

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. MRS

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:

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(President-Elect)**

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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

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Senior Research Fellow
Xerox Research Laboratories
Webster, New York

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Assistant Professor, Department of
Materials Science and Engineering
Stanford University
Stanford, California

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

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

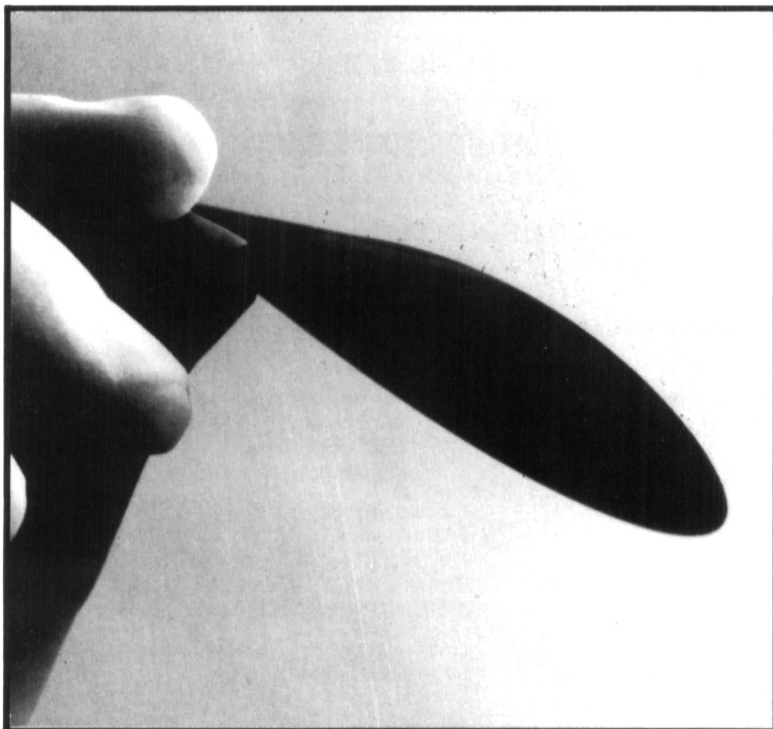
Rustum Roy
Director, Technology and Society Program
Pennsylvania State University
University Park, Pennsylvania

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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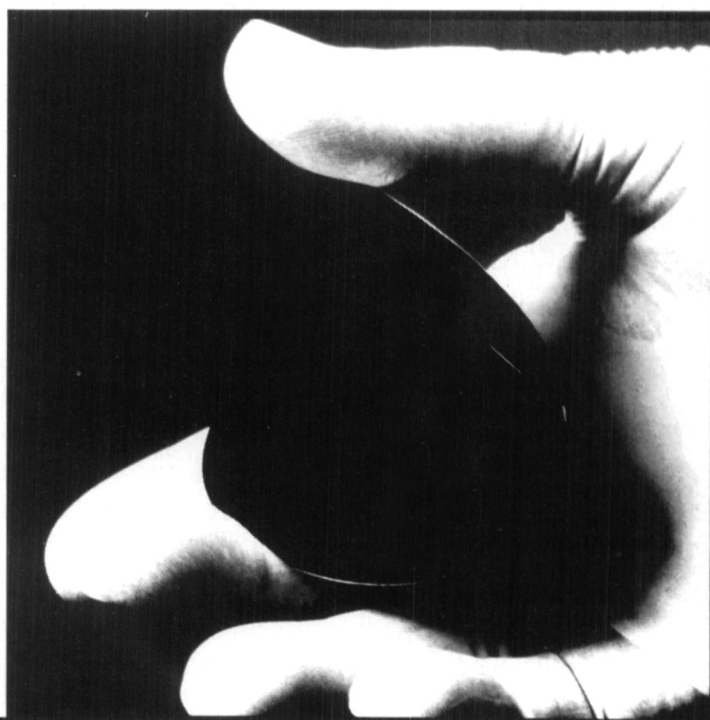
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P-20 Growth of Long-Wavelength Detector Materials	
NEW Instructors: L. Ralph Dawson, Sorab K. Ghandi, Sanghamitra Sen, and Tse Tung	
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TECHNIQUES	
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