

▪ New Materials Development

▪ New Characterization Methods

▪ New Process Technology



▪ Technical Program

- A: PHASE FORMATION AND MODIFICATION BY BEAM-SOLID INTERACTIONS
Gary S. Was, Lynn E. Rehn, and David M. Follstaedt
- B: PHOTONS AND LOW ENERGY PARTICLES IN SURFACE PROCESSING
Carol Ashby, James H. Brannon, and Stella Pang
- Ca: INTERFACE DYNAMICS AND GROWTH
Keng S. Liang, Michael P. Anderson, Robijn F. Bruinsma, and Giacinto Scoles
- Cb: STRUCTURE AND PROPERTIES OF INTERFACES IN MATERIALS
William A.T. Clark, Clyde L. Briant, and Ulrich Dahmen
- D: THIN FILMS: STRESSES AND MECHANICAL PROPERTIES III
William D. Nix, John C. Bravman, Eduard Arzt, and L. Ben Freund
- E: ADVANCED III-V COMPOUND SEMICONDUCTOR GROWTH, PROCESSING AND DEVICES
S.J. Pearson, D.K. Sadana, and J.M. Zavada
- F: LOW TEMPERATURE (LT) GaAs AND RELATED MATERIALS
Gerald L. Witt, Robert Calawa, Umesh Mishra, and Eicke Weber
- G: WIDE BAND-GAP SEMICONDUCTORS
Theodore D. Moustakas, Jacques I. Pankove, and Y. Hamakawa
- H: HIGH-TEMPERATURE SUPERCONDUCTORS: MATERIALS RESEARCH FOR EMERGING TECHNOLOGIES
Alfredo C. Anderson, Robert J. Cava, Siu Wai Chan, Randy W. Simon, and Kiyotaka Wasa
- I: FERROELECTRIC THIN FILMS II
Angus I. Kingon, Edward R. Myers, and Bruce Tuttle
- J: OPTICAL WAVEGUIDE MATERIALS
Matthijs M. Broer, H. Kawazoe, George H. Sigel, and R. Th. Kersten
- K: ADVANCED CEMENTITIOUS SYSTEMS: MECHANISMS AND PROPERTIES
F.P. Glasser, P.L. Pratt, T.O. Mason, J.F. Young, and G.J. McCarthy
- L: INNOVATIONS IN THE DEVELOPMENT AND CHARACTERIZATION OF MATERIALS FOR INFRASTRUCTURE
John M. Barsom, Jack Youtcheff, Randall P. Bright, and Paul Zia
- M: SHAPE MEMORY MATERIALS AND PHENOMENA—FUNDAMENTAL ASPECTS AND APPLICATIONS
C.T. Liu, Manfred Wuttig, K. Otsuka, and Henry Kunsman
- N: ELECTRICAL, OPTICAL, AND MAGNETIC PROPERTIES OF ORGANIC SOLID STATE MATERIALS
Long Y. Chiang, Anthony F. Garito, and Daniel J. Sandman
- O: COMPLEX FLUIDS
David Weitz, Eric Sirota, Tom Witten, and Jacob Israelachvili
- P: DISORDERED MATERIALS: FRACTALS, SCALING AND DYNAMICS
Lawrence M. Schwartz, James V. Maher, and Thomas C. Halsey
- Q: SYNTHESIS AND PROCESSING OF CERAMICS: SCIENTIFIC ISSUES
Wendell E. Rhine, Thomas M. Shaw, R.J. Gottschall, and Y. Chen
- R: CHEMICAL VAPOR DEPOSITION OF REFRACTORY METALS AND CERAMICS
Theodore M. Besmann, Bernard M. Gallois, and James Warren
- S: GAS PRESSURE EFFECTS ON MATERIALS PROCESSING AND DESIGN
Koza Ishizaki, John K. Tien, and Ed Hodge
- T: TISSUE-INDUCING BIOMATERIALS
Marcy Flanagan, Linda Cima, and Eyal Ron
- U: NEW STRATEGIES FOR THE SYNTHESIS AND CHARACTERIZATION OF CATALYSTS
S. Mark Davis, Abhaya Dartye, and Bruce J. Tatarchuk

- V: APPLICATION OF MULTIPLE SCATTERING THEORY TO MATERIALS SCIENCE
William H. Butler, Peter H. Dederichs, A. Gonis, and Richard Weaver
- W: WORKSHOP ON SPECIMEN PREPARATION FOR TRANSMISSION ELECTRON MICROSCOPY OF MATERIALS - III
Ron Anderson, John Bravman, and Bryan Tracy
- X: FRONTIERS OF MATERIALS RESEARCH
Julia M. Phillips, Michael M.J. Treacy, and Man H. Yoo
- Z: HIERARCHICALLY STRUCTURED MATERIALS
Ilhan A. Aksay, Eric Baer, Mehmet Sarikaya, and David A. Tirrell

▪ Meeting Chairs

Julia M. Phillips, AT&T Bell Laboratories
Michael M.J. Treacy, NEC Research Institute Inc.
Man H. Yoo, Oak Ridge National Laboratory

▪ Equipment Exhibit

A major exhibit of the latest analytical and processing equipment which closely parallels the nature of the technical symposia will be located in the Boston Marriott Hotel convenient to the technical session rooms. For show booth information, contact: Bob Finnegan, MRS Show Manager, American Institute of Physics, 335 East 45th Street, New York, NY 10017; Telephone (212) 661-9404; FAX (212) 661-2036.

▪ Short Course Program

Courses on advanced materials characterization, preparation, and processing/diagnostic techniques have been designed for scientists, engineers, managers, and technical staff who wish to update their knowledge and skills in the research, development and processing of materials. These up-to-date courses are at the forefront of science and technology and complement Fall Meeting symposia. Class sizes are limited. Early preregistration is encouraged. See course list on p. 55 and registration form on p. 56.

▪ Proceedings

Many of the MRS symposia will be publishing proceedings or extended abstracts. See complete list and pre-publication prices on p. 59.

▪ Preregistration

Preregister by telephone, or FAX with your VISA, MasterCard or Diners Club card. Use the Meeting Registration form on p. 56.

To request detailed 1991 Fall Program, Short Course, or Symposium Aide information, contact:



Materials Research Society
9800 McKnight Road, Pittsburgh, PA 15237
Telephone (412) 367-3003, FAX (412) 367-4373

The 1991 MRS Fall Meeting will serve as a key forum for discussion of interdisciplinary leading-edge materials research from around the world. Various meeting formats - oral, poster, roundtable, forum and workshop sessions - are offered to maximize participation.

General Meeting Information

Location/Lodging:

Boston Marriott/Copley Place
110 Huntington Avenue
Boston, MA 02116
(800) 228-9290
(617) 236-5800 (Direct)
FAX (617) 424-9378

Westin Hotel/Copley Place
10 Huntington Avenue
Boston, MA 02116
(800) 228-3000
(617) 262-9600 (Direct)
FAX (617) 424-7483

A block of rooms has been reserved for MRS meeting attendees at the Boston Marriott and Westin Hotel, Copley Place. To assure staying at a conference hotel, be sure to make your reservations prior to October 30, 1991. To request a roster of alternative hotels within walking distance of the Boston Marriott and Westin Hotels, FAX (412) 367-4373 or write to MRS Headquarters. When making your reservations, mention the Materials Research Society to receive the special rates.

Travel Arrangements: American Airlines is offering MRS meeting attendees the following special rates:

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

If a lower American Airlines promotional fare is available, the American Airlines Meeting Desk will confirm the lower fare, providing normal qualifications are met. 14-day advance reservation and ticketing notice is required. International travelers may ask for the International Congress Officer at any American Airlines center.

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

1. Call American Airlines today, or have your travel agent call: (800) 433-1790
2. Refer to Star Number: S02Z1VO

MRS meeting attendees may take advantage of these special American Airlines discounted fares for traveling to and from the Boston meeting from Thursday, November 28, through Wednesday, December 11, 1991.

Local Transportation: Shuttle service to the Boston Marriott and Westin Hotels from Logan International Airport departs every half-hour from the designated shuttle stop in front of each terminal. The cost is approximately \$6-\$8 one way. Cab fares range between \$10-\$15 per ride (up to four persons can share one cab).

There is a free shuttle from airport terminals to the airport subway station (The "T"). Copley Station is within one block of the Marriott, Westin, and alternative hotels on the "Green Line."



Selected Short Courses covering the latest developments in materials science and technology will be offered in conjunction with the 1991 Fall Meeting of the Materials Research Society. These up-to-date courses are at the forefront of science and technology and complement Fall Meeting symposium topics. SPECIALTY, REVIEW, AND SURVEY courses are designed to meet the needs of professional scientists, engineers, technical staff, and managers who want to know the latest techniques in characterization and fabrication of materials. **CLASS SIZES ARE LIMITED: Early telephone preregistration is encouraged. For information regarding registration, short course student scholarships, and special meeting registration discounts: Telephone (412) 367-3003; FAX (412) 367-4373**

PREREGISTRATION TUITION

ADVANCED MATERIALS

- M-04: Optoelectronic Materials, Processes, and Devices
Instructor: Mool C. Gupta
Friday-Saturday, December 6-7 \$565
- M-05: Fabrication, Characterization, and Applications of High-Temperature Superconductors
Instructors: Terry P. Orlando and Robert E. Schwall
Sunday-Monday, December 1-2 \$565
- M-12: Introduction to Cementitious Materials
Instructors: Della M. Roy, J. Francis Young, and Gregory J. McCarthy
Sunday-Monday, December 1-2 \$425
- M-14: Engineering Aspects of Shape-Memory Alloys
Instructors: Tom Duerig and Alan R. Pelton
Monday, December 2 \$385

TECHNIQUES

- T-05: Plasma Technology for Thin Film Deposition
Instructor: Donald M. Mattox
Wednesday, December 4 \$385

CHARACTERIZATION OF MATERIALS

- C-01: Modern Materials Analysis Techniques
Instructors: James A. Borders, Kenneth H. Eckelmeyer, and Suzanne H. Weissman
Monday-Wednesday, December 2-4 \$795
- C-02: Practical Transmission and Analytical Electron Microscopy: Theory and Practice
Instructor: Alton D. Romig Jr.
Tuesday-Wednesday, December 3-4 \$565
- C-03: Surface and Thin Film Analysis
Instructors: Leonard C. Feldman and James W. Mayer
Friday-Saturday, December 6-7 \$565
- C-09: Fractals: Concepts & Applications to Materials Science & Technology
Instructors: James E. Martin and Alan J. Hurd
Sunday-Monday, December 1-2 \$565
- C-18: TEM Specimen Preparation in the Physical Sciences
Instructor: Ronald M. Anderson
Thursday-Friday, December 5-6 \$425
- C-20: Optical Characterization of III-V Semiconductor Epitaxial Layers
Instructor: Gary W. Wicks
Thursday, December 5 \$385

- C-22: Thin Film Epitaxy, Interdiffusion, & Phase Transformation
Instructors: King Ning Tu, Leonard C. Feldman, and James W. Mayer
Thursday-Friday, December 5-6 \$565
- C-23: Characterization of Compound Semiconductors by High Resolution X-Ray Diffraction
Instructors: Simon Bates, Mary Halliwell, and Thomas W. Ryan
Thursday-Friday, December 5-6 \$565

PREPARATION AND FABRICATION OF MATERIALS

- F-01: Film and Coating Deposition Techniques
Instructor: Donald M. Mattox
Friday-Saturday, December 6-7 \$565
- F-02: Plasma Etching for Microelectronic Fabrication
Instructor: G. Kenneth Herb
Tuesday, December 3 \$385
- F-04: Microelectronic Packaging: Materials, Processing, & Reliability
Instructor: Shankara K. Prasad
Wednesday-Friday, December 4-6 \$795
- F-10: Fundamentals and Applications of Ion Beam Assisted Deposition
Instructor: James K. Hirvonen
Thursday, December 5 \$385
- P-04: Film Formation, Adhesion, and Surface Preparation
Instructor: Donald M. Mattox
Sunday-Monday, December 1-2 \$565
- P-10: Metalorganic Chemical Vapor Deposition and Atomic Layer Epitaxy
Instructor: P. Dan Dapkus
Friday, December 6 \$385
- P-19: Compound Semiconductor Epitaxy and Processing
Instructors: Ami Appelbaum and L. Ralph Dawson
Sunday-Wednesday, December 1-4 \$795
- P-21: Silicides, Junctions, and Metallization for ULSI
Instructors: George E. Goergiou and S. Ali Eshraghi
Sunday-Monday, December 1-2 \$565

SPECIAL DISCOUNTS IN COURSE FEES:

There are special discounted tuition fees for specific course combinations:
C-02 and C-18 \$795 Total Fee; P-19 and C-20 \$975 Total Fee.
Any combination of P-04, F-02, T-05, F-10 and F-01 that results in 2, 3, 4, and 5 course days: \$565, \$795, \$975, and \$1125, respectively.

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.

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