

# Preview

## 1992 Spring Meeting

**April 27 - May 1 ■ San Francisco, Marriott Hotel**

**Meeting Chairs:**  
**June Passaretti, Pfizer, Inc.**  
**Lynn Rehn, Argonne National Laboratory**  
**Dale Schaefer, Sandia National Laboratories**

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The Spring MRS Meeting returns to San Francisco this year, where it will stay for the decade. While the location is set, the program continues to grow and change. This year's program includes 26 symposia and has 2,400 oral and poster presentations planned, substantially more than any previous spring meeting.

A cluster of symposia will address environmental concerns. One symposium covers recycling of wood-based materials, encompassing recycling paper, removing ink and contaminants, and creating composite structures using recycled fiber. The second symposium of this cluster covers materials for alternative energy sources, such as chemically selective membranes and catalysts, and materials for high-temperature and high-pressure energy conversion. The third symposium addresses materials separation using membranes, zeolites, etc. to handle toxic waste, remove metals, or filter gases.

Fullerenes, fullerides, and fulleroids settle into a symposium on novel forms of carbon, joined by diamond films, carbon clusters, fibers, amorphous carbon, graphite, extraterrestrial carbon, and foams, bringing together diverse interests but focusing on a common element.

The largest symposium will consider "better ceramics through chemistry." As science looks to build unique materials from the atom up, more attention is focusing on the versatility and insight gained through chemistry.

A symposium on "smart materials" and micro-electro-mechanical systems teases the imagination with a vision of tiny modern machines performing tasks by sensing and responding to light, chemistry, temperature, and even biological stimuli.

As computers grow in complexity and capability, so too do computational methods to explain and predict structure, properties, and other materials phenomena. A symposium addressing computational methods will cover modeling of polymers, ceramics, superconductors, interfaces, clusters, processing, and more.

Semiconductors are broadly represented in a series of symposia, including two new ones on photo-induced space charge effects and defect engineering. Additional symposia cover surface preparation, reliability, metallization, heteroepitaxy, beam interactions, and electronic packaging.

Among other intriguing topics is one within the symposium on art and archaeology. Several sessions address the destruction of cultural property and historic monuments resulting from armed conflict and the conservation science required to preserve them. Examples draw from World War I and II, the Persian Gulf War, and recent conflicts surrounding Yugoslavia.

Other symposia cover microwave processing, clusters and colloids, aerosols, intermetallic matrix composites, submicron multiphase materials, defects in oxides, and macromolecular host-guest complexes. See the matrix on the following pages for a list of all the technical symposia and session titles.

### Special Features

The plenary speaker on Monday night will be Bassam Z. Shkhashiri, professor of chemistry at the University of Wisconsin-Madison. Shkhashiri founded the University of Wisconsin's Institute for Chemical Education in 1983 and was As-

sistant Director of the National Science Foundation for Science and Engineering Education from 1984 to 1990. He is known for his effective teaching methods using demonstrations. He aims both to lure future generations to careers as researchers, entrepreneurs, and teachers and to promote scientific literacy for all citizens. The session also includes presentation of the Outstanding Young Investigator awards and graduate student awards.

Symposium X, a set of lunch-hour reviews designed for the nonspecialist, promises enlightening presentations on porous materials, ceramic membranes, art and archaeology, computer simulation of microstructure, mechanical properties of thin films, new optics for x-rays and neutrons with the Kumakhov lens, and presentations by the Outstanding Young Investigator awardees.

A special forum is planned in response to the Bush administration's Advanced Materials and Processing Program, an initiative proposed in the 1993 federal budget. Representatives from the major federal agencies affected will describe their involvement in the initiative. The session is tentatively scheduled for noon on Thursday, April 30.

The meeting is complemented by short courses related to symposium topics, an extensive equipment exhibit, a job placement bulletin board, three evenings of poster sessions, and more.

For further details about the meeting program and registration, see the 1992 MRS Spring Meeting Program, which is mailed to all MRS members. If you need a program, call the MRS Meetings Department (412)367-3003; fax (412)367-4373. □

**Plenary Speaker**  
**Bassam Z. Shkhashiri**  
**Monday, April 27, 1992**  
**San Francisco Marriott**

An outspoken advocate of science and technology education and literacy, Bassam Z. Shkhashiri is a professor of chemistry at the University of Wisconsin-Madison and holds AB, MS, and PhD degrees in chemistry as well as several honorary doctorates. He founded the University of Wisconsin's Institute for Chemical Education in 1983 and is co-author of several texts and videotapes on chemistry. He was the National Science Foundation's assistant director for science and engineering education from 1984 to 1990 and claims credit for having set the NSF education budget on a \$600 million trajectory for fiscal year 1993.

Shkhashiri is well-known for his development and use of demonstrations in teaching to prove that "science is fun." He has had an interactive chemistry exhibit on display since 1983 at the Chicago Museum of Science and Industry and annually puts on a Christmas science show that has been presented at various places, including the National Academy of Sciences and the Smithsonian's National Air and Space Museum.

**Travel and Lodging**

Meeting Hotel:  
 San Francisco Marriott Hotel  
 55 Fourth Street  
 San Francisco, CA 94103  
 (800) 228-9290 Nationwide  
 (415) 896-1600 Direct  
 FAX (415) 442-0141

A block of rooms has been reserved for MRS meeting attendees at the San Francisco Marriott Hotel. When reserving your room, mention the Materials Research Society to receive the special rates: \$140 single; \$165 double.

**DEADLINE FOR HOTEL RESERVATIONS: March 30, 1992**

**Air Travel:**

American Airlines is offering special rates for traveling to and from the San Francisco meeting from Friday, April 24, through Monday, May 4, 1992:

- 45% off full-day coach fare (U.S. only),
- 5% off all other fares with all tariff rules in effect.

To take advantage of these discounts — available only through American Airlines' toll-free number:

1. Call American Airlines today, or have your travel agent call: (800) 433-1790
2. Refer to Star Number: S02Z2VO

**Preregistration Fees**

Preregistration fees for the MRS meeting are \$225 for MRS members; \$260 for nonmembers; \$60 for student members; \$70 for student nonmembers; and \$95 for MRS short course attendees registered for two or more short course days.

Preregister by **April 17, 1992**, to take advantage of pre-meeting fees. Registrations received after April 17, 1992, will be charged at-meeting rates. At-meeting registration fees will be \$50 higher (\$10 higher for students) than preregistration fees.

Preregistrations are accepted by mail, phone, or fax. If you need a form for mail or fax preregistration, call (412) 367-3003.

**Telephone Preregistrations** require credit card payment (VISA, MasterCard, or Diners Club only). Call (412) 367-3003 and ask for Meeting Registration, Monday through Friday between 8:00 a.m. and 5:00 p.m. EST.

**Telephone preregistrations will close at 5:00 p.m., Friday, April 17, 1992.**



**MRS Short Course Program**

**Five New Course Topics and Tutorial**

Selected short courses and a tutorial covering the latest developments in materials science and technology will be offered in conjunction with the 1992 Spring Meeting of the Materials Research Society. These up-to-date presentations are at the forefront of science and technology and complement Spring Meeting symposium topics. **SPECIALTY, REVIEW, AND SURVEY COURSES** and the **TUTORIAL** are designed to meet the needs of professional scientists, engineers, professional staff, and managers who want to know the latest techniques relating to materials science and technology.

For information regarding registration, student scholarships, and special meeting registration discounts, contact MRS Headquarters: **Telephone (412) 367-3003; Fax (412) 367-4373.**

<b>Advanced Materials</b>	<b>Preregistration Tuition</b>
<b>Optoelectronic Materials, Processes, and Devices</b>	
Instructor: Mool C. Gupta	
Friday-Saturday, May 1-2 .....	\$595
<b>Polymers for Electronic and Photonic Applications</b>	
Instructors: C. P. Wong, C. Grant Willson and Robert J. Twieg	
Saturday-Monday morning, April 25-27 .....	\$645
<b>Characterization of Materials</b>	
<b>Amorphous Silicon Technology</b>	
Instructors: Robert A. Street and Michael G. Hack	
Monday, April 27 .....	\$395
<b>IC Failure Mechanisms and Analytical Techniques</b>	
Instructor: Giorgio Riga	
Thursday-Friday, April 30-May 1 .....	\$595
<b>Scanning Electron Microscopy: Applications to Electronic Materials and Devices</b>	
Instructor: Alton D. Romig, Jr.	
Tuesday-Wednesday, April 28-29 .....	\$595
<b>TEM Specimen Preparation in the Physical Sciences</b>	
Instructor: Ronald M. Anderson	
Monday afternoon-Tuesday, April 27-28 .....	\$450

<b>Characterization of Diamond Films</b>	
Instructors: Jeffrey T. Glass and Robert J. Nemanich	
Sunday, April 26 .....	\$395
<b>Materials Research and Analysis Using In Situ and Ex Situ Spectroscopic Ellipsometry</b>	
<b>New!</b> Instructor: John A. Woolam	
Tuesday, April 28 .....	\$395
<b>Preparation and Fabrication of Materials Film and Coating Deposition Techniques</b>	
Instructor: Donald M. Mattox	
Tuesday-Wednesday, April 28-29 .....	\$595
<b>Plasma Etching for Microelectronic Fabrication</b>	
Instructor: G. Kenneth Herb	
Monday, April 27 .....	\$395
<b>Materials and Processing Aspects of Advanced VLSI Assembly and Packaging</b>	
<b>New!</b> Instructor: Shankara K. Prasad	
Thursday-Saturday, April 30-May 2 .....	\$825
<b>Microwave Interactions with Dielectric Materials</b>	
Instructors: Hal D. Kimrey and Magdy F. Iskander	
Saturday-Sunday, April 25-26 .....	\$595
<b>Materials and Processes at the Leading Edge of Microlithography</b>	
<b>New!</b> Instructor: Gary N. Taylor	
Friday, May 1 .....	\$395
<b>Film Formation, Adhesion, Surface Preparation, and Characterization of Thin Film Structures</b>	
Instructor: Donald M. Mattox	
Saturday-Sunday, April 25-26 .....	\$595
<b>Vapor Phase Synthesis of Powders and Films</b>	
<b>New!</b> Instructors: Toivo Kodas and Sotiris E. Pratsinis	
Monday, April 27 .....	\$395
<b>Fundamentals of Epitaxial Growth Techniques for Compound Semiconductors</b>	
Instructor: L. Ralph Dawson	
Saturday-Sunday, April 25-26 .....	\$595
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<b>Tutorial Program</b>	
<b>Introduction to Parallel Supercomputing in Material Science</b>	
<b>New!</b> Instructors: Jeffrey S. Nelson, Mark P. Sears and Steve J. Plimpton	
Monday morning, April 27 .....	\$145
<b>Special Fee Discounts:</b>	
• P-14 and F-01 - \$975 Total Fee; C-16 and C-12 - \$975 Total Fee	
• Facilities registering three or more persons at the same time in one MRS short course receive a 20% discount for the third and all additional persons.	