new field of materials research, intensely pursued and holding fascinating possibilities for future applications and fundamental studies.

Freeman’s work exemplifies his leadership in the emerging area of “computational” materials science, centering on the concept that a supercomputer can be viewed as the equivalent of a growth chamber or molecular-beam epitaxy machine, to synthesize and design new materials, and to gain insights into their behavior and properties. His major role in introducing a class of new and fascinating materials complements his numerous other distinguished contributions to the development of materials research.

**Duward F. Shriver**

While polymer electrolytes were first studied in Europe, Professor Shriver’s laboratory produced the first comprehensive synthetic characterization of them—leading to completely new insights into their structure and the mechanisms of ionic transport within them. After successfully developing a continuum elastomeric network interpretation of the mobility mechanism in simple polymer/salt complexes based on polyethylene oxide, Shriver turned his attention to the preparation of new polymer solid electrolytes with tailored properties. A key achievement was his work on the synthesis and characterization of phosphazine-based polymer electrolytes with oligo ether side chains. The combination of the phosphazine backbone (to yield low glass transition temperature and mobility) with oligo ether side chains (to provide complexation to drive the system thermodynamically, towards the elastomeric conductor) was a triumph of imagination and creative solid-state materials.

Shriver’s most recent investigation—of polymer-mixed conductors in which both electronic charge and ionic charge are transferred—presents one of the most challenging problems in understanding how charge transport occurs in disordered systems with mixed conductivity.

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**MRS Members Choose 1991 Officers, Councillors**

MRS members cast their ballots this past September to elect three officers and five councillors. Newly elected to serve the Materials Research Society beginning January 1, 1991 are:

**First Vice President (President-Elect)**
G. Slade Cargill III
Senior Manager, Physical Sciences Department
IBM T.J. Watson Research Center
Yorktown Heights, New York

**Second Vice President**
S. Thomas Picraux
Manager, Surface, Interface, and Ion Beam Research Department
Sandia National Laboratories
Albuquerque, New Mexico

**Councillors**
John C. Bravman
Assistant Professor, Department of Materials Science and Engineering
Stanford University
Stanford, California

Gregory C. Farrington
Dean, School of Engineering and Applied Science
University of Pennsylvania
Philadelphia, Pennsylvania

Julia M. Phillips
Supervisor, Thin Film Research Group
AT&T Bell Laboratories
Murray Hill, New Jersey

Rustum Roy
Director, Technology and Society Program
Pennsylvania State University
University Park, Pennsylvania

**Treasurer**
Charles B. Duke
Senior Research Fellow
Xerox Research Laboratories
Webster, New York

**Carl V. Thompson**
Associate Professor, Department of Materials Science and Engineering
Massachusetts Institute of Technology
Cambridge, Massachusetts

James B. Roberto, associate director of the Solid State Division at Oak Ridge National Laboratory, who was elected first vice president last year, will serve as president of the Materials Research Society in 1991. Carol M. Jantzen, a ceramist in the Glass Technology Group at the Westinghouse Savannah River Co., will continue to serve her two-year term as treasurer through 1991.
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Please visit Booth No. 906 at the MRS Show in Boston, November 27-29, 1990.
Selected Short Courses covering the latest developments in materials science and technology will be offered in conjunction with the 1990 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. SPECIALITY, REVIEW, AND SURVEY courses are designed to meet 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 preregistrations are encouraged.

F-03 Fundamentals and Applications of Ion Beam Processes
Instructor: James K. Hine
Sunday and Monday, November 25-26 .................................. $510

F-04 Microelectronic Packaging: Materials, Processing, and Reliability
Instructor: Shankara K. Prasad
Thursday, Friday and Saturday, November 29-December 1 .................. $775

F-11 Materials and Processes for Microfeature Fabrication
NEW Instructor: Gary N. Taylor
Monday, November 26 ..................................................... $345

F-12 Spin-On Dielectrics for State-of-the-Art VLSI Applications
NEW Instructors: Nadia Lifshitz and Gerald Smolinsky
Monday, November 26 ..................................................... $345

TECHNIQUES
T-09 Low Temperature Testing of Superconductors and Semiconductors
NEW Instructor: Robert E. Schwall
Tuesday, November 27 ..................................................... $345

CHARACTERIZATION OF MATERIALS
C-01 Modern Materials Analysis Techniques
Instructors: James A. Borders, Kenneth H. Eckelhien, and Suzanne H. Weissman
Monday, Tuesday and Wednesday November 26-28 ....................... $775

C-03 Surface and Thin Film Analysis
Instructors: Leonard C. Feldman and James W. Mayer
Friday and Saturday, November 30-December 1 ........................... $580

C-09 Fractals: Concepts and Applications in Materials Science and Engineering
Instructors: James E. Martin and Alan J. Hurst
Sunday and Monday, November 25-26 .................................. $510

C-14 Fundamentals and Applications of Scanning Tunneling Microscopy
Instructor: Robert J. Hamers
Monday, November 26 ..................................................... $345

C-17 Scanning, Transmission and Analytical Electron Microscopy
Instructors: Alton D. Romig, Jr., and David C. Joy
Monday, Tuesday and Wednesday, November 26-28 ....................... $775

C-18 TEM Specimen Preparation in the Physical Sciences
Instructor: Ronald M. Anderson
Thursday, November 29 ................................................... $345

C-20 Optical Characterization of III-V Semiconductor Epitaxial Layers
Instructor: Gary W. Wicks
Thursday, November 29 ................................................... $345

C-22 Thin Film Epitaxy, Interdiffusion, and Phase Transformation
NEW Instructors: Leonard C. Feldman, James W. Mayer, and King-Ning Tu
Thursday and Friday, November 29-30 ................................... $535

SPECIAL DISCOUNTS:
There are special discounted tuition fees for specific course combinations: M-05 and T-09 — total fee is $775; F-01 and P-14 — total fee is $895; C-17 and C-18 — total fee is $980.

MRS ON-SITE SHORT COURSE PROGRAM
Available at your facility
One of the best ways to keep your stuff up to date on the latest developments is through an on-going program of continuing education. Many of the courses described in this flyer, as well as others not being presented at the 1990 Fall Meeting, are now available on a contract basis for presentation at your facility or technical meeting.

For further details about courses available at your facility, nearby site, or your technical meeting, write or call:
Vivienne Harwood Mattox, MRS Short Course Manager: 440 Live Oak Loop, Albuquerque, NM 87122; (505) 294-9532, FAX (505) 298-7942

REGISTRATION INFORMATION: Call (412) 367-3003 and ask for the Short Course Office to request information about student scholarships and special meeting registration discounts.
EQUIPMENT EXHIBIT
1990 MRS Fall Meeting
Boston Marriott
Copley Place Hotel
Tuesday-Thursday, November 27-29

As part of the 1990 MRS Fall Meeting, a major equipment exhibit will display analytical and processing equipment closely paralleling the nature of the technical symposia. The technical program has been arranged to allow meeting participants ample opportunity to visit the exhibit, which will be located on the third floor of the Boston Marriott Copley Place Hotel.

Show Hours
Tuesday ............................. noon - 7:00 p.m.
Reception .......................... 5:00 p.m. - 7:00 p.m.
Wednesday ......................... 9:30 a.m. - 5:00 p.m.
Thursday ........................... 9:30 a.m. - 2:00 p.m.

EXHIBITORS
(as of September 19, 1990)

Academic Press, Inc.
AG Associates
Aixtron Inc.
American Chemical Society
American Institute of Physics
AMER-TEM
Anatech Ltd.
APD Cryogenics, Inc.
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Keithley Instruments
Kimball Physics Inc.
Kratos Analytical
Lake Shore Cryotronics
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Kurt J. Lesker Co.
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VG Instruments
Vacuum Barrier Corporation
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