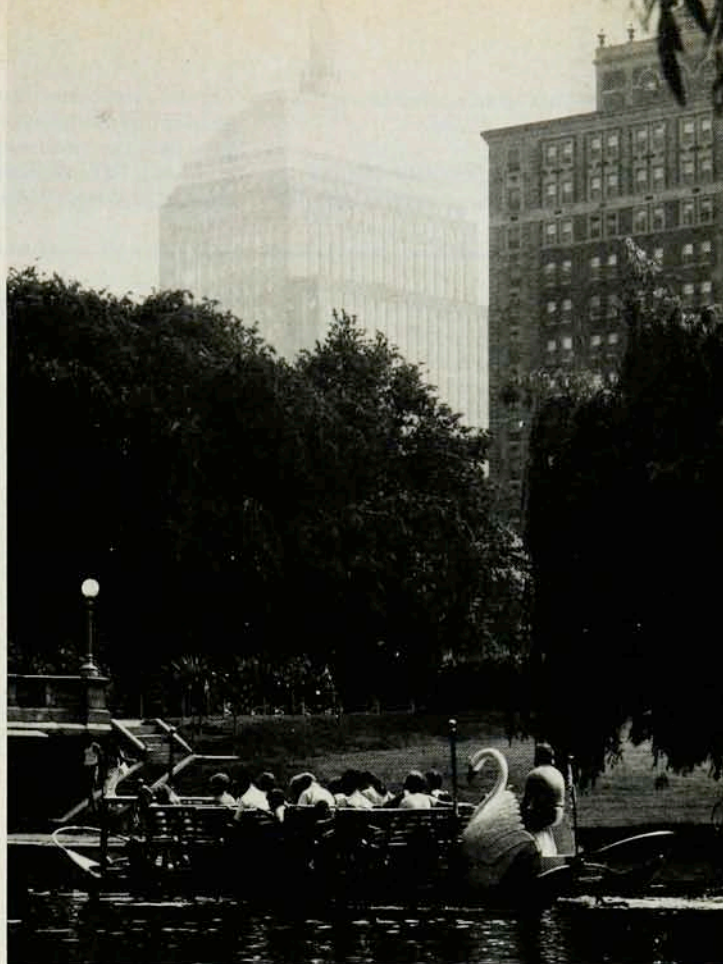


MATERIALS RESEARCH SOCIETY MEETS IN BOSTON

The annual fall meeting will feature symposia on high-temperature superconductors and many other topics in materials research.



The Materials Research Society will hold its fall meeting in Boston, Massachusetts, from 30 November to 5 December. Located at the Boston Marriott and Westin Hotels, the meeting will feature a wide array of technical symposia, short courses and an equipment exhibit. Registration will take place at the Marriott Hotel on Sunday, 29 November, from 4 pm to 9 pm, on Monday from 7 am to 7 pm, Tuesday through Thursday from 7:30 am to 5 pm, and on Friday from 7:30 am to noon.

Most symposia at the meeting will not begin until Monday afternoon or Tuesday morning, to give participants an opportunity to attend a special Monday morning symposium on recent news about high-temperature superconductors. Other symposia will discuss beam-solid interactions, layered materials, films, interfaces, electronic materials, polymers and nuclear waste management. In addition, poster sessions will be held on Tuesday and Thursday. Seventeen of the 21 symposia will publish their proceedings individually in book form.

The opening plenary session, scheduled for Monday evening, will feature William C. DeVries of Humana Heart

Institute International. DeVries, the only surgeon certified by the Food and Drug Administration to implant the pneumatic artificial heart known as the Jarvik-7 for permanent life support, will discuss the construction and operation of the artificial heart system and describe the conditions under which it is implanted. The artificial heart system incorporates all the significant advances made in biomaterials and pump and energy systems.

Short courses

MRS will offer 29 short courses on the following advanced research techniques at various times during the week:

- Conventional and high-temperature superconductors
- Crystalline polymers
- Liquid-phase epitaxy techniques
- Molecular-beam epitaxy
- Vapor-phase epitaxy
- Film formation, adhesion and surface preparation
- Plasma-enhanced chemical-vapor deposition of thin films for microelectronics
- Implantation and diffusion
- Rapid thermal processing
- Photon-controlled processing for mi-

- croelectronics
- Silicon epitaxy: Present and future
- Plasma etching for microelectronic fabrication
- Ion-beam processes for materials modification
- Microelectronic packaging: Materials, processing and reliability
- Modern materials analysis techniques
- Electron microscopy of thin films
- Surface and thin film analysis
- Characterization of films, coatings and surfaces
- Application of reflection electron diffraction to epitaxial growth
- Deep-level transient spectroscopy
- Fractals in materials science
- Characterization of powders and porous materials
- Integrated circuit failure mechanisms and analytical techniques
- Atom probe microanalysis: Principles and applications to materials problems
- Scanning tunneling microscopy: Theory and practice
- Nuclear magnetic resonance spectroscopy
- Scanning electron microscopy and x-ray microanalysis
- Experimental strategies for optimizing process variables

Vacuum and plasma technology for materials processing

Exhibit and placement center

During the meeting, more than 100

organizations and companies will be exhibiting equipment that closely parallels the nature of the technical symposia. The exhibit, located in the Boston Marriott Hotel, will be open

on Tuesday and Wednesday from 9 am to 5 pm and on Thursday from 9 am to 2 pm.

A job placement service, organized and operated by the American Insti-

Invited sessions and speakers

MONDAY

morning

Biomedical materials and devices: Sensors, neural prostheses and pain. *L. L. Sidman; Y. Hosobuchi*

Fly ash and coal conversion byproducts: Materials science in coal ash disposal. *M. J. Dudas; D. Rai; S. V. Marrigod; L. E. Eary; C. C. Ainsworth; G. J. McCarthy; L. L. LaBuz; J. F. Villaume*

afternoon

Fundamentals of beam-solid interactions and transient processing: Silicon-on-insulator and buried metals in semiconductors: Multilayers synthesis by ion bombardment. *W. L. Johnson; M.-A. Nicolier; Y.-T. Cheng; A. E. White; K. T. Short; R. C. Dynes; J. M. Gibson; C. Jaussaud; D. G. Armour*

Epitaxy of semiconductor layered structures: Fundamentals of epitaxial growth. *A. Madhukar; N. Orsuka*

Defects in electronic materials: Keynote session. *G. D. Watkins; F. Rong; W. Barry; G. B. Bacheiler; R. C. Newman; A. Chantre; K. C. Pandey; F. Capasso; F. Beltram*

Electronic packaging materials science: Electronic packaging materials. *B. H. Whalen; R. W. Keyes; C. A. Neugebauer; R. C. Frye*

Polymer surfaces, interfaces and adhesion: Polymers absorbed on surfaces. *P.-G. deGennes; J. F. Rabolt; S. A. Rocca; R. A. L. Jones; A. M. Donald; J. Klein; S. Granick*

Biomedical materials and devices: Vascular and cardiovascular materials and devices. *M. Szycher; W. C. DeVries*

Microstructure and properties of catalysts. *H. Poppo; P. A. Sermon; K. Keryou; J. M. Thomas; G. R. Millward; R. T. K. Baker*

Scientific basis for nuclear waste management: Plenary session. *I. Grenthe; G. P. Marsh; L. H. Johnson; K. W. Stephens; T. H. Pigford; P. L. Chambré*

Fly ash and coal conversion byproducts: Characterization. *A. G. Eklund; D. M. Golden*

TUESDAY

morning

Fundamentals of beam-solid interactions and transient processing: Phase stability during ion irradiation. *N. Q. Lam*

Laser and particle-beam chemical processing for microelectronics: Plenary session. *D. E. Eastman; C. Wirtz; J. C. Polanyi*

Epitaxy of semiconductor layered structures: Epitaxial growth of mercury cadmium telluride. *J.-P. Faurie; S. K. Ghandhi; P.-Y. Lu; L. M. Williams; C.-H. Wang; S. N. G. Chu*

Defects in electronic materials: Defects in silicon. *G. Davies*

Polysilicon films and interfaces: Deposition and characterization. *T. Kamins; R. Sinclair; J. C. Bravman; A. H. Carim*

Silicon-on-insulator and buried metals in semiconductors: Simox. *P. D. Augustus*

Electronic packaging materials science: Multichip modules. *J. W. Balde; R. J. Jensen; S. H. Wen; J. Kim; J. Hurst; N. Chou; K. L. Tai*

Nonlinear optical properties of polymers: Applications and device requirements. *B. G. Kushner; J. A. Neff; R. Lyrel; G. F. Lipscomb; J. I. Thakara; M. Thakur; G. I. Stegeman; C. T. Seaton; R. Zanoni; J. Stramaroff; R. DeMartino; D. Haas; G. Khananian; T. Leslie; H. T. Man; M. Sansone; C. Teng; H. Yoon; F. L. Giles*

Polymer surfaces, interfaces and adhesion: Interactions of polymers with surfaces. *L. Leibler; D. Brosera; H. Hasegawa; T. Hashimoto; P. Pincus; M. Tirrell; S. Patel; Y.-L. Chen; H. Waranabe; R. G. Nuzzo; G. Hadzioannou*

Biomedical materials and devices: Blood cell and plasma substitutes. *R. D. MacGregor; C. A. Hunt; J. Bonaventura; C. Bonaventura*

Biomedical materials and devices: Standardization and control. *D. G. Singleton*

Plasma-assisted deposition of new materials: Plasma processing. *J. Paraszczak; J. Heidenreich; M. Moisan*

Microstructure and properties of catalysts. *P. J. Feibelman; W. A. Goddard; W. P. Halperin; I. Yu; K. W. Zilm; L. Bonnevier; D. M. Simonsen; G. H. Haller*

Scientific basis for nuclear waste management: Migration and transport studies. *P. Gnirk; W. Coons; R. Pusck; M. Gray*

Fly ash and coal conversion byproducts: Characterization and reactivity. *R. T. Hemmings; E. E. Berry*

Fractal aspects of materials—disordered systems: Growth and patterns. *L. M. Sander; T. C. Halsey; L. A. Turkevich; R. C. Ball*

afternoon

Laser and particle-beam chemical processing for microelectronics. *I. Hagashikawa; M. Nonaka; T. Sato; N. Nakase; Y. Horiike; M. Rothschild; D. J. Ehrlich*

Epitaxy of semiconductor layered structures: Epitaxial growth of wide-gap II-VI semiconductors. *J. F. Scherzina; S. Hwang; K. A. Harris; N. C. Giles; R. N. Bicknell; R. L. Harper; D. L. Dreifus; R. M. Kolbas; L. A. Kolodziejski; R. L. Gunshor; A. Nurmikko*

Defects in electronic materials: Impurities in silicon. *M. Kleverman; J. W. Corbett*

SiO₂ and its interfaces: Silicon oxidation. *A. Ourmazd; J. Bevk; G. W. Rubloff; I. W. Boyd*

Polysilicon films and interfaces: Properties of grain boundaries. *H. J. Queisser; J. Werner; P. Haasen; G. Petermann*

Silicon-on-insulator and buried metals in semiconductors: Zone melting recrystallization. *D. Durarrre*

Electronic packaging materials science: Interconnect technology. *S. Numata; T. Miwa; N. Kinjo; Y. Misawa; D. Makino; J. Imaizumi; D. W. Wang; R. W. Seibold; R. T. Lamoureux; S. H. Goodman; S. B. Rimsa; A. M. Ibrahim; L. E. Vigezzi; D. E. L. Dyke*

Nonlinear optical properties of polymers: Susceptibilities of organic materials. *A. F. Garito; A. C. Griffin; A. M. Bhatti; R. S. L. Hung*

Polymer surfaces, interfaces and adhesion: Adhesion. *R. P. Wool; C. E. Uzo; R. J. Diefendorf; L. T. Drzal; A. N. Gent; H. R. Brown; A. C.-M. Yang; T. P. Russell; E. J. Kramer*

Plasma-assisted deposition of new materials: Plasma processing. *P. K. Bachmann*

Microstructure and properties of catalysts. *D. E. W. Vaughan*

Scientific basis for nuclear waste management: Corrosion studies. *J. K. Bates*

Fly ash and coal conversion byproducts: Utilization. *P. K. Mehra*

Fractal aspects of materials—disordered systems: Novel applications. *J. H. Kaufman; A. I. Nazzari; M. Flickner; O. R. Melroy; A. Kapitulnik; R. B. Laibowitz*

WEDNESDAY

morning

Fundamentals of beam-solid interactions and transient processing: Laser-solid interactions—semiconductors. *W. Z. Lin; R. W. Schoenlein; E. P. Ippen; J. G. Fujimoto; D. H. Lowndes*

Laser and particle-beam chemical processing for microelectronics. *M. Stuke*

Epitaxy of semiconductor layered structures: Silicon-on-insulator and buried metals in semiconductors: Heteroepitaxy on silicon—epitaxial silicides and fluorides. *H. Ishiura; T. Asano; K. Tsutsui; H. C. Lee; S. Furukawa; A. F. J. Levi; R. T. Tung; J. L. Barstone; M. Anzlowar*

Defects in electronic materials. *W. C. Daurermon-Smith; H. J. von Bardeleben*

SiO₂ and its interfaces: Novel methods. *J. Narayan; P. Avouris; F. Bozso; R. Hamers*

SiO₂ and its interfaces: Impurity effects. *G. K. Celler; L. E. Trimble; K. W. West; L. Pfeiffer; T. T. Sheng*

Polysilicon films and interfaces: Microstructural dynamics. *C. V. Thompson; C. A. Handwerker; J. W. Cahn; J. W. Mayer; J. R. Phillips; L. R. Zheng*

Electronic packaging materials science: Polymer surfaces, interfaces and adhesion. *R. Rosenberg; D. C. Hofer; C. P. Wong*

Nonlinear optical properties of polymers: Conjugated polymers.

tute of Physics, will be offered to MRS members and meeting attendees. It will be open Tuesday through Thursday from 9 am to 5 pm. Forms for job candidates can be ob-

tained by writing to Beverly Citrynell, Career Placement, American Institute of Physics, 335 East 45th Street, New York NY 10017. Completed forms will be made available

to employers for examination. There will be a small fee for candidates using the placement center.

—RICHARD HART AND
MARGARET MARYNOWSKI ■

D. K. Campbell; D. S. Chemla; B. I. Greene; J. Orenstein; M. Thakur; K. Schullen; M. Barzoukas; P. Frémaux; D. Josse; F. Kajzar; I. Ledoux; J. Messier; J. Zyss

Biomedical materials and devices: Tissue-biomaterial interface.

J. E. Lemons; J. T. Lambrecht; R. Ewers; A. Kerscher; R. Jentzsch

Plasma-assisted deposition of new materials: Diamond. B. V. Derjaguin; N. Seraka; T. Anthony; T. D. Moustakas

Microstructure and properties of catalysts. J. W. Johnson; J. F. Brady; A. Hariman; J. M. Thomas; W. Zhou; D. A. Jefferson

Fly ash and coal conversion byproducts: Bonding in cementitious composites: Reactions and admixtures. R. L. Smith

Bonding in cementitious composites: Interfaces. P. K. Mehra; P. J. M. Monteiro

Fractal aspects of materials—disordered systems: Glasses and localization. P. J. Steinhardt; F. Spaepen; G. Y. Onoda; E. G. Liniger; R. Orbach; E. Courrens; R. Vacher; T. Waighner; J. Pelous

afternoon

Fundamentals of beam-solid interactions and transient processing: Laser and electron quenching of metals. D. M. Follstaedt; J. A. Knapp; P. S. Peercy; J. H. Perepezko

Epitaxy of semiconductor layered structures: Heteroepitaxy on silicon—strained semiconductor multilayers. E. Kasper; L. C. Feldman

Multilayers: Synthesis. R. W. Vaak; M. H. Grabow; G. H. Gilmer; A. Zangwill; J. P. Hirth; B. Canahan; F. Kanar

Defects in electronic materials: Defects in III-V compounds. B. K. Meyer; D. M. Hofmann; J.-M. Spaerth; G. A. Baraff

SiO₂ and its interfaces: Chemical vapor deposition I. T. Inushima; N. Hirose; K. Ura; T. Saro; S. Yamazaki

SiO₂ and its interfaces: Chemical vapor deposition II. J. Barey; E. Tierney; T. N. Nguyen; J. W. Strasiak; J. Li; D. V. Tsu; G. Lucovsky; M. W. Watkins

Polysilicon films and interfaces: Thin film reactions—solar cells and sensors. G. Ottaviani; L. L. Kazmerski; R. T. Howe

Silicon-on-insulator and buried metals in semiconductors: Simox, defects and SOS. S. J. Krause; C. O. Jung; S. R. Wilson; R. E. Reedy; G. A. Garcia

Electronic packaging materials science: Polymer interfaces and adhesion. S. D. Senturia; M. G. Allen; M. Grunze; C. J. Bartlett; R. H. Estes

Nonlinear optical properties of polymers: Conjugated polymers. C. Flytzanis; M. Sinclair; D. Moses; A. J. Heeger; S. Eremad; G. L. Baker; F. Kajzar; L. Rothberg; E. J. Mele; G. W. Hayden; W.-K. Wu; S. Kivelson

Biomedical materials and devices: Controlled drug delivery and removal systems. R. M. Ottenbrite; B. P. Gaber; M. Nagumo; B. Rudolph; I. Chandrasekhar

Plasma-assisted deposition of new materials: Diamond. A. Hara; N. Fujimori; S. Yazu; P. Koidl

Microstructure and properties of catalysts. J. H. Lunsford; C.-H. Lin; J.-X. Wang; K. D. Campbell; W. Ueda

Bonding in cementitious composites: Effects of the interface on mechanical properties. L. J. Struble

Fractal aspects of materials—disordered systems: Interfacial phenomena. S. H. Liu; B. Sapoval; D. Andelman; J.-F. Joanny; S. Garoff

THURSDAY

morning

Laser and particle-beam chemical processing for microelectronics. J. Nishizawa

Epitaxy of semiconductor layered structures: III-V epitaxial growth. W. T. Tsang; G. B. Stringfellow

Multilayers: Characterization. L. Wilson; A. Bienenstock; J. M. Vandenberg; M. B. Panish; W. M. Stobbs

Defects in electronic materials: Shallow impurities and dx centers in III-V compounds. F. Sette; S. J. Pearton; J. M. Poore; J. E. Rowe; R. A. Stradling; P. M. Mooney

Polysilicon films and interfaces: FET and bipolar applications. T. H. Ning; R. W. Keyes

Silicon-on-insulator and buried metals in semiconductors: Porous silicon, and buried nitride and carbide. S. S. Tsao

Electronic packaging materials science: Silicon and hybrid circuit interconnects. G. N. Taylor; S. K. Gupta; W. Borland; V. P. Suta; D. Jaffe

Structure-property relationships in optical materials. S. P. Velsko; L. E. Davis; D. Eimerl; J. D. Bierlein; L. L. Chase; A. M. Harper; C. K. Lowe-Ma; M. E. Hills

Nonlinear optical properties of polymers: New materials. C. Ye; T. J. Marks; J. Yang; G. K. Wong; P. N. Prasad; F. Wudl; M. B. Sinclair; A. O. Paril; P. Smith; J. F. Wolfe; S. P. Bitler; L. R. Dalton

Polymer surfaces, interfaces and adhesion: Interface chemistry and adhesion. B. U. Kolb; K. W. Lee; T. J. McCarthy; R. Haight

Biomedical materials and devices: Orthopedic materials and prostheses. J. B. Koeneman; R. Ewers

Microstructure and properties of catalysts. D. E. Aspnes; A. Heller

Bonding in cementitious composites: Cement-aggregate and cement-fiber interfaces. P. Barros; R. J. Gray

Fractal aspects of materials—disordered systems: Porous media. A. J. Karz; A. H. Thompson; P. Wong; J. P. Stokes; T. M. Shaw

Specimen preparation for transmission electron microscopy of materials. A. G. Cullis; N. G. Chew; F. Khoury; S. B. Rice; M. M. J. Treacy; J. M. Brown; P. S. Sklad; P. Goodhew

afternoon

Laser and particle-beam chemical processing for microelectronics. D. Baeuerle

Multilayers: Phase stability. B. W. Dodson; I. J. Fritz; S. T. Picraux; J. Y. Tsao; T. Sakalakis

Defects in electronic materials: Epitaxial layered structures. P. M. Petroff; J. M. Gibson

SiO₂ and its interfaces: Transport. M. V. Fischetti; D. J. DiMaria

Polysilicon films and interfaces: Thin film transistors. T. Naguchi; T. Ohshima; H. Hayashi

Silicon-on-insulator and buried metals in semiconductors: Devices, circuits and radiation effects. J. C. Sturm; C.-E. D. Chen; Rad Hard SOI project team

Silicon-on-insulator and buried metals in semiconductors: Late news. S. Cristoloveanu; A. H. van Ommen

Electronic packaging materials science: Integrated circuit packaging. D. J. Lando; D. G. Grabbe; E. Kraft; C. A. Streidel

Structure-property relationships in optical materials. R. Roy; D. K. Agrawal; J. E. Marion

Nonlinear optical properties of polymers: Second-harmonic generation. D. J. Gerbi; G. T. Boyd; D. A. Ender; P. C. W. Leung; J. J. Stralko

Polymer surfaces, interfaces and adhesion: Properties and structure of thin films. G. R. Hamed; C. H. Shieh; J. E. Ritter; J. Petermann; T. Hashimoto; H. Hasegawa; T. Shiwa; A. Nakai

Biomedical materials and devices: Dental materials. M. G. Duncanson Jr

Microstructure and properties of catalysts. J. Wei

Bonding in cementitious composites: Effect of cement-fiber interfaces on properties of concrete. A. Benur; A. A. Kruger

Fractal aspects of materials—disordered systems: Porous media. R. Kapelman

FRIDAY

morning

Multilayers: Properties. C. Falco; R. C. Cammarata; I. K. Schuller

Electronic packaging materials science: GaAs and optoelectronic packaging materials. L. D. Hurcheson; S. Srimam; R. L. Holman; R. B. Jander; E. J. Murphy; A. W. Schelling; R. J. Holmes; M. F. Yan; W. W. Rhodes; D. W. Johnson Jr; J. W. Strafford

Biomedical materials and devices: Ion implantation effects on orthopedic and other biomaterials. J. M. Williams; P. Sioshansi; Y. Suzuki; K. Kusakabe; K. Kusakabe; H. Akiba; M. Iwaki; M. Suzuki

Bonding in cementitious composites: Modeling of interfacial behavior—interfaces in reinforced concrete. S. P. Shah

Fractal aspects of materials—disordered systems: Aggregation. P. Sheng; F. Family; M. Kolb

afternoon

Biomedical materials and devices: Devices and materials for therapeutic plasmapheresis, cytopheresis and dialysis: artificial organs. Y. Nose

Fractal aspects of materials—disordered systems: Polymers and damage. J. P. Wilcoxon; D. W. Schaefer; E. W. Kaler