

Preview: 2004 MRS Fall Meeting

Hynes Convention Center and Sheraton Boston Hotel Boston, Massachusetts
Meeting: November 29–December 3 • Exhibit: November 30–December 2

www.mrs.org

Meeting Chairs:

Shefford P. Baker
Cornell University

Julia Hsu
Sandia National Laboratories

Bethanie J.H. Stadler
University of Minnesota

Richard Vaia
Air Force Research Laboratory

The Materials Research Society will hold its 2004 Fall Meeting at the Hynes Convention Center and the Sheraton Boston Hotel in Boston, Mass., November 29–December 3, 2004. The meeting will include a technical program; seven tutorials; a plenary session; an awards ceremony; an equipment exhibit, including the Research Tools Seminar; poster sessions; a career center; funding seminars; and other special activities. Also, the MRS science exhibition *Strange Matter* will be on tour in Boston during the meeting. Proceedings of selected symposia will be published and made available on the MRS Web site. Online access is free to MRS members.

A broad range of symposium topics will be offered. The materials community continues to grow, being the bedrock of cross-disciplinary efforts that are pushing the envelope on the technology horizon. Symposium organizers from around the world have created a program that captures the revolutions occurring in the materials community and explores new and emerging fields at the forefront of interdisciplinary science.

As a special feature, *Strange Matter*, an interactive materials science museum exhibition developed by MRS, will be on display at the Boston Museum of Science during the meeting. More information, including volunteer opportunities, will be available at the Meeting site on Monday through Thursday, 10:00 a.m.–noon, in Exhibition Hall C at the Hynes Convention Center. The Museum is hosting the exhibition October 2, 2004–January 3, 2005. Another special program for materials entrepreneurs will occur during Symposium X: “Innovations to Impact.”

Forty-two technical symposium topics, grouped into seven clusters, will provide an expansive overview of cutting-edge themes. In addition, materials education for the future generation and its educators

will be highlighted through a special symposium and collaborative programs with the Boston Museum of Science.

The **Electronic, Magnetic, and Photonics** cluster will discuss materials for sensing, electronic and optoelectronic applications, progress in ultrafine lithographic techniques, innovations in nonvolatile memories, progress in semiconductor and magnetic nanostructures, materials challenges for high-frequency devices, nanomagnetism and magneto-optics, and developments in nitrides and multifunctional oxides. The impact of materials on energy and power technologies will be addressed in the **Energy Generation and Storage** cluster, which includes symposia on solid-state ionics, photovoltaics, materials issues in fuel cells, and hydrogen storage.

Advances in Materials Characterization, an important aspect of materials discoveries, will highlight the recent explosion of new approaches in scanning probe microscopies, electron microscopy, and neutron and x-ray scattering techniques that are expected to provide unprecedented insight into nano- and multiscale phenomena. Symposium O includes a panel discussion on Thursday afternoon on future scanning probe microscopy challenges and opportunities.

The **Mechanical Behavior** cluster will explore the unique mechanical properties of functional and nanoscale materials including challenges posed by nanoscale characterization and the stability of interfaces and films, innovations in active materials, intermetallics, and the unique property suite of biological materials. Symposium R on Fundamentals of Nano-indentation and Nanotribology will hold a panel discussion on Tuesday night (8:00–10:00 p.m.) on Measuring Time-Dependent Mechanical Properties with Point Probes.

In the **Hybrids and Soft Matter** cluster, fundamental materials development—such as bio-inspired and -derived processes, multicomponent polymer systems, and hybrid materials—will be examined alongside the technologically driven fields of medicine, liquid crystals, and optical materials.

The **Novel Materials Fabrication and Applications** cluster will highlight the intersection of modeling, chemistry, fabrication, and processing to address the frontiers of materials applications, including mesoscale assembly of nanounits, nano-

patterning of surfaces, solid free-forming, utilization of ultrafast lasers, and the unique issues for materials durability in space. An evening session will be held in Symposium JJ on Tuesday, covering Solution-Phase and Polymer Film Growth. Symposium NN on Materials for Space Applications includes two evening sessions of oral presentations—on Tuesday and Thursday—to address multifunctional materials and magnetic materials, respectively.

The cluster of **Materials Topics of General Interest** includes materials in art and archaeology (Symposium OO), communicating materials science to secondary school teachers and students (Symposium PP), and Symposium X, review presentations on “Frontiers of Materials Research—Innovations to Impact.” Symposium PP will include a Sunday tutorial for attendees interested in adding materials demonstrations to their outreach palette, including a recipe book to take home. Also included in this Symposium are workshops for high school teachers and their mentors, as well as discussions and oral presentations for and by nationwide teachers who will be in attendance.

During the three-day symposium on art and archaeology, the organizers have arranged several discussion points and a workshop and demonstration on “Color from Within Structure.” The workshop, to be held in a laboratory at the Massachusetts Institute of Technology, addresses the production of polychromy in ceramics, metals, glasses, and textiles. The symposium will also lead visits to the Museum of Fine Arts, Boston Scientific Research Laboratory, and the Harvard University Art Museum Straus Center for Conservation.

In Symposium X, the Meeting Chairs have arranged a series of presentations that review how materials innovations make an impact on society. Through an examination of current multimillion-dollar businesses founded on materials innovations, entrepreneurs will describe their struggles and successes in bringing materials concepts to the market. Speakers will also discuss critical materials innovations that will be necessary to address growing social issues such as energy and defense.

Special Events

The plenary speaker will be **Mildred S. Dresselhaus** of the Massachusetts Institute

of Technology, presenting a talk on Monday, November 29, at 6:00 p.m. in the Sheraton Boston Grand Ballroom. The title of the plenary address is "Addressing Grand Challenges Through Advanced Materials."

The **awards ceremony** will convene on Wednesday, December 1, at 6:30 p.m. in the Sheraton Boston Grand Ballroom, at which **Nick Holonyak Jr.** of the University of Illinois will receive the Von Hippel Award and present the Von Hippel address. The title of his talk is "From Transistor to Laser and Light-Emitting Diode." **Frank S. Bates** of the University of Minnesota is the recipient of the David Turnbull Lectureship. He will deliver his lecture, "Network Phases in Block Copolymer Melts," on November 30, 5:00 p.m. in room 309 at the Hynes Convention Center. MRS Medals will be presented to **Jacob N. Israelachvili** of the University of California, Santa Barbara, **Toh-Ming Lu** of Rensselaer Polytechnic Institute, and **Sunil K. Sinha** of the University of California, San Diego. Medalist talks are scheduled for Wednesday, December 1 in the Hynes Convention Center; times to be announced.

Additional Events and Activities

A funding seminar, "Opportunities for Bilateral Exchange of Young Researchers," organized by the MRS International Relations Committee, will be held on Monday, November 29. Representatives from funding agencies and international

programs will provide information and share experiences on established bilateral exchange programs on collaborative research related to materials science, followed by a question-and-answer session. Additional funding seminars will feature representatives from U.S. government agencies. The 10th anniversary of the Materials Research Science & Engineering Centers (MRSEC) will be celebrated at the Meeting on Tuesday evening.

Materials Voice, a web-based tool for writing letters to legislators in Washington D.C., will be inaugurated at the Fall Meeting. Computers with access to *Materials Voice* will be set up in kiosks where volunteers will be available to assist members who wish to make use of the software. See the article "Materials Voice: MRS Web Site Facilitates Congressional Communication" in this issue of *MRS Bulletin* (p. 732).

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.

A **student mixer** will be held for graduate students and members of MRS University Chapters. Also, chapter officers and faculty advisors are invited to attend a **meeting of MRS University Chapter representatives** 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.

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. Details of various events and activities will be published in the *Meeting Guide* on-site. International travelers are reminded to allow ample time to obtain a visa if necessary; more information is available on the MRS Web site.

For additional details about 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 12**. The MRS Web site can be accessed for updated information on confirmed talks and details of special events, and for preregistration: www.mrs.org. MRS

MRS Introduces

Chapter Challenge 2005

—a new event designed to spark a little "friendly competition" among MRS Chapters.

The premise is simple. We've come up with a theme, **Sustainability in Materials Science and Engineering**, and we want to see just what your members can do with it.

That's it. We're giving you the theme and not much more. Your challenge is to come up with a creative program or activity that relates to sustainability...and then make it happen!

Details for the competition can be found on our Web site:
www.mrs.org/university/2005challenge

So get your Chapter together and set the creative juices flowing. It's a great way to energize your membership, increase student involvement, and showcase your Chapter.

Deadline for entries is April 1, 2005.
The winning Chapter will be announced May 1, 2005 and will be featured in a summer issue of the *MRS Bulletin*.

Don't lose another minute. The Chapter Challenge starts NOW...

MRS 2004 FALL

Career Center

Need a Job... Need Someone to Fill a Job?

Discover the many valuable services available to you at the 2004 MRS Fall Meeting Career Center. Whether you are conducting a job search or recruiting potential employees, the Career Center is the place to be.

Location & Hours
Hynes Convention Center • Exhibit Hall (Level 2)

Monday, November 29 1:00 pm – 5:00 pm <i>(Registration only)</i>
Tuesday, November 30 1:00 pm – 6:00 pm
Wednesday, December 1 9:00 am – 5:30 pm
Thursday, December 2 9:00 am – 1:30 pm

For additional information, contact Lorri Smiley at 724-779-3004, ext. 543 or smiley@mrs.org.