Three "HOT TOPIC" Symposia Added to the 2004 TMS Annual Meeting & Exhibition Program

The 2004 TMS Annual Meeting & Exhibition will be a showcase of today's most dynamic materials technologies, issues, and advancements. In an effort to present the most current developments in the most topical and active areas of research and practical application, TMS has recently added the following symposia to its 2004 line-up:

NANOSTRUCTURED MAGNETIC MATERIALS

Sponsored by TMS and the Electronic, Magnetic & Photonic Materials Division, EMPMD Superconducting and Magnetic Materials Committee

Abstract due date: 7/15/03

This symposium will highlight recent scientific results and technological advances in the field of nanostructured magnetic materials and devices. Topics will include, but are not limited to, the following: (i) Self-Assembly and Nanomagnetism (ii) Magnetic Thin Films and Surfaces (iii) Ferromagnetic Semiconductors (iv) GMR and Spin-dependent Tunneling. Special focus will be on the fundamental studies of growth, structure, magnetic properties, and spin dynamics with particular emphasis on spintronic devices, GMR materials and magnetic recording media. Publication of a proceedings volume is planned. Submit abstracts electronically at http://cms.tms.org.

Organized by: Ashutosh Tiwari, North Carolina State University, atiwari@unity.ncsu.edu, Rasmi R. Das, University of Puerto Rico, aa982140@upracd.upr.clu, and Ramamoorthy Ramesh, University of Maryland, rr136@umail.umd.edu

MATERIALS ISSUES IN FUEL CELLS

Sponsored by TMS

Abstract due date: 10/31/03

Fuel cells are at the threshold of becoming one of the most viable forms of energy conversion devices. Energy can be harnessed through fuel cells for applications in many commercial sectors. The government and the industry have made a concerted commitment to make a profound impact on energy management. Many types of fuel cell devices are being developed globally. For fuel cells to potentially deliver the economic alternative that it envisages, significant material challenges have to be overcome in the near future. TMS invites abstracts on this 'hot-topic' from scientists and engineers to address the materials issues in fuel cells development. This session will include plenary lectures from leading experts and imminent researchers who will present a comprehensive analysis of materials challenges in fuel cells. Papers are invited to describe the state-of-the-art in fuel cells research and development from a materials perspective. The papers will be published in *JOM*. Submit abstracts electronically at http://cms.tms.org.

Organized by: Brajendra Mishra, Colorado School of Mines, bmishra@mines.edu and John M. Parsey, Jr., ATMI, jparsey@atmi.com

ADVANCED MATERIALS IN RACECARS

Sponsored by TMS

Abstract due date: 10/31/03

Stock Car Auto Racing is a powerful, challenging and exciting sport. Present day racecars are engineering marvels that get pushed to their performance limits. Speed and safety are of paramount concern that must be delivered by the sound and sturdy structure. Materials design and performance challenges are encountered in the frame, the body, the engine, the tire and the on-board devices. To learn about the materials issues in the fascinating world of racecars, TMS announces a 'Hot-Topic' Symposium on Advanced Materials in Racecars. Experts from the field of racecar design, development and engineering will present invited plenary talks. Presentations are also invited on racecar-related material issues to address the novel advanced developments. The papers will be published in *JOM*. Submit abstracts electronically at http://cms.tms.org.

Organized by: Brajendra Mishra, Colorado School of Mines, bmishra@mines.edu and John M. Parsey, Jr., ATMI, jparsey@atmi.com

In addition—the Light Metals Division will once again be including a unique session on Potroom Improvements as part of the Aluminum Reduction Program

ALUMINUM REDUCTION – POTROOM IMPROVEMENTS

Sponsored by the Light Metals Division and the LMD Aluminum Committee

Abstract due date: 08/15/03

The primary goal of the special TMS session, "Aluminum Reduction - Potroom Improvements", is to promote increased participation by the active professionals who work at international aluminum smelters in making presentations at the annual TMS meetings. To make it easier to participate, no formal technical manuscript is required to make a presentation in this special session at the annual 2004 TMS Annual Meeting in Charlotte, NC.

Requirements: 1) Authors must work at an aluminum smelter in order to participate in this special TMS session. 2) Authors should submit abstracts via the TMS Conference Management System (CMS) at http://cms.tms.org, with an August 15, 2003 deadline. 3) Authors are required to prepare and submit a PowerPoint presentation using a TMS template; deadline will be announced later. 4) Presentation will be reviewed and accepted by the TMS Program Organizer and Session Chair based on their significance, innovation, importance in achieving performance gains and industrial impact. 5) All presentations in this special session will be put onto a CD-ROM and sold by TMS at the annual meeting. 6) Authors are required to attend the annual TMS meeting and make their presentation in order to have it included on the CD-ROM.

Organized by: Alton T. Tabereaux, Alcoa Inc., Alton.Tabereaux@alcoa.com and Tom Alcorn, Century Aluminum, talcorn@centuryky.com

TMS2004

133rd Annual Meeting & Exhibition

Bringing technology into applied perspectives.

TMS2004

133rd Annual Meeting & Exhibition

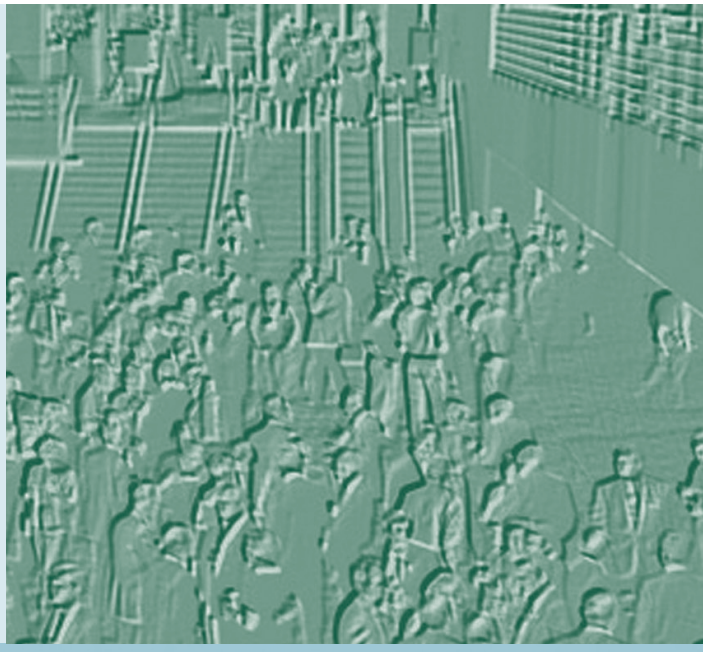
Bringing Technological Innovations into an Applied Perspective

March 14–18, 2004

Charlotte Convention Center

Charlotte, North Carolina,

USA



Featuring Programming in the Following Conference Tracks–

- Advanced Materials
- Electronic Materials
- Extraction & Processing
- Light Metals
- Micro- and Nanoscale Technologies
- Physical Metallurgy
- HOT-TOPIC TRACK: Building MSE Synergies

ANNOUNCEMENTS & CALL FOR PAPERS

For details, visit the 2004 TMS Annual Meeting website at www.tms.org/AnnualMeeting.html

TMS
184 Thorn Hill Road
Warrendale, PA 15086
USA

Plan to join research and industry leaders from more than 60 countries who will participate in the 133rd TMS Annual Meeting & Exhibition.

This event encompasses all facets of materials science technologies and related industries. The program, outlined in the pages to follow, will contain more than 200 sessions and 1,600 individual presentations in the following conference tracks:

See the technical sessions come to life with the Annual Meeting Exhibition. To complement the technical sessions, the Exhibition will offer the latest technological advances presented by over 100 companies. In this outstanding face-to-face business environment, discover problem-solving solutions that can be put to work today! Complete information on all aspects of TMS 2004 is available at www.tms.org/AnnualMeeting.html.

If you are in the materials science field this is an event you cannot afford to miss. Whether you present, attend, or exhibit, take advantage of this opportunity to learn, network, and discover ways to make your job easier and improve your productivity.

A Message from Our Host City, Charlotte, North Carolina

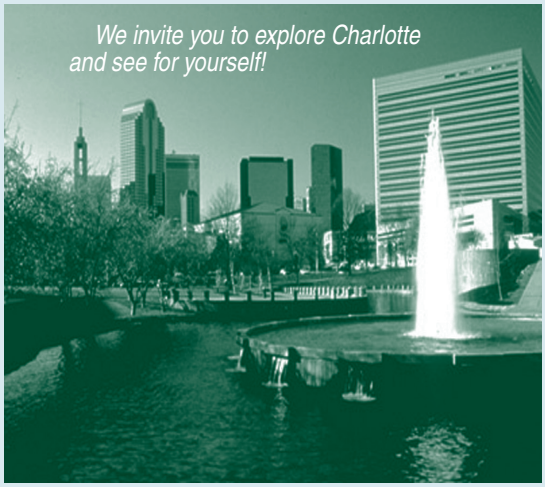
Welcome to Charlotte

We invite you to enjoy and experience Charlotte!

A clean, tree-filled landscape that invites you to come outside. A spot for inventive cuisine and exciting nightlife. A welcoming place for families.

Our history is exciting and relevant. Our arts are thriving with music, visual arts, and dance all in top form. The enthusiasm of our fans makes the Queen City a mecca for sports.

Blessed with four distinctly beautiful seasons, a moderate climate and incomparable natural surroundings, Charlotte offers something for everyone.



Welcome, International Visitors

Charlotte serves as an international gateway to the Carolinas with non-stop/direct service to nine international destinations including Bermuda, Mexico, United Kingdom, Jamaica, Bahamas, Puerto Rico, the Netherlands and Canada.

The airport, Charlotte/Douglas International, serves over 160 cities with non-stop service and 500+ flights daily, and 22 million passengers annually.

The city is conveniently located just two hours from the Great Smoky Mountains and three hours to pristine Carolina beaches.

Cleanliness. Beauty. Excitement. Friendliness. We want you to experience it all!

Plan to attend the 2004 TMS Annual Meeting & Exhibition.

To Submit an Abstract Electronically:

- Find the symposium that fits your area of technical activity.
- Visit http://cms.tms.org, and follow instructions to access the appropriate year and conference to which you wish to submit.
- For technical assistance contact TMS Technical Programming Department at (724) 776-9042 ext. 212; fax (724) 776-3770; e-mail raabe@tms.org

Participation in the 133rd TMS Annual Meeting & Exhibition will come from the five TMS Divisions:

- Electronic, Magnetic & Photonic Materials Division (EMPMD)
- Extraction & Processing Division (EPD)
- Light Metals Division (LMD)
- Materials Processing & Manufacturing Division (MPMD)
- Structural Materials Division (SMD)

Special contributions will be made by:

- National Science Foundation
- TMS Education Committee
- Aluminum Association
- Materials Science Critical Technology Sector of ASM International
- International Magnesium Association

Concurrent proceedings from symposia approved for publication will be available at the 2004 TMS Annual Meeting. Post-conference titles and journal special issues will be available after the meeting. Contact TMS for additional information about these or other TMS publications, or visit the TMS Document Center at http://doc.tms.org

Selecting Your Symposium

With conference tracks, programming is organized into categories to suit attendees' interests: light metals, extraction & processing, micro-and nanoscale technologies, hot topics, advanced materials, physical metallurgy, and electronic materials. To submit a paper, find the track that suits your topic, and then, within that track, the appropriate symposium. Abstract submission dates and organizers are listed for each symposium.

HOT-TOPIC TRACK

BUILDING MSE SYNERGIES

This track consists of two unique hybrid symposia—both with a biotechnology subtext—designed to build linkages across materials, systems, technologies, research approaches, and engineering practice.

Consisting of invitation-only presentations and sponsored by the National Science Foundation, the symposium Metals for the Future will explore the future of the metals field, including opportunities that exist for fundamental and applied research. The symposium will address synergistic opportunities at the interfaces with other materials and disciplines such as mechanics and bioengineering. Today's metals research and future challenges will be considered.

The symposium Materials by Design: Atoms to Applications will bring together specialists in different technological applications to examine the integration of fundamental materials science into engineering systems. The discussion will range from materials synthesis at the molecular level to actual use in an engineering structure or device.

Materials By Design: Atoms To Applications

Sponsored by: Electronic, Magnetic & Photonic Materials Division, Jt. EMPMD/SMD-Chemistry & Physics of Materials Committee

Abstract due date: 7/15/03

The aim of this conference is to explore experimental and computational methodologies in different materials applications which deals with ways one links length and time scales from materials synthesis (at the molecular level) up to the actual use in an engineering structure or device. The symposium will explore the latest advances in theory, computation and experimental techniques, which enable ways in which one may design materials for functionality across length scales. Approaches on how this transition from "atoms to applications" can be accelerated will be an important theme of this meeting. The conference will explore topics which help in:

- Linking models and experiments synergistically to enable speedy acquisition of data of relevance to the designer.
- Establishing a procedure for rapidly mining and searching for data based on robust mathematical principles integrated with scientifically meaningful interpretations.
- Developing an experimental protocol based on combinatorial techniques, to compress variables in the materials and processing parameter space into small volumes, permitting high throughput screening of relevant data.
- Applying a set of mathematical and accompanying computational methodologies linking length scales of materials properties to systems behavior.
- Reducing the amount of testing to fewer focused critical tests using component matched testing that predicts component and systems behavior from testing materials.

In this conference a variety of materials applications will be explored ranging from the aerospace industry to the chemical and biotechnology industry. Submit abstracts electronically at http://cms.tms.org or to: Krishna Rajan, Rensselaer Polytechnic Institute, Department of Materials Science and Engineering, Troy, NY 12180-3590 USA T: 518-276-6126 F: 518-276-8554 Email: rajank@rpi.edu. Co-Organizer: Krishnan K. Sankaran, The Boeing Company, St. Louis, MO 63166-0516 USA T: 314-233-8680 F: 314-232-0888 Email: krishnan.k.sankaran@boeing.com.

Metals For The Future

Sponsored by: National Science Foundation

Abstracts Accepted by Invitation Only

A NSF sponsored Symposium that will explore the future of the field of metals, including the opportunities that exist for fundamental and applied research. The symposium will address synergistic opportunities at the interfaces with other materials and disciplines such as mechanics and bio-engineering. Invited speakers will present their views on the status of today's metals research and introduce future challenges that will be discussed. ABSTRACTS ACCEPTED BY INVITATION ONLY. Submit abstracts electronically at http://cms.tms.org or to: Manfred Wuttig, University of Maryland, Department of Materials & Nuclear Engineering, College Park, MD 20743-2115 USA T: 301-405-5212 F: 301-314-9467 Email: wuttig@eng.umd.edu. Co-Organizer: Sreeramamurthy Ankem, University of Maryland, Department of Material & Nuclear Engineering, College Park, MD 20742-2115 USA T: 301-405-5219 F: 301-314-9467 Email: ankem@eng.umd.edu.

ADVANCED MATERIALS

Materials that must meet unique and daunting performance requirements are the focus of this programming track. Making materials that can withstand unusual and/or demanding applications, however, presents unique challenges in fundamental and applied research, processing, fabrication, and implementation. The symposia of this track will look at powder metallurgy processing and properties (inclusive of ceramics, metals, intermetallics, and composites); alternatives to nickel- and cobalt-based superalloys that may be capable of performing effectively at significantly higher temperatures (candidates include molybdenum borosilicides, niobium silicides, refractory metal alloys, and precious metal superalloys); and processing and mechanical behavior of bulk metallic glasses, which have certain advantageous characteristics as compared to conventional crystalline alloys (e.g., higher fracture strength, fracture toughness, and elasticity).

A significant new materials opportunity—and commensurate challenge—also exists in the area of energy conversion and power transmission and storage. To explore these issues, the advanced materials track will host the second installment of the symposia series Fundamentals of Advanced Materials for Energy Conversion. The original was a highly successful program during the 2002 TMS Annual Meeting in Seattle, Washington. Topics will include thermoelectronics, fuel cells, hydrogen storage, batteries, supercapacitors, superconductors, magnetics, and photovoltaics, among others.

Many of the presentations in this track are planned for proceedings publication.

Advanced Materials For Energy Conversion II

Sponsored by: Light Metals Division, LMD-Reactive Metals Committee

Abstract due date: 7/15/03

This symposium follows "Fundamentals of Advanced Materials for Energy Conversion I" TMS Seattle Meeting 2002. We bring together researchers in the fields of Materials Science and Engineering working on energy conversion fundamentals and applications. The focus of this symposium is on new ideas and transmission of energy. The symposium sessions will include, Thermoelectronics, Fuel Cells, Storage of Hydrogen and its Isotopes, Batteries, Supercapacitors, Superconductors, Magnets and Magnetic Refrigeration, Membrane Materials, Thermal Energy Storage Materials, Photovoltaics, and other related topics. Submit abstracts electronically at http://cms.tms.org or to: Dhanesh Chandra, University of Nevada, Metallurgical & Materials Engineering, Reno, NV 89557 USA T: 775-784-4960 F: 775-784-4316 Email: dchandra@unr.edu. Co-Organizers: Renato G. Bautista, University of Nevada, Department of Chemical and Metal Engineering, Reno, NV 89557-0136 USA T: 775-784-1602 F: 775-784-4764 Email: bautista@quake.seismo.unr.edu; Louis Schlapbach, EMPA Swiss Federal, Laboratory for Materials Testing and Research, Duebendorf CH-8600 Switzerland T: +411 823 4600 F: +411 821 6244 Email: louis.schlapbach@empa.ch.

Beyond Nickel-Base Superalloys

Sponsored by: Structural Materials Division, SMD-Corrosion and Environmental Effects Committee-
(Jt. ASM-MSCTS), SMD-High Temperature Alloys Committee,
SMD-Mechanical Behavior of Materials-
(Jt. ASM-MSCTS), SMD-Refractory Metals Committee

Abstract due date: 7/15/03

Presently, nickel and cobalt-base superalloys are the logical choice for strong, tough, and oxidation-resistant high-temperature structural materials. However, above approximately 1000°C their strength drops dramatically. This symposium targets materials with engineering properties similar to those of superalloys, but at significantly higher temperatures. Recent developments such as niobium silicides, molybdenum borosilicides, and precious metal superalloys suggest that progress is being made. Materials systems of interest in this symposium include also high-strength refractory metal alloys. Topics of interest include, but are not limited to, first principles modeling of alloy phases and their properties, measurement of physical properties, thermodynamics and phase diagrams, processing, microstructural characterization, oxidation and corrosion, and mechanical properties. Publication in a refereed, archival journal is anticipated, with manuscripts due at the time of the meeting. Submit abstracts electronically at http://cms.tms.org or to: Joachim H. Schneibel, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6115 USA T: 865-576-4644 F: 865-574-7659 Email: schneibeljh@ornl.gov. Co-Organizers: David Alven, Lockheed Martin Corp., PO Box 1072, Schenectady, NY 12301-1072 USA T: 518-395-6107 F: 518-395-7366 Email: dalven@nycap.rr.com; David U. Furrer, Ladish Company, Cudahy, WI 53110 USA T: 414-747-3063 F: 414-747-3036 Email: dfurrer@ladishco.com; Dallis A. Hardwick, US Air Force, AFRL/MLLM, Wright Patterson AFB, OH 45433 USA T: 937-255-1322 F: 937-255-3007 Email: dallis.hardwick@wpafb.af.mil; Martin Janousek, Plansee AG Technology Center, Reutte, Tyrol A-6600 Austria T: 43-5672-600-2601 Email: martin.janousek@plansee.at; Yoshinao Mishima, Tokyo Institute of Technology, Procision and Intelligence Laboratory, Yokohama, Kanagawa 226 Japan T: 81-45-924-5612 Email: mishima@Iron.materia.titech.ac.jp; John A. Shields, HC Starck, Cleveland, OH 44117 USA T: 216-692-4481 F: 216-692-0031 Email: john.shields.b@bayer.com; Peter F. Tortorelli, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6156 USA T: 865-574-5119 F: 865-241-0215 Email: tortorellipf@ornl.gov.

Bulk Metallic Glasses

Sponsored by: Structural Materials Division, ASM International: Materials Science Critical Technology Sector,
SMD-Mechanical Behavior of Materials-(Jt. ASM-MSCTS)

Abstract due date: 7/15/03

Provide fundamental understanding and theoretical modeling of processing and mechanical behavior of bulk metallic glasses (BMGs). In the last decade, new approaches to fabricating metallic glasses [i.e., by utilizing unique combinations of elements to form metallic-glass alloys] have resulted in the required cooling rate dropping from 105 C/s to as low as 1 C/s, and the specimen size increasing from 0.05 mm to as large as 80 mm. Because of the large sizes possible with this exciting technology, the metallic glasses are called BMGs. Mechanical behavior of BMGs is among the new, exciting fields of research that are fully illustrating their advantages over crystalline alloys. Generally, BMGs have higher fracture strengths, fracture toughnesses, and elasticities than their

crystalline counterparts. There is great interest in BMGs for use in biomedical, structural, and mechanical applications. Some of the areas to be explored:

(1) Material fabrication and processing
(2) Nanocrystalline materials and composites based on BMGs
(3) Mechanical behavior
(4) Shearband formation, fatigue, deformation, and fracture mechanisms
(5) Corrosion, physical, magnetic, electric, and thermal properties
(6) Theoretical modeling and simulation
(7) Industrial applications

MANUSCRIPT DEADLINE: August 31, 2003. Submit abstracts electronically at http://cms.tms.org or to: Peter K. Liaw, University of Tennessee, Department of Materials Science and Engineering, Knoxville, TN 37996-2200 USA T: 865-974-6356 F: 865-974-4115 Email: pliaw@utk.edu. Co-Organizer: Raymond A. Buchanan, University of Tennessee, Department of Materials Science and Engineering, Knoxville, TN 37996-2200 USA T: 865-974-4858 F: 865-974-4115 Email: rab1@utk.edu.

Processing, Microstructure and Properties of Powder-Based Materials

Sponsored by: Materials Processing and Manufacturing Division, MPMD-Powder Materials Committee

Abstract due date: 7/15/03

This symposium covers research on the processing, microstructures and properties of materials formed from powders. Materials covered include ceramics, metals, intermetallics and metal matrix composites. Submit abstracts electronically at http://cms.tms.org or to: K. Morsi, University of Missouri, Department of Mechanical and Aerospace Engineering, Columbia, MO 65211-0001 USA T: 573-884-6936 F: 573-884-5090 Email: morsik@missouri.edu. Co-Organizers: James C. Foley, Los Alamos National Laboratory, PO Box 1663, MSG 741, Los Alamos, NM 87545 USA T: 505-665-2856 F: 505-667-5268 Email: foley@lanl.gov; Karl P. Staudhammer, Los Alamos National Laboratory, Nuclear Materials Technology Division, Los Alamos, NM 87545 USA T: 505 667 6869 F: 505 667 7966 Email: staudhammer@lanl.gov.

ELECTRONIC MATERIALS

Electronic materials—and their associate processing methodologies—represent the forefront of critical materials technologies, enabling rapid and sizeable advances in computing, sensor technology, miniaturization, nanotechnology, optoelectronics, and energy management, to name but a few.

This track will feature experimental, theoretical, and practical investigations into a number of electronic materials issues, including the environmentally and regulatory significant one of identifying and employing alternatives to lead-based solders. Soldering processes, metallization, and manufacturing concerns for microelectronics applications will be addressed, as will solder materials development for use in optical/optoelectronic and micro-electromechanical system packaging. Other programming topics include phase stability, phase transformation, and reactive phase formation issues in electronic materials (e.g., flip-chip, solder joints, silicide materials, contacts, and interconnect in integrated circuits). Additionally, recent advances and challenges in thin-film science, technology, and applications will be reviewed (including III-V and II-VI materials, stress and thermal management, interfaces, and diffusion).

***Many of the papers from this track will appear in the* Journal of Electronic Materials.**

Challenges in Advanced Thin Films: Microstructures, Interfaces, and Reactions

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

Abstract due date: 7/15/03

This symposium will provide a platform for presentation and discussion of recent advancements and challanges in thin-film science, technology and applications. Sessions will focus on the topics listed below. In addition, papers that focus on developments in III-V and II-VI materials are also encouraged. Several invited speakers are anticipated to attend. Specific topics include, but are not limited to: Recent advances in thin-film technology; Microstructures and properties of thin films in sub-micron range and beyond; Stress and thermal management of thin films and structures; Structure, chemistry and properties of interface between metal/barrier, barrier/dielectric, etc.; Adhesion, delamination, interface diffusion and phase transformation including metal/low-k. Submit abstracts electronically at http://cms.tms.org or to: N. (Ravi) M. Ravindra, New Jersey Institute of Technology, Department of Physics, Newark, NJ USA T: 973-596-3278 F: 973-642-4978 Email: nmravindra@comcast.net. Co-Organizers: Seung H. Kang, Agere Systems, Device and Module R&D, Allentown, PA 18109 USA Email: shkang1@agere.com; Choong-Un Kim, The University of Texas, Materials Science and Engineering, Arlington, TX 76019-0031 USA T: 817-272-5497 Email: choongun@uta.edu; Jud Ready, Georgia Tech Research Institute-EOEML, Atlanta, GA 30332-0826 USA T: 404-385-4497 Email: jud.ready@gtri.gatech.edu; Anis Zribi, General Electric Global Research Center, Bldg KW, Room C1324D, One River Rd, Niskayuna, NY 12309 USA T: 518-387-4616, F: 518-387-5997, Email: zribi@crd.ge.com

Lead-Free Solders and Processing Issues Relevant to Microelectronic Packaging

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

Abstract due date: 7/15/03

This symposium will address materials and processing issues related to the use of emerging and established lead-free solders. Soldering processes, metallization (board and component finishes) and manufacturing aspects will be addressed for microelectronics applications. Solder materials development for use in optical/Optoelectronic and MEMS packaging are also included. Topics considered will consist of materials and manufacturing challenges in solder alloy design, structure-property-processing relationships of bulk solders and 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 various kinds of electronic packages. The symposium will also cover lead-free materials for metal-semiconductor contacts, application such as thermal interface materials, alternative interconnect technologies for stress management at both the wafer level, and chip to package level, and issues involved in the design and integration of conductive adhesives in electronic packages. Topics related to lead-free soldering in optoelectronics and microelectronics packages, such as BGA, micro-BGA, CSP, etc. are also of interest.

Submit abstracts electronically at http://cms.tms.org or to: Laura J. Turbini, University of Toronto, Center for Microelectronic Assembly & Packaging, Toronto, ON M5S 3E4 Canada T: 416-946-9329 F: 416-946-3628 Email: turbini@ecf.utoronto.ca. Co-Organizers: Srinivas Chada, Honeywell, Electronic Materials Division T: 509-252-2180 Email: srini.chada@honeywell.com; Sung K. Kang, IBM, T. J. Watson Research Center, Yorktown Heights, NY 10598 USA T: 914-945-3932 F: 914-945-2141 Email: kang@us.ibm.com; Kwang-Lung Lin, National Cheng Kung University, Department of Materials Science and Engineering, Tainan 70101 Taiwan T: 886-6-275575 F: 886-6-2346290 Email: matkllin@mail.ncku.edu.tw; Michael R. Notis, Lehigh University, Department of Materials Science and Engineering, Bethlehem, PA 18015 USA T: 610-758-4225 F: 610-758-4244 Email: mrn1@lehigh.edu; Jin Yu, KAIST, Center for Electronic Packaging Materials 305-701 Korea T: 82-42-869-4214 F: 82-42-869-8840 Email: cepm@mse.kaist.ac.kr.

Phase Stability, Phase Transformation, and Reactive Phase Formation in Electronic Materials III

Sponsored by: Electronic, Magnetic & Photonic Materials Division, Structural Materials Division, Jt. EMPMD/SMD-Alloy Phases Committee

Abstract due date: 7/15/03

This symposium addresses phase stability, phase transformation, and reactive phase formation issues in electronic materials. Topics of interests include, but are not limited to, phase stability of flip-chip USM, interfacial reactions at solder joints, phase transformations in lead-free solders during the soldering process, stability of solder joints in optoelectronics, phase transformations in silicide materials, phase stability of contacts and interconnects in ICs, new barrier layers for Cu processes, multicomponent III-V materials, and chemical interactions between electronic materials. Papers on experimental and theoretical investigations of related topics are all welcome. Submit abstracts electronically at http://cms.tms.org or to: C. Robert Kao, National Central University, Department of Chemical and Materials Engineering, Chungli City 32054 Taiwan T: 011 886 3 4227382 F: 011 886 3 4227382 Email: crkao@ncu.edu.tw. Co-Organizers: Sinn-Wen Chen, National Tsing-Hua University, Department of Chemical Engineering, Hsinchu 300 Taiwan T: 011 886 3 5721734 F: 011 886 3 5715408 Email: swchen@che.nthu.edu.tw; Hyuck Mo Lee, Korea Advanced Institute of Science & Technology, Department of Materials Science & Engineering, Taejon 305-701 Korea T: 011 82 42 869 3334 F: 011 82 42 869 3310 Email: hmlee@kaist.ac.kr; Suzanne E. Mohney, Pennsylvania State University, Department of Materials Science & Engineering, University Park, PA 16802 USA T: 814-863-0744 F: 814-865-2917 Email: mohney@ems.psu.edu; Michael R. Notis, Lehigh University, Department of Materials Science and Engineering, Bethlehem, PA 18015 USA T: 610-758-4225 F: 610-758-4244 Email: mrn1@lehigh.edu; Douglas J. Swenson, Michigan Technological University, Department of Materials Science & Engineering, Houghton, MI 49931 USA T: 906-487-3352 Email: dswenson@mtu.edu.

EXTRACTION AND PROCESSING

Embracing the cornerstone issues of the global primary metals production field, this track emphasizes the extraction, processing, synthesis, shaping, forming, treatment, handling, and recycling of metals and other materials (with the exceptions of like issues covered in the Light Metals track). Common themes will include environmental considerations, experimental and industrial-scale approaches, analytical techniques, computer modeling and process control, sustainability, and fundamental concerns such as physical chemistry, thermodynamics, and transport phenomena.

Many of the track's presentations will appear in the 2004 edition of* EPD Congress, *which is the annual volume of the TMS Extraction & Processing Division and which provides coverage of the optimized processing approaches to ferrous and nonferrous metals. Other publications are also planned.

A spotlight symposium on laterite nickel will mark the 25th anniversary of 1979's International Laterite Symposium by providing updates on certain products and outlining new developments that have occurred in the interim.

General Pyrometallurgy

Sponsored by: Extraction & Processing Division, EPD-Pyrometallurgy Committee

Abstract due date: 7/15/03

General topics in pyrometallurgy, covering the science, technology, and industrial practice of the processing of non-ferrous metals from their ores and/or secondary sources by pyrometallurgical means, and their forming into semi-finished, or finished products. Submit abstracts to http://cms.tms.org or to: Thomas P. Battle, DuPont Titanium Technologies, Wilmington, DE 19880 USA T: 302-695-9321 F: 302-695-1219 Email: thomas.p.battle@usa.dupont.com.

Educational Issues in Transport Phenomena in Materials Processing

Sponsored by: Materials Processing & Manufacturing Division, TMS-Education Committee

Abstract due date: 7/15/03

Educators of transport phenomena in materials departments face a variety of challenges starting with the requirement to teach in one semester material which most other engineering departments cover in two. The selection and order of topics in standard texts follow the pattern set by Bird, Stewart and Lightfoot, which is well suited for chemical engineering, but alternative approaches have been suggested for materials engineering curricula. Also, in addition to the standard topics of fluid dynamics, heat and mass transfer, these courses often also include special topics such as solidification, computation, even process cost modeling; the requisite mathematics and dimensional/scaling analysis also play essential roles. All of this must be taught using examples and problems from across all classes of materials. Finally, a number of textbooks introduced in the past few years, and newly-available computer-based resources, have greatly expanded the number of primary and supplementary readings and teaching tools for this subject. Speakers will discuss experiences in navigating these challenges in teaching this subject, and integrating transport into other subjects which comprise both the undergraduate materials curriculum and continuing education offerings, from thermodynamics, kinetics, and mechanics to relevant laboratory experiences. Submit abstracts electronically at http://cms.tms.org or to: Matthew John M. 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. Co-Organizer: Adam

C. Powell, Massachusetts Institute of Technology, Department of Materials Science and Engineering, Cambridge, MA 02139-4307 USA T: 617-452-2086 F: 617-253-5418 Email: hazelsct@mit.edu.

International Laterite Nickel Symposium - 2004

Sponsored by: Extraction & Processing Division, EPD-Aqueous Processing Committee, EPD-Copper, Nickel, Cobalt Committee, EPD-Process Fundamentals Committee, EPD-Process Mineralogy Committee, EPD-Pyrometallurgy Committee, EPD-Waste Treatment & Minimization Committee

Abstract due date: 5/31/03

The symposium would be an update of the "International Laterite Symposium" held in 1979. The proposed 2004 symposium would serve to update certain projects and developments discussed in 1979, and cover happenings in the interim period for the following topics:

- Geology
- Mineralogy
- Mining
- Fundamentals/Research & Development
- Emerging Technologies
- Pyrometallurgy - Designs, Projects, Start-ups, and Operations
- Hydrometallurgy - Designs, Projects,Start-ups, and Operations

Submit abstracts electronically at http://cms.tms.org or to: David M. Lane, Bechtel Corporation, Mining and Metals, Englewood, CO 80112 USA T: 303-486-6069 Email: dmlane@bechtel.com. Co-Organizer: William P. Imrie, Bechtel Corporation, Englewood, CO 80112-2202 USA T: 720-493-1560 F: 303-493-1560 Email: wimrie@BECHTEL.com.

Materials Processing Fundamentals

Sponsored by: Extraction & Processing Division, Materials Processing & Manufacturing Division, EPD-Process Fundamentals Committee, Jt. MPMD/EPD-Process Modeling Analysis & Control Committee

Abstract due date: 7/15/03

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 and in-plant validation are especially encouraged. Submit abstracts electronically at http://cms.tms.org or to: Adam C. Powell, Massachusetts Institute of Technology, Department of Materials Science and Engineering, Cambridge, MA 02139-4307 USA T: 617-452-2086 F: 617-253-5418 Email: hazelsct@mit.edu. Co-Organizer: Princewill N. Anyalebechi, Grand Valley State University, L. V. Eberhard Center, Grand Rapids, MI 49504-6495 USA Email: anyalebp@gvsu.edu.

Recycling—A special 4 symposia program

Sponsored by: Extraction & Processing Division, Light Metals Division, Jt. LMD/EPD-Recycling Committee

Abstract due date: 7/15/03

The 2004 Recycling program will cover innovative research work, advances in ongoing research, and general industrial practices from recycling of materials. The program will include the 4 symposia listed below. Abstracts may be submitted electronically at http://cms.tms.org or to the appropriate organizers listed.

- **Aluminum Dross Processing**
  The scope of the Aluminum Dross Processing symposium is to review current technologies for processing aluminum drosses. Additionally, new or unconventional methods in aluminum processing may be presented. The new methods can include different styles or approaches to furnace technology or alternative methods for recovering the aluminum content by techniques other than conventional furnaces. Organizers: Ray Peterson, IMCO Recycling Inc, PO Box 268, 397 Black Hollow Road, Rockwood, TN 37854-0268 USA P: 865-354-6375 F: 865-354-9983 Email: rpeterson@imcorecycling.com; Angela Withers, IMCO Recycling Inc, PO Box 28, Rockwood, TN 37854 USA P: 865-354-5484 F: 865-354-9983 Email: awithers@imcorecycling.com.
- **Aluminum Can Recycling**
  The Recycling Committee will sponsor a single session on the subject of Aluminum Can Recycling, organized by Bryan Steverson and Don Stewart of Alcoa, Inc. Technical papers covering all aspects of aluminum can recycling, from collection through processing, are solicited. The papers may range from fundamental through applied science. Organizers: Don Stewart, Alcoa Technical Center, 100 Technical Drive, Alcoa Center, PA 15069 USA P: 724-337-5764 F: 724-337-4063 Email: donald.stewart@alcoa.com; Bryan Steverson, Alcoa Inc, Rigid Packaging Div., 2300 N. Wright Rd., Alcoa, TN 37701 USA P: 865-977-2078 F: 865-977-2315 Email: bryan.steverson@alcoa.com.
- **Spent Consumer Battery Recycling**
  This Symposium aims at highlighting the comparative state of development of spent consumers battery recycling in North America and in Europe. Consumers batteries include primary non-rechargeable cells and rechargeable batteries, such as Ni-Cd, Ni-metalhydride and Li-ion cells. Not only an insight of the various processes in commercial use or in the emerging stage is expected to be gained by this Symposium, but clearly of interest will also be the incentives by authorities and legislation to promote the activities of spent consumer battery collection and their final destination. Organizer: Norbert Piret, Piret & Stolberg Partners, Im Licht 12, Duisburg, 47279 Germany P: +49-203-722-396 F: +49-203-723-946 Email: nlp.p-sp.dbg@t-online.de.
- **Recycling – General Session**
  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. Organizer: Greg Krumdick, Argonne National Laboratory, 9700 South Cass Ave., Argonne, IL 60439 USA P: 630-252-3952 F: 630-252-1342 Email: gkrumdick@anl.gov.

Solid and Aqueous Wastes from Non-Ferrous Metal Industry

Sponsored by: Extraction & Processing Division, EPD-Waste Treatment & Minimization Committee

Abstract due date: 7/15/03

Various kinds of solid and aqueous wastes are discharged from non-ferrous metal industries. They are solid wastes such as base metals, precious metals, precipitates, flue dust and fly ash, and aqueous wastes containing various metal ions. It is desirable from the veiwpoint of environment and resources preservation that metal values are recovered from these wastes. The session covers generation, physical and chemical treatment, metal recovery and disposal on solid and aqueous wastes

from non-ferrous metal industries. The session will cover the above topics and related areas. Submit abstracts electronically at http://cms.tms.org or to: Junji Shibata, Kansai University, Department of Chemical Engineering, 3-3-35 Yamatecho Suita, Osaka 564-8680 Japan T: 011-81-66-368-0856 F: 011-81-66-388-8869 Email: shibata@kansai-u.ac.jp Co-Organizers: Edgar E. Vidal, Colorado School of Mines, Golden, CO 80401-1887 USA T: 303-273-3543 Email: evidal@mines.edu

Sustainable Development for Mining and Metallurgical Industries

Sponsored by: Extraction & Processing Division, EPD-Waste Treatment & Minimization Committee

Abstract due date: 7/15/03

Sustainable development calls for judicious integration and balance of economic development, environmental protection and social justice. In today's world, industries are competing in a global market. Since the value products of mining industries are crucial both to several other industries and our daily life, a 'sustainable development strategy for the mining industry' is obvious. The Conference provides an excellent opportunity for the meeting of scientists, engineers, senior management personnel from operations and marketing, equipment suppliers and members of the academic world to discuss issues related to sustainable development for mining and metallurgical industries. Submit abstracts electronically at http://cms.tms.org or to: V. I. Lakshmanan, Ortech Corporation, Mississauga, Ontario L5K1B3k Canada T: 905-822-4111 F: 905-822-9537 Email: llakshmanan@ortech.on.ca. Co-Organizer: V. Ramachandran, Scottsdale, AZ 85262-1352 USA F: 480-575-5449 Email: ramvasanti@aol.com.

LIGHT METALS

The TMS Annual Meeting & Exhibition is internationally recognized as the global light metals community's preeminent forum for exploring the science and technological issues associated with the production, processing, properties, application, and recycle of industrially significant light metals. In particular, this track will focus on myriad issues associated with aluminum, magnesium, lithium, and titanium.

TMS traditionally presents stand-out programming in primary and secondary aluminum processing. The proceedings of the alumina reduction, bauxite and alumina, carbon, and cast shop symposia are published in the annual volume—*Light Metals*, a book that is widely recognized as the "bible of the aluminum industry." Rapidly attaining similar status, the annual volume* Magnesium Technology *provides a like reference for scientists and engineers working with this extremely lightweight metal. Many of the presentations delivered in these symposia will appear in the* Light Metals 2004 *and* Magnesium Technology 2004 *proceedings volumes. Many papers from other symposia in this track are also planned for publication.

Alumina and Bauxite

Sponsored by: Light Metals Division, LMD-Aluminum Committee

Abstract due date: 7/15/03

The Alumina and Bauxite Symposium, along with Cast Shop Technology, Aluminum Reduction Technology, Carbon Technology, Recycling Technology, and Reactive Metals, collectively form the Light Metals Symposium, where experts from the Light Metals Industry and academia from all over the world meet each other and share information. You are invited to submit papers in the following subject areas: Bayer Process: fundamentals, chemistry, operational experiences; Safety and environment with focus on residues; Bauxite mining; Process control; Analytical methods; Design of refineries. Submit abstracts electronically at http://cms.tms.org or to: Travis Galloway, Century Aluminum, Hawesville, KY 42348 USA T: 270-927-6921, Ext 257 F: 270-927-9058 Email: tgalloway@centuryky.com. Co-Organizer: David Kirkpatrick, Kaiser Aluminum & Chemical Group, Gramercy, LA 70052-3370 USA T: 225-869-2470 F: 225-869-2349 Email: david.kirkpatrick@kaiseral.com.

Aluminum Reduction Technology

Sponsored by: Light Metals Division, LMD-Aluminum Committee

Abstract due date: 7/15/03

The Aluminum Reduction Technology Symposium, along with Alumina and Bauxite, Cast Shop Technology, Carbon Technology, Recycling Technology, Reactive Metals, and Potroom Operations - Potroom Improvements, collectively form the Light Metals Symposium, where experts from the Light Metals Industry and academia from all over the world meet each other and share information. You are invited to submit papers in the following subject areas: Cell design; Cell operation (performance and operating advances); New cell materials; Cell modernization and productivity increase; Process control; Modeling of cell design; Environmental aspects; Fundamentals; Bath chemistry; Inert anodes. Submit abstracts electronically at http://cms.tms.org or to: Tom Alcorn, Century Aluminum; T: 270-927-6921 x202; Email: talcorn@centuryky.com; Co-Organizer: Jay N. Bruggeman, Alcoa Inc., 100 Technical Dr., Alcoa Center, PA 15069 USA, F: 724 337-2005, Email: jay.bruggeman@alcoa.com.

Automotive Alloys 2004

Sponsored by: Light Metals Division, LMD-Aluminum Committee

Abstract due date: 7/15/03

Automotive Alloys 2004 symposium is inviting papers to capture the ongoing research, development and testing activities for usage of aluminum and magnesium alloys in automotive applications. Submit abstracts electronically at http://cms.tms.org or to: Subodh K. Das, Secat, Inc., Coldstream Research Campus, Lexington, KY 40511 USA T: 859-514-4989 F: 859-514-4988 Email: skdas@secat.net.

Carbon Technology

Sponsored by: Light Metals Division, LMD-Aluminum Committee

Abstract due date: 7/15/03

The Carbon Technology Symposium, along with Aluminum Reduction Technology, Alumina and Bauxite, Cast Shop Technology, Recycling Technology, and Reactive Metals, collectively form the Light Metals Symposium, where experts from the Light Metals Industry and academia from all over the world meet each other and share information. You are invited to submit papers in the following subject areas: Anode raw materials and properties; Paste plant design and operation; Baking

furnace design and operation; Rodding room design and operation; Anode quality and performance; Carbon plant environmental and safety; Carbon cathode materials and performance. Submit abstracts electronically at http://cms.tms.org or to: Markus Meier, R&D Carbon, PO Box 362, CH 3960, Sierre, Switzerland; T: 41-27-4592929; Email: meier@rd-carbon.com; Co-Organizer: Amir Mirchi, Alcan, Inc., Jonquiere, QC G7S 4K8 Canada; T: 418-699-6585x6390; Email: amir_mirchi@alcan.com.

Cast Shop Technology

Sponsored by: Light Metals Division, LMD-Aluminum Committee

Abstract due date: 7/15/03

The Cast Shop Technology Symposium, along with Carbon Technology, Aluminum Reduction Technology, Alumina and Bauxite, Recycling Technology, and Reactive Metals, collectively form the Light Metals Symposium, where experts from the Light Metals Industry and academia from all over the world meet each other and share information. You are invited to submit papers in the following subject areas: Charge materials; Melting; Filtration; Pre-furnace treatment; Casting processes; Fluxing; Environmental issues; Shape casting; Grain refinement; Modeling and control; Automation; Cast structures; Safety. Submit abstracts electronically at http://cms.tms.org or to: Dr. D. Corleen Chesonis, Alcoa, 100 Technical Dr., Alcoa Center, PA 15069 USA, Phone: 724-337-4794, Fax: 724-337-4063, Email: corleen.chesonis@alcoa.com; Co-Organizer: Dr. Jean-Pierre Martin, Aluminium Technology Centre, National Research Council Canada, 930 Jacques-Cartier E., Saguenay, QC G7H 7K9 Canada, Phone: 418-543-0758, Fax: 418-543-1925, Email: jean-pierre.martin@ncr.gc.ca.

Cost Affordable Titanium

Sponsored by: Structural Materials Division, SMD-Titanium Committee

Abstract due date: 7/15/03

In the proposed six-session symposium, papers addressing all aspects of cost reduction in titanium and its alloys will be presented, and proceedings published. The various segments of titanium technology to be covered will include, but not be limited to: extraction (with emphasis on innovative non-Kroll approaches) of new lower cost alloys, creative melting including cold hearth approaches, near net shape techniques (including powder metallurgy variants such as near net shapes, spraying, laser forming, etc and casting approaches), processing/fabrication advances such as warm drawing, extrusion, superplastic forming (also in combination with diffusion bonding), high speed machining and knowledge based processing with emphasis on computer aided approaches, better process control including enhanced inspection methods, and creative designs such as functionally graded materials, porous alloys and infiltrated concepts. Submit abstracts electronically at http://cms.tms.org or to: M. Ashraf Imam, Naval Research Laboratory, Washington, DC 20375-5000 USA T: 202-767-2185 F: 202-767-2623 Email: imam@anvil.nrl.navy.mil. Co-Organizers: Derek Fray, University of Cambridge, Department of Materials Science & Metallurgy, Cambridge CB2 3Q2 United Kingdom T: 011 44 1223 334306 F: 011 44 1223 3345637 Email: djf25@cam.ac.uk; F. H. (Sam) Froes, University of Idaho, Institute of Materials and Advanced Processes, Moscow, ID 83844-3026 USA T: 208-885-6376 F: 208-885-4009 Email: imap@uidaho.edu.

Lithium 2004

Sponsored by: Light Metals Division, LMD-Reactive Metals Committee

Abstract due date: 7/15/03

This international symposium will cover all aspects of resources, extraction, separation, purification, processing and applications of lithium metal. Particular emphasis is placed on the synthesis, applications and physical metallurgy of alloys and compounds of lithium. Sessions will be devoted to lithium application in batteries and energy storing devices, aluminum-lithium alloys as well as the role of lithium compounds in molten salt processing. Submit abstracts electronically at http://cms.tms.org or to: Brajendra Mishra, Colorado School of Mines, Kroll Institute for Extractive Metals, Golden, CO 80401-1887 USA T: 303-273-3893 F: 303-384-2189 Email: bmishra@mines.edu.

Magnesium Technology 2004

Sponsored by: Light Metals Division, LMD-Magnesium Committee

Abstract due date: 7/15/03

This symposium, sponsored by the Magnesium Committee of the Light Metals Division of TMS and the International Magnesium Association will cover various topics of magnesium technology including Primary production and market; Recycling and environmental issues; Alloy development; Phase transformations; Manufacturing processes; Mechanical and physical properties; Cast and wrought alloys; Welding and joining; Corrosion and Surface Finishing; and Applications and research programs. Submit abstracts electronically at http://cms.tms.org or to: Alan A. Luo, General Motors, Staff Research Engineer; Materials and Processes Lab, Warren, MI 48090-9055 USA Email: alan.luo@gm.com.

Phase Transformations and Deformation in Magnesium Alloys

Sponsored by: MPMD-Phase Transformations Committee-(Jt. ASM-MSCTS)

Abstracts Accepted by Invitation Only

Attempts to improve mechanical properties of existing magnesium alloys and to develop new alloys with better performance have thus far been restricted by a lack of detailed understanding on phase equilibria in complex alloy systems, precipitation processes, interactions between lattice defects and precipitates, deformation microstructures, and deformation mechanisms at ambient and elevated temperatures. The aims of this symposium are to examine current understanding on phase transformations and roles of phase transformation products in controlling the deformation behaviour of commercially and strategically important magnesium alloys and to provide a platform for rational design of microstructures for high strength and creep-resistant service. The emphasis of the symposium will be on presentations from leading researchers in the field, and the Organizer will seek to provide the most coherent presentations possible. This symposium will be composed exclusively of invited presentations and run for two days. It is planned to have four sessions on: (A) Alloy Design and Solidification, (B) Precipitation, (C) Plastic Deformation and Strengthening, (D) Creep Deformation. The proceedings of the symposium will be published in Metall. Mater. Trans. A. Submit abstracts electronically at http://cms.tms.org or to: Jian-Feng Nie, Monash University, School of Physics and Materials Engineering, Victoria 3800 Australia T: 61 3 9905 9605 Email: nie@spme.monash.edu.au.

Reactive Metals

Sponsored by: Light Metals Division, LMD-Reactive Metals Committee

Abstract due date: 7/15/03

The Reactive Metals Symposium, along with Carbon Technology, Aluminum Reduction Technology, Alumina and Bauxite, Cast Shop Technology, and Recycling Technology, collectively form the Light Metals Symposium, where experts from the Light Metals Industry and academia from all over the world meet each other and share information. You are invited to submit papers in the following subject areas: Reactive metals; Advances in molten salt processing. 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: jhryn@anl.gov.

Solidification of Aluminum Alloys

Sponsored by: Materials Processing & Manufacturing Division, MPMD-Solidification Committee

Abstract due date: 7/15/03

This symposium will address progress in the application of solidification principles to the production of aluminum alloys. Topics will include microstructure evolution, phase formation and solidification path analysis, grain refinement, micro/macro-segregation, mechanical behavior/properties in the mushy state, solidification cracking/tearing, gas/shrinkage porosity formation, effect of impurities/trace elements, and the impact of cast structure on the subsequent fabrication and properties of finished products. Papers on the experimental or theoretical simulation of solidification aspects of casting processes including direct chill (DC) casting, continuous casting, shaped casting, semi-solid processing and other advanced casting technologies are also encouraged. Of particular interest will be examples showing the use of solidification principles to solve industrial problems. Submit abstracts electronically at http://cms.tms.org or to: Men Glenn Chu, Alcoa Technical Center, Molten Metal Processing Center, Alcoa Center, PA 15069 USA T: 724-337-2266 F: 724-337-4063 Email: men.chu@alcoa.com. Co-Organizers: Douglas A. Granger, Gras, Inc., Murrysville, PA 15668-1332 USA T: 724-733-8607 F: 724-733-7547 Email: dagranger@adelphia.net; Qingyou Han, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6083 USA T: 865-574-4352 F: 865-574-4357 Email: hanq@ornl.gov.

MICRO-AND NANOSCALE TECHNOLOGIES

"Nano" has become the prefix of the new millennium, and the TMS Annual Meeting has evolved into one of the world's premier destinations to present developments in the synthesis, analysis, properties, and application of these ultra-small-scale technologies, both in terms of materials and devices. From a structural perspective, this track will consider biomedical applications, surfaces and interfaces, and severe plastic deformation. From a device perspective, the 5th Global Innovations Symposium of the Materials Processing & Manufacturing Division will consider practical fabrication, characterization, and evaluation technologies.

Many of the presentations in this track are planned for proceedings publication.

5th Global Innovations Symposium: Trends in LIGA, Miniaturization, and Nano-Scale Materials, Devices and Technologies

Sponsored by: Materials Processing & Manufacturing Division, MPMD-Powder Materials Committee, MPMD-Phase Transformations Committee-(Jt. ASM-MSCTS), MPMD-Computational Materials Science & Engineering-(Jt. ASM-MSCTS), Jt. MPMD/EPD-Process Modeling Analysis & Control Committee, MPMD-Surface Engineering Committee, MPMD-Shaping and Forming Committee, MPMD-Solidification Committee

Abstract due date: 7/1/03

New low cost techniques for the fabrication of micro-parts with typical features ranging between 1 to 1000 micrometers are being developed as miniaturization technology pushes the frontier to smaller and smaller devices. Using advanced material processing technologies, like LIGA technology, miniaturized parts are fabricated by electroplating or sintering of ceramic or metal nanoparticles shaped into molds. In addition to optimizing the baseline pre-form microfabrication technique, research is underway to develop methods for evaluating the properties of microparts and investigations into the effects of nanoparticle size, fabrication parameters, and sintering schedule on properties of these micro-part materials. This symposium will provide description, insight, challenges, and projections for advances in miniaturized part manufacturing, evaluation and applications. It is intended to bring together those people developing LIGA and LIGA-like technologies to discuss the fundamental materials and engineering challenges to advancing the technology and identify materials processing needs for further development of these technologies. There will be three types of talks: Overviews by invited speakers which describe the size scale of interest to the LIGA community, mini-tutorials by experts in the field that describe characteristics of commercially available nanoscale materials, and focused technical presentations that describe advanced techniques and materials issues for making miniature parts with nanocrystalline microstructures, including sensors, using LIGA and LIGA-like technologies.

Topics of interest will include but not be limited to:

- Materials processing needs for microfabricated devices
- Characterization of nanostructured materials
- Fundamental material science issues in nanostructured materials
- Stress and stress evolution in LIGA and LIGA-like parts
- Effects of restricted geometry on microstructure

Submit abstracts electronically at http://cms.tms.org or to: John E. Smugeresky, Sandia National Laboratories, Department 8724, Livermore, CA 94551-0969 USA T: 925-294-2910 F: 925-294-3410 Email:

smug@sandia.gov. Co-Organizers: Steven H. Goods, Sandia National Labs, Livermore, CA 94551-0969 T: 925-294-3274 F: 925-294-3410 Email: shgoods@sandia.gov; Sean J. Hearne, Sandia National Labs, Albuquerque, NM 87185-1415 T: 505-845-0804 F: 505-844-7775 Email: sjhearn@sandia.gov; Neville R. Moody, Sandia National Laboratories, Livermore, CA 94551-0969 USA T: 925-294-2622 F: 925-294-3410 Email: nrmoody@sandia.gov.

Nanostructured Materials for Biomedical Applications

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

Abstract due date: 7/15/03

There are rapid developments in the types of materials used in medical implants and diagnostic equipment. Topics of interest include, but are not limited to, nanostructured materials, bio-derived materials, novel scaffolds, sensor materials, and "smart" materials that are able to respond to the body environment. This symposium will encompass the fields of engineering and medicine, and will provide an ideal environment for discussion of medical device design and development. Submit abstracts electronically at http://cms.tms.org or to: Roger J. Narayan, Georgia Tech, School of Materials Science and Engineering, Atlanta, GA 30332-0245 USA T: 404-894-2823 Email: roger.narayan@mse.gatech.edu. Co-Organizers: J. Michael Rigsbee, North Carolina State University, Department of Materials Science and Engineering, Raleigh, NC 27695-7907 USA F: 919-515-7724 Email: mike_rigsbee@ncsu.edu; Xinghang Zhang, Los Alamos National Laboratory, Los Alamos, NM 87545 USA T: 505-665-6685 Email: zhangx@lanl.gov.

Surfaces and Interfaces in Nanostructured Materials

Sponsored by: Materials Processing and Manufacturing Division, MPMD-Surface Engineering Committee

Abstract due date: 6/20/03

As feature sizes in modern materials get smaller, the surface/interface to volume ratio increases. For nano-technology-derived structures, it can be argued that the few atomic layers that constitute the interfacial region will dominate most properties. Modification and tailoring of the surface or interface may be the most effective approach of controlling these materials. This mandates a detailed understanding of structural, physical and chemical properties of interfaces. The proposed symposium is expected to bring experts working on different aspects of these studies (fabrication, characterization, modification, modeling, etc.) to identify and address some of the important issues. Focus areas will include topics such as, but not limited to, the following:

- Structure-Chemistry-Property Relationships
- Surface engineering approaches in the nano-scale regime
- Chemistry and atomic bonding at interfaces
- Kinetics, Diffusion paths and related effects at Interfaces
- Fabrication of "bulk" nano-structures
- Advances in Interfacial Modification/Engineering Techniques

This symposium plans to publish a proceedings volume. Submit abstracts electronically at http://cms.tms.org or to: Sharmila M. Mukhopadhyay, Wright State University, Department of Mechanical and Materials Engineering, Dayton, OH 45435 USA T: (937) 775-5092 F: (937) 775-5009 Email: smukhopa@cs.wright.edu. Co-Organizers: Arvind Agarwal, Florida International Univ, Dept of Mechanical and Materials Eng, Miami, FL 33174 USA T: 305-348-1701 F: 305-348-1932 Email: agarwala@fiu.edu; Narendra B. Dahotre, University of Tennessee, Department of Materials Science & Engineering, Knoxville, TN 37932 USA T: 865-974-0523 F: 865-974-0530 Email: ndahotre@utk.edu; Sudipta Seal, University of Central Florida, Advanced Materials Processing and Analysis Center and Mechanical, Materials and Aerospace Engineering, Oviedo, FL 32765-7962 USA T: 407-823-5277 F: 407-823-6880 Email: sseal@pegasus.cc.ucf.edu.

Third International Symposium on Ultrafine Grained Materials

Sponsored by: Materials Processing & Manufacturing Division, MPMD-Shaping and Forming Committee

Abstract due date: 7/1/03

This is the third international symposium that focuses on all aspects of science and technology of ultrafine-grained (UFG) materials produced by Severe Plastic Deformation (SPD) techniques. It provides a forum on the topics of fundamental issues in SPD processing and SPD-processed materials, processing and microstructures, microstructural evolution, mechanical and physical properties, superplasticity, computational and analytical modeling, new SPD technologies and advances, structural applications, etc. Submit abstracts electronically at http://cms.tms.org or to: Yuntian Ted Zhu, Los Alamos National Laboratory, Materials Science and Technology Division, Los Alamos, NM 87545 USA T: 505-667-4029 F: 505-667-2264 Email: yzhu@lanl.gov. Co-Organizers: Terence G. Langdon, University of Southern California, Department of Mechanical Engineering, Los Angeles, CA 90089-1453 USA T: 213-740-0491 F: 213-740-8071 Email: langdon@usc.edu; Terry C. Lowe, Metallicum, Santa Fe, NM 87501 USA T: 505-983-6852 F: 505-983-6495 Email: tlowe@metallicum.com; S. Lee Semiatin, Air Force Research Laboratory, Materials & Manufacturing Directorate, WPAFB, OH 45433 USA T: 937-255-1345 F: 937-255-9792 Email: Lee.semiatin@wpafb.af.mil; Dong H. Shin, Hanyang University, Department of Metallurgy and Material Science, Ansan, Kyunggi-Do 425-791 Korea Email: dshin@hanyang.ac.kr; Ruslan Z. Valiev, Institute of Physics of Advanced Material, Ufa State Aviation Technology University, Ufa 450000 Russia Email: RZValiev@mail.rb.ru.

PHYSICAL METALLURGY

The symposia of this wide-ranging track provide an opportunity to expand our understanding of structure-processing-property-performance relationships as well as the associated physical and mechanical behavior as determined through process analysis, testing, characterization, modeling and simulation, and other evaluative techniques.

Core coverage will include mechanical properties (superplasticity, failure, internal stresses, and thermo-mechanical behavior), solidification and microstructures (phase transformations, multiphase phenomena, evolution, interfaces, diffusion, recrystallization, grain boundaries, texture, and crystallography), materials testing and evaluation, microscopy, modeling and simulation (computer and physical modeling, mathematical modeling, design, computational fluid dynamics, computational thermodynamics, validation, and sensors), and microgravity.

Many of the presentations in this track are planned for proceedings publication.

Advances in Superplasticity and Superplastic Forming

Sponsored by: Materials Processing and Manufacturing Division, Structural Materials Division, MPMD-Shaping and Forming Committee, SMD-Mechanical Behavior of Materials-(Jt. ASM-MSCTS), SMD-Structural Materials Committee

Abstract due date: 7/15/03

Superplastic forming, already established as an important technology in aerospace manufacturing, has begun infiltrating the automotive industry, where fast cycle time is a key requirement. This symposium addresses the various advances in materials and process technologies required to enable this next step in the mass production applications of superplastic forming. A focus of the symposium is materials and processes of interest to the automotive industry, such as forming of light alloys at more rapid rates and lower forming temperatures. This includes alloy development for aluminum and magnesium, as well as other metallic materials, and novel forming techniques for commercial applications. Basic aspects of research on grain refinement techniques, microstructural evolution, deformation mechanisms, cavitation and process modeling will continue to remain of key interest. Sessions are also planned on superplastic deformation of other materials, such as titanium, steel, stainless steel, and metallic glasses, etc., and papers in these areas are strongly encouraged. Submit abstracts electronically at http://cms.tms.org or to: 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. Co-Organizers: P. A. Friedman, Ford Research Laboratory T: 313-248-3362 Email: pfriedma@ford.com; Amit K. Ghosh, University of Michigan, Department of Materials Science and Engineering, Ann Arbor, MI 48109-2136 USA T: 734-764-3322 F: 734-763-4788 Email: akg@umich.edu; P. E. Krajewski, General Motors R&D Center T: 586-986-8696 Email: paul.e.krakewski@gm.com; Rajiv S. Mishra, University of Missouri-Rolla, Metallurgical Engineering, Rolla, MO 65409-0340 USA T: 573-341-6361 F: 573-341-6934 Email: rsmishra@umr.edu; J. G. Schroth, General Motors R&D Center T: 586-986-0977 Email: james.g.schroth@gm.com.

Computational Thermodynamics and Phase Transformations

Sponsored by: ASM International: Materials Science Critical Technology Sector, Electronic, Magnetic & Photonic Materials Division, Materials Processing & Manufacturing Division, Structural Materials Division, MPMD-Computational Materials Science & Engineering-(Jt. ASM-MSCTS), Jt. EMPMD/SMD-Chemistry & Physics of Materials Committee

Abstract due date: 7/1/03

By reducing the number of time consuming laboratory experiments required to test a new component design or process, computational modeling and simulation can result in significant cost savings. This symposium is the third in a series of annual TMS symposia focusing on computational thermodynamics and kinetics of phase transformations. It intends to bring together computational and experimental materials scientists to assess the current status of computational models and simulation techniques at different time and length scales. In addition to fundamental understanding of the mechanisms underlying microstructural evolution, attention will also be given to applications practical to microstructural engineering of advanced materials including metals, ceramics and electronic materials in both bulk and thin film forms. Of particular interest are computational models that integrate two or more different approaches, analyses that compare the relative merits of various simulation techniques and validation with experiment of simulation results. Six sessions are anticipated with several invited speakers in each session. Topics of relevance include, but are not limited to:

- Classical and first principles atomistic simulation techniques.
- Thermodynamic properties of equilibrium and nonequilibrium phases.
- Fundamental properties of surfaces and interfaces.
- Advances in phase field modeling.
- Kinetics of grain growth, recrystallization and particle coarsening.
- Effect of elastic and plastic strains on the kinetics of microstructural evolution.

Submit abstracts electronically at http://cms.tms.org or to: Jeffrey J. Hoyt, Sandia National Laboratories, Matls. & Process Modlg., Albuquerque, NM 87122 USA T: (505) 284-5391 F: (505) 844-9781 Email: jjhoyt@sandia.gov.

CFD Modeling and Simulation of Engineering Processes

Sponsored by: Materials Processing & Manufacturing Division, ASM/MSCTS-Materials & Processing, Computer Simulation Committee, Jt. MPMD/EPD-Process Modeling Analysis & Control Committee, MPMD-Solidification Committee

Abstract due date: 7/15/03

The symposium will be focused on the computational fluid dynamics (CFD) modeling and simulation of various engineering processes, such as metal processes (e.g., casting, forging, welding, heat treating, VAR/ESR/PAM/EBM remelting processes, etc.), coatings (PVD, CVD, plasma-assisted EBM-PVD technologies, etc.), other surface engineering processes including induction, laser and EB thermal processing). Papers on multi-scale modeling and simulation are considered. Other processes such as power/energy related processes (e.g., fuel cells, Ag-Zn batteries, etc.), electromagnetic processes involving fluid flow phenomena, steel making and processing technologies, and thermal management of electronic systems are also considered. The papers must cover physical phenomena involved in the process, a thorough description of the mathematical model and the validation and verification of the model. The aim of the conference is to bring together scientists and engineers on the CFD field to discuss applications of CFD to engineering processes and to demonstrate how CFD could help better understand the fundamentals of engineering processes; furthermore, they should how this will lead to a

shorten design cycle with an improved performance of the process. Papers on process modeling applying CFD software are very welcome. Several symposium topics will be considered. Submit abstracts electronically at http://cms.tms.org or to: Laurentiu Nastac, Concurrent Technologies Corporation, Pittsburgh, PA 15219-1819 USA Email: nastac@ctcgsc.org. Co-Organizer: Ramesh Minisandram, Allvac, R&D Department, Monroe, NC 28111-5030 USA Email: ramesh.minisandram@allvac.com.

The Didier de Fontaine Symposium on the Thermodynamics of Alloys

Sponsored by: Computer Simulation Committee

Abstract due date: 7/15/03

This symposium will honor the seminal contributions of Didier de Fontaine to the theory of alloys over the last 40 years. His many contributions are in the areas of crystallography, ordering reactions, and phase separation; using various techniques for the calculation of phase equilibria by combined first principles electronic band structure and statistical mechanical methods. Six sessions are anticipated including both invited and contributed talks in each session. This symposium will address basic issues of thermodynamic equilibrium in alloys that have been the center of Professor de Fontaine's career. Topics and techniques of relevance include: Cluster expansion techniques as well as first principles atomistic techniques for the calculation of equilibrium structures and ordering phenomena in alloys, and the application of advanced X-Ray/neutron scattering and electron-microscopy methods in studies of alloy phase transformations. Joint sessions are planned with the symposium on Computational Thermodynamics and Phase Transformations. Submit abstracts electronically at http://cms.tms.org or to: Diana Farkas, Virginia Polytechnic Institute and State University, Department of Materials Science and Engineering, Blacksburg, VA 24061 USA T: 540-231-4742 F: 540-231-8919 Email: diana@vt.edu. Co-Organizers: Mark D. Asta, Northwestern University, Department of Materials Science and Engineering, Evanston, IL 60208-3108 USA T: 847-491-5940 Email: m-asta@northwestern.edu; Gerbrand Ceder, MIT, Department of Materials Science, Cambridge, MA 02139 USA T: 617-253-1581 F: 617-258-6534 Email: gceder@mit.edu; Christopher Mark Wolverton, Ford Motor Company, Scientific Research Laboratory, Dearborn, MI 48121-2053 USA F: 734-944-0243 Email: cwolvert@ford.com.

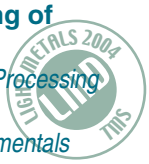
Dislocations

Sponsored by: ASM International: Materials Science Critical Technology Sector, Electronic, Magnetic &
Photonic Materials Division, Materials Processing & Manufacturing Division, Structural Materials Division,
Jt. EMPMD/SMD-Chemistry & Physics of Materials Committee, MPMD-Computational Materials Science &
Engineering-(Jt. ASM-MSCTS)

Abstract due date: 7/15/03

Many key material properties arise not from crystal structure, but from structural defects. Dislocations, for example, mediate many mechanical and electrical properties to the extent that much of materials processing focuses on controlling dislocation formation and annihilation. This symposium will survey the current state of dislocation theory, modeling, and experiment. Topics include, but are not limited to, characterization of single dislocations, dislocation interactions and entanglement, pattern formation and evolution, interactions with impurities, precipitates and interfaces, and the connection between dislocation structure and macroscopic phenomena. In each session, invited speakers will provide perspectives in critical areas. Submit abstracts electronically at http://cms.tms.org or to: Elizabeth A. Holm, Sandia National Laboratories, Albuquerque, NM 87185-1411 USA T: 505-844-7669 F: 505-844-9781 Email: eaholm@sandia.gov. Co-Organizers: Richard A. LeSar, Los Alamos National Laboratory, Theoretical Division T: 505-665-0420 F: 505-665-3909 Email: lesar@lanl.gov; Yunzhi Wang, The Ohio State University, Department of Materials Science and Engineering, Columbus, OH 43210 USA T: 614-292-0682 Email: wang.363@osu.edu.

Electrochemical Measurements and Processing of Materials



Sponsored by: Extraction & Processing Division, Materials Processing & Manufacturing Division,
EPD-Aqueous Processing Committee, EPD-Process Fundamentals Committee, EPD-Pyrometallurgy Committee, ASM/MSCTS-Thermodynamics & Phase Equilibria Committee, EPD-Waste Treatment & Minimization Committee

Abstract due date: 7/15/03

The symposium will invite and solicit papers on novel measurement and processing techniques that employ electrochemical process fundamentals. The emphasis will be on measurement methods and processes that extend our understanding and application capability of electrochemical techniques. Topics can be broadly classified into the following three categories: Physical and Chemical Property Measurements; Sensors including micro-sensors; and Electrochemically ediated synthesis/processing/refining of materials and value-added products. Submit abstracts electronically at http://cms.tms.org or to: Uday B. Pal, Boston University, Department of Manufacturing Engineering, Brookline, MA 02446 USA T: 617-353-7708 Email: upal@bu.edu. Co-Organizers: Akram M. Alfantazi, University of British Columbia, Vancouver BC V6T 124 T: 604-822-8745 F: 604-822-3619 Email: alfantaz@interchange.ubc.ca; Adam C. Powell, Massachusetts Institute of Technology, Department of Materials Science and Engineering, Cambridge, MA 02139-4307 USA T: 617-452-2086 F: 617-253-5418 Email: hazelsct@mit.edu; Ramana Reddy, University of Alabama, Department of Metals and Materials Engineering, Tuscaloosa, AL 35487-0202 USA T: 205-348-4246 F: 205-348-2164 Email: rreddy@coe.eng.ua.edu.

Failure of Structural Materials

Sponsored by: Structural Materials Division, SMD-Structural Materials Committee

Abstract due date: 7/15/03

This symposium will address the investigation of and root causes for failures of structural materials. Focused areas will include investigation techniques, materials solution & design, and Processing/Joining. Submit abstracts electronically at http://cms.tms.org or to: Michael E. Stevenson, Metals and Materials Engineering, Suwanee, GA 30024 USA Email: mstevenson@mmelab.com. Co-Organizer: Mark L. Weaver, University of Alabama, Metallurgical and Materials Engineering, Tuscaloosa, AL 35487-0202 USA T: 205-348-7073 F: 205-348-2164 Email: mweaver@coe.eng.ua.edu.

Internal Stresses and Thermo-Mechanical Behavior in Multi-Component Materials Systems

Sponsored by: Electronic, Magnetic & Photonic Materials Division, Structural Materials Division, EMPMD-Electronic Packaging and Interconnection Materials Committee, EMPMD-Thin Films & Interfaces Committee, SMD-Composite Materials Committee-Jt. ASM-MSCTS

Abstract due date: 6/15/03

The purpose of this symposium is to bring together the latest developments in: (1) residual stress measurements, (2) modeling and simulation approaches, and (3) understanding the interaction between thermo-mechanical behavior and internal stresses. Topics of interest include internal stress-related system performance and reliability issues, interaction between internal stresses and fracture/fatigue/creep/thermal cycling, as well as phase changes associated with internal stresses and effect on properties. Areas of interest include composites, nano-materials, thin films and coatings, interconnects in microelectronic devices and packages, and other systems with interfaces between dissimilar materials. Submit abstracts electronically at http://cms.tms.org or to: Indranath Dutta, Naval Postgraduate School, Department of Mechanical Engineering, Monterey, CA 93943 USA T: 831-656-2851 F: 831-656-2238 Email: idutta@nps.navy.mil. Co-Organizers: Mark A.M. Bourke, Los Alamos National Laboratory, Neutron Science Center, Los Alamos, NM 87545 USA Email: bourke@lanl.gov; Darrel R. Frear, Motorola, Tempe, AZ 85284 USA T: 480-413-6655 F: 480-413-4511 Email: darrel.frear@motorola.com; Bhaskar S. Majumdar, New Mexico Tech, Department of Materials Science and Engineering, Socorro, NM 87801 USA T: 505-835-5152 Email: majumdar@nmt.edu; John E. Sanchez, Advanced Micro Devices, Sunnyvale, CA 94088 USA T: 408-749-2253 F: 408-749-3851 Email: johne.sanchez@amd.com.

Multiphase Phenomena in Materials Processing

Sponsored by: Extraction & Processing Division, Light Metals Division, Materials Processing and Manufacturing Division, EPD-Process Fundamentals Committee, Jt. MPMD/EPD-Process Modeling Analysis & Control Committee, MPMD-Solidification Committee

Abstract due date: 7/15/03

This symposium provides researchers and engineers with a forum to discuss the recent development in modeling of multiscale and multiphase phenomena in material processing systems. The topics include gas-particle flows, liquid-liquid phase flows, bubbly driven flows, granular flows, liquid-solid flows, and multiphase flows in external fields, multiscale heat and mass transfer, and microstructure formation in these multiphase systems. Papers addressing the theory, experiments and computational modeling in the above topic areas are called for. Submit abstracts electronically at http://cms.tms.org or to: Ben Q. Li, Washington State University, School of Mechanical and Materials Engineering, Pullman, WA 99164-2920 USA T: 509-335-7386 F: 509-335-4662 Email: li@mme.wsu.edu. Co-Organizer: Stavros A. Argyropoulos, University of Toronto, Department of Materials Science and Engineering, 184 College Street, Toronto Ontario M5S 3E4 Canada; T: 416-978-5302, F: 416-978-4155, Email: argyro@ecf.utoronto.ca; Christoph Beckermann, University of Iowa, Department of Mechanical Engineering, Iowa City, IA 52242 USA T: 319-335-5681, F: 319-335-5669 Email: becker@engineering.uiowa.edu; Bob Dax, Concurrent Technologies Corporation, 425 Sixth Ave., Pittsburgh, PA 15219 USA T: 412-276-3806 F: 814-269-2799, Email: Dax@ctc.com; Hani Henein, University of Alberta, Edmonton, AB T6G 2G6 Canada T: 780-492-7304 F: 780-492-0704 Email: hani.henein@ualberta.ca; Adrian Sabau, Oak Ridge National Laboratory, MS-602, 1 Bethel Valley Road, Bldg. 4508, MS 6083, Oak Ridge, TN 37831-6083 USA T: 865-241-5145, F: 865-574-4358, Email: sabaua@ornl.gov; Brian G. Thomas, University of Illinois, Department of Mechanical and Industrial Engineering, 1206 West Green Street, Urbana, IL 61801 USA T: 217-333-6919, F: 217-244-6534, Email: bgthomas@uiuc.edu; Srinath Viswanathan, Sandia National Laboratories, MS 1134, Department 1835, PO Box 5800, Albuquerque, NM 87185-1134 USA T: (505) 284-8497, F: (505) 845-3430, Email: srinath@sandia.gov

R.J. Arsenault Symposium on Materials Testing and Evaluation

Sponsored by: Structural Materials Division, SMD-Mechanical Behavior of Materials-(Jt. ASM-MSCTS)

Abstract due date: 7/15/03

Advances in instrumentation in existing materials testing and evaluation techniques, as well as new approaches to materials testing and evaluation, are increasingly becoming necessary with the continuously decreasing size of engineering structures and the emergence of new materials in bulk, coating, thin-film, line and dot forms. This symposium seeks to provide a broad forum for examining current research and future directions in materials testing and evaluation. The techniques will assess a range of geometrical and microstructural length scales in various material classes. Aspects of non-destructive and online monitoring techniques will also be addressed. Representative techniques include (but are not limited to): x-ray and neutron diffraction, instrumented indentation, magnetic, electromagnetic, acoustic, optical and thermographic techniques, etc. This symposium is held in honor of Prof. R. J. Arsenault, following his retirement from the University of Maryland. Submit abstracts electronically at http://cms.tms.org or to: Raj Vaidyanathan, University of Central Florida, AMPAC MMAE, Orlando, FL 32816-2455 USA T: 407 882 1180 Email: raj@mail.ucf.edu. Co-Organizers: Peter K. Liaw, University of Tennessee, Department of Materials Science and Engineering, Knoxville, TN 37996-2200 USA T: 865-974-6356 F: 865-974-4115 Email: pliaw@utk.edu; K. Linga Murty, National Science Foundation, Arlington, VA 22230 USA T: 703-292-4935 F: 703-292-9035 Email: kmurty@nsf.gov.

The Role of Grain Boundaries in Material Design

Sponsored by: ASM/MSCTS-Texture & Anisotropy Committee

Abstract due date: 7/15/03

Recent advances in materials science and engineering provide strategies for incorporating materials chemistry and microstructure parameters as design variables for highly-constrained design problems. These advances are driven by a critical need to reduce the time required to introduce new materials by identifying principles and developing tools by which predictive optimizing of material processing and properties can be done at the conceptual design stage of a new system. This symposium will provide a forum for presentation and discussion of theory, models, and methodology for identifying and obtaining controlled grain boundary characteristics in materials design, and the use of these models and methods in multidisciplinary design. The topics of the symposium include, but are not limited to:

- Systems approaches to multiscale optimization of material properties
- Topology optimization
- Strategies for solving inverse problems associated with microstructure/chemistry-properties relationships
- Analysis for functionally graded materials
- Integration of material design with finite element analysis

- Strategies for accelerated development of material databases
- Prediction of damage nucleation and evolution
- Case studies

Submit abstracts electronically at http://cms.tms.org or to: Brent L. Adams, Brigham Young University, Department of Mechanical Engineering, Provo, UT 84602 USA T: 412-268-2711 Email: b_l_adams@byu.edu. Co-Organizer: Thomas R. Bieler, Michigan State University, Department of Chemical Engineering and Materials Science, East Lansing, MI 48824-1226 USA T: 517-353-9767 F: 517-432-1105 Email: bieler@egr.msu.edu.

Solidification Processes and Microstructures: A Symposium in Honor of Prof. W. Kurz

Sponsored by: Materials Processing & Manufacturing Division-MPMD-Solidification Committee

Abstract due date: 7/15/03

Professor Wilfried Kurz, born April 18, 1938, has been active for nearly forty years in the field of solidification, essentially at the Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland. Among many achievements, W. Kurz has carried out experimental and theoretical investigations on microstructural aspects such as dendrite tip kinetics, microsegregation, eutectics and peritectics formation, microstructure selection, banding, and absolute stability at high solidification rate, etc. He has also made significant contributions to processes such as continuous casting of steel and aluminum, directional solidification, and single crystal growth, laser surface treatment, laser welding, laser metal forming, etc. The book Fundamentals of Solidification, written with one of his former Ph.D. students (D. Fisher), has been a great help for many students and researchers in the field. As Prof. W. Kurz retires in 2003, a special symposium dedicated to him is organized. It focuses on both theoretical and experimental investigations of solidification processes and microstructures. In addition to invited speakers, contributed papers making clear reference to one or more scientific papers of W. Kurz are also welcome. Submit abstracts electronically at http://cms.tms.org or to: Michel Rappaz, Ecole Polytechnique Fédérale de Lausanne, MXG, Lausanne Switzerland Email: michel.rappaz@epfl.ch. Co-Organizers: Christoph Beckermann, University of Iowa, Department of Mechanical Engineering, Iowa City, IA 52242 USA T: 319-335-5681 F: 319-335-5669 Email: becker@engineering.uiowa.edu; R. Trivedi, Iowa State University, Ames, IA 50011 USA T: 515-294-5869 F: 515-294-4291 Email: trivedi@ameslab.gov.

Hume Rothery Symposium: Structure and Diffusional Growth Mechanisms of Irrational Interphase Boundaries

Sponsored by: Jt. EMPMD/SMD-Alloy Phases Committee

Abstracts Accepted by Invitation Only

This symposium will focus upon the interphase boundary structure of planar (and curved) interfaces formed during diffusional phase transformations that are characterized by irrational orientation relationships and by conjugate habit planes that are irrational even at the atomic level. Example phase transformations will include precipitation from substitutional and interstitial solid solutions, the massive transformation and the pearlite and cellular reactions. Submit abstracts electronically at http://cms.tms.org or to: H. I. Aaronson, Carnegie Mellon University, Department of Materials Science and Engineering, Pittsburgh, PA 15213 USA T: 412 268 8785 F: 412 268 7596 Email: aaronson@andrew.cmu.edu.

Symposium in Honor of Prof. Roger D. Doherty

Sponsored by: Light Metals Division, Aluminum Association, MPMD-Solidification Committee, SMD-Physical Metallurgy Committee, LMD-Aluminum Committee

Abstract due date: 7/15/03

This symposium will address several issues of long standing importance in physical metallurgy that have been highlights of Prof. Doherty's career. These include phase transformations, solidification, recrystallization, texture development, microstructural stability and work hardening. The symposium will consist of a set of invited lectures from colleagues from industry, academia and the national laboratories. Submit abstracts electronically at http://cms.tms.org or to: Anthony D. Rollett, Carnegie Mellon University, Department of Materials Science & Engineering, Pittsburgh, PA 15213-3918 USA T: 412-268-3177 F: 412-268-7596 Email: rollett@andrew.cmu.edu. Co-Organizer: Robert E. Sanders, Alcoa Technical Center, PA 15069-0001 T: 724-337-2478 Email: robert.sanders@alcoa.com.

General Abstracts

Sponsored by: TMS

Abstract due date: 8/15/03

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 inter-connection 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, Warrendale, PA 15086 USA T: 724-776-9000 F: 724-776-3770 Email: raabe@tms.org.

General Poster Session

Sponsored by: TMS

Abstract due date: 8/15/03

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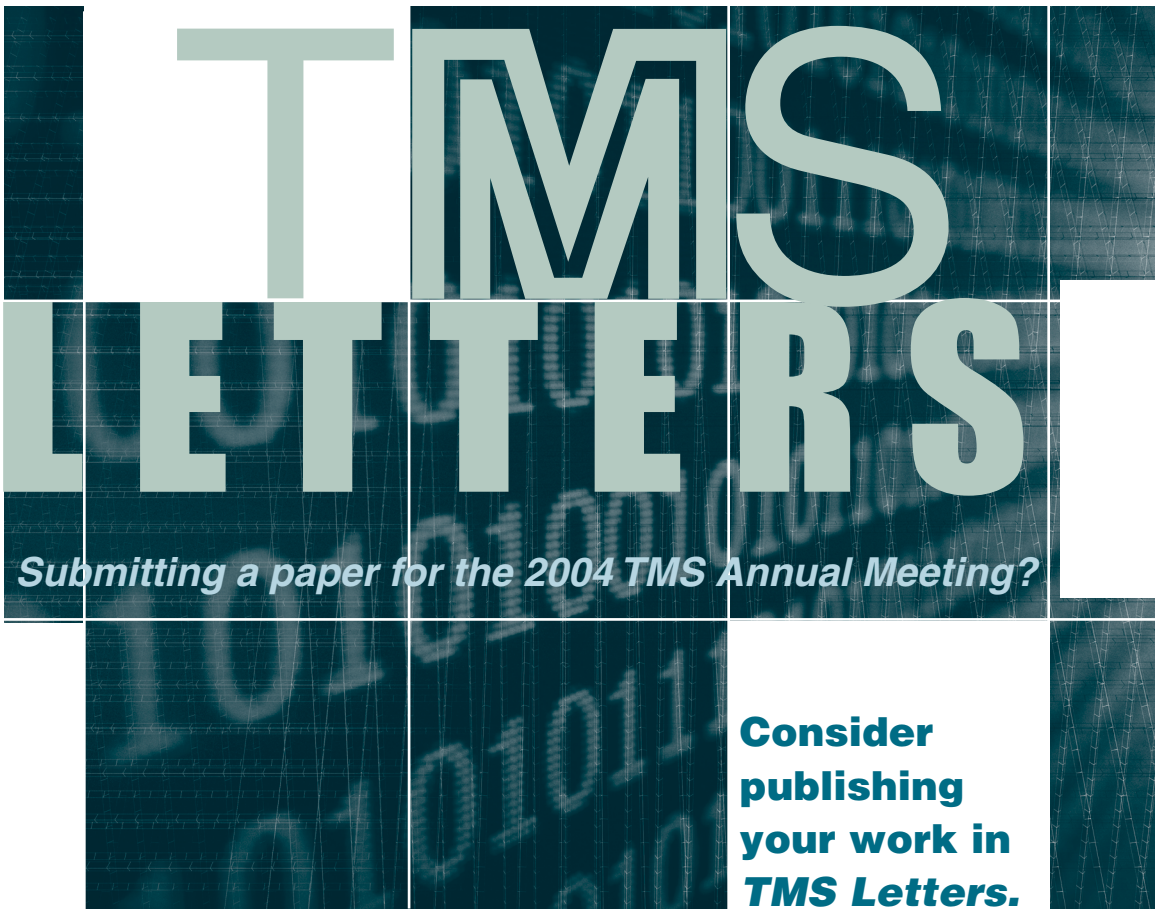

TMS Letters: A New Venue for Publishing TMS Conference Proceedings

TMS Letters is a peer-reviewed, journal published exclusively on-line. The journal will be composed of two-page technical updates of research presented at TMS meetings and not published in any other book or journal. Every member of TMS, as well as nonmember subscribers, will have access to this timely, relevant, and rigorously reviewed resource.

TMS Letters will debut following the 2004 TMS Annual Meeting and will consist exclusively of papers presented at the conference. Other issues of TMS Letters published throughout the year will include proceedings from MS&T (Materials Science & Technology) and Electronic Materials conferences.

If a formal conference proceedings publication is not planned for your symposium, consider publishing a two-page technical update, including text and graphics, in TMS Letters.

Author instructions and directions for submitting papers to the journal will be made available later this year. More information and future announcements will be provided in the 2004 TMS Annual Meeting Advance Brochure, *TMS e-News,* and *JOM.*