

## RESOURCES

*A summary of new products and services for materials research...*



▲ **Miniature Molder for Polymers:** The CS-183MMX Mini-MAX mixer, extruder, and injection molding machine from Custom Scientific Instruments can produce test specimens from less than a gram of polymer material. Polymer melts can be prepared for injection using either intensive mixing, which produces high shear rates to break up clumps of material, or extensive mixing, which causes a folding action to uniformly distribute melt ingredients. The fully molded and mixed polymer is then extruded and injected into the specimen mold. These mold specimens can be used for dynamic, tensile, and impact testing. **Circle No. 75 on Reader Service Card.**

**HPLC Calculator Software:** SAVANT Audiovisuals' Windows-based HPLC software features individual lab calculators related to peaks, band spreading, resolution, columns, detection, and quantification. A master page selector allows users to choose any of 33 built-in functions, and users can input parameters particular to their own experiments. Two on-screen plotting devices, eight critical reference charts and tables, printout resources, a bibliography, and a glossary of HPLC terms are also included. **Circle No. 70 on Reader Service Card.**

**Liquid Nitrogen Control System:** Com:One Devices' LCS-78 auto-fill system displays and controls the amount of liquid nitrogen in cryostats or cold traps. The control unit can be configured to display engineering units (liters, inches, millimeters, or percent) and features an output relay, audible alarm, manual override, and three user-defined setpoints. The

nondissipative stainless steel probe, which continuously monitors liquid level, requires no manual adjustment and is available in lengths from 5 cm to 1 m. The displayed liquid level is accurate to  $\pm 0.5\%$ . **Circle No. 71 on Reader Service Card.**

**Handheld Coating Thickness Gauge:** The PosiTector 100 from DeFelsko allows nondestructive measurement of coating thickness on substrates such as concrete, wood, glass, and plastic. The AA-battery-powered device has a range of 10  $\mu\text{m}$  to 20 mm. Two-button control and auto-calibration allow users to select a coating/substrate combination from an on-screen menu while the gauge automatically selects the thickness range. Models are available with memory for statistical analysis and computer downloading. **Circle No. 72 on Reader Service Card.**

**Specialty Chemicals Catalog:** Free 1994/1995 catalog from GFS Chemicals lists over 1,200 high purity chemicals plus related specialty products. Product sublistings include ICP and AA standards, analytical standard solutions and buffers, trace metal grade acids, perchlorate salts and solutions, Bio-Refined™ inorganic salts, organic chemicals, rare-earth salts and solutions, and a bulk-quantity product listing. Cross references allow users to locate items by either CAS or GFS item number. **Circle No. 73 on Reader Service Card.**

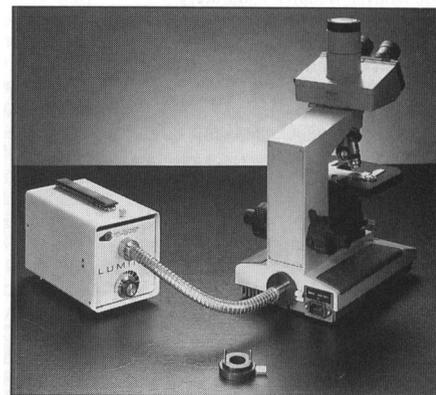
**Integrated SEM/EDS System:** Topcon Technologies' scanning electron microscope/energy dispersive x-ray spectrometer uses an EDAX EDS to add elemental analysis. The SEM image and EDS spectrum appear on one screen and are controlled by a mouse and keyboard. The EDS spectrum can be overlaid on a full-screen SEM image or can appear beside the SEM image. Multiple windows can be brought up in any combination, and windows and menus can be moved or hidden. The unit offers dual control without duplication of the control systems. **Circle No. 74 on Reader Service Card.**

**Densitometry and Gel Analysis Software:** Signal Analytics' IPLab Gel™ for Macintosh computers offers 2-D analysis of dot blots, and density analysis on unidirectional electrophoretic gels using either 1-D or 2-D analysis. In 2-D analysis, individual bands can be manually outlined or a global thresholding command can identify multiple bands. In

1-D analysis, users can obtain a plot of the average of pixel values along each row of a specified region, and peaks can be marked manually or automatically. **Circle No. 77 on Reader Service Card.**

**X-Ray Imaging Cameras:** Photonic Science's X-Ray Imager cameras (distributed by Micro Photonics) are designed for high-resolution topography and real-time dynamic imaging. Each CCD camera is fitted with an x-ray scintillator that is fiber optically coupled to an image intensifier. Intensified images can be output at 30 frames/second. The standard scintillator has an energy range of 5 to 200 KeV. Easily switchable scintillators enable input images ranging from 12 to 150 mm diagonal and camera resolutions ranging from 150 to 18  $\mu\text{m}$ . **Circle No. 79 on Reader Service Card.**

**Universal Adhesion Tester:** Portable computer-integrated Romulus II from Adhesion International can evaluate coating adherence and adhesion for thin films, thick coatings, wear coatings, paints, adhesives and bonded components, composites and laminates, and more. Nine interchangeable modules allow users to perform tests such as diamond scratch, stud pull, blade cutting, shear, and flexure strain. The standard force range is 0.05 to 100 kg, but the instrument can be configured to apply test forces of 3/4 g to 3/4 ton. **Circle No. 80 on Reader Service Card.**



▲ **Lighting Upgrade for Microscopes:** Chiu Technical's light source maximizes the resolving power of Nikon and Olympus BHT or BHS microscopes by increasing standard 6 V, 20 W illumination to 12 V, 100 W. The device is designed to enhance results in photomicrography, video-microscopy, dark-field, Namorski observation, and high magnification polarizing light. **Circle No. 78 on Reader Service Card.**



# CORPORATE AFFILIATES

(As of January 1994)

Materials Research Society would like to thank the following for their financial support:

- Advanced Energy Industries, Inc.  
Advanced Micro Devices  
Advanced Photovoltaic Systems, Inc.  
Aerospace Corp.  
AG Associates  
Air Products and Chemicals, Inc.  
Aixtron Inc.  
AJA International Inc.  
Alkermes, Inc.  
Allied-Signal, Inc.  
Alpha Beta Technology  
American Superconductor Corp.  
American Xtal Technology  
Amoco Oil Co.  
AMRAY Inc.  
Anatech Ltd.  
APD Cryogenics Inc.  
APL Engineered Materials, Inc.  
Applied Materials  
Applied Science and Technology (ASTex)  
Argonne National Laboratory  
ast Elektronik GmbH  
Atomic Energy of Canada Ltd.  
AT&T Bell Laboratories  
Aurora Technologies Corp.  
AXIC  
Balzers  
Balzers Aktiengesellschaft  
Bellcore  
BIOSYM Technologies Inc.  
Biotransplant, Inc.  
Blake Industries, Inc.  
The BOC Group  
Brookhaven National Laboratory  
Cameca Instruments, Inc.  
Chorus Corp. (EPI Systems)  
Codman & Shurtleff, Inc.  
Commonwealth Scientific Corp.  
Comstock Inc.  
Concurrent Technologies Corp.  
Conductus  
Consortium für Elektrochemische Corning Inc.  
Cray Research, Inc.  
CREE Research Inc.  
CVC Products, Inc.  
DCA Instruments, Inc.  
Denton Vacuum, Inc.  
DePuy, Inc.  
Digital Equipment Corp.  
Digital Instruments, Inc.  
Dow Chemical Co.  
Dow Corning Corp.  
E.I. duPont de Nemours & Co., Inc.  
Eaton Corp.  
EG&G Idaho Inc.  
EG&G Instruments, Inc.  
EG&G Ortec  
Electric Power Research Institute (EPRI)  
Elettrorava S.p.A.  
Elsevier Science Publishing Co., Inc.  
EMCORE Corp.  
ENEA  
Engelhard Corp.  
EniChem America Inc.  
EPI Division/Chorus Corp.  
ES Microwave  
eV Products, division of II-VI  
Charles Evans & Associates  
Evans East  
Eveready Battery Co., Inc.  
Exxon Chemical  
Exxon Corporate Research  
Exxon Production Research Co.  
Exxon Research and Engineering Co.  
FEI Co.  
Ferguson Consulting  
E.A. Fischione Instruments, Inc.  
Fisons/VG Instruments  
Focal Inc.  
Ford Motor Co.  
Fox Products Corp.  
Fuji Electric Co., Ltd.  
Fujitsu Ltd.  
Fururawa Electric Co., Inc.  
GATAN Inc.  
Gelest Inc.  
Genentech Inc.  
General Electric Co.  
General Electric Corp./Aircraft Engines Div.  
General Motors Research  
Golden Technologies Co., Inc. (GTC)  
Goodfellow Corp.  
Gordon & Breach Publishers Inc.  
Granville-Phillips Co.  
Hewlett-Packard Co.  
High Voltage Engineering Europa B.V.  
Hitachi Ltd.  
Hitachi Research Laboratory  
Hitachi Scientific Instruments  
Hoechst Celanese Research Division  
Howmedica  
Hughes Aircraft Corp.  
Hughes Research Laboratories  
Huntington Laboratories  
IBM Corp.  
IGC Advanced Superconductors Inc.  
Institute for Scientific Information (ISI)  
Institute of Physics Publishing (IOP)  
Instron Corp.  
Instruments SA, Inc./Riber Division  
Intevac MBE Equipment Division  
Ion Tech, Inc.  
JCPDS-International Centre for Diffraction Data  
JEOL USA, Inc.  
Johnson Controls, Inc.  
Johnson & Johnson  
Johnson & Johnson Orthopaedics  
Kaneka Corp.  
Keithley Instruments, Inc.  
Kimball Physics, Inc.  
Kobe Steel USA, Inc.  
Komag Inc.  
Kratos Analytical, Inc.  
Lake Shore Cryotronics, Inc.  
Lambda Physik, Inc.  
Lawrence Berkeley Laboratory  
Lawrence Livermore National Laboratory  
Leighton Electronics, Inc.  
Kurt J. Lesker Co.  
Lightning Optical Corp.  
Los Alamos National Laboratory  
MACCOR, Inc.  
Martin Marietta Energy Systems, Inc.  
Materials Research Corp.  
Matsushita Electric Industrial Co., Ltd.  
MDC Vacuum Products Corp.  
Medisorb Technologies International L.P.  
MER Corp.  
Microwave Laboratories  
Mitsubishi Electric Co.  
MKS Instruments, Inc.  
Morton International  
Motorola Phoenix Corporate Research Laboratories  
Motorola APRDL  
MR Semicon, Inc.  
Nano Instruments, Inc.  
National Electrostatics Corp.  
National Renewable Energy Laboratory (NREL)  
National Semiconductor  
NCUBE  
NEC Corp.  
NEC Research Institute, Inc.  
NEOCERA, Inc.  
Newport/Klinger  
Nichia Chemical Industries, Ltd.  
Nihon Kessho Koogaku Co., Ltd.  
Niki Kogei Co.  
Nippon Steel Corp/Electronics & Information Systems  
Nissin Electric Co., Ltd.  
n & k Technology, Inc.  
Nor-Cal Products Inc.  
Norian Corp.  
North Eastern Analytical Corp.  
Northern Telecom Ltd.  
NTT Opto-Electronics Laboratories  
OCG Microelectronic Materials Inc.  
OPTOVAC  
Osram Sylvania Inc.  
Osteonics Corp.  
Oxford Instruments, Inc.  
Paterson Instruments PTY Ltd.  
Pergamon Press Ltd.  
Perkin-Elmer Corp.  
Perseptive Biosystems, Inc.  
Pfizer Central Research  
Philips Electronic Instruments Co. (PEI)  
Plasma Sciences, Inc.  
Plasma-Therm Industrial Products, Inc.  
Portland Cement Association  
Princeton Gamma-Tech, Inc.  
Pure Tech Inc.  
Quad Group  
Quantum Design, Inc.  
Radiation Monitoring Devices, Inc. (RMD, Inc.)  
Raytheon Co. Equipment Division  
Research and PVD Materials  
Rexham Industrial  
Rigaku/USA, Inc.  
Rockwell International Science Center  
ROITECH  
Sandia National Laboratories  
Sanyo Electric Co., Ltd.  
Schering Plough Research Institute  
Schlumberger Doll Research  
Schlumberger Well Services  
Science Laboratories, Inc.  
Scintag, Inc.  
Sematech Inc.  
SEMICAPS Inc.  
Semiconductor Processing Co.  
SES Research  
SFA, Inc.  
Siemens Analytical X-Ray Instruments, Inc.  
Siemens Solar Industries  
Sienna Technologies, Inc.  
Siltec Silicon  
Smith & Nephew Richards Inc.  
Solarex Corp.  
Sony Co., Ltd.  
South Bay Technology, Inc.  
Spire Corp.  
Springer-Verlag New York, Inc.  
Staib Instruments GmbH  
Stanford Synchrotron Radiation Laboratory  
Strem Chemicals, Inc.  
Sumitomo Electric USA Inc.  
Superior Vacuum Technology Inc.  
Surface/Interface Inc.  
Synergy Research Corp.  
Tencor Instruments  
Texas Instruments, Inc.  
TFI Telemark  
Thermionics Laboratory, Inc.  
TN Technologies, Inc.  
Topcon Technologies, Inc.  
TopoMetrix Corp.  
TOSOH USA Inc.  
Toyota Central R&D Laboratories, Inc.  
Ultram International  
United Solar Systems Corp.  
USG Research Center  
Vacuum Barrier Corp.  
Vacuum Metallurgical Co.  
Varian Associates, Inc./Ion Implant Division  
VCH Publishers, Inc.  
Vertex Pharmaceuticals  
Virginia Semiconductors, Inc.  
Voltaix, Inc.  
WAKO Bussan Co., Ltd.  
The West Co.  
John Wiley & Sons Inc.  
W.R. Grace & Co.  
Xerox Corp.  
Xsirus, Inc.  
Carl Zeiss, Inc.

For more information about the Corporate Participation Program contact:

Mary E. Kaufold  
Materials Research Society  
9800 McKnight Road  
Pittsburgh, PA 15237  
Phone (412) 367-3036  
Fax (412) 367-4373

or

Kenneth E. Voss  
Corporate Participation Committee  
Engelhard Corporation  
101 Wood Avenue  
Iselin NJ 08830-0770  
Phone (908) 205-5146  
Fax (908) 205-5330