

25 Graduate Student Award Finalists Participate in Special Session at MRS Fall Meeting

Twenty-five graduate student award finalists are participating in a special student talk session during the 1989 MRS Fall Meeting in Boston. A recent addition to the criteria for selecting award recipients, this special session is being implemented at the Fall Meeting to reflect the growing competitiveness of the graduate student awards program, to improve the selection process, and to give more visibility to the graduate students at the meeting.

The finalists are presenting 10-minute talks on their work Tuesday, November 28 from 12:10 to 1:30 p.m. in five designated rooms at the Boston Marriott Hotel. Among the judges will be organizers from the symposia in which the finalists are participating, members of the MRS Awards Committee, and other MRS representatives. MRS Fall Meeting participants are also invited to attend.

Graduate student awards will be presented at the Von Hippel Award Ceremony, Wednesday, November 29 at 6 p.m. in the Boston Marriott Hotel. Following is a list of the finalists, the titles of their papers, and the symposia in which the complete papers are being presented.

Graduate Student Award Finalists 1989 MRS Fall Meeting

Terry Lynn Alford, Cornell University, "Ion-Beam Synthesis of Buried Yttrium Silicide," (Symposium A)

John F. Ankner, University of Illinois, "Neutron Reflectivity Study of GD-Y Interface," (Symposium J)

Louis Breau, University of Texas, "Remote Plasma-Enhanced CVD of Epitaxial Silicon on Silicon (100) at 150°C," (Symposium I)

David Ward Brown, University of California-Davis, "Formation of Buried Elemental Layers Using Ion Implantation," (Symposium A)

Ju Ren Ding, Tsinghua University, Beijing, "Ion Beam Method to Study Fractal Aggregation of Magnetic Particles in Thin Films," (Symposium A)

Vinayak P. Dravid, Lehigh University, "Plan-View CBED Studies of NiO-ZrO₂(CaO) Interfaces," (Symposium C)

Hailing Duan, John Hopkins University, "Studies on the Formation of Switching and Memory Storage Materials Constructed from Metallo-Organic Charge-Transfer Salts," (Symposium Q)

Hilary L. Hampsch, Northwestern University, "Second Order Nonlinear Optics and Polymer Physics of Corona Poled Polymer Films," (Symposium Q)

Arun Inam, Rutgers University, "Josephson Weak-Links Fabricated from Heteroepitaxial YBa₂Cu₃O_{7-x}/PrBa₂Cu₃O_{7-x}/YBa₂Cu₃O_{7-x} Multilayers," (Symposium M)

Forrest Kaatz, University of Pennsylvania, "Epitaxial Growth of TbSi₂ on Si(111)," (Symposium D)

Robert R. Keller, University of Minnesota, "Electron Channeling Analysis of Elastic Strains in InGaAs Thin Films," (Symposium D)

Qiyuan Ma, Columbia University, "Use of Si-YBaCuO Intermixed System for Patterning of Superconducting Thin Films," (Symposium M)

John F. Marko, Massachusetts Institute of Technology, "Weighted-Density Theory of Phase Transitions in Fluids Composed of Anisotropic Particles," (Symposium V)

Anne W. Mayes, Northwestern University, "Microphase Separation in Multiblock Copolymer Melts," (Symposium S)

Rejean Munger, University of Waterloo, Ontario, "Partial Superconductivity in YBa₂Cu₃O₇ at 90 < T < 300 K," (Symposium M)

Linda S. Sapochak, University of South-

ern California, "Effects of Conjugation Length and Substituents on the Conductivity of Oxidatively Doped a,w-Diphenylpolenes," (Symposium Q)

Linda S. Schadler, University of Pennsylvania, "Interphase Behavior of Cyclic Fatigue of Monofilament Composites," (Symposium N)

Xiangdong Shi, University of Pennsylvania, "Sound Velocity Studies of the Bechgaard Salts (TMTSF)₂ClO₄ and (TMTSF)₂PF₆," (Symposium Q)

Rajiv K. Singh, North Carolina State University, "Pulsed Laser Technique for Deposition of Superconducting Thin Films: Deposition Physics and *In-Situ* Processing," (Symposium M)

Leland Scott Swanson, Iowa State University, "Photoluminescence, ESR, and ODMR Studies of Pristine and Photodegraded Poly(3-Hexylthiophene) Films and Solutions," (Symposium Q)

Igor Szafranek, University of Illinois at Urbana-Champaign, "Reassessment of Acceptor Passivation Mechanism in p-Type Hydrogenated GaAs," (Symposium G)

Lisa Tietz, Cornell University, "The Structure of Interfaces in Oxide Heterojunctions Formed by CVD," (Symposium C)

Karen I. Winey, University of Massachusetts, "The Ordered Bicontinuous Double Diamond Structure in Blends of Diblock Copolymer and Homopolymer," (Symposium O)

Dan Q. Wu, State University of New York at Stony Brook, "Small-Angle X-Ray Scattering on Poly(Ethylene-Methacrylic Acid) Lead and Lead Sulfide Ionomers," (Symposium O)

Satoshi Yamauchi, Tohoku University, Japan, "Plasma-Assisted Epitaxial Growth of ZnSe Films in Hydrogen Plasma," (Symposium E)

MRS

Do You Have An Opinion?

The MRS BULLETIN wants your comments and views on issues affecting materials research.

Send your comments to: Editor, MRS BULLETIN, 9800 McKnight Road, Pittsburgh, PA 15237
Telephone (412) 367-3036, Fax (412) 367-4373

Essential Resources

Visit booth #114 in Boston

Organometallic Vapor-Phase Epitaxy

Theory and Practice

Gerald B. Stringfellow

Here is the first single-author treatment of organometallic vapor-phase epitaxy (OMVPE)—a leading technique for the fabrication of semiconductor materials and devices. Also included are metal-organic molecular-beam epitaxy (MOMBE) and chemical-beam epitaxy (CBE) ultra-high-vacuum deposition techniques using organometallic source molecules. This book provides a basic foundation for understanding the technique and the application of OMVPE for the growth of both III-V and II-VI semiconductor materials and the special structures required for device applications.

July 1989, 416 pages, \$59.50
ISBN: 0-12-673840-8

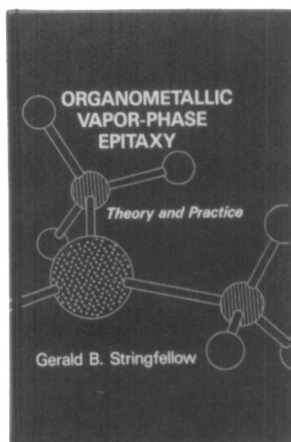
Electronic Materials

Science and Technology

Shyam P. Murarka and
Martin C. Peckerar

Written as an intermediate-level text, this book will also be a good reference source for practicing engineers and scientists who are interested in electronic materials and devices. After presenting an introduction to electronic devices, the authors describe the processing of a complementary MOS (CMOS) circuit including fundamental physical and materials concepts. Other areas of electronic material processing covered include crystal growth, oxidation, diffusion, ion implantation, metallization, chemical vapor deposition, lithography concepts and tools, and etching.

September 1989, 640 pages, \$59.95
ISBN: 0-12-511120-7



Aluminum Alloys— Contemporary Research and Applications

edited by
A.K. Vasudevan and R.D. Doherty

This book discusses the structure and properties of the current and potential aluminum alloys in terms of their structure (and structural transformations by new processing methods) and the relationship between structure and mechanical and other properties. The alternative materials that challenge aluminum are considered as well, since the challenge of new competitive materials is a strong influence on innovation.

October 1989, c. 678 pages, \$149.00
ISBN: 0-12-341831-3

Plasma Etching

An Introduction

edited by
Dennis M. Manos and Daniel L. Flamm

Plasma etching plays an essential role in microelectronic circuit manufacturing. Suitable for researchers, process engineers, and graduate students, this book introduces the basic physics and chemistry of electrical discharges and relates them to plasma etching mechanisms. Throughout the volume the authors offer practical examples of process chemistry, equipment design, and production methods.

July 1989, 496 pages, \$69.50
ISBN: 0-12-469370-9

Nanostructure Physics and Fabrication

Proceedings of the International
Symposium, College Station,
Texas, March 13–15, 1989

edited by
Mark A. Reed and Wiley P. Kirk

Nanostructure Physics and Fabrication contains the contributions of an interdisciplinary group of specialists in nanometer scale fabrication, physics of mesoscopic systems, electronic transport, and materials science brought together to discuss the current status of nanometer scale electronic structures. These articles provide the most current assessment of this active and growing area of interest.

CONTENTS: Overview. Conceptual Origins of Nanostructures. Lateral Periodicity and Confinement. Quantum Devices and Transistors. Equilibrium and Nonequilibrium Response in Nanoelectronic Structures. Quantum Wires and Ballistic Point Contacts. Related Fabrication and Phenomena.

August 1989, 544 pages, \$64.50
ISBN: 0-12-585000-X

Please visit Booth No. 114 at the MRS Show
in Boston, November 28-30, 1989.



ACADEMIC PRESS

Harcourt Brace Jovanovich, Publishers
Book Marketing Department #18119
1250 Sixth Avenue, San Diego, CA 92101

CALL TOLL FREE
1-800-321-5068

Quote this reference number for free postage and
handling on your prepaid order — 18119

Prices subject to change without notice. ©1989 by Academic Press, Inc.
All Rights Reserved. DK/KR — 18119.

1989 MRS Fall Meeting Symposium Proceedings and Extended Abstracts

Available at Special Pre-Publication Prices Through March 1, 1990!

Beam-Solid Interactions: Physical Phenomena

Editors: J.A. Knapp, P. Borgesen, R.A. Zuhr

Order Code 157B

\$32.00 MRS Member

\$44.00 U.S. List \$50.00 Foreign

In-Situ Patterning: Selective Area Deposition and Etching

Editors: R. Rosenberg, A.F. Bernhardt, J.G. Black

Order Code 158B

\$34.00 MRS Member

\$39.00 U.S. List \$45.00 Foreign

Atomic Scale Structure of Interfaces

Editors: R.D. Bringans, R.M. Feenstra, J.M. Gibson

Order Code 159B

\$34.00 MRS Member

\$39.00 U.S. List \$44.00 Foreign

Layered Structures: Heteroepitaxy, Superlattices, Strain, and Metastability

Editors: B.W. Dodson, L.J. Schowalter,

J.E. Cunningham, F.H. Pollak

Order Code 160B

\$34.00 MRS Member

\$39.00 U.S. List \$44.00 Foreign

Properties of II-VI Semiconductors: Bulk Crystals, Thin Films, Quantum Well Structures and Dilute Magnetic Systems

Editors: J.F. Schetzina, F.J. Bartoli Jr., H.F. Schaake

Order Code 161B

\$34.00 MRS Member

\$39.00 U.S. List \$44.00 Foreign

Diamond, Boron Nitride, Silicon Carbide and Related Wide Bandgap Semiconductors

Editors: J.T. Glass, R.F. Messier, N. Fujimori

Order Code 162B

\$32.00 MRS Member

\$36.00 U.S. List \$41.00 Foreign

Impurities, Defects and Diffusion in Semiconductors: Bulk and Layered Structures

Editors: J. Bernholc, E.E. Haller, D.J. Wolford

Order Code 163B

\$42.00 MRS Member

\$48.00 U.S. List \$55.00 Foreign

Materials Issues in Microcrystalline Semiconductors

Editors: P.M. Fauchet, C.C. Tsai, K. Tanaka

Order Code 164B

\$36.00 MRS Member

\$41.00 U.S. List \$47.00 Foreign

Characterization of Plasma-Enhanced CVD Processes

Editors: G. Lucovsky, D.E. Ibbotson, D.W. Hess

Order Code 165B

\$26.00 MRS Member

\$31.00 U.S. List \$36.00 Foreign

Neutron Scattering for Materials Science

Editors: S.M. Shapiro, S.C. Moss, J.D. Jorgensen

Order Code 166B

\$36.00 MRS Member

\$41.00 U.S. List \$47.00 Foreign

Advanced Electronic Packaging Materials

Editors: J. Partridge, C-Y. Li, C.J. Chen, A. Barfknecht

Order Code 167B

\$30.00 MRS Member

\$35.00 U.S. List \$42.00 Foreign

Chemical Vapor Deposition of Refractory Metals and Ceramics

Editors: T.M. Besmann, B.M. Gallois

Order Code 168B

\$30.00 MRS Member

\$35.00 U.S. List \$40.00 Foreign

High Temperature Superconductors: Fundamental Properties and Novel Materials Processing

Editors: J. Narayan, C.W. Chu, L.F. Schneemeyer,

D.K. Christen

Order Code 169B

\$38.00 MRS Member

\$43.00 U.S. List \$49.00 Foreign

Tailored Interfaces in Composite Materials

Editors: C.G. Pantano, E.J.H. Chen

Order Code 170B

\$34.00 MRS Member

\$39.00 U.S. List \$46.00 Foreign

Polymer Based Molecular Composites

Editors: D.W. Schaefer, J.E. Mark

Order Code 171B

\$34.00 MRS Member

\$39.00 U.S. List \$46.00 Foreign

Optical Fiber Materials and Processing

Editors: J.W. Fleming, G.H. Sigel, S. Takahashi,

P.W. France

Order Code 172B

\$28.00 MRS Member

\$34.00 U.S. List \$39.00 Foreign

Electrical, Optical and Magnetic Properties of Organic Solid-State Materials

Editors: L.Y. Chiang, D.O. Cowan, P. Chaikin

Order Code 173B

\$36.00 MRS Member

\$41.00 U.S. List \$47.00 Foreign

Materials Synthesis Utilizing Biological Processes

Editors: P.D. Calvert, M. Alper, P.C. Rieke

Order Code 174B

\$26.00 MRS Member

\$29.00 U.S. List \$33.00 Foreign

Multi-Functional Materials

Editors: D.R. Ulrich, E.E. Karasz, A.J. Buckley,

G. Gallagher-Daggitt

Order Code 175B

\$26.00 MRS Member

\$30.00 U.S. List \$35.00 Foreign

Fractal Aspects of Materials

Editors: J.E. Martin, J.H. Kaufman, P.W. Schmidt

Order Code EA-20B

\$18.00 MRS Member

\$20.00 U.S. List \$22.00 Foreign

Scientific Basis for Nuclear Waste Management XIII

Editors: V.M. Oversby, P.W. Brown

Order Code 176B

\$45.00 MRS Member

\$50.00 U.S. List \$55.00 Foreign

Macromolecular Liquids

Editors: C.R. Safinya, S.A. Safran, P.A. Pincus

Order Code 177B

\$36.00 MRS Member

\$41.00 U.S. List \$47.00 Foreign

Fly Ash and Coal Conversion By-Products: Characterization, Utilization and Disposal VI

Editors: R.L. Day, F.P. Glasser

Order Code 178B

\$32.00 MRS Member

\$37.00 U.S. List \$42.00 Foreign

Specialty Cements with Advanced Properties

Editors: H. Jennings, A.G. Landers, B.E. Scheetz,

I. Odler

Order Code 179B

\$30.00 MRS Member

\$35.00 U.S. List \$42.00 Foreign

MRS accepts check or money order (payable in U.S. Dollars), purchase order, and Visa, MasterCard and Diners Club cards. Order from the Materials Research Society, Publications Department, 9800 McKnight Road, Pittsburgh, PA 15237; telephone (412) 367-3012; fax (412) 367-4373. In Europe, Africa and the Middle East order from Clarke Associates-Europe Ltd., 13a Small Street, Bristol BS1 1DE, England; telephone: 0272 268864; fax: 0272 226437.

The prices listed here are available only through March 1, 1990. Prices after this date will be higher. Order now and save!

EQUIPMENT EXHIBIT

at the 1989 MRS Fall Meeting

As part of the 1989 MRS Fall Meeting in Boston, a major equipment exhibit will display analytical and processing equipment closely paralleling the nature of the technical symposia and short courses. The exhibit will be conveniently located on the third floor of the Boston Marriott Hotel/Copley Place.

| | Hours |
|------------------------------|---|
| Tuesday, November 28 | 12:00 p.m.-7:00 p.m. (Reception 5:00 p.m.-7:00 p.m.) |
| Wednesday, November 29 | 9:00 a.m.-5:00 p.m. |
| Thursday, November 30 | 9:00 a.m.-2:00 p.m. |

Exhibitors

(as of September 13, 1989)

Academic Press, Inc.

Advanced Materials
Engineering Research
Aixtron GmbH
Alcatel Vacuum Products, Inc.
American Chemical Society
American Institute of Physics
Amplifier Research

Anatech Ltd.

APD Cryogenics Inc.

Aries/QEI

ASTeX/Applied Science & Technology

ATM, Inc.

Balzers

Beam Alloy Corporation

Blake Industries, Inc.

Edmund Buehler

GmbH & Co.

Cahn Instruments Inc.

Cameca Instruments, Inc.

Ceramaseal

Chapman and Hall

Commonwealth Scientific Corp.

CVC Products, Inc.

Denton Vacuum, Inc.

Duniway Stockroom Corporation

E.A. Fischione Instrument Mfg.

Edwards High Vacuum International

EG&G Princeton Applied Research

Elsevier Science Publishing Co., Inc.

Charles Evans & Associates

FEI Company

Gatan, Inc.

Goodfellow Metals Cambridge Ltd.

Granville-Phillips Co.

High Vacuum Apparatus Mfg., Inc.

Hitachi Scientific Instruments

HPS Div. of MKS Instruments Inc.

Huntington Laboratories

Image Micro Systems, Inc.

Implant Sciences Corporation

Inel Inc.

Innovative Technology, Inc.

Instruments SA, Inc.

International Scientific Instruments

Ion Tech, Inc.

Janis Research Company

JCPDS-ICDD

JEOL U.S.A., Inc.

Kaiser Systems, Inc.

Keithley Instruments

KeveX Instruments, Inc.

Kimball Physics, Inc.

Kratos Analytical, Inc.

Lake Shore Cryotronics, Inc.

Lambda Physik, Inc.

Leighton Electronics, Inc.

Kurt J. Lesker Company

Leybold Inficon

Leybold Vacuum Products

Materials by Metron

McAllister Technical Services

MDC Vacuum Products Corporation

Microscience, Inc.

MKS Instruments Inc.

MMR Technologies, Inc.

National Electrostatics Corp.

Neslab Instruments

Netsch Incorporated

NGS Associates, Inc.

Nicolet

North Eastern Analytical Corp.

Omicron Associates

Oxford Instruments

Oxford University Press

Peabody Scientific

Pergamon Press

Perkin-Elmer Corporation

Philips Electronic Instruments Co.

Physicon Corporation

Plasma Technology

Plenum Publishing Corporation

Princeton Gamma-Tech, Inc.

Princeton Instruments

Process Products Corporation

Quantachrome Corp.

Quantum Design, Inc.

RHK Technology, Inc.

Rigaku/USA, Inc.

RMC-Cryosystems Inc.

Rudolph Research

Scintag, Inc.

Siemens Analytical X-Ray

South Bay Technology, Inc.

Spectramass, Inc./

Spectra Instruments Div.

Spectra-Tech Inc.

Spire Corporation

Springer-Verlag New York Inc.

Structure Probe, Inc./SPI Supplies

Sula Technologies

Superconductive Components, Inc.

Sycon Instruments, Inc.

Tencor Instruments

Thermionics Laboratory

Ultra High Vacuum Instruments, Inc.

Vacuum Barrier Corp.

Varian/Vacuum Products

VAT, Inc.

VCR Group, Inc.

VG Instruments, Inc.

Virginia Semiconductor, Inc.

Voltaix, Inc.

Walf Associates

Waterloo Scientific

Wavemat, Inc.

John Wiley & Sons

Carl Zeiss, Inc.

SEE AD IN THIS ISSUE.

1990 SPRING MEETING PROGRAM

April 16-21,
1990



San Francisco,
California

BETTER CERAMICS THROUGH CHEMISTRY IV

C.J. Brinker, Sandia National Laboratories, (505) 846-3552, FAX (505) 846-5064; D.E. Clark, University of Florida, (904) 392-7660, FAX (904) 392-6359; Donald R. Ulrich, Air Force Office of Scientific Research, (202) 767-4963; Brian J.J. Zelinski, Arizona Materials Laboratories, (602) 322-2977, FAX (602) 322-2993

ADVANCED METALLIZATIONS IN MICROELECTRONICS

Avishay Katz, AT&T Bell Laboratories, (201) 582-2261, FAX (201) 582-5917; Shyam P. Murarka, Rensselaer Polytechnic Institute, (518) 276-2978, FAX (518) 276-8761; Ami Appelbaum, Rockwell International Corporation, (214) 996-6522, FAX (214) 996-5545

POLYSILICON THIN FILMS AND INTERFACES

Bruha Raicu, Integrated Technology Associate, (408) 773-8614; FAX (415) 941-2704; T. Kamins, Hewlett-Packard, (415) 857-5470, FAX (415) 857-5308; Carl V. Thompson, Massachusetts Institute of Technology, (617) 253-7652, FAX (617) 258-8539

CRITICAL CURRENTS IN HIGH-TEMPERATURE SUPERCONDUCTORS

John R. Clem, Iowa State University, (515) 294-4223, FAX (515) 294-0689; Jack W. Ekin, National Institute of Standards & Technology, (303) 497-5448, FAX (303) 497-5316; Sungho Jin, AT&T Bell Laboratories, (201) 582-4076, FAX (201) 582-2913; Donald M. Kroeger, Oak Ridge National Laboratory, (615) 574-5155, FAX (615) 574-6073

HIGH RESOLUTION ELECTRON MICROSCOPY OF DEFECTS IN MATERIALS

Robert Sinclair, Stanford University, (415) 723-1102, FAX (415) 725-4034; Ulrich Dahmen, University of California, Berkeley, (415) 486-4627, FAX (415) 486-4888; David J. Smith, Arizona State University, (602) 965-4540

DEGRADATION MECHANISMS IN III-V COMPOUND SEMICONDUCTOR DEVICES & STRUCTURES

V. Swaminathan, AT&T Bell Laboratories, (201) 582-4981, FAX (201) 582-5917; Stephen J. Pearton, AT&T Bell Laboratories, (201) 582-4757, FAX (201) 582-5917; Omar Manasreh, Wright Research & Development Center, (513) 255-4474, FAX (513) 255-5375

MATERIALS ISSUES IN ART AND ARCHAEOLOGY II

James R. Druzik, Getty Conservation Institute, (213) 822-2299; FAX (213) 821-9409; Pamela B. Vandiver, Smithsonian Institution, (301) 238-3734; FAX (301) 238-3667; George Wheeler, Metropolitan Museum of Art, (212) 570-3858, FAX (212) 570-3879

MATERIALS FOR SENSORS AND SEPARATIONS

Marc Anderson, University of Wisconsin-Madison, (608) 262-2470, FAX (608) 262-0454; John Armor, Air Products and Chemicals, Inc., (215) 481-5792, FAX (215) 481-4600; D. Jed Harrison, University of Alberta, (403) 492-2790, FAX (403) 492-8231; Antonio J. Ricco, Sandia National Laboratories, (505) 846-4947, FAX (505) 846-2009

ALLOY PHASE STABILITY AND DESIGN

G. Malcolm Stocks, Oak Ridge National Laboratory, (615) 574-5163; Anthony F. Giamei, United Technologies Research Center, David P. Pope, University of Pennsylvania, (215) 898-9837, FAX (215) 898-1130

THIN FILM STRUCTURES AND PHASE STABILITY

Bruce M. Clemens, Stanford University, (415) 725-7455, FAX (415) 725-4034; William L. Johnson, California Institute of Technology, (818) 356-4433, FAX (818) 795-1547

THIN FILMS: STRESSES AND MECHANICAL PROPERTIES II

Warren Oliver, Oak Ridge National Laboratory, (615) 576-7245, FAX (615) 574-7721; Mary Doerner, International Business Machines, (408) 284-8369, FAX (408) 256-8481; George Pharr, Rice University, (713) 527-8101, Ext. 3573, FAX (713) 285-5136, Blnet: PHARR@RICE; Franz R. Brotzen, Rice University, (713) 527-8101, FAX (713) 285-5136

MICROWAVE PROCESSING OF MATERIALS

William B. Snyder, Oak Ridge National Laboratory, (615) 576-2178; Willard H. Sutton, United Technologies Research Center, (203) 727-7639; D. Lynn Johnson, Northwestern University, (312) 491-3584; Magdy F. Iskander, University of Utah, (801) 581-6944

PLASMA PROCESSING AND SYNTHESIS OF MATERIALS

Diran Apelian, Drexel University, (215) 895-1541, FAX (215) 895-4929; Julian Szekely, Massachusetts Institute of Technology, (617) 253-3236; FAX (617) 253-8124

LASER ABLATION FOR MATERIALS SYNTHESIS

David C. Paine, Brown University, (401) 863-1457, FAX (401) 863-1157; John C. Bravman, Stanford University, (415) 723-3698, FAX (415) 725-4034

AMORPHOUS SILICON TECHNOLOGY - 1990

P.C. Taylor, University of Utah, (801) 581-4484, FAX (801) 581-4801; Malcolm J. Thompson, Xerox PARC, (415) 494-4561, FAX (415) 494-4919; Y. Hamakawa, Osaka University, Japan, 81-6-844-1151, FAX 81-6-853-1362; Arun Madan, Colorado, (303) 526-9016, FAX (303) 526-1748; P.G. LeComber, University of Dundee, United Kingdom, 44-382-23181, FAX 44-382-201604

SURFACE AND NEAR SURFACE STRUCTURE OF POLYMER INTERFACES

Jeffrey A. Kelber, Sandia National Laboratories, (505) 844-5436; Ralph G. Nuzzo, AT&T Bell Laboratories, (201) 582-5486; Matthew V. Tirrell, University of Minnesota, (612) 625-0192, FAX (612) 626-7246; Ernesto Occhiello, Istituto Guido Donegani, Italy

ATOMIC SCALE CALCULATIONS OF STRUCTURE IN MATERIALS

Michael A. Schluter, AT&T Bell Laboratories, (201) 582-3106; Murray S. Daw, Sandia National Laboratories, (415) 294-2198

INTERMETALLIC MATRIX COMPOSITES

Donald L. Anton, United Technologies Research Center, (203) 727-7174, FAX (203) 727-7879; Robert McMeeking, University of California, Santa Barbara, (805) 961-4583, FAX (805) 961-8124; Daniel Miracle, United States Air Force, Wright-Patterson AFB, (513) 255-9833, FAX (513) 255-9792; Patrick Martin, Los Alamos National Laboratory, (505) 667-8168, FAX (505) 667-1754

PHYSICAL PHENOMENA IN GRANULAR MATERIALS

Theodore H. Geballe, Stanford University, (415) 723-0215, FAX (415) 723-0010; Ping Sheng, Exxon Research & Engineering, (201) 730-2870, FAX (201) 730-3042; G.D. Cody, Exxon Research & Engineering, (201) 730-3022; FAX (201) 730-3042

SUPERPLASTICITY IN METALS, CERAMICS, AND INTERMETALLICS

Merrilea J. Mayo, Sandia National Laboratories, (505) 846-3551, FAX (505) 846-5064; Jeffrey Wadsworth, Lockheed Missile & Space Co., Inc., (415) 424-2234, FAX (415) 354-5415; Masaru Kobayashi, Technological University of Nagaoka, Japan, 0258-46-6000, Ext. 7120, FAX 0258-46-6972; Amiya K. Mukherjee, University of California at Davis, (916) 752-1776; FAX (916) 752-8058

MATERIALS INTERACTIONS RELEVANT TO THE PULP, PAPER AND WOOD INDUSTRIES

June D. Passarelli, Pfizer Minerals Research Center, (215) 861-3431, FAX (215) 861-3412; Daniel Caulfield, USDA Forest Service, (608) 231-9436, FAX (608) 231-9592; Rustum Roy, Pennsylvania State University, (814) 865-3421; FAX (814) 865-2326; Vance Setterholm, USDA Forest Service, (608) 231-9478; FAX (608) 231-9592

EPITAXIAL HETEROSTRUCTURES

Don W. Shaw, Texas Instruments, Inc., (214) 995-4788, FAX (214) 995-5539; John C. Bean, AT&T Bell Laboratories, (201) 582-3324, FAX (201) 582-3901; Vassilis G. Keramidas, Bellcore, (201) 758-3353, FAX (201) 758-9626; Paul S. Peercy, Sandia National Laboratories, (505) 844-4309, FAX (505) 846-2009

WORKSHOP ON SPECIMEN PREPARATION FOR TRANSMISSION ELECTRON MICROSCOPY OF MATERIALS II

Ron Anderson, IBM, (914) 892-2225, FAX (914) 892-2555

FRONTIERS OF MATERIALS RESEARCH

Robert A. Huggins, Stanford University, (415) 723-4110, FAX (415) 725-4034

FERROELECTRIC THIN FILMS

Angus I. Kingon, North Carolina State University, (919) 737-2347, FAX (919) 737-3419; Edward R. Myers, National Semiconductor, (408) 721-2258, FAX (408) 736-8503

Meeting Chairs

John C. Bravman
Stanford University
(415) 723-3698
FAX (415) 725-4034

William H. Butler
Oak Ridge
National Laboratory
(615) 574-4845
FAX (615) 574-7271

C. Jeffrey Brinker
Sandia National
Laboratories
(505) 846-3552
FAX (505) 846-5064

November 26–
December 1, 1990

MRS

Boston, Massachusetts

1-9-9-0

FALL MEETING PROGRAM

■ SYMPOSIUM A / SURFACE CHEMISTRY AND BEAM-SOLID INTERACTIONS

Harry A. Atwater, Caltech, (818) 356-2197
Frances A. Houle, IBM Almaden Research Center,
(408) 927-2420
Doug Lowndes, Oak Ridge National Laboratory,
(615) 574-6306

■ SYMPOSIUM B / ELECTRONIC, OPTICAL AND DEVICE PROPERTIES OF LAYERED STRUCTURES

John Hayes, Bellcore, (201) 758-2851
Mark Hybertsen, AT&T Bell Laboratories,
(201) 582-3628
Eicke Weber, University of California, (415) 642-0205,
FAX (415) 486-5933

■ SYMPOSIUM C / MICROSTRUCTURAL EVOLUTION OF SURFACES AND THIN FILMS

Carl V. Thompson, Massachusetts Institute of
Technology, (617) 253-7652
Jeffrey Y. Tsao, Sandia National Laboratories,
(505) 844-7092
David Srolovitz, University of Michigan, (313) 936-1740

■ SYMPOSIUM D / ELECTRONIC PACKAGING MATERIALS SCIENCE

Edwin D. Lillie, MCC, (512) 250-2715
Kenneth A. Jackson, AT&T Bell Laboratories,
(201) 582-4188
Ralph J. Jaccodine, Lehigh University, (215) 758-4409

■ SYMPOSIUM E / CHEMICAL PERSPECTIVES OF MICROELECTRONIC MATERIALS

Mihal E. Gross, AT&T Bell Laboratories, (201) 582-4504
Lawrence H. Dubois, AT&T Bell Laboratories,
(201) 582-7920
Leonard V. Interrante, Rensselaer Polytechnic Institute,
(518) 276-2644
Klaus F. Jensen, Massachusetts Institute of Technology,
(617) 253-4589

■ SYMPOSIUM F / PHASE TRANSFORMATIONS

Michael O. Thompson, Cornell University,
(607) 255-4714

■ SYMPOSIUM G / CLUSTERS & CLUSTER-ASSEMBLED MATERIALS

Robert S. Averback, University of Illinois-Urbana,
(217) 333-4302
David L. Nelson, Office of Naval Research,
(202) 696-4410
J. Bernholc, North Carolina State University,
(919) 737-3126

■ SYMPOSIUM H / HIGH-TEMPERATURE SUPERCONDUCTORS

Kenneth Lay, GE Corporate Research and
Development Center, (518) 387-7495
Julia M. Phillips, AT&T Bell Laboratories,
(201) 582-4428
Allen Goldman, University of Minnesota,
(612) 624-6525
Anthony C. Schaffhauser, Oak Ridge National
Laboratory, (615) 574-4826

■ SYMPOSIUM I / MECHANICAL PROPERTIES OF POROUS MATERIALS

Lorna J. Gibson, Massachusetts Institute of
Technology, (617) 253-7107
Karl Sieradzki, The Johns Hopkins University,
(301) 338-5409
David Green, Pennsylvania State University,
(814) 863-2011

■ SYMPOSIUM J / ADVANCED DIFFRACTION METHODS

Philip I. Cohen, University of Minnesota, (612) 625-5517
David Eaglesham, AT&T Bell Laboratories,
(201) 582-3768
Ting C. Huang, IBM Almaden Research Center,
(408) 927-2375

■ SYMPOSIUM K / DEFECTS IN MATERIALS

Paul D. Bristowe, Massachusetts Institute of
Technology, (617) 253-3326
Ernst Epperson, Argonne National Laboratory,
(312) 972-4971
J.E. Griffith, AT&T Bell Laboratories, (201) 582-5222
Z. Liliental-Weber, University of California-Berkeley,
(415) 486-6276

■ SYMPOSIUM L / SOLID STATE IONICS

Gholamabbas Nazri, GM Research Laboratory,
(313) 986-0737
Duward F. Shriver, Northwestern University,
(312) 491-5655
M. Balkanski, Universite Pierre et M. Curie, France
Robert A. Huggins, Stanford University, (415) 723-4110,
FAX (415) 725-4034

■ SYMPOSIUM M / KINETICS IN SMALL CONFINING SYSTEMS

J.M. Drake, Exxon Research and Engineering,
(201) 730-2848
R. Kopelman, University of Michigan, (313) 764-7541
J. Klafter, Tel Aviv University, Israel, 972-3-5450254,
FAX 972-3-541-3752

■ SYMPOSIUM N / COVALENT CERAMICS

Gary Fischman, Alfred University, (607) 871-2449
Richard M. Spriggs, Alfred University, (607) 871-2486

■ SYMPOSIUM O / FIBER-REINFORCED CEMENTITIOUS MATERIALS

Sidney Mindess, University of British Columbia,
(604) 228-6413
Jan P. Skalny, W.R. Grace & Company, (301) 531-4597

■ SYMPOSIUM P / SCIENTIFIC BASIS FOR NUCLEAR WASTE MANAGEMENT XIV

T. Abrajano, Jr., Argonne National Laboratory,
(312) 972-4261
Lawrence H. Johnson, Whiteshell Nuclear Research
Establishment (204) 753-2311

■ SYMPOSIUM Q / HIGH-TEMPERATURE ORDERED INTERMETALLIC ALLOYS

James O. Stiegler, Oak Ridge National Laboratory,
(615) 574-4065
David P. Pope, University of Pennsylvania,
(215) 898-7246
James C. Williams, GE Aircraft Engines, (513) 243-4531

■ SYMPOSIUM R / NOVEL STRUCTURAL AND ELECTRONIC PROPERTIES OF POLYMERS

Joon Row, University of Cincinnati, (513) 556-3117
John M. Torkelson, Northwestern University,
(312) 491-7449
John Emerson, AT&T Bell Laboratories, (609) 639-2571

■ SYMPOSIUM S / SYNTHESIS AND PROPERTIES OF NEW CATALYSTS: UTILIZATION OF NOVEL MATERIALS COMPONENTS AND SYNTHETIC TECHNIQUES

Marc J. Ledoux, Universite Louis Pasteur Strasbourg I,
France
Edward W. Corcoran, Exxon Research and
Engineering, (201) 730-2465
Jack R. Knox, Knox Consulting Company,
(312) 357-3707

■ SYMPOSIUM T / LONG-WAVELENGTH SEMICONDUCTOR MATERIALS

Avishay Katz, AT&T Bell Laboratories, (201) 582-2261
Robert M. Biefeld, Sandia National Laboratories,
(505) 844-1556
R.J. Malik, AT&T Bell Laboratories, (201) 582-6580
Robert L. Gunshor, Purdue University, (317) 494-3509

■ SYMPOSIUM U / ADVANCED TOMOGRAPHIC IMAGING METHODS FOR THE STUDY OF MATERIALS

J.L. Ackerman, Massachusetts General Hospital,
(617) 726-3083
W. Ellingson, Argonne National Laboratory,
(312) 972-5068

■ SYMPOSIUM V / BIOMATERIALS (Chairs to be announced)

■ SYMPOSIUM W / DYNAMICS OF DISORDERED SYSTEMS AND FRACTALS

James P. Stokes, Exxon Research and Engineering,
(201) 730-2426
Mark O. Robbins, Johns Hopkins University,
(301) 338-7204
T.A. Witten, University of Chicago, (312) 702-0947,
FAX (312) 702-5863

■ SYMPOSIUM X / FRONTIERS OF MATERIALS SCIENCE

Rustum Roy, Pennsylvania State University,
(814) 865-3421

■ SYMPOSIUM Y / QUANTUM STRUCTURES & MICROLITHOGRAPHY

T.P. Smith III, IBM T.J. Watson Research Center,
(914) 945-2809
D. Kerns, IBM T.J. Watson Research Center,
(914) 945-1147
S.D. Berger, AT&T Bell Laboratories, (201) 582-2484
H. Craighead, Cornell University, (607) 255-2329

Meeting Chairs

Robert Hull, AT&T Bell Laboratories,
(201) 582-6455

Gregory McCarthy, North Dakota State University
(701) 237-7193

Frans Spaepen, Harvard University
(617) 495-3760

New Materials Science Texts and References from Springer-Verlag

Booth #209 at the MRS Exhibit in Boston

The Physical and Mathematical Modelling of Tundish Operations

J. Szekely and O.J. Ilgebusi

Reflecting the critical role of tundishes in affecting the quality of finished steel products, this book provides a good physical understanding of what is happening in tundishes and places tundish design into realistic perspective. It also addresses less well understood aspects and blends these considerations into a coherent approach to optimal design of tundish operations.

1989/111 pp./124 illus./11 tables/hardcover \$54.00

ISBN 0-387-96858-X

Materials Research and Engineering

Ladle Metallurgy

J. Szekely, G. Carlsson, and L. Helle

This text provides a comprehensive description of the science, practice, and economics of ladle metallurgical operations. The material draws heavily on previous SCABINJECT conferences and has been used tutorially by the authors. Topics covered include injection technology and metallurgy, injection practice in secondary metallurgy of steel, economic considerations, and the testing technique for powder injection.

1989/166 pp./137 illus./24 tables/hardcover \$69.00

ISBN 0-387-96798-2

Materials Research and Engineering

Materials Testing for the Metal Forming Industry

K. Pöhlandt

This is the first comprehensive treatment of materials testing for the special demands of the metal forming industry. Testing methods for the forming behavior of metals as well as for metal forming tool materials are described. A list of ASTM, ISO and Euronorm standards are included for a complete reference source.

1989/226 pp./76 illus./hardcover \$59.50 (tent.)

ISBN 0-387-50651-9

Modelling Hot Deformation of Steels

An Approach to Understanding and Behavior

Edited by J.G. Lenard

Computer-aided modelling of microalloyed steels is examined in the context of controlled rolling. The book also reviews industrial practices and the difficulties associated with understanding high-temperature behavior. Also included is a promising new approach to deformation mapping.

1989/145 pp./47 illus./hardcover \$49.50

ISBN 0-387-50754-X

Welding Metallurgy of Stainless Steel

E. Folkhard

Approaches metallurgical reactions by discussing constitution diagrams, solidification and segregation phenomena, phase transformations, precipitations of carbides and intermetallic phases, and cracking problems. In addition, it provides directions for welding techniques that avoid failure in practical welding operations.

1988/279 pp./115 illus./hardcover \$50.00

ISBN 0-387-82043-4

Non-Destructive Testing

B. Hull and V. John

This introductory text treats the underlying principles and important applications of the major non-destructive inspection techniques now in use. In addition to complete chapter coverage of each technique, the text provides students and practicing engineers with a broad overview of the field, plus a review of recent developments.

1988/144 pp./softcover \$24.00

ISBN 0-387-91325-4

Micromechanics and Inhomogeneity:

The Toshio Mura Anniversary Volume

Edited by G.J. Weng, M. Taya, and H. Abe

Written by leading researchers from the U.S., Japan, and Europe in honor of Mura's 65th birthday, the 37 original contributions span topics relevant to the applied mechanics and materials communities, but all linked by the indispensability of micromechanics to their understanding. Ample examples of analytical and experimental approaches with a special emphasis on composites and other new material systems are included.

1989/approx. 700 pp./225 illus./hardcover \$74.00 (tent.)

ISBN 0-387-97043-6

Forthcoming -

Ultrasonic Testing of Materials

Fourth Edition

J. Krautkrämer and H. Krautkrämer

The established reference work in the field will be available in a fully revised fourth edition early in 1990. It treats nondestructive testing of solid materials using ultrasonic waves - from the basics up to the most sophisticated methods and including tips derived from 30 years of practical experience. This edition features improved coverage of physical fundamentals, updated reports on instrumentation, and new applications in the nuclear and space industries.

1990/approx. 700 pp./564 illus./hardcover \$134.00 (tent.)

ISBN 0-387-51231-4

Principles of Magnetic Resonance

Third Edition

C.P. Slichter

"...one of the best expositions of the quantum theory of resonance...It has my highest recommendation for use as a textbook." - J.O.S.A.

The third edition of this renowned graduate-level textbook offers new material in many areas, including new sections on one- and two-dimensional Fourier transforms, multiple quantum coherence, and magnetic resonance imaging.

1989/approx. 640 pp./179 illus./softcover \$49.50

ISBN 0-387-50157-6

Springer Series in Solid-State Sciences, Vol. 1

Also available -

Electronic Structure and Optical Properties of Semiconductors

Second Edition

M.L. Cohen and J.R. Chelikowsky

"...highlights some of the underlying mechanisms associated with optical processes in semiconductors and provides information related to their theoretical and experimental study...attention is directed toward techniques that investigate energy band structure..." - CHOICE

1989/264 pp./161 illus./softcover \$39.00

ISBN 0-387-51391-4

Springer Series in Solid-State Sciences, Vol. 75

To order call Toll-Free: 1-800-SPRINGER (In NJ call 201-348-4033). Or FAX: 212-473-6272. For mail orders please send payment plus \$2.50 for postage and handling to: Springer-Verlag New York, Inc., Attn.: K. Quinn, 175 Fifth Avenue, New York, NY 10010. We accept Visa, MC, AmEx, and Discover charges (with signature and expiration date noted) as well as personal checks and money orders. NY, NJ, and CA residents please add state sales tax.



Springer-Verlag

New York Berlin Heidelberg Vienna
London Paris Tokyo Hong Kong

Please visit Booth No. 209 at the MRS Show
in Boston, November 28-30, 1989.