monday through Thursday, beginning at 12:05 p.m. Talks will include presentations by Michelle Aubert (National Center of Cinematography, France) on "Film Archiving in the Digital Age—A French Experience"; Charles M. Falco

(University of Arizona) on "The Art and Materials Science of 190 mph Superbikes"; and David F. Rendle (Forensic Science Service, London Laboratory) on "Applications of X-Rays to Forensic Science"; as well as talks on recent developments in "Molecular Electronics," by Paul McKuen; and novel ferromagnetic materials, namely, "Organic Ferromagnets," by Art Epstein; and "Ferromagnetic Semiconductors," by Hideo Ohno.

Poster sessions will be held Monday through Thursday, beginning at 8:00 p.m. in the Hynes Convention Center, second level. 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.

Career Services and Student Opportunities

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

Graduate students and members of MRS University Chapters are invited to attend the **Student Mixer** on Monday

evening from 7:30–9:00 p.m. in the Liberty Ballroom, Sheraton Hotel. Also, chapter officers and faculty advisors are invited to attend a **meeting of MRS University Chapter representatives** on Wednesday at noon to compare notes on recent activities and brainstorm on new projects and issues of common concern. Those interested in starting new chapters are also welcome. Check the *Program & Exhibit Guide* for location.

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. 724-779-3003, and fax 724-779-8313. The deadline to preregister for the meeting is **November 15**. The MRS Web site can be accessed for updated information on confirmed talks and details of special events, and for pre-registration: www.mrs.org. MRS

INTERNATIONAL COLLABORATION SESSIONS – 2002 MRS FALL MEETING

Tuesday • December 3

National Science Foundation	Tom Weber Director, Division of Materials Research Lance Haworth Executive Officer, Division of Materials Research	6:00 pm EDT Republic Ballroom— Sheraton Hotel
National Natural Science Foundation of China	Mingho He Director, Bureau of Planning Tian Wen Assistant to NSFC President	

Thursday • December 5

National Science Foundation	John B. Hunt Acting Assistant Director, Mathematical and Physical Sciences Tom Weber Lance Haworth	6:00 pm EDT Republic Ballroom— Sheraton
European Commission	Ezio Andreta Director	
Sociedade Brasileira de Pesquisa em Materiais (Brazil-MRS)	Guillermo Solórzano Pontifícia Universidade Católica do Rio de Janeiro	