
Some 15 young scientists win student awards

Winners of the Materials Research Society's Graduate Student Awards for 1984 will address nine of the technical symposia. A record number of award winners were selected from an unprecedented avalanche of applications—more than three times the number submitted last year.

"A significantly greater number of graduate students will participate in this year's Fall Meeting than ever have before," says Kathleen C. Taylor, Treasurer, who initiated the awards program for students. "Applications were received from a number of academic institutions which hadn't participated in previous competitions, indicating that the program is achieving one of its principal goals, which is to encourage the broadest possible participation in our meetings."

Recommended by Major Professor

The awards are made to outstanding students recommended by their major professor who will present papers judged superior by the chairmen of the MRS symposia. Thus, explains Kathy, "the students selected have demonstrated the intellectual excellence, technical competence, and hard work required to achieve distinguished research results."

The award winners and the titles of the papers they will present are:

Symposium A

Thomas C. Banwell, applied physics, California Institute of Technology; "Ion Induced Mixing in $Ni-SiO_2$ Bilayers."

Symposium B

Bobbi Roop, physical chemistry, Massachusetts Institute of Technology; "Reactivity of XeF_2 , F_2 , and CF_3 on Si(111)7x7 and Si(100)2x1."

Symposium C

Gary B. Bronner, electrical engineering, Stanford University; "Physical Modeling of Backside Gettering."

Ali S.M. Salih, materials engineering, North Carolina State University, Raleigh; "Extrinsic Gettering via the Controlled Introduction of Misfit Dislocations."

Symposium D

James Kakalios, physics, University of Chicago; "Amorphous Semiconductor Doping Superlattices."

Evert Jan van Loenen, physics, FOM Institute for Atomic and Molecular Physics, Amsterdam; "The Orientation of Ultrathin $NiSi_2$ Films: Correlations with Film Morphology."

Theoren P. Smith, 3rd, physics, Brown University; "Charge Transport in Caf_2/Si Metal-Epitaxial Insulator-Semiconductor Field Effect Transistors."

Symposium E

Slavik Kasztelan, spectrochemistry, Universite des Sciences et Techniques de Lille; "Supported Layered Sulphide Catalysts: Geometrical Model and Emphasis on the Role of Edge Sites."

Symposium G

Joseph K. Doychak, metallurgy and materials science, Case Western Reserve University; "High Temperature Oxidation of -NiAl."

A.K. Kuruvilla, materials engineering, Rensselaer Polytechnic Institute; "Hydrogen Embrittlement of Ordered Alloys."

Symposium I

Lourdes G. Salamanca-Riba, physics, Massachusetts Institute of Technology; "High Resolution Electron Microscopy Studies of Potassium-Hydrogen Intercalated Graphite."

Robert C. Tatar, electrical engineering, University of Pennsylvania; "Density of States of Ternary Alkali Graphite Intercalation Compounds."

Symposium J

Peter F. Green, physics, Cornell University; "Ion Beam Analysis of Diffusion in Polymer Melts."

Symposium K

Kurt Sickafus, materials science, Cornell University; "Observation of a Grain Boundary Phase Transformation Induced by Solute Segregation."

Symposium N

Abderrafi M. Ougouag, nuclear engineering, University of Illinois; "Effects of Radiation Induced Stress Effects on the Chemical Durability of Nuclear Waste Glasses."

Short-course program

Nine one- or two-day short courses have been scheduled. They are:

- Surface and Thin Film Analysis (Friday-Saturday).
 - Ion Implantation and Rapid Thermal Annealing (Friday).
 - Ion-Beam Modification of Non-Semiconductors (Saturday).
 - Liquid-phase Epitaxy Techniques (Friday-Saturday).
 - Molecular Beam Epitaxy (Friday-Saturday).
 - Vacuum Technology (Friday-Saturday).
 - Pumping Hazardous Gases (Friday).
 - Modern Analytical Methods in Corrosion Research (Friday-Saturday).
 - Vapor Phase Epitaxy (Friday).
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Job placement center

A Job Placement Center will be conducted at the Fall Meeting. It is organized and operated by the American Institute of Physics.

The Center, featuring interview space, posting and call boards, will be located in the Boston Marriott/Copley Place Hotel. The Center will operate from 9 a.m. to 5 p.m. Tuesday through Thursday, Nov. 27-29. The primary objective of the Center is to arrange interviews between candidates and employers. Candidates and employers may register at the meeting. Check at the Registration Desk for the location of the Placement Center.

Exhibitors

Your guide to the firms
On display at our equipment show

The Materials Research Society is pleased to present its first annual Equipment Show as part of the 1984 Annual Meeting. Organized with the assistance of the American Institute of Physics, the Show provides an opportunity for manufacturers and vendors to present the latest technical and scientific equipment and services to our members.

Located in the Exhibit Area, the Show will operate Tuesday through Thursday. The hours are:

Tuesday: 9:30 a.m.-4 p.m.; 7-9 p.m.

Wednesday: 9:30 a.m.-4:30 p.m.

Thursday: 9:30 a.m.-3:30 p.m.

The exhibitors are:

Booth	Firm
179	ACCUFIBER, 2000 E. Columbia Way, Bldg. 7, Vancouver, WA 98661; Lydia Lundberg
157	ACTON RESEARCH CORP., Box 215, 525 Main St., Acton, MA 01720; Michael Case
158	AG ASSOCIATES, 1052 Elwell Ct., Palo Alto, CA 94303; Deborah McGowan
165	AIR PRODUCTS & CHEMICALS INC., Advance Pds Dept., Box 2802, Allentown, PA 18105; Gary Scarsdale
138	AMPLIFIER RESEARCH, 160 Schoolhouse Rd., Souderton, PA 18964; Dan Roth
137	ATOMIKA INC., 614 W. Manchester Blvd., Suite 205, Inglewood, CA 90301; Richard Luers
111	BLAKE INDUSTRIES INC., 660 Jerusalem Rd., Scotch Plains, NJ 07076; David Rognlie
118	CAMECA INSTRUMENTS INC., 2001 W. Main St., Stamford, CT 06902; Thomas Fisher
107	THE CARBORUNDUM CO., Carborundum Center, Box 156, Niagara Falls, NY 14302; Rosa Capobianco
103	CERAMASEAL, Box 25, New Lebanon Center, NY 12126; Gene Sawin
113	CRYOMAGNETICS INC., 795 Oak Ridge Turnpike, Oak Ridge, TN 37830; Robert Ennis
190	CRYOSYSTEMS INC., 190 Heatherdown Dr., Westerville, OH 43081; David Swartz
139	CTI-CRYOGENICS, Kelvin Park, Waltham, MA 02254; Robert Dennen
119	CALLERY CHEMICAL CO., Callery, PA 16024 Linda Jansen
143	DETECTOR TECHNOLOGY, Box K300, Brookfield, MA 01506; Peter Graves
108, 109	DIGITAL EQUIPMENT CORP., One Iron Way, Box 1002, Marlboro, MA 01752; William Youngs
114	DYCOR ELECTRONICS INC., 2419 Smallman St., Pittsburgh, PA 15222; John Hackwelder
166, 167, 168	EATON CORP., Ion Beam Systems Div., 16 Tozer Rd., Beverly, MA 01905 Jeff Gelpey
130	EDAX INTERNATIONAL, Box 135 Prairie View, IL 60069; R. Zutkis
149, 150	EG&G PRINCETON APPLIED RESEARCH, Box 2565, Princeton, NJ 08540 Joann Webster
148	EG&G ORTEC, 100 Midland Rd., Oak Ridge, TN 37803; Judith Potter
127, 128	GATAN INC., 780 Commonwealth, Warrendale, PA 15086; Terry Donovan
131	GENERAL IONEX CORP., 19 Graf Rd., Newburyport, MA 01950; Bruce Thorburn
151	HARSHAW/FILTROL PARTNERSHIP, 1945 E. 97th St., Cleveland, OH 44106; Bruce Wathan
159	HELIONETICS, 5452 Overlin Dr., San Diego, CA 92121; Sherry Brainerd
144	HITACHI SCIENTIFIC INSTRUMENTS, 460 Middlefield Rd., Mountain View, CA 94043; Hideo Naito
112	HUNTINGTON MECHANICAL LABORATORIES, 1040 L'Avenida Mountain View, CA 94043; Ken Bertken
126A	ICI AMERICAS, Rollings Bldg., 8th Fl., Wilmington, DE 19898; James Tippings
117	INNOVATIVE TECHNOLOGY INC., 205 Willow St., South Hamilton, MA 01982; Peter Calandra
122	INSTRUMENTS SA INC., 173 Essex Ave., Metuchen, NJ 08840; Philip Fischer

123	INTERNATIONAL ADVANCED MATERIALS, Box 572, Suffern, NY 10901; Rodger Cary	101	NGS ASSOCIATES INC., Shamut Rd., Canton, MA 02021; Marie Kapsalia
140	JANIS RESEARCH CO. INC., 2 Jewel Dr., Box 696, Wilmington, MA 01887; William Shields	116	NEWPORT CORP., 18235 Mt. Baldy Circle, Box 8020, Fountain Valley, CA 92728; Therese Covey
163, 164	JEOL USA INC., 11 Dearborn Rd., Peabody, MA 01960; Thomas Huber	141	NICOLET ANALYTICAL INSTRUMENTS, 5225 Verona Rd., Box 4508, Madison, WI 53711; Barbara Brink
177	KEITHLEY INSTRUMENTS, 28775 Aurora Rd., Cleveland, OH 44139; Sue Bebout	184	ORIEL CORP., 250 Long Beach Blvd., Box 872, Stratford, CT 06497; Peter Nero
146	JEVEX CORP., 1101 Chess Dr., Box 4050, Foster City, CA 94404; Dick Cushing	152	OXFORD INSTRUMENTS, 3A Alfred Circle, Bedford, MA; Michael Cassidy
178	KIMBALL PHYSICS INC., Kimball Hill Rd., Wilton, NH 03086; Faye Crawford	174	PERKIN-ELMER, Physical Electronics Div., 6509 Flying Cloud Dr., Eden Prairie, MN 55344; Lori Broecker
129	KLINGER SCIENTIFIC CORP., 110-20 Jamaica Ave., Richmond Hill, NY 11418; Gary Spiegel	174	PERKIN-ELMER VACUUM PRODUCTS, Eden Prairie, MN 55344; Robert Adamzak
176	LAKE SHORE CRYOTRONICS INC., 64 E. Walnut St., Westerville, OH 43081; John Swartz	142	PHILIPS ELECTRONIC INSTRUMENTS INC., 85 McKee Dr., Mahwah, NJ 07430; Michelle Martin
169	LAMBDA PHYSIK, 289 Great Rd., Acton, MA 01720; David Muller	126B	PHILLIPS SCIENTIFIC INC., 13 Ackerman Ave., Suffern, NY 10901; Tom Phillips
170	LECROY RESEARCH, 700 S. Main St., Spring Valley, NY 10977; Julie Jackson	186	PHOTOCHEMICAL RESEARCH ASSOCIATES INC., 45 Meg Dr., London, Ontario, Cda; Roderick Miller
133	E. LEITZ INC., 24 Link Dr., Rockleigh, NJ 07647; Maureen Dillon	189	PHOTO TECH. INT'L, Box AA, Princeton, NJ 08542; Charles Marianck
145	LEMONT SCIENTIFIC, 2011 Pine Hall Dr., State College, PA 16801; Paul Anderson	180	PLENUM PUBLISHING CORP., 233 Spring St., New York, NY 10013; Eleanor Jentsch
154	KURT J. LESKER, 5635 Horning Rd., Pittsburgh, PA 15236; James Armstrong	106	PHYSICON CORP., 221 Mt. Auburn St., Cambridge, MA 02138; Heimart von Zweck
160	LEYBOLD-HARAEUS VACUUM PROD. INC., 5700 Mellon Rd., Export, PA 15632; Eugene Fuselier	162	QUESTEK INC., 7 De Angelo Dr., Bedford, MA 01730; James Campbell
135, 136	LUMONICS INC., 105 Schneider Rd., Kanata, Ottawa, Ontario, Canada; Roger Sandwell	172, 173	RIGAKU/USA INC., 3 Electronics Ave., Danvers, MA 01923; Kim Snable
187	MATERIALS BY METRON INC., Box 147, Allamuchy, NJ 07820; Mel Hollander	161	RUDOLPH RESEARCH, One Rudolph Rd., Box 1000, Flanders, NJ 07836; Richard Budzinski
147	MICROSCIENCE INC., 110A Jerusalem Rd., Box 633, Cohasset, MA 02025; Toni Drybanski	182, 183	SCINTAG INC., 3350 Scott Blvd., Santa Clara, CA 95051; Elizabeth Rippstein
153	MKS INSTRUMENTS INC., 34 3rd Ave., Burlington, MA 01803; Larry Elder	188	SEMICONDUCTOR PROCESSING CO. INC., 409 E. First St., Boston, MA 02127; Ralph Soper
185	MODERN INSTRUMENTATION TECH. INC., Matterville Bus. & Tech. Center, R.D.#1, Box 262, Port Matilda, PA 16870; Sarah Robinson	126	S.I.C./McPherson, Acton Facility, 530 Main St., Acton, MA 01720; Karen Brigham
175	NATIONAL ELECTROSTATICS CORP., Box 310, Graber Rd., Middletown, WI 53562; Gregory Norton	124	L.M. SIMARD INC., 759 Ward Dr., Suite B, Santa Barbara, CA 93111; Janice Tucker
105	NESLAB INSTRUMENTS INC., Temperature Controlled Liquid Sys., 25 Nimble Hill Rd., Box 1178, Portsmouth, NH 03801; James Cassani	104	SOUTHBAY TECHNOLOGY INC., 5209 Tyler Ave., Temple City, CA 91780; Richard Henriks

- 121 SPECTRAMASS INC., Box 95034,
Pittsburgh, PA 15223; Lois Ferguson
- 120 SPEX INDUSTRIES, 3880 Park Ave.,
Edison, NJ 08820; Ralph Obenauf
- 115 SPIRE CORP., Patriots Park,
Bedford, MA 01730; Jo Ann Burke
- 102 STRUCTURE PROBE, 535 E. Gay St., Box 342,
West Chester, PA 19380; Gillian Brogran
- 132 SURFACE SCIENCE LABS, 465 National Ave.,
Mountain View, CA 94043; Betsy Smullen
- 155 TACHISTO LASER SYSTEMS INC.,
13 Highland Circle,
Needham, MA 02194; Dick Kennally
- 171 THERMIONICS LABORATORY, Box 3711,
Hayward, CA 94540; Mark Trujillo
- 156 TRACOR NORTHERN, 2551 W. Beltline Hwy.,
Middleton, WI 53562; Joseph Mullen
- 125 ULTRA HIGH VACUUM INSTR. INC.,
901 Fuhrmann Blvd.,
Buffalo, NY 14203; J. Robinson
- 127A, VG INSTRUMENTS INC., 300 Broad St.,
127B Stamford, CT 06901; Gerard Kearns
- 191 VARIAN ASSOCIATES INC., Semiconductor
Equipment Group, 611 Hansen Way,
Palo Alto, CA 94306; Natalie Gross
- 110 VEECO INSTRUMENTS INC., Terminal Dr.,
Plainview, NY 11803; Chris Moeck

Technical symposia

The core of the Materials Research Society's Annual Meeting, its technical symposia, in 1984 comprise 16 topical conferences and the popular lunch-hour lectures called "Frontiers of Materials Science."

The symposia are:

SYMPOSIUM A

"Energy Beam-Solid Interactions and Transient Thermal Processing," Monday-Friday, Salon E.

SYMPOSIUM B

"Laser Chemical Processing of Semiconductor Devices," Tuesday-Wednesday, Salon A/B.

SYMPOSIUM C

"Impurity Diffusion and Gettering in Semiconductors," Tuesday-Friday, Salon C/D.

SYMPOSIUM D

"Layered Structures, Epitaxy, and Interfaces," Monday-Friday, Salon G.

SYMPOSIUM E

"Catalysis by Solids: Bulk Properties, Surface Properties, and Defects," Tuesday-Friday, Regis.

SYMPOSIUM F

"Plasma Synthesis and Etching of Electronic Materials," Tuesday-Friday, Salon H/I.

SYMPOSIUM G

"High Temperature Ordered Intermetallic Alloys," Monday-Wednesday, Cape Cod and Hyannis.

SYMPOSIUM H

"Hydrogen in Metals," Tuesday-Thursday, Simmons.

SYMPOSIUM I

"Graphite Intercalation Compounds," Wednesday-Friday, Provincetown and Orleans.

SYMPOSIUM J

"Electronic Packaging Materials Science," Tuesday-Thursday, Salon J/K.

SYMPOSIUM K

"Advanced Photon and Particle Techniques for Characterization of Defects in Solids," Tuesday-Thursday, Yarmouth and Vineyard.

SYMPOSIUM L

"The Potential for Very High Strength Cement-based Materials," Tuesday-Wednesday, Falmouth.

SYMPOSIUM M

"Coal Combustion and Conversion Wastes: Characterization, Utilization, and Disposal," Thursday-Friday, Falmouth.

SYMPOSIUM N

"Scientific Basis for Nuclear Waste Management," Monday-Thursday, Salon F.

SYMPOSIUM O

"Alloy Phase Diagrams," Thursday-Friday, Boston College.

SYMPOSIUM P

"Fractal Aspects of Materials: Metal and Catalyst Surfaces, Powders, and Aggregates," Monday-Tuesday, Provincetown and Orleans.

SYMPOSIUM X

"Frontiers of Materials Science," Monday-Thursday, Salon E.