# **TMS2008**

**137th Annual Meeting & Exhibition** 

Linking Science and Technology for Global Solutions







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272		General Abstracts: Extraction and Processing: Session I	General Abstracts: Extraction and Processing: Session II	IOMMMS Global Materials Forum 2008: Creating the Future MS&E Professional	Materials for Infrastructure: Building Bridges in the Global Community: Session I	Materials for Infrastructure: Building Bridges in the Global Community: Session II	The Role of Engineers in Meeting 21st Century Societal Challenges AIME Keynote Session	
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275		Emerging Interconnect and Packaging Technologies: Pb-Free Solders: Fundamental Properties, Interfacial Reactions and Phase Transformations	Emerging Interconnect and Packaging Technologies: Pb-Free and Sn-Pb Solders: Electromigation	Emerging Interconnect and Packaging Technologies: Advanced Interconnects	Emerging Interconnect and Packaging Technologies: Pb-Free Solder: Tin Whisker Formation and Mechanical Behavior	Emerging Interconnect and Packaging Technologies: Pb-Free Solders: Reliability and Microstructure Development	Emerging Interconnect and Packaging Technologies: Pb-Free Solders and Other Interconnects: Microstructure, Modeling, and Test Methods	
276		Hume-Rothery Symposium - Nanoscale Phases: Session I	Hume-Rothery Symposium - Nanoscale Phases: Session II	Hume-Rothery Symposium - Nanoscale Phases: Session III	Hume-Rothery Symposium - Nanoscale Phases: Session IV	General Abstracts: Electronic, Magnetic, and Photonic Materials Division: Session I	General Abstracts: Electronic, Magnetic, and Photonic Materials Division: Session II	

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	Recent Developments in Rare Earth Science and Technology - Acta Materialia Gold Medal Symposium: Session I	Recent Developments in Rare Earth Science and Technology - Acta Materialia Gold Medal Symposium: Session II	Recycling: Electronics Recycling	Recycling: Micro-Organisms for Metal Recovery	Recycling: Light Metals	Recycling: General Sessions		280
		9th Global Innovations Symposium: Trends in Integrated Computational Materials Engineering for Materials Processing and Manufacturing: Session I	9th Global Innovations Symposium: Trends in Integrated Computational Materials Engineering for Materials Processing and Manufacturing: Session II	Aqueous Processing - General Session: Aqueous Processing General Abstracts				281
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285		Emerging Methods to Understand Mechanical Behavior: Imaging Methods: TEM, SEM, AFM and Moire	Emerging Methods to Understand Mechanical Behavior: Digital Image Correlation Methods	Emerging Methods to Understand Mechanical Behavior: Indentation and Time-Resolved Methods	Emerging Methods to Understand Mechanical Behavior: Subscale Methods: Tension and Compression	Emerging Methods to Understand Mechanical Behavior: Diffraction Methods: Electron and Neutron	Emerging Methods to Understand Mechanical Behavior: Diffraction Methods: Synchrotron X-Ray	
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287		Recent Industrial Applications of Solid-State Phase Transformations: Superalloys and TRIP Steels/ Automotive Steels	Recent Industrial Applications of Solid-State Phase Transformations: Alloy Design, Microstructure Prediction and Control	Frontiers in Process Modeling: Metallurgical Reactors - and - Frontiers in Process Modeling: Casting and General Modeling		Energy Conservation in Metals Extraction and Materials Processing: Session I	Energy Conservation in Metals Extraction and Materials Processing: Session II	
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291		Magnesium Technology 2008: Magnesium Plenary Session	Magnesium Technology 2008: Wrought Alloys I	Magnesium Technology 2008: Wrought Alloys II	Magnesium Technology 2008: Wrought Alloys III	Magnesium Technology 2008: Advanced Magnesium Materials	Magnesium Technology 2008: Corrosion, Surface Finishing and Joining	
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293		Aluminum Alloys: Fabrication, Characterization and Applications: Development and Applications	Aluminum Alloys: Fabrication, Characterization and Applications: Processing and Properties	Aluminum Alloys: Fabrication, Characterization and Applications: Modeling	Aluminum Alloys: Fabrication, Characterization and Applications: Alloy Characterization	Aluminum Alloys: Fabrication, Characterization and Applications: Corrosion and Protection	Aluminum Alloys: Fabrication, Characterization and Applications: Composites and Foams	

### **Program-at-a-Glance**

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	Key Challenges and Opportunities for the Aluminum Industry	Alumina and Bauxite: HSEC	Alumina and Bauxite: Equipment	Alumina and Bauxite: Bauxite	Alumina and Bauxite: Additives	Alumina and Bauxite: Operations	Alumina and Bauxite: Precipitation/ Conclusion	296
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	Mechanical Behavior, Microstructure, and Modeling of Ti and Its Alloys: Processing: Design, Control and Optimization	Mechanical Behavior, Microstructure, and Modeling of Ti and Its Alloys: Phase Transformation and Microstructure Development I	Mechanical Behavior, Microstructure, and Modeling of Ti and Its Alloys: Phase Transformation and Microstructure Development II	Mechanical Behavior, Microstructure, and Modeling of Ti and Its Alloys: Microstructure/ Property Correlation I	Mechanical Behavior, Microstructure, and Modeling of Ti and Its Alloys: Microstructure/ Property Correlation II	Mechanical Behavior, Microstructure, and Modeling of Ti and Its Alloys: Physical/ Mechanical Property Prediction		384

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386	Hael Mughrabi Honorary Symposium: Plasticity, Failure and Fatigue in Structural Materials - from Macro to Nano: Poster Session	Hael Mughrabi Honorary Symposium: Plasticity, Failure and Fatigue in Structural Materials - from Macro to Nano: Dislocations: Work Hardening, Patterning, Size Effects I	Hael Mughrabi Honorary Symposium: Plasticity, Failure and Fatigue in Structural Materials - from Macro to Nano: High-emperature Mechanical Properties: Creep, Fatigue and Thermomechanical Fatigue	Hael Mughrabi Honorary Symposium: Plasticity, Failure and Fatigue in Structural Materials - from Macro to Nano: Dislocations: Work Hardening, Patterning, Size Effects II	Hael Mughrabi Honorary Symposium: Plasticity, Failure and Fatigue in Structural Materials - from Macro to Nano: Cyclic Deformation and Fatigue of Metals I	Hael Mughrabi Honorary Symposium: Plasticity, Failure and Fatigue in Structural Materials - from Macro to Nano: Mechanical Properties of Ultrafine-Grained (UFG) Metals I	Hael Mughrabi Honorary Symposium: Plasticity, Failure and Fatigue in Structural Materials - from Macro to Nano: Mechanical Properties of Ultrafine-Grained (UFG) Metals II	Hael Mughrabi Honorary Symposium: Plasticity, Failure and Fatigue in Structural Materials - from Macro to Nano: Cyclic Deformation and Fatigue of Metals II
387		General Abstracts: Structural Materials Division: Mechanical Behavior of Metals and Alloys	General Abstracts: Structural Materials Division: Mechanical Behavior of Materials	General Abstracts: Structural Materials Division: Structure/Property Relations	General Abstracts: Structural Materials Division: Novel Issues in Materials Processing	General Abstracts: Structural Materials Division: Microstructure/ Property Relations in Steel I	General Abstracts: Structural Materials Division: Microstructure/ Property Relations in Steel II	
388		Enhancing Materials Durability via Surface Engineering: Residual Stress Effects on Durability	Enhancing Materials Durability via Surface Engineering: Steel and Other Alloys Surface Durability	Enhancing Materials Durability via Surface Engineering: Superalloy Surface Durability	Enhancing Materials Durability via Surface Engineering: Novel Surface Durability Approaches - and - National Academies Corrosion Education Study Commuity Town Hall Meeting	Refractory Metals 2008: Processing	Refractory Metals 2008: Characterization	Refractory Metals 2008: Properties of Refractory Metals
389		Particle Beam- Induced Radiation Effects in Materials: Metals I	Particle Beam- Induced Radiation Effects in Materials: Metals II	Particle Beam- Induced Radiation Effects in Materials: RIS and Multilayers	Particle Beam- Induced Radiation Effects in Materials: Ceramics and Nuclear Fuel Materials	Particle Beam- Induced Radiation Effects in Materials: Carbides, Semiconductors and Other Non-Metals	Particle Beam- Induced Radiation Effects in Materials: Nanostructures	
390		Biological Materials Science: Mechanical Behavior of Biological Materials I	Biological Materials Science: Implant Biomaterials I	Biological Materials Science: Bioinspired Design and Processing	Biological Materials Science: Scaffold Biomaterials	Biological Materials Science: Functional Biomaterials	Biological Materials Science: Mechanical Behavior of Biological Materials II	Biological Materials Science: Implant Biomaterials II
391		Neutron and X-Ray Studies for Probing Materials Behavior: Resolving Local Structure	Neutron and X-Ray Studies for Probing Materials Behavior: Diffraction at Small Dimensions	Neutron and X-Ray Studies for Probing Materials Behavior: Phase Transitions and Beyond	Neutron and X-Ray Studies for Probing Materials Behavior: Recrystallization	Neutron and X-Ray Studies for Probing Materials Behavior: Stresses/Strains and Structure	Neutron and X-Ray Studies for Probing Materials Behavior: Scattering and Understanding of Materials Properties	

### **Program-at-a-Glance**

Sunday	Monday		Tues	sday	Wedn	esday	Thursday	Room
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	Materials in Clean Power Systems III: Fuel Cells, Hydrogen-, and Clean Coal-Based Technologies: Plenary Session	Materials in Clean Power Systems III: Fuel Cells, Hydrogen-, and Clean Coal-Based Technologies: Gas Separation and CO <sub>2</sub> Capture	Materials in Clean Power Systems III: Fuel Cells, Hydrogen-, and Clean Coal-Based Technologies: Solid Oxide Fuel Cells: Metallic Interconnects	Materials in Clean Power Systems III: Fuel Cells, Hydrogen-, and Clean Coal-Based Technologies: Metallic Interconnects in SOFCs: Oxidation, Protection Coatings	Materials in Clean Power Systems III: Fuel Cells, Hydrogen-, and Clean Coal-Based Technologies: Metallic Interconnects and Sealing in SOFCs	Materials in Clean Power Systems III: Fuel Cells, Hydrogen-, and Clean Coal-Based Technologies: PEM Fuel Cells and Solar Technologies	Materials in Clean Power Systems III: Fuel Cells, Hydrogen-, and Clean Coal-Based Technologies: Hydrogen Technologies	392
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	Ultrafine-Grained Materials: Fifth International Symposium: Modeling, Theory, and Property	Ultrafine-Grained Materials: Fifth International Symposium: Processing and Materials	Ultrafine-Grained Materials: Fifth International Symposium: Stability, Technology, and Property	Ultrafine-Grained Materials: Fifth International Symposium: Properties - and - Poster Session	Ultrafine-Grained Materials: Fifth International Symposium: Deformation Mechanisms	Ultrafine-Grained Materials: Fifth International Symposium: Structure and Evolution		395/396
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	Frontiers of Computational Materials Science: Session I							R01/R02 (APS)

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Aluminum Alloys: Fabrication, Characterization and Applications: Composites and Foams			
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