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# Announcements & Calls for Papers

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## 2001 Annual Meeting



**DATE:** February 11-15, 2001

**LOCATION:** Ernest Morial Convention Center  
New Orleans, Louisiana

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## GENERAL ABSTRACT INFORMATION

Please contact:

**TMS Technical Programming Department, 184 Thorn Hill Road, Warrendale, PA 15086 USA; Telephone (724)776-9042, ext. 227; Fax (724)776-3770; Email weissp@tms.org**

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### AUTHORS

It is recommended that the prospective author electronically submit abstracts to the TMS Conference Management System (CMS) using the following address: <http://cms.tms.org>. Follow the instructions to access the appropriate year and conference to which you wish to submit. Please call the Programming Services Department for assistance if you need further instructions.

If electronic submission is not possible please attach your abstract to this form and submit to TMS as directed.

**Please Check One Presentation Type and Submit with 150-word Abstract:**

- General Abstract
- TMS Annual Meeting
- TMS Fall Meeting
- Poster Session

If submitted as a GENERAL ABSTRACT, indicate desired category and key word(s) - (see keyword category listed and mail to address listed above).

Name \_\_\_\_\_

Address \_\_\_\_\_

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Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_

- Alloy Phases
- Aluminum
- Aqueous Processing
- Chem. & Phys. of Matls.
- Coatings and Thin Films
- Composite Materials
- Copper, Nickel, Cobalt
- Corrosion and Environ. Effects
- Deformation
- Elect. Pckg. & Intercon. Matls.
- Environmental Effects
- Extraction & Processing
- Fatigue
- Ferrous Metallurgy
- Fracture
- High Temperature Alloys
- Industrial Innovations
- Lead, Zinc
- Mechanical Metallurgy
- Modeling
- New and Emerging Tech.
- Non-Ferrous Metals
- Nuclear Materials
- Phase Trans. & Struct. Evol.
- Physical Properties
- Polymers
- Powder Metallurgy
- Powder Technology
- Precious Metals
- Process Fundamentals
- Process Mineralogy
- Proc. Model. Analysis & Control
- Pyrometallurgy
- Reactive Metals
- Recycling
- Refractory Metals
- Shaping and Forming
- Solidification
- Structure
- Superconducting Materials
- Surface Engineering
- Thin Films and Interfaces
- Waste Treat. & Mini.
- Wear Phenomena

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## PROGRAMMING:

Nearly 200 technical sessions to update metallurgists materials scientists and engineers with the latest scientific and technical developments are being programmed and sponsored by the technical divisions of TMS: EMPMD, EPD, LMD, MPMD, SMD, and the ASM-MSCTS.



All technical programs are accessible through the conference management system (CMS)  
at  
<http://cms.tms.org>

All authors wishing to submit abstracts to the symposia listed below are encouraged to use CMS for electronic submission of abstracts and communication with organizers. Abstract deadlines are listed for each symposium.

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### 2001: An Odyssey of Materials in Space

Sponsored by: Extraction & Processing Division, Light Metals Division, Aluminum Committee, Copper, Nickel, Cobalt Committee

Abstract due date: 7/15/2000

The objective of this symposium is to provide an overview of the materials science contributions that have enabled the exploration and implementation of space, and to project the advancements required for future space missions. Materials which contribute to launch technology, orbital payloads and space exploration will be presented, along with discussion of space-based materials research. Submit abstracts electronically at <http://cms.tms.org> or to: Daniel B. Miracle, Wright Laboratory, Materials Directorate, Building 655, WPAFB, OH 45433 USA T: 937-255-9833 F: 937-255-3007 Email: [miracldb@ml.wpafb.af.mil](mailto:miracldb@ml.wpafb.af.mil); Co-Organizers: Enrique V. Barrera, Rice University, Metals Engineering and Materials Science Department, Houston, TX 77251 USA T: 713-527-8101 F: 713-523-4117 Email: [barrera@rice.edu](mailto:barrera@rice.edu)

### Adhesion Between Solid Surfaces

Sponsored by: Structural Materials Division, Electronic, Magnetic & Photonic Materials Division, Chemistry & Physics of Materials Committee

Abstract due date: 7/1/2000

Any topic related to the adhesion between solid surfaces is acceptable but experimental techniques for measuring adhesion be-

tween solid surfaces will be emphasized. Experiments or theories which can substan-

tiate these techniques are welcome. Interpretations and calculations to support your measurements are desirable. Variables or conditions which may affect your measurements should be illustrated. Reversibility, repeatability and stability of the techniques should be considered. Submit abstracts electronically at <http://cms.tms.org> or to: James C.M. Li, University of Rochester, Department of Mechanical Engineering, Rochester, NY 14627 USA T: 716-275-4038 Email: [li@me.rochester.edu](mailto:li@me.rochester.edu)

### Alumina & Bauxite

Sponsored by: Light Metals Division, Aluminum Committee

Abstract due date: 7/15/2000

Papers are solicited for the 2000 Alumina and Bauxite sessions to be presented at the Annual TMS Meeting in New Orleans, Louisiana. The subjects of interest are on all aspects of the alumina and bauxite industry including and process design, alumina quality improvements and challenges, as well as current and new uses of both alumina and alumina trihydrate. Will entertain proposal for one, half day forum on subjects of interest to the industry such as breakthroughs in separation technology. Papers should avoid commercialism and must contain substantial new findings for the aluminum industry. Submit abstracts electronically at <http://cms.tms.org> or to: Gerald I.D. Roach, Alcoa World Alumina, Alcoa Technical Center, Research and Development, Cockburn Road, Kwinana,

Western Australia 6167 Australia T: 011-61-8-9410-3304 F: 011-8-9410-3197 Email: [gerald.roach@alcoa.com.au](mailto:gerald.roach@alcoa.com.au); Co-Organizers: Jacques M. Mordini, Aluminium Pechiney, Gardanne 13541 France T: 011-334-4265-2126 F: 011-334-4258-0711 Email: [jmordini@amt.pechiney.fr](mailto:jmordini@amt.pechiney.fr)

### Aluminum in Building and Structural Design Applications

Sponsored by: The Aluminum Association, TMS, Light Metals Division

Abstract due date: 7/15/2000

The third largest end use of aluminum in the U.S. is in construction and infrastructure applications. In addition, many applications of aluminum in transportation and other growing markets require the material to be designed for load bearing applications. Much of this design is performed in accordance with a newly revised Aluminum Association standard, the Aluminum Design Manual. Papers in this session outline the use of aluminum as a structural material, including its properties, design advantages, and applications. Submit abstracts electronically at <http://cms.tms.org> or to: Randy Kissell, TGB Partnership, 1325 Farmview Road, Hillsborough, NC 27278 USA T: 919-644-8250 F: 919-644-8252 Email: [tg@mindspring.com](mailto:tg@mindspring.com)

### Aluminum Joining-Emphasizing Laser and Friction Stir Welding

Sponsored by: The Aluminum Association, TMS, Light Metals Division

Abstract due date: 7/15/2000

Aluminum alloys are finding expanding application in automotive structures and hang-on components and with these come new challenges for effective and efficient joining. Those challenges are being met with both new welding processes, like friction-stir welding, and with enhancements to existing processes, such as multiple-head spot welding and automated systems. In this session, we will focus on a number of these new and enhanced joining technologies, using real case studies to illustrate the degree of progress that has already been made as well as some of the potential for the future. Submit abstracts electronically at <http://cms.tms.org> or to: Gilbert Kaufman, 3662 Pevensey Drive, Columbus, OH 43220-4821 USA T: 614-459-3949 F: 919-644-8252 Email: [tgb@mindspring.com](mailto:tgb@mindspring.com)

### **Aluminum Reduction Technology**

Sponsored by: Light Metals Division, Aluminum Committee

Abstract due date: 7/15/2000

The sessions will address all aspects of primary aluminum production technology. Particular focus will be on cell operation, with emphasis on cell performance improvements, operating advances, cell modernization and productivity increase. New cell materials and emerging technologies will also be covered, together with process control, modeling for cell design, environmental aspects and fundamentals. Papers should avoid any commercialism and must contain substantial new findings for the aluminum industry. Submit abstracts electronically at <http://cms.tms.org> or to: John Chen, University of Auckland, Department of Chemical and Materials Engineering, Auckland, New Zealand T: 649-373-7599 F: 649-373-7463 Email: [j.chen@auckland.ac.nz](mailto:j.chen@auckland.ac.nz). Co-Organizers: Halvor Kvande, Norsk Hydro ASA, Oslo N-0240 Norway T: 011-47-22-73-91-55 F: 011-47-22-73-77-78 Email: [halvor.kvande@hydro.com](mailto:halvor.kvande@hydro.com).

### **Applications of Refractory Metals and Materials in the Processing Industries**

Sponsored by: Structural Materials Division, Refractory Metals Committee

Abstract due date: 7/15/2000

This symposium will cover the use of refractory metals and materials in the process industry. Typically these applications have a need for a corrosion or wear resistant material for processing chemicals and other industrial products. The symposium will include applications, new alloys and materials, processing or heat treating developments, and other topics relating to the use of refractory metals in industry.

Submit abstracts electronically at <http://cms.tms.org> or to: Joseph W. Newkirk, University of Missouri-Rolla, Department of Metallurgical Engineering, Rolla, MO 65409-0340 USA T: 573-341-4725 F: 573-341-6934 Email: [jnewkirk@umr.edu](mailto:jnewkirk@umr.edu). Co-Organizers: Robert Balliett, H.C. Starck, Inc., Newton, MA 02161 USA.

### **Automotive Alloys 2001**

Sponsored by: Light Metals Division, Aluminum Committee

Abstract due date: 7/15/2000

The science and technology of aluminum and magnesium alloys as it relates to the automotive market will be the main thrust of this symposium. The 2001 symposium will be the fifth symposium covering topic areas that include: the physical and process metallurgy for aluminum and magnesium castings, extrusions, composites and sheet; alloys processing structure and properties characterization, commercial and pilot applications in automotive market technology and performance. Current research, developments, technology and review contributions will be welcome. Submit abstracts electronically at <http://cms.tms.org> or to: Subodh K. Das, University of Kentucky College of Engineering, Center for Aluminum Technology, Lexington, KY 40506-0043 USA T: 606-257-7380 F: 606-257-3342 Email: [skdas@engr.uky.edu](mailto:skdas@engr.uky.edu).

### **Bauxite Residue Treatment: New Developments**

Sponsored by: The Aluminum Association, TMS, Light Metals Division

Abstract due date: 7/15/2000

The treatment and use of bauxite residue (sometimes known as red mud) was the focus of an industry workshop sponsored by The Aluminum Association in late 1999. Industry representatives were joined by outside experts to explore approaches and establish priorities for collaborative research efforts. These deliberations have been recorded in a "Technology Roadmap for Bauxite Residue Treatment and Utilization" published by the Association. Highest priority was proposed for work on metal recovery from the residue, the removal of desilication product before it becomes waste, and the area of bauxite beneficiation. The purpose of this session is to explore ongoing R&D in the context of this roadmap. Submit abstracts electronically at <http://cms.tms.org> or to: John Green, The Aluminum Association, 900 19th Street NW, Suite 300, Washington, DC 20006 USA T: 202-862-5121 F: 202-862-5164 Email: [jgreen@aluminum.org](mailto:jgreen@aluminum.org)

### **Carbon Technology**

Sponsored by: Light Metals Division, Aluminum Committee

Abstract due date: 7/15/2000

Programming for several sessions will cover anode (both prebaked and soderberg) and cathode operations as they relate to the aluminum industry. This includes raw materials, paste and green anode manufacture, anode baking, anode rodding, as well as all cathode operations. Also there will be a joint session with Reduction Technology on anode performance in cells. All aspects as they relate to properties, analytical procedures, and operations will be included. Papers should avoid any commercialism and must contain substantial new findings or reinterpretations of interest for the aluminum industry. Submit abstracts electronically at <http://cms.tms.org> or to: Morten Sorlie, Elkem ASA Research, Vaagsbygd, Kristiansand N-4675 Norway T: 47-38-01-7211 F:47-38-01-491 Email: [morten.sorlie@elkem.no](mailto:morten.sorlie@elkem.no). Co-Organizers: Les Edwards, CII Carbon, Chalmette, LA 70004 USA T: 504-278-1085, ext.106 F:504-278-1084 Email: [ledwards@ciicarbon.com](mailto:ledwards@ciicarbon.com).

### **Cast Shop Technology**

Sponsored by: Light Metals Division, Aluminum Committee

Abstract due date: 7/15/2000

Broad-based scientific and engineering papers in the following areas are sought for incorporation in our Cast Shop technical sessions: recycling, melting and melt preparation, alloying, grain refinement, metal treatment, ingot and shape casting, continuous processing for all shapes (including strip and slab casting), process modeling, and safe melt handling practices. Papers that emphasize the translation of theory and process understanding into practice are particularly desirable, and will receive special consideration. All papers must meet minimum standards of scholarship, scientific method, completeness, documentation, and style. Submissions of a commercial nature will not be considered. Submit abstracts electronically at <http://cms.tms.org> or to: Paul Crepeau, General Motors Corporation, Pontiac Engineering Center, Pontiac, MI 48340-2920 USA T: 248-857-1664 F: 248-857-2599 Email: [paul.n.crepeau@gm.com](mailto:paul.n.crepeau@gm.com). Co-Organizers: John F. Grandfield, CSIRO Australia, Preston, Victoria 3072 Australia T: 011-61-39-662-7832 F: 011-39-662-7770 Email: [john.grandfield@cmst.csiro.au](mailto:john.grandfield@cmst.csiro.au)

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### **Chemistry and Electrochemistry of Corrosion and Stress Corrosion**

Sponsored by: ASM International: Materials Science Critical Technology Sector, Structural Materials Division, Corrosion and Environmental Effects Committee, Jt. Nuclear Materials Committee

Abstract due date: 6/1/2000

This symposium will include papers on the chemistry and electrochemistry of corrosion and stress corrosion cracking. Papers are solicited on a wide range of topics in stress corrosion cracking including chemistry differences between crack initiation and propagation. Submit abstracts electronically at <http://cms.tms.org> or to: Russell H. Jones, Battelle Pacific Northwest National Laboratory, Richland, WA 99352 USA T: 509-376-4276 F: 509-376-0418 Email: [rh.jones@pnl.gov](mailto:rh.jones@pnl.gov)

### **Computational Thermodynamics and Materials Design**

Sponsored by: ASM International: Materials Science Critical Technology Sector, Electronic, Magnetic & Photonic Materials Division, Structural Materials Division, Alloy Phases Committee, Jt. Computational Materials Science & Engineering, Thermodynamics & Phase Equilibria Committee

Abstract due date: 7/15/2000

On the occasion of his 70th birthday, a symposium dedicated to Dr. Larry Kaufman is being organized. Dr. Kaufman has pioneered the fields of calculation of phase diagrams (CALPHAD), which is a key component in today's computational materials design. Topics to be covered in the symposium include, but will not be limited to, the following: lattice stability, computational thermodynamics, calculation of phase diagrams, computational kinetics, materials design, and industrial applications. The symposium will consist of a keynote talk by Dr. Larry Kaufman and oral presentations. Poster presentations may be arranged depending on the response to this call. Submit abstracts electronically at <http://cms.tms.org> or to: Zi-Kui Liu, Penn State University, Materials Science and Engineering Department, University Park, PA 16802-5005 USA F: 814-865-2917 Email: [zliu@questek](mailto:zliu@questek)

### **Current Research and Practice in Metal Injection Molding**

Sponsored by: Materials Processing and Manufacturing Division, Powder Metallurgy Committee

Abstract due date: 7/15/2000

Symposium will cover current research in the area of Metal Injection Molding. Also new innovations in process or technique will be covered. Areas of interest includes new alloys development, new feedstocks, processing developments, nondestructive testing, characterization and mechanical properties. Submit abstracts electronically at <http://cms.tms.org> or to: Joseph W. Newkirk, University of Missouri-Rolla, Department of Metallurgical Engineering, Rolla, MO 65409-0340 USA T: 573-341-4725 F: 573-341-6934 Email: [jnewkirk@umr.edu](mailto:jnewkirk@umr.edu); Co-Organizers: James C. Foley, Ames Laboratory, Iowa State University, Ames, IA 50011-3020 USA T: 515-294-8252 F: 515-294-8727 Email: [foley@ameslab.gov](mailto:foley@ameslab.gov); Prabhat Kumar, H.C. Starck, Inc., Newton, MA 02161-1951 USA T: 617-630-5872 F: 617-630-5879 Email: [prabhat.kumar.b@bayer.com](mailto:prabhat.kumar.b@bayer.com)

### **Cyanide: Social, Industrial, and Economic Aspects**

Sponsored by: Extraction & Processing Division, Waste Treatment & Minimization Committee, Precious Metals Committee

Abstract due date: 7/15/2000

This symposium will focus on five major issues concerning cyanide: production and uses, processing practices, and innovations, recovery and destruction, fundamentals, and alternatives. Specific topics will also include, but are not limited to, the cyanide cycle, natural and synthetic sources, precious metal leaching, other industrial uses, non-industrial uses (e.g. medicinal, agricultural, and food purposes), chemistry, thermodynamics, spent potlines, detection, and analysis, etc. However, the symposium will also include presentations on politics and spills, as well as a subsequent panel discussion about the environmental movement that has targeted the use of cyanide in the mining industry. Is it based on hysteria or fact? Is the public receiving full information to make informed decisions or only selected information to mislead it? Initiatives passed in Montana and on the ballot in Colorado were and are being challenged in this regard. This symposium is intended for government, industrial, academic, and administrative personnel, as well as news reporters and the general public. Submit abstracts electronically at <http://cms.tms.org> or to: Courtney Young, Montana Tech, Metallurgical Engineering Department, Butte, MT 59701 USA T: 406-496-4158 F: 406-496-4133 Email: [cyoung@mtech.edu](mailto:cyoung@mtech.edu). Co-Organizers: Corby Anderson, Montana Tech, Metallurgical Engineering Department, Butte, MT, 59701 USA; Larry Twidwell, Montana Tech, Metallurgical Engineering Department, Butte, MT 59701 USA

### **Defect Properties and Mechanical Behavior of H.C.P. Metals and Alloys**

Sponsored by: ASM International: Materials Science Critical Technology Sector, Structural Materials Division, Electronic, Magnetic & Photonic Materials Division, Chemistry & Physics of Materials Committee, Jt. Nuclear Materials Committee, Titanium Committee

Abstract due date: 7/15/2000

This symposium will provide a forum to present recent results and discuss future directions of research in physical and mechanical metallurgy of h.c.p. metals and alloys. The symposium emphasizes broad scientific issues regarding the questions of general interests, such as "why beryllium is inherently so brittle" and "what makes titanium, and zirconium and their alloys so ductile"? Topics will include theory and multiscale modeling (from first principles calculations to modeling of texture evolution) as well as experimental investigations of bulk and defect properties, microstructural evolution, and deformation and fracture behavior. Topics related to unresolved scientific issues in lightweight materials (Mg, Ti, and Be) technology are also welcome. Submit abstracts electronically at <http://cms.tms.org> or to: Man H. Yoo, Oak Ridge National Laboratory, Metals and Ceramics Division, Oak Ridge, TN 37831-6115 USA T: 423-574-5165 Email: [yoo@ornl.gov](mailto:yoo@ornl.gov); Co-Organizers: James R. Morris, Ames Laboratory, Iowa State University, Ames, IA 50011-3020 USA T: 515-294-8872 F: 515-294-0689 Email: [jrmorris@ameslab.gov](mailto:jrmorris@ameslab.gov)

### **Electronic Structure and Alloy Properties-Hume Rothery Award**

Sponsored by: Electronic, Magnetic & Photonic Materials Division, Structural Materials Division, Alloy Phases Committee

Abstract due date: 7/15/2000

This two-day symposium is in honor of Prof. B. L. Gyorffy, University of Bristol, UK, who has been awarded the Hume Rothery award for 2001. This symposium will aim at presentations on theoretical work, focused on the electronic structure and related properties, within the realm of alloy and materials physics. Specific subjects to be covered include the ground-state equilibrium properties of alloys, the treatment of short-range order, the effects of charge transfer, ordering tendencies, the formation of local moments, and multilayers. Other specific topics may develop as a result of participation by scientists in fields related to the main theme of the symposium. Submit abstracts electronically at <http://cms.tms.org> or to:

Antonios Gonis, Lawrence Livermore National Laboratory, Livermore, CA 94551-0808 USA T: 925-422-7150 F: 925-423-7040 Email: gonis1@llnl.gov; Co-Organizers: Patrice E.A. Turchi, Lawrence Livermore National Laboratory, Materials Science and Technology Division, Livermore, CA 94551 USA T: 925-422-9925 F: 925-423-7040 Email: turchi1@llnl.gov

### General Abstract Sessions

Sponsored by: TMS

Abstract due date: 8/15/2000

The TMS Annual Meeting Programming Committee invites you to make plans now to present your research as part of its extensive program of general abstract sessions. In an effort to present a more comprehensive view of current work being carried on in materials science research and industry, particularly new and emerging technologies and techniques, TMS is soliciting general abstract submissions for sessions related to the following areas: alloy phases, aluminum, chemistry and physics of materials, composite materials, corrosion and environmental effects, electronic packaging and interconnection materials, polymers, powder metallurgy, precious metals, processing fundamentals, reactive metals, recycling, refractory metals, shaping and forming, solidification, superconducting materials, surface engineering, thin films and interfaces. Submit abstracts electronically at <http://cms.tms.org> or to: TMS, Programming Services, 184 Thorn Hill Road, Warrendale, PA 15086 USA T: 724-776-9000, ext. 227 F: 724-776-3770 Email: weissp@tms.org

### General Recycling

Sponsored by: Extraction & Processing Division, Light Metals Division, Recycling Committee

Abstract due date: 7/15/2000

Several sessions will cover innovative research work, advances in ongoing research, and general industrial practices from recycling of materials. Reports of work in other fields, including optimization of physical, aqueous, and thermal processing of scraps and waste; environmental and economic impacts; material selection and design based on recyclability; life-cycle analysis of materials; properties; and applications of recovered materials are welcomed. Submit abstracts electronically at <http://cms.tms.org> or to: Guy Fredrickson, Reynolds Metals Company, Smelter Technology Laboratory, Muscle Shoals, AL 35661 USA T: 256-386-9640 F: 256-386-9610 Email: glfredri@rmc.com

### Granulation of Molten Materials

Sponsored by: Pyrometallurgy Committee

Abstract due date: 7/15/2000

This symposium will explore aspects of granulation of slags, mattes, speiss, and metals. We will include topics such as launder and nozzle design through separation of the granulated material from the granulated medium submissions. Papers addressing both the fundamental aspects and practical application of granulation systems are encouraged: Submit abstracts electronically at <http://cms.tms.org> or to: John Rapkoch, Kvaerner Metals, San Ramon, CA 94583 USA T: 925-866-6397 F: 925-244-6020 Email: john.rapkoch@kvaerner.com; Co-Organizers: James Stevenson, Unifield Engineering, Inc., Billings, MT 59101 USA T: 406-245-4455 F: 406-245-7112 Email: jstevens@unifield.com

### High Temperature Coatings-IV

Sponsored by: Materials Processing and Manufacturing Division, ASM International: Materials Science Critical Technology Sector, Structural Materials Division, Corrosion and Environmental Effects Committee, Surface Engineering Committee

Abstract due date: 7/15/2000

This symposium is intended to focus on processing and characterization of high temperature coatings with regard to engineering and physical and chemical properties. The symposia will include synthesis of new unconventional materials. Various existing methods along with novel and innovative techniques of producing coatings and their applications will be addressed. Submit abstracts electronically at <http://cms.tms.org> or to: Narendra B. Dahotre, University of Tennessee Space Institute, Center for Laser Applications, Tullahoma, TN 37388 USA T: 931-393-7495 F: 931-454-2271 Email: ndahotre@utsi.edu; Co-Organizers: Janet Hampikian, Georgia Institute of Technology, School of Materials Science and Engineering, Atlanta, GA 30332-0245 USA T: 404-894-2845 F: 404-894-9140 Email: janet.hampikian@mse.gatech.edu

### High Temperature Superconductors

Sponsored by: Electronic, Magnetic & Photonic Materials Division, Structural Materials Division, Superconducting Materials Committee

Abstract due date: 7/10/2000

The purpose of this symposium is to bring together those actively engaged in synthesis, fabrication, characterization, and applications of high-temperature superconductors to present their recent results and discuss the future prospects and directions for R&D. Topics include but not limited to: Coated conductors (substrates, buffer, superconductor, and protective layer/stabilizer preparation techniques); Bi-based superconductors (powder-in-tube, thick/thin film, bulk); Tl- and Hg-based superconductors (film, bulk); Characterization of superconductors; Microstructure-property relationships; Phase-equilibria; and Electronic and Electric Power applications. Submit abstracts electronically at <http://cms.tms.org> or to: U. Balu Balachandran, Argonne National Laboratory, Argonne, IL 60439 USA T: 630-252-4250 F: 630-252-3604 Email: balu@anl.gov; Co-Organizers: Pradeep Haldar, Intermagnetics General Corporation, Latham, NY 12110-0461 USA T: 518-782-1122 F: 518-783-2615 Email: 102121.2300@compuserve.com; Chandra Pande, Naval Research Laboratory, Materials Science and Technology Division, Washington, DC 20375-5000 USA T: 202-767-2744 F: 202-767-2623 Email: pande@anvil.nrl.navy.mil

### International Symposium on Deformation and Microstructure in Intermetallics

Sponsored by: Structural Materials Division, ASM International: Materials Science Critical Technology Sector, Physical Metallurgy Committee, Jt. Mechanical Behavior of Materials

Abstract due date: 7/15/2000

Understanding of deformation and microstructure characteristics at/above room temperature has been a key issue for applications of intermetallics as structural materials. This symposium provides a forum for reporting recent progress and discussing unresolved issues in plastic deformation, creep, fatigue, and fracture of the materials. The emphasis is placed on macro- and micro-mechanisms associated with the deformation and fracture behavior at ambient and high temperatures. This symposium calls for papers of theoretical and modeling (meso-scopic) results as well as experimental works specifically related to microstructural characteristics such as slip, twinning, slip/twin-interface interactions,

grain boundary sliding, and crack-tip plasticity and transformation. The papers will be published in TMS proceedings. Submit abstracts electronically at <http://cms.tms.org> or to Sung H. Whang, Polytechnic University, Department of Mechanical Engineering, Brooklyn, NY 11201 USA T: 718-2603144 F: 718-260-3532 Email: [swhang@poly.edu](mailto:swhang@poly.edu); Co-Organizers: Peter M. Hazzledine, UES Inc., Dayton, OH 45432 USA T: 937-255-9837 F: 937-476-7292 Email: [hazzlep@picard.mil.wpath.af.mil](mailto:hazzlep@picard.mil.wpath.af.mil)

### **International Symposium on Shape Casting of Aluminum: Science and Technology**

Sponsored by: Light Metals Division, Materials Processing and Manufacturing Division, Structural Materials Division, ASM International: Materials Science Critical Technology Sector, Aluminum Committee, Non-Ferrous Metals Committee, Solidification Committee, Jt. Mechanical Behavior of Materials

Abstract due date: 7/15/2000

This symposium will provide a review of the state-of-the art in technology and science of shape casting of aluminum alloys. Topics will range from overviews of important problems and technological/industrial trends to fundamentals of solidification and processing-structure-property relationships, modeling methods and advances in industrial practices for Al-Si and Al-Si-Cu alloys. Submit abstracts electronically at <http://cms.tms.org> or to: John E. Allison, Ford Motor Company, Scientific Research Laboratory, Dearborn, MI 48124-2053 USA T: 313-845-7224 F: 313-390-0514 Email: [jalliso2@ford.com](mailto:jalliso2@ford.com); Co-Organizers: Dan Bryant, Reynolds Metals Company, Chester, VA 23836-3122 USA T: 804-751-2519 Email: [jdbryan1@rmc.com](mailto:jdbryan1@rmc.com); Jon Dantzig, University of Illinois, Department of Mechanical and Industrial Engineering, Urbana, IL 61801-2906 USA T: 217-333-4107 Email: [dantzig@uiuc.edu](mailto:dantzig@uiuc.edu); Ray D. Peterson, IMCO Recycling, Inc., Rockwood, TN 37854 USA T: 423-354-6375 F: 423-354-9983 Email: [rpeter@imco.recycling.com](mailto:rpeter@imco.recycling.com)

### **Lead-Free Solder Materials and Soldering Technologies**

Sponsored by: Electronic, Magnetic & Photonic Materials Division, Electronic Packaging and Interconnection Materials Committee

Abstract due date: 7/15/2000

The focus of this symposium will be on emerging and established lead-free and lead-bearing solders, metallizations (board and

component finishes) and soldering processes for electronic, optical/optoelectronic and MEMS packaging. This symposium will address the materials and manufacturing aspects of alloy design of solders, structure-property-processing relationships of bulk solders as well as solder joints, influence of surface and underbump metallization on solderability and reliability of solder joints, microstructure modeling and control, reliability modeling and testing methodologies of electronic, MEMS and optical/optoelectronic packages. The symposium will also cover lead-free materials for metal-semiconductor contacts, alternative interconnect technology for stress management at both wafer-level and chip to package level, and the issues involved in the design and integration of conductive adhesives in electronic packages. Topics related to lead-free soldering in optoelectronic and microelectronic packages, such as BGA, micro-BGA, chip-scale etc. are also of special interest. The proceedings will be published as a special issue of J. of Electronic Materials. The manuscripts will be due at the symposium; however to expedite the review procedure you are encouraged to submit the manuscript (one original and one copy) one month before the symposium. There is no page limitation but the style should conform to that of JEM. The manuscripts will be peer reviewed and then considered for publication. Submit abstracts electronically at <http://cms.tms.org> or to: Sung Kang, IBM, TJ Watson Research Center, Yorktown Heights, NY 10598 USA T: 914-945-3932 F: 914-945-2141 Email: [kang@watson.ibm.com](mailto:kang@watson.ibm.com); Co-Organizers: Srinu Chada, Motorola, Department APTC, Plantation, FL 33322 USA F: 954-723-5554 Email: [drschada@hotmail.com](mailto:drschada@hotmail.com); C. Robert Kao, National Central University, Department of Chemical Engineering, Chungli City, Taiwan T: 886-34-227-382 F: 886-34-227-382 Email: [crkao@hotmail.com](mailto:crkao@hotmail.com); Hareesh Mavoori, Bell Laboratories, Murray Hill, NJ 07974 USA T: 908-582-2558 F: 908-582-4868 Email: [hareesh@allwise.lucent](mailto:hareesh@allwise.lucent); Ronald W. Smith, Materials Resources International, North Wales, PA 19454 USA

### **Light Weight Alloys for Aerospace Applications**

Sponsored by: Structural Materials Division, Non-Ferrous Metals Committee

Abstract due date: 7/15/2000

The scope of this symposium is to cover advances made in the area of scientific understanding and technological applications of lightweight alloys. Authors are encouraged to submit papers focussing on fundamental science as well as application areas. Materials of interest will include: aluminum, titanium, magnesium, beryllium,

and their composites. Processing, structure-property relationship, failure mechanisms and advanced joining themes are highly encouraged. Submit abstracts electronically at <http://cms.tms.org> or to: Eui W. Lee, Naval Air Warfare Center, Code 4342, MS5, Patuxent River, MD 20670 USA T: 301-342-8071 F: 301-342-8120 Email: [LeeEW@navair.navy.mil](mailto:LeeEW@navair.navy.mil); Co-Organizers: William Frazier, Naval Air Warfare Center, Aircraft Division, Patuxent River, MD 20670-1908 USA T: 301-342-8003 F: 301-342-8062 Email: [FrazierWE@navair.navy.mil](mailto:FrazierWE@navair.navy.mil); Kumar Jata, Wright-Patterson Air Force Base, WL-MLS, Dayton, OH 45433-7718 USA T: 937-255-1304 F: 937-255-3007 Email: [kumar.jata@ml.af.mil](mailto:kumar.jata@ml.af.mil); Nack J. Kim, Center for Advanced Aerospace Materials, Pohang 790-330 Korea T: 0562-279-2135 F: 0562-279-2399 Email: [njkim@postech.ac.kr](mailto:njkim@postech.ac.kr)

### **Magnesium Technology 2001**

Sponsored by: Light Metals Division, ASM International: Materials Science Critical Technology Sector, Structural Materials Division, Corrosion and Environmental Effects Committee, International Magnesium Association, Reactive Metals Committee

Abstract due date: 7/15/2000

This second annual symposium will address science and technology issues associated with all aspects of magnesium production and use. The symposium will include a session honoring the memory of Lloyd Pidgeon, developer of the Pidgeon process for magnesium production. Papers are solicited on all aspects of extraction and processing, physical and mechanical properties, alloy development, and applications. Potential session topics include but are not limited to the following. 1. Lloyd Pidgeon Memorial Session: Magnesium Reduction; 2. Fundamentals of Magnesium Production; 3. Materials for Magnesium Production; 4. Environmental Issues; 5. Casting and Solidification; 6. Alloy Development: Structural, Thixo, and Wrought Alloys; 7. Magnesium and Corrosion: Cathodic Protection and Corrosion Resistant Alloys; 8. Alloy Properties and New Applications; 9. Magnesium and the Automotive Industry. Submit abstracts electronically at <http://cms.tms.org> or to: John N. Hryn, Argonne National Laboratory, Argonne, IL 60439-4815 USA T: 630-252-5894 F: 630-252-1342 Email: [hryn@anl.gov](mailto:hryn@anl.gov); Co-Organizers: Byron B. Clow, International Magnesium Association, McLean, VA 22101 USA T: 703-442-8888 Email: [ima@bellatlantic.net](mailto:ima@bellatlantic.net); David Creber, Alcan International Limited, Kingston R&D Center, Kingston, Ontario K7L 5L9 Canada T: 613-541-2188 F: 613-541-2265 Email: [David.Creber@alcan.com](mailto:David.Creber@alcan.com); Russell H. Jones, Battelle Pacific

Northwest National Laboratory, Richland, WA 99352 USA T: 509-376-4276 F: 509-376-0418 Email: rh.jones@pnl.gov; Ramaswami Neelameggham, Magnesium Corporation of America, Salt Lake City, UT 84116 USA T: 801-532-1522, ext. 280 F: 801-596-1132 Email: rneelameggham@magnesiumcorp.com; Eric A. Nyberg, Pacific Northwest National Laboratory, Materials Processing Group, Richland, WA 99352 USA T: 509-372-2510 F: 509-376-6034 Email: eric.nyberg@pnl.gov; Mihriban O. Pekguleryz, Noranda, Noranda Technology Centre, Pointe-Claire, Quebec H9R 1G5 Canada T: 514-630-9339 F: 514-630-9379 Email: pekguleryz@ntc.noranda.com; Kevin Watson, Noranda, Noranda Technology Centre, Pointe-Claire, Quebec H7R 1G5 Canada T: 514-630-9553 F: 514-630-9379 Email: watson@ntc.noranda.com

### Materials Issues in Microelectronics

Sponsored by: Electronic, Magnetic & Photonic Materials Division, Electronic Packaging and Interconnection Materials Committee

Abstract due date: 7/15/2000

This symposium will explore various aspects of electronic interconnection technology that are of current concern. Topics to be emphasized will be: interfacial reactions at all levels of packaging including connector, solder and metallization interfaces; optical interconnection and packaging; packaging for MEMS. In addition, papers are welcome in areas related to material issues for high conductivity connector alloys, wire-bonding, BGA, MCM, microwave and antenna devices, various thermal management technologies, and future approaches to high density packaging. Submit abstracts electronically at <http://cms.tms.org> or to: Michael R. Notis, Lehigh University, Department of Materials Science, Bethlehem, PA 18015 USA T: 610-758-4225 F: 610-758-4244 Email: mrnl@lehigh.edu; Co-Organizers: Martin Weiser, AlliedSignal Electronic Materials, Plated and Discrete Products, Spokane, WA 99216 USA T: 509-252-2757 F: 509-252-8617 Email: weisemw@jmspk.com; Jin Yu, KAIST, Department of Materials Science, Seoul, Korea T: 011-82-2-958-3513 F: 011-82-2-958-3553 Email: jinyu@cais.kaist.ac.kr

### Materials Processing Fundamentals

Sponsored by: Extraction & Processing Division, Materials Processing and Manufacturing Division, Process Fundamentals Committee, Jt. Processing Modeling Analysis & Control Committee

Abstract due date: 7/15/2000

This symposium will cover all aspects of the fundamentals, synthesis, analysis, design, monitoring, and control of metals, materials, and metallurgical processes and phenomena. Topics include the experimental, analytical, and computer modeling aspects of the physical chemistry, thermodynamics, and transport phenomena in materials and metallurgical processes as well as monitoring and control methodologies involved in these processes. Research relating to processes involving iron and steel, nonferrous metals, or lightweight alloys and topics that relate to process monitoring and control involving laboratory or in-plant validation are especially encouraged. Submit abstracts electronically at <http://cms.tms.org> or to: P. N. Anyalebechi, ALCOA, Ingot and Solidification Platform, Alcoa Center, PA 15069-0001 USA T: 724-337-2467 F: 724-337-4083 Email: princewill.anyalebechi@alcoa.com; Co-Organizers: A. Powell, MIT

### Materials & Processes for Submicron Technology

Sponsored by: Electronic, Magnetic & Photonic Materials Division, Thin Films & Interfaces Committee, MSCTS

Abstract due date: 7/15/2000

Advances in microelectronic devices are directly related to the reduction in size of the electronic devices and interconnections down to the submicron size. The purpose of the symposium is to provide an interactive forum of multidisciplinary discussion on the science and technology of advanced materials and processing issues in microelectronic device fabrication. Specific topics include, but are not limited to: Advanced Metallization: new materials and processes for metallization and interconnects, deposition kinetics, film properties related to performance, process and control and integration; Advanced Dielectrics: new organic and inorganic dielectrics, low-dielectric constant materials; High-K Materials for Gate Dielectrics: processing and characterization of barium strontium titanate, tantalum pentaoxide, titanium oxide, etc.; Chemical Mechanical Polishing: CMP theory, modeling and simulation, parametric analysis of polishing sensitivities and integration of CMP into process flow; Silicides: formation kinetics and stability of silicide phases, silicide processing, process integration, and next-generation sili-

cide technology; Silicon Contact Technology: barrier processing, metal fill processes, and process integration for high-aspect ratio contacts and shallow-junction devices; Reliability Issues: gate dielectrics, electromigration in contacts and substrates; and Integrated Processing: sequential multichamber processing, real time monitoring, ultraclean processing, low temperature epitaxy. Submit abstracts electronically at <http://cms.tms.org> or to: N. (Ravi) M. Ravindra, New Jersey Institute of Technology, University Heights, Newark, NJ 07102-1982 USA T: 973-596-3278 F: 973-642-4978 Email: nm.ravindra@home.com; Co-Organizers: Mark Anthony, University of South Florida, College of Engineering, Tampa, FL 33620 USA T: 813-974-2096 F: 813-974-3610 Email: manthony@eng.usf.edu; Ashok Kumar, University of South Florida, Department of Mechanical Engineering, Tampa, FL 33620 USA T: 813-974-3942 F: 813-974-3610 Email: akumar1@eng.usf.edu; Sailesh Merchant, Lucent Technologies, Orlando, FL 32819 USA T: 407-371-7538 F: 407-371-7566 Email: smerchant@lucent.com; John Sanchez, University of Michigan, College of Engineering, Ann Arbor, MI 48109-2136 USA T: 734-763-2595 F: 734-763-4708 Email: jsanchez@eng.umich.edu

### Properties of Nanocrystalline Materials

Sponsored by: ASM International: Materials Science Critical Technology Sector, Structural Materials Division, Jt. Mechanical Behavior of Materials

Abstract due date: 7/15/2000

In recent years, a wide range of nanocrystalline materials has been synthesized to engineer desired properties such as mechanical, chemical, catalytic, electrical, magnetic, and optical properties. These properties have shown a strong processing dependence. This symposium will provide a forum to address characterization of these properties, processing-property relationship, structure-property relationship, and the relationship among properties in a broad spectrum of nanocrystalline materials. This symposium also calls for papers in the related areas that include theories, computer simulations, industrial applications, new characterization techniques and approaches, etc. Submit abstracts electronically at <http://cms.tms.org> or to: Sung H. Whang, Polytechnic University, Department of Mechanical Engineering, Brooklyn, NY 11201 USA T: 718-260-3144 F: 718-260-3532 Email: swhang@poly.edu; Co-Organizers: Horst W. Hahn, Technische Hochschule Darmstadt, Darmstadt D-64287 Germany Email: hhahn@hrzpub.tudarmstadt.de; Robert D. Shull, NIST, 855.11, Gaithersburg, MD 20899-8552 USA T:



301-975-6035 F: 301-975-4553 Email: robert.shull@nist.gov

### **Purification of Nonferrous Elements**

Sponsored by: Extraction & Processing Division, Copper, Nickel, Cobalt Committee

Abstract due date: 6/30/2000

Presentations in this session will focus on the post-reduction purification of nonferrous metals for value-added applications. Elements of particular interest are the metalloids (As, Bi, Ga, Ge, In, Sb, Se, Te), and ultrapurification of transition metals. Submit abstracts electronically at <http://cms.tms.org> or to: Mark E. Schlesinger, University of Missouri, Department of Metallurgical Engineering, Rolla, MO 65409-0001 USA T: 573-341-4791 F: 573-341-6934 Email: mes@umr.edu

### **Reactive Metals-General Sessions**

Sponsored by: Light Metals Division, Reactive Metals Committee

Abstract due date: 7/15/2000

Papers are solicited on all aspects of the extractions, separation, purification preparation, production and application of reactive metals, including alkali metals, alkaline-earth metals, groups 4-6 refractory metals (Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W) rare earths, actinides, and the elements Ga, Ge, As, Se, In, Sb, Ta, Tl, Bi and Be. Accepted papers will be published in Light Metals. Submit abstracts electronically at <http://cms.tms.org> or to: John N. Hryn, Argonne National Laboratory, Argonne, IL 60439-4815 USA T: 630-252-5894 F: 630-252-1342 Email: hryn@anl.gov; Co-Organizers: Sean M. McDevitt, Argonne National Laboratory, Chemical Technology Division, Argonne, IL 60439-4837 USA T: 630-252-4308 F: 630-252-9917 Email: mcdevitt@cmt.anl.gov

### **Review and Optimization of Actual Copper Electrowinning Practice**

Sponsored by: Extraction & Processing Division, Aqueous Processing Committee, Copper, Nickel, Cobalt Committee

Abstract due date: 7/31/2000

This symposium will review the practice of copper electrowinning and recent implementation of improvements in copper electrowinning plant operations. The topics addressed are: the control of iron, minimization of electrolyte bleed-off and its treatment, effects of presence of manganese, reduction of cobalt losses, nitrate and chlo-

ride in copper electrolyte, effects on anodes, addition agents and acid mist control, etc. Submit abstracts electronically at <http://cms.tms.org> or to: Norbert L. Piret, Piret & Stolberg Partners, Duisburg 47279 Germany T: 49-203-722396 F: 49-203-723947 Email: nlp.p-sp.dbg@t-online.de; Co-Organizers: Akram Alfantazi, Laurentian University, School of Engineering, Ontario P3E 2C6 Canada T: 705-675-1151 2274, ext. 2274 F: 705-675-4862 Email: aalfantazi@nickel.laurentian.ca

### **Sampling, Sensors & Control for High Temperature Metallurgical Processes**

Sponsored by: Light Metals Division, Extraction & Processing Division, Materials Processing and Manufacturing Division, Aluminum Committee, Pyrometallurgy Committee, Jt. Processing Modeling Analysis & Control Committee

Abstract due date: 7/15/2000

This symposium will consider current difficulties and new developments such as: representative sampling and subsequent analysis and data reconciliation; sensors (including physical and inferential or safe sensors); modeling for control and the integration of sampling, sensors and control as applied to high temperature metallurgical processes utilizing molten metals, slags, molten salts and gases. Submit abstracts electronically at <http://cms.tms.org> or to: Adrian Deneys, Praxair Incorporated, Tarrytown, NY 10591 USA T: 914-345-6908 F: 914-345-6486 Email: adrian\_deneys@praxair.com; Co-Organizers: Derek Fray, University of Cambridge, Department of Materials Science and Metallurgy, Cambridge CB2 3Q2 United Kingdom T: 011-00440-1223-334306 F: 011-0040-1223-334567 Email: djf25@cam.ac.uk; Matt Krane, Purdue University, Department of Materials Engineering, West Lafayette, IN 47907 USA T: 765-494-4107 F: 765-494-1204 Email: krane@ecn.purdue.edu; Markus Reuter, Delft University of Technology, Applied Earth Sciences, Delft 2628 RX, The Netherlands T: 31-152-78-1636 F: 31-152-78-2836 Email: secr.gti@ta.tudelft.nl; Fiona Stevens McFadden, 4175 Valley Road, Mt. Eden, Auckland, New Zealand, T: 011 649 3737599 x 5815, Email: f.stevens@auckland.ac.nz

### **Second Global Symposium on Innovations in Material Processing & Manufacturing: Sheet Materials**

Sponsored by: Materials Processing and Manufacturing Division, Powder Metallurgy Committee, Shaping and Forming Committee, Solidification Committee

Abstract due date: 7/15/2000

The purpose of this inter-disciplinary conference is to bring together worldwide state-of-the-art developments in the field of science and technology in the processing and manufacturing of sheet materials. Emphasis will be given to new sheet materials made from ferrous and non-ferrous metals, laminates, polymers, composites and reinforced plastics. The manufacturing and processing of sheet material should be related to applications in the automotive, aerospace and appliance industries. The conference will provide a forum for presenting advances in sheet processing and manufacturing by researchers and engineers from industry, research centers and academia. Both invited and contributed papers will be included. Invited papers will give comprehensive overviews of the current status and future directions for research. Contributed papers will cover research on specific topics of interest. Submit abstracts electronically at <http://cms.tms.org> or to: Mahmoud Y. Demeri, Ford Motor Company, Manufacturing Systems Department, Northville, MI 48167 USA T: 313-845-6092 F: 313-390-0514 Email: mdemeri@ford.com; Co-Organizers: Iver Anderson, Iowa State University, Ames Laboratory, Ames, IA 50011-3020 USA T: 515-294-8252 F: 515-294-8727 Email: andersoni@ameslab.gov; David L. Bourell, University of Texas, Mechanical Engineering Department, Austin, TX 78712-1063 USA T: 512-471-3170 F: 512-471-7681 Email: dbourell@mail.utexas.edu; Amit K. Ghosh, University of Michigan, Department of Materials Science and Engineering, Ann Arbor, MI 48109-2136 USA T: 313-764-3322 F: 313-763-4788 Email: akg@umich.edu; John Papazian, Northrup Grumman; Klaus Siebert, University of Stuttgart

### **Solution Concentration and Purification in Aqueous Processing**

Sponsored by: Extraction & Processing Division, Aqueous Processing Committee

Abstract due date: 7/15/2000

This symposium will cover all aspects of solution concentration and purification in aqueous processing of metals and minerals. The symposium will focus on the fundamental and practical aspects in the processing of non-ferrous metals (Ni, Co, Cu, Zn, Pb, etc.) and precious metals (Ag, Au,

etc.). Topics of special emphasis will include solvent extraction, ion exchange, precipitation, cementation, adsorption, electrochemical methods, and environmental issues. A general session will be devoted to all other general applications of solution concentration and purification in hydrometallurgy. Submit abstracts electronically at <http://cms.tms.org> or to: Akram Alfantazi, Laurentian University, School of Engineering, Ontario P3E 2C6 Canada T: 705-675-1151, ext. 2274 F: 705-675-4862 Email: [aalfantazi@nickel.laurentian.ca](mailto:aalfantazi@nickel.laurentian.ca)

### **Structural Biomaterials for the 21st Century**

Sponsored by: Structural Materials Division, ASM International: Materials Science Critical Technology Sector, Corrosion and Environmental Effects Committee, Structural Materials Committee, Titanium Committee

Abstract due date: 7/15/2000

This symposia is intended to provide an overview of the latest technologies and applications of structural metallic, ceramic, plastic, and composite biomaterials leading into the next millennium. The scope of the presentations can include discussions of materials, special processes, specific applications, or biological environment and fatigue/wear response. Participants from industry as well as research institutions and universities are strongly encouraged to present. Submit abstracts electronically at <http://cms.tms.org> or to: Henry J. Rack, Clemson University, School of Chemical and Materials Science, Clemson, SC 29634-0921 USA T: 864-656-5636 F: 864-656-4461 Email: [rackh@ces.clemson.edu](mailto:rackh@ces.clemson.edu); Co-Organizers: Donald R. Lesuer, Lawrence Livermore National Laboratory, Livermore, CA 94550 USA T: 925-422-9633 F: 925-422-2527 Email: [lesuer1@llnl.gov](mailto:lesuer1@llnl.gov); Eric M. Taleff, University of Texas, Mechanical Engineering Department, Austin, TX 78712-1063 USA T: 512-471-5378 F: 512-471-7681 Email: [taleff@mail.utexas.edu](mailto:taleff@mail.utexas.edu)

### **Synthesis of Lightweight Metals IV**

Sponsored by: Light Metals Division, Structural Materials Division, Aluminum Committee, Titanium Committee

Abstract due date: 6/15/2000

The symposium will address recent advances in the synthesis and processing of lightweight metallic materials. Thus the focus of papers should be on the methods used to develop new and improved materials. It is envisioned that the majority of the papers will consider the low density materials aluminum, magnesium, titanium

and beryllium and composites based on these metals. Synthesis methods such as rapid solidification, mechanical alloying and vapour deposition will be addressed. Spray methods including co-spraying will be included. Plasma and other high energy techniques such as electron beam techniques will be addressed. Nanostructured materials, combustion synthesis and metal matrix composites will be covered. Other synthesis/processing methods will include thermochemical processing (use of hydrogen as a temporary alloying element) and other methods under the general umbrella of the theme of the symposium. The synthesis/processing methods to be covered will also encompass advances in ingot/casting techniques such as direct production of sheet/strip and melting methods such as electron beam and plasma melting. Innovative "conventional" processing techniques such as rolling, extrusion, forging, and drawing will also be included. It is planned that the proceedings will be published. Submit abstracts electronically at <http://cms.tms.org> or to: C.M. Ward Close, DERA Farnborough, Structural Materials Center, Farnborough, Hampshire GU114OLX UK T: 44-1252-392540 F: 44-1252-397303. Co-Organizers: Helena Carvalho, INETI, Department of Materials, Lisboa, Codex, Portugal T: 351-1-716-5141 F: 351-1-716-0901 Email: [Helena.Carvalho@imp.ineti.pt](mailto:Helena.Carvalho@imp.ineti.pt); C.M. Ward Close, DERA Farnborough, Structural Materials Center, Farnborough, Hampshire GU114OLX UK T: 44-1252-392540 F: 44-1252-397303; James Cotton, The Boeing Company, Seattle, WA 98124-2499 USA T: 425-234-2681 F: 425-234-2863 Email: [James.Cotton@PSSBoeing.com](mailto:James.Cotton@PSSBoeing.com); F. H. (Sam) Froes, University of Idaho, IMAP-Mines Building 321, Moscow, ID 83844-3026 USA T: 208-885-7989 F: 208-885-4009 Email: [imap@uidaho.edu](mailto:imap@uidaho.edu)

### **Teaching and Learning Solid State Diffusion**

Sponsored by: ASM International: Materials Science Critical Technology Sector, Atomic Transport Committee

Abstract due date: 7/15/2000

Solid state diffusion is a critical process in many manufacturing operations including: the formation and adhesion of coatings, liquid-solid phase transformations, corrosion and solid state transformations. Atom movements, solutions of the diffusion equation, measurement of diffusion coefficients and multicomponent diffusion are taught in introductory materials courses and in higher level undergraduate courses dealing with kinetics and phase transformations. At the graduate level it is common to devote a full course to this topic. The purpose of this symposium is to create a forum for the exchange of ideas and informa-

tion among faculty who teach solid state diffusion at both the undergraduate and graduate level. Submit abstracts electronically at <http://cms.tms.org> or to: Richard D. Sisson, Worcester Polytechnic Institute, Materials Science and Engineering Department, Worcester, MA 01609 USA T: 508-831-5335 Email: [session@wpi.edu](mailto:session@wpi.edu); Co-Organizers: Joe I. Goldstein, University of Massachusetts, Department of Engineering, Amherst, MA 01020 USA; John Morral, University of Connecticut, Department of Metallurgy, Storrs, CT 6260 USA T: 860-486-2923 F: 860-486-4745 Email: [jmorral@emet.ims.uconn.edu](mailto:jmorral@emet.ims.uconn.edu)

## FUTURE MEETING SITES

MEETING	DATE	LOCATION
<b>Annual Meeting and Exhibition:</b>		
More than 1,000 technical presentations and 30,000 square feet of exhibitions will detail the latest advances and most critical developments in minerals, metals, and materials science and technology.		
2001 - New Orleans, LA	February 11-15	Ernest Morial Convention Center
2002 - Seattle, WA	February 17-21	Wash. State Conv. & Trade Center
2003 - San Diego, CA	March 2-6	San Diego Convention Center
2004 - Charlotte, NC	March 21-25	Charlotte Convention Center
<b>Fall Meeting: Physical Metallurgy and Materials:</b>		
A program focusing on new developments in materials research and applications held in conjunction with ASM's Materials Week and the Materials Expo.		
2000 - St. Louis, MO	October 8-12	Regal Riverfront Hotel
2001 - Indianapolis, IN	November 4-8	Westin Hotel
<b>Fall Extraction &amp; Process Metallurgy Meeting:</b>		
2000 - Pittsburgh, PA	October 22-25	Pittsburgh Hilton Hotel
<i>New Technologies for the Next Millennium (Combining Lead-Zinc 2000 and Recycling of Metals and Engineered Materials)</i>		
2001 - San Diego, CA	September 23-27	San Diego Hilton Resort
<i>Computational Modeling of Materials, Minerals and Metals Processing</i>		
<b>Electronic Materials Conference:</b>		
The annual forum devoted to discussion of preparation and characterization of electronic materials.		
2000 - Denver, CO	June 21-23	University of Denver
2001 - Notre Dame, IN	June 27-29	University of Notre Dame
<b>Topical Conferences:</b>		
2000 - Denver, CO	June 19-21	University of Denver
<i>Device Research Conference</i>		
2000 - Cambridge, MA	June 28-30	Massachusetts Institute of Technology
<i>Merton C. Flemings Honorary Symposium</i>		
2000 - Vancouver, British Columbia	July 16-20	The Westin Bayshore Hotel
<i>Fifth International Conference on Structural and Functional Intermetallics</i>		
2000 - San Francisco, CA	November 5-8	Renaissance Parc 55 Hotel
<i>Second International Conference on Processing Materials for Properties (PMP2)</i>		
2001 - San Diego, CA	March 11-14	San Diego Hilton Resort
<i>Organometallic Vapor Phase Epitaxy Conference (OMVPE)</i>		
2001 - Coronado, CA	April 22-25	Coronado Island Marriott Resort
<i>Materials and Science in Sports</i>		
2001 - Pittsburgh, PA	June 17-20	Embassy Suites Hotel
<i>Fifth International Special Emphasis Symposium on Superalloys 718, 625, 706 and Derivatives</i>		
2001 - Jackson Hole, WY	September 23-27	Snow King Resort
<i>International Symposium on Structural Intermetallics - 3</i>		

For more information on any of these conferences, please contact:

TMS Meeting Services Department  
184-4 Thorn Hill Road  
Warrendale, PA 15086

Telephone: (724) 776-9000, ext. 243  
Fax: (724) 776-3770  
E-Mail: [mtgserv@tms.org](mailto:mtgserv@tms.org)

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