

TMS2018 Symposium and Session List
Updated November 20, 2017

2018 EPD Distinguished Lecture

Mon 03/12/2018 8:00 AM Distinguished Lecture and Award Presentation

2018 Light Metals Keynote Session

Mon 03/12/2018 8:00 AM Sustainability in the Aluminum Industry: Climate Neutral Industry with Zero Emissions and Zero Waste?

2018 Symposium on Functional Nanomaterials: Discovery and Integration of Nanomaterials

Mon 03/12/2018 8:00 AM 3D Structures and Hybrid Materials
 Mon 03/12/2018 2:30 PM 2D Nanoelectronics
 Tues 03/13/2018 8:30 AM Nanomaterials for Environmental and Energy Applications
 Tues 03/13/2018 2:00 PM Design and Synthesis of 2D Materials
 Wed 03/14/2018 8:30 AM Nanomaterials, Characterization, and Applications
 Wed 03/14/2018 2:00 PM Joint with Bio-Nano Interface Engineering and Applications Symposium

9th International Symposium on High Temperature Metallurgical Processing

Mon 03/12/2018 8:00 AM Energy-efficient and Clean Metallurgical Technology
 Mon 03/12/2018 2:30 PM Simulation and Modeling of High Temperature Metallurgical Process
 Tues 03/13/2018 8:30 AM Alloys and Materials Preparation
 Tues 03/13/2018 2:00 PM Fundamental Research on High Temperature Metallurgical Processing
 Wed 03/14/2018 8:30 AM Extraction and Recovery of Metals
 Wed 03/14/2018 2:00 PM Treatment and Recycling of Metallurgical Slag/Solid Wastes
 Thur 03/15/2018 8:30 AM Ironmaking, Steelmaking and Casting
 Thur 03/15/2018 2:00 PM Agglomeration and Direct Reduction of Complex Iron Ores

Accelerated Materials Evaluation for Nuclear Application Utilizing Test Reactors, Ion Beam Facilities and Integrated Modeling

Mon 03/12/2018 8:00 AM Ion Irradiation and In-situ TEM
 Mon 03/12/2018 2:30 PM Neutron Irradiation and Ion vs Neutron
 Tues 03/13/2018 8:30 AM Modeling-simulation and Fundamental Studies
 Tues 03/13/2018 2:00 PM Ceramics and Nuclear Fuels
 Wed 03/14/2018 8:30 AM Mechanical Behavior and Technique Development
 Wed 03/14/2018 2:00 PM Facility Overviews and Materials Development

Accident Tolerant Fuels for Light Water Reactor

Mon 03/12/2018 8:00 AM ATF Program Overview
 Mon 03/12/2018 2:30 PM Modeling & Simulation
 Tues 03/13/2018 8:30 AM Advanced Fuels
 Tues 03/13/2018 2:00 PM Structural Materials
 Wed 03/14/2018 8:30 AM Ceramic Cladding & Coatings
 Wed 03/14/2018 2:00 PM Cladding Materials

Acta Materialia Symposium

Mon 03/12/2018 3:15 PM Acta Materialia Award Session

Additive Manufacturing Joint Keynote Session

Mon 03/12/2018 2:30 PM Joint Keynote Session

Additive Manufacturing of Metals: Establishing Location-Specific Processing-Microstructure-Property Relationships III

Mon 03/12/2018 8:00 AM Additive Manufacturing: A Revolution in Materials Processing
 Tues 03/13/2018 8:30 AM Mechanical Behavior of Additively Manufactured Materials
 Tues 03/13/2018 2:00 PM High Temperature Alloys and Properties
 Wed 03/14/2018 8:30 AM Post-build Thermal Processing: Effects on Microstructure and Properties
 Wed 03/14/2018 2:00 PM Emerging Materials and Processes
 Wed 03/14/2018 2:00 PM Modeling of Additive Manufacturing Processes
 Thur 03/15/2018 8:30 AM Additive Manufacturing of Advanced Light-weight Materials
 Thur 03/15/2018 2:00 PM Advanced Characterization and Innovative Applications

Additive Manufacturing of Metals: Fatigue and Fracture

Mon 03/12/2018 8:00 AM Session I
 Tues 03/13/2018 8:30 AM Session II
 Tues 03/13/2018 2:00 PM Session III
 Wed 03/14/2018 8:30 AM Session IV

Additive Manufacturing: Building the Pathway towards Process and Material Qualification

Mon 03/12/2018	8:00 AM	High Speed Imaging in Additive Manufacturing
Tues 03/13/2018	8:30 AM	Beam Line Science in Additive Manufacturing
Tues 03/13/2018	2:00 PM	Modeling in Additive Manufacturing
Wed 03/14/2018	8:30 AM	Metals in Additive Manufacturing I
Wed 03/14/2018	2:00 PM	Metals in Additive Manufacturing II
Thur 03/15/2018	8:30 AM	Qualification in Additive Manufacturing

Advanced Characterization Techniques for Quantifying and Modeling Deformation

Mon 03/12/2018	8:00 AM	Local Strain & Misorientation I
Mon 03/12/2018	2:30 PM	Local Strain & Misorientation II
Tues 03/13/2018	8:30 AM	Damage / Phase Transformation Plasticity
Tues 03/13/2018	2:00 PM	Dislocations and Planar Faults
Wed 03/14/2018	8:30 AM	Constitutive Behavior I
Wed 03/14/2018	2:00 PM	Plasticity Modeling / Experiments
Thur 03/15/2018	8:30 AM	Constitutive Behavior II

Advanced High-Strength Steels

Mon 03/12/2018	8:00 AM	High Mn Steels
Mon 03/12/2018	2:30 PM	Quenching and Partitioning (Q&P) Steels
Tues 03/13/2018	8:30 AM	1st Generation AHSS
Tues 03/13/2018	2:00 PM	Medium Mn Steels
Wed 03/14/2018	8:30 AM	Hydrogen Embrittlement, Fracture and Damage
Wed 03/14/2018	2:00 PM	Phase Transformation and Thermo-mechanical Processing
Thur 03/15/2018	8:30 AM	Bainitic and Stainless Steels

Advanced Magnetic Materials for Energy and Power Conversion Applications

		Application of Advanced Soft Magnetic Materials in Power Electronics and
Mon 03/12/2018	8:00 AM	Motors
Mon 03/12/2018	2:30 PM	Advances in Permanent Magnet Alloys
Tues 03/13/2018	8:30 AM	Development in Rare Earth Free Permanent Magnet Alloys
Tues 03/13/2018	2:00 PM	Alloy Development and Application of Magneto-thermal Materials
		Additive Manufacturing and Advanced Processing of Permanent Magnetic
Wed 03/14/2018	8:30 AM	Materials
Wed 03/14/2018	2:00 PM	Additive Manufacturing and Advanced Processing of Soft Magnetic Materials
Thur 03/15/2018	8:30 AM	Development and Application of Soft Magnetic Materials

Advanced Microelectronic Packaging, Emerging Interconnection Technology, and Pb-free Solder

Mon 03/12/2018	8:00 AM	3D Microelectronic Packaging
Mon 03/12/2018	2:30 PM	Quality and Reliability of Advanced Microelectronic Packaging I
Tues 03/13/2018	8:30 AM	Advanced Microelectronic Packaging Materials
Tues 03/13/2018	2:00 PM	Quality and Reliability of Advanced Microelectronic Packaging II
Wed 03/14/2018	8:30 AM	Emerging Interconnects
Wed 03/14/2018	2:00 PM	Pb Free Solder Alloy I
Thur 03/15/2018	8:30 AM	Pb Free Solder Alloy II

Advanced Real Time Optical Imaging

Wed 03/14/2018	8:30 AM	Iron and Steelmaking I
Wed 03/14/2018	2:00 PM	High Temperature Phenomena
Thur 03/15/2018	8:30 AM	Iron and Steelmaking II
Thur 03/15/2018	2:00 PM	Iron and Steelmaking III

Advances in Additive Manufacturing of Titanium and Titanium Based Alloys

Mon 03/12/2018	8:00 AM	Overview of Additive Manufacturing for Titanium Alloys
Tues 03/13/2018	8:30 AM	Processing for Quality
Tues 03/13/2018	2:00 PM	Solidification and Microstructure I
Wed 03/14/2018	8:30 AM	ICME for Additive Manufacturing
Wed 03/14/2018	2:00 PM	Solidification and Microstructure II
Thur 03/15/2018	8:30 AM	Emerging Methods and Materials

Algorithm Development in Materials Science and Engineering

		DFT, Atomistic and Machine Learning Algorithms for Study and Design of
Tues 03/13/2018	8:30 AM	Materials
Tues 03/13/2018	2:00 PM	DFT and Atomistic Algorithms for Study and Design of Materials

Wed 03/14/2018	8:30 AM	Atomistic Algorithms for Study and Design of Materials
Wed 03/14/2018	2:00 PM	Atomistic and Micro Scale Algorithms and Models
Thur 03/15/2018	8:30 AM	Experimental and Computational Algorithms
Thur 03/15/2018	2:00 PM	Applications of Microscale Algorithms and Models

Alloy Development and Powder Manufacture for Additive Manufacturing

Wed 03/14/2018	8:30 AM	ICME General Approaches
Wed 03/14/2018	2:00 PM	Powder Development
Thur 03/15/2018	8:30 AM	Design of Aluminum Alloys
Thur 03/15/2018	2:00 PM	Design of Ni and Fe Alloys

Alloys and Compounds for Thermoelectric and Solar Cell Applications VI

Mon 03/12/2018	8:00 AM	Session I
Mon 03/12/2018	2:30 PM	Session II
Tues 03/13/2018	8:30 AM	Session III
Tues 03/13/2018	2:00 PM	Session IV
Wed 03/14/2018	8:30 AM	Session V

Alumina & Bauxite

Mon 03/12/2018	2:30 PM	Digestion and Precipitation
Tues 03/13/2018	8:30 AM	Fundamentals, Product Quality, Efficiency and Modeling
Wed 03/14/2018	8:30 AM	Valorisation of Bayer Process Residues: Red Mud Treatment and Scandium Extraction
Wed 03/14/2018	2:00 PM	Processing of Low Grade Bauxite: Flotation and Pretreatment

Aluminum Alloys, Processing and Characterization

Mon 03/12/2018	2:30 PM	Characterizations and Applications of High Strength Aluminum Alloys
Tues 03/13/2018	8:30 AM	Behavior of Casting Alloys
Tues 03/13/2018	2:00 PM	Aluminum Alloy Development
Wed 03/14/2018	8:30 AM	Microstructures and Mechanical Properties of Aluminum Alloys
Wed 03/14/2018	2:00 PM	Simulations and Studies of Processing
Thur 03/15/2018	8:30 AM	Emerging Technologies

Aluminum Reduction Technology

Mon 03/12/2018	2:30 PM	Cell Operations, Control & Improvements
Tues 03/13/2018	2:00 PM	Joint Session: Alumina Quality
Wed 03/14/2018	8:30 AM	Cell Design & Modelling
Wed 03/14/2018	2:00 PM	Fundamentals, Electrolyte Chemistry & Market
Thur 03/15/2018	8:30 AM	Environment, Gas Treatment & Alumina Transport
Thur 03/15/2018	2:00 PM	Cell Technology Development

Application of Solidification Fundamentals to Challenges in Metal Additive Manufacturing

Mon 03/12/2018	8:00 AM	Process to Microstructure Relationships
Tues 03/13/2018	8:30 AM	Advanced Characterization
Tues 03/13/2018	2:00 PM	Solidification Modeling

Atom Probe Tomography for Advanced Characterization of Metals, Minerals and Materials

Tues 03/13/2018	8:30 AM	General Methods and Development
Tues 03/13/2018	2:00 PM	Novel Applications and Modelling
Wed 03/14/2018	8:30 AM	Lightweight Alloys
Wed 03/14/2018	2:00 PM	Fe-based Alloys and High-entropy Alloys
Thur 03/15/2018	8:30 AM	Nuclear Materials

Bio-Nano Interfaces and Engineering Applications

Mon 03/12/2018	8:00 AM	Bio-Nano Interfaces I
Mon 03/12/2018	2:30 PM	Bio-Nano Interfaces II
Tues 03/13/2018	8:30 AM	Bio-Nano Interfaces III

Biodegradable Materials for Medical Applications

Wed 03/14/2018	8:30 AM	Magnesium Alloys I
Wed 03/14/2018	2:00 PM	Magnesium Alloys II
Thur 03/15/2018	8:30 AM	Biodegradable Metals
Thur 03/15/2018	2:00 PM	Polymers and Glasses

Biological Materials Science

Mon 03/12/2018	8:00 AM	Structural Biological Materials
Mon 03/12/2018	2:30 PM	Synthesis of Bio-inspired Materials and Structures
Tues 03/13/2018	8:30 AM	Biomaterials and Biomedical Applications I
Tues 03/13/2018	2:00 PM	Bones, Teeth, and Dental Materials

Wed 03/14/2018 8:30 AM Functional Biological Materials
Wed 03/14/2018 2:00 PM Biomaterials and Biomedical Applications II

Bladesmithing 2018

Wed 03/14/2018 8:30 AM Bladesmithing I

Building an ICME Infrastructure: Developing Tools that Integrate Across Length and Time Scales to Accelerate Materials Design

Wed 03/14/2018 8:30 AM ICME Gap Analysis: Multiscale Modeling and Characterization of Structural Materials: I
Wed 03/14/2018 2:00 PM ICME Gap Analysis: Multiscale Modeling and Characterization of Structural Materials: II
Thur 03/15/2018 8:30 AM Materials Design Collaboration Platforms and Tools
Thur 03/15/2018 2:00 PM Integration Tools and Methods for Linking Processing-structure-property Relationships

Bulk Metallic Glasses XV

Tues 03/13/2018 8:30 AM Alloy Development and Application I
Tues 03/13/2018 2:00 PM Structures and Mechanical Properties I
Wed 03/14/2018 8:30 AM Alloy Development and Application II
Wed 03/14/2018 2:00 PM Structures and Mechanical Properties II
Thur 03/15/2018 8:30 AM Structures and Modeling
Thur 03/15/2018 2:00 PM Structures and Characterization
Thur 03/15/2018 2:00 PM Modeling and Thermal Properties

Cast Shop Technology

Mon 03/12/2018 2:30 PM HSE and Cast House Operation
Wed 03/14/2018 8:30 AM Melt Treatment
Thur 03/15/2018 8:30 AM Casting and Cast House Products
Thur 03/15/2018 2:00 PM Continuous Casting

Cast Shop Technology: Energy Joint Session

Tues 03/13/2018 8:30 AM Cast Shop Technology: Energy Joint Session

Cast Shop Technology: Fundamentals of Aluminum Alloy Solidification Joint Session

Wed 03/14/2018 2:00 PM Cast Shop Technology: Fundamentals of Aluminum Alloy Solidification Joint Session

Cast Shop Technology: Recycling and Sustainability Joint Session

Tues 03/13/2018 2:00 PM Cast Shop Technology: Recycling and Sustainability Joint Session

CFD Modeling and Simulation in Materials Processing

Mon 03/12/2018 8:00 AM Casting and Solidification I
Mon 03/12/2018 2:30 PM Casting and Solidification II
Tues 03/13/2018 8:30 AM Processing I
Tues 03/13/2018 2:00 PM Processing II
Wed 03/14/2018 8:30 AM Processing III

Characterization of Minerals, Metals, and Materials

Mon 03/12/2018 8:00 AM Characterization Methods
Mon 03/12/2018 8:00 AM Characterization of Non-ferrous Metals
Mon 03/12/2018 2:30 PM Characterization of Ceramics
Mon 03/12/2018 2:30 PM Microstructure and Performance of Materials
Tues 03/13/2018 8:30 AM Characterization and Uses of Metallurgical Slags
Tues 03/13/2018 2:00 PM Characterization of Polymer and Composite Materials
Wed 03/14/2018 8:30 AM Analysis of Surfaces and Interfaces
Wed 03/14/2018 2:00 PM Characterization Methods II
Wed 03/14/2018 2:00 PM Characterization of Powder Materials
Wed 03/14/2018 2:00 PM Mechanical Behaviors of Materials
Thur 03/15/2018 8:30 AM Characterization of Ferrous Materials
Thur 03/15/2018 8:30 AM Mineral Processing and Analysis
Thur 03/15/2018 8:30 AM Nanostructure and Characterization of Materials
Thur 03/15/2018 2:00 PM Thermal Processing and Analysis

Computational Design and Simulation of Materials (CDSM 2018): Atomistic Simulations

Mon 03/12/2018 8:00 AM Boundaries and Interfaces I
Tues 03/13/2018 8:30 AM Boundaries and Interfaces II
Tues 03/13/2018 2:00 PM Methodology and Chemistry of Materials

Wed 03/14/2018	8:30 AM	Diffusion I
Wed 03/14/2018	2:00 PM	Diffusion II
Thur 03/15/2018	8:30 AM	Defects and Microstructure
Thur 03/15/2018	2:00 PM	Thermodynamics
Thur 03/15/2018	2:00 PM	Transport

Computational Design and Simulation of Materials (CDSM 2018): Meso/Macroscale Simulations

Mon 03/12/2018	8:00 AM	Phase Field Simulations I: Functional Materials and Alloys
Mon 03/12/2018	4:40 PM	Phase Field Simulations II: Lightweight Alloys
Tues 03/13/2018	8:30 AM	Dislocation and Plasticity
Tues 03/13/2018	2:00 PM	Multiscale Modeling
Wed 03/14/2018	8:30 AM	Microstructure and Processing Simulations I
Wed 03/14/2018	2:00 PM	Microstructure and Processing Simulations II
Thur 03/15/2018	8:30 AM	Mechanical and Process Simulations

Computational Design and Simulation of Materials (CDSM 2018): Computational Design of Materials

Mon 03/12/2018	8:00 AM	Computational Design of Materials: CALPHAD
Mon 03/12/2018	4:40 PM	Computational Design of Materials: Uncertainty
Tues 03/13/2018	8:30 AM	Computational Design of Materials: Case Studies
Tues 03/13/2018	2:00 PM	Computational Design of Materials: Machine Learning
Wed 03/14/2018	8:30 AM	Computational Design: Microstructure and Mechanical Behaviors
Wed 03/14/2018	2:00 PM	Computational Design: Tools and Data

Computational Design and Simulation of Materials (CDSM 2018): Plenary Session

Mon 03/12/2018	2:30 PM	Plenary
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Computational Materials Discovery and Optimization

Mon 03/12/2018	8:00 AM	Materials Informatics
Mon 03/12/2018	2:30 PM	Materials Interfaces, 2D Materials, and Nanomaterials
Tues 03/13/2018	8:30 AM	Bulk Materials: Thermal, Magnetic, and Optical Properties
Tues 03/13/2018	2:00 PM	Materials for Energy Technologies

Computational Materials Science and Engineering for Nuclear Energy

Mon 03/12/2018	8:00 AM	Nuclear Fuels and Cladding I
Mon 03/12/2018	2:30 PM	Nuclear Fuels and Cladding II
Tues 03/13/2018	8:30 AM	Structural Materials I
Tues 03/13/2018	2:00 PM	Structural Materials II
Wed 03/14/2018	8:30 AM	Novel Models and Method Development
Wed 03/14/2018	2:00 PM	Fundamentals of Radiation Effects I
Thur 03/15/2018	8:30 AM	Fundamentals of Radiation Effects II

Computational Method and Experimental Approaches for Model Development and Validation, Uncertainty Quantification, and Stochastic Predictions

Wed 03/14/2018	8:30 AM	Mathematical and Machine Learning Approaches Applied to UQ
Wed 03/14/2018	2:00 PM	Development, UQ and Validation of Classical Potential
Thur 03/15/2018	8:30 AM	UQ of Quantum Calculations (DFT and Other Approaches)
Thur 03/15/2018	2:00 PM	UQ and Validation of Mesoscale Simulations

Computational Thermodynamics and Kinetics

Mon 03/12/2018	8:00 AM	Structure and Property
Mon 03/12/2018	2:30 PM	Transport
Tues 03/13/2018	8:30 AM	Transport and Structure
Wed 03/14/2018	8:30 AM	Phase Equilibria and Transformations
Wed 03/14/2018	2:00 PM	Thermochemistry and Thermomechanics
Thur 03/15/2018	8:30 AM	Phase Field

Coupling Advanced Characterization and Modeling Tools for Understanding Fundamental Phase Transformation Mechanisms: An MPMD Symposium in Honor of Hamish Fraser

Tues 03/13/2018	8:30 AM	Session I
Tues 03/13/2018	2:00 PM	Session II
Wed 03/14/2018	8:30 AM	Session III
Wed 03/14/2018	2:00 PM	Session IV

Coupling Experiments and Modeling to Understand Plasticity and Failure

Mon 03/12/2018	8:00 AM	Plasticity
Mon 03/12/2018	2:30 PM	Fatigue
Tues 03/13/2018	8:30 AM	Plasticity Induced Damage

Tues 03/13/2018 2:00 PM Dislocation Scale Plasticity

Wed 03/14/2018 8:30 AM Plasticity in HCP Alloys

Deformation and Damage Mechanisms in High Temperature Ni, Co and Fe-based Superalloys

Mon 03/12/2018 8:00 AM 1A: Grain Size Development During Forging & Heat Treatment in Ni-based Superalloys.1B: Recrystallization & Grain Growth Ni-based Superalloys.

2A: Precipitation Dissolution, Liquation in & Welding of Ni-based Superalloys.2B: Effects of Ordering and Precipitate Behavior in Ni-based

Mon 03/12/2018 2:30 PM Superalloys.

Tues 03/13/2018 8:30 AM 3A: Characterising Strain Localization in Ni-based Superalloys.3B Characterization & Understanding of Deformation in Ni-based Superalloys.

4A: Characterization of Creep Deformation & Damage in Ni-based Superalloys.4B: Characterization of Creep or Fatigue Deformation & Damage in

Tues 03/13/2018 2:00 PM Ni-based Superalloys

Wed 03/14/2018 8:30 AM 5A: Fe-based Superalloy Development & Properties.5B: Deformation & Damage in Fe and Ni-based Superalloys

Wed 03/14/2018 2:00 PM 6A:Ni-based Superalloy Development & Properties.6B: Microstructure & Properties of Co-based Superalloys.

Deriving Value from Challenging Waste Materials: Recycling and Sustainability Joint Session

Wed 03/14/2018 2:00 PM Urban Mining and Electronic Waste

Thur 03/15/2018 8:30 AM Industrial Streams I

Thur 03/15/2018 2:00 PM Industrial Streams II

Design for Mechanical Behavior of Architected Materials via Topology Optimization

Mon 03/12/2018 8:00 AM Optimal Design of Microlattices and Architected Materials Architected and Topology Optimization (TO) Design for Dynamic, Nonlinear,

Mon 03/12/2018 2:30 PM and Energy Applications

Tues 03/13/2018 8:30 AM Design and Topology Optimization (TO) Considering Manufacturability, Microstructure, and Surface Effects

Tues 03/13/2018 2:00 PM Recent Advancements and Material Applications of Topology Optimization (TO)

Dynamic Behavior of Materials VIII

Mon 03/12/2018 8:00 AM Effect of Microstructure of Dynamic Response I

Mon 03/12/2018 2:30 PM Energetic Materials

Tues 03/13/2018 8:30 AM Dynamic Response of BCC Materials

Tues 03/13/2018 2:00 PM Effect of Microstructure of Dynamic Response II

Wed 03/14/2018 8:30 AM Dynamic Response of HCP Materials

Wed 03/14/2018 2:00 PM Effect of Microstructure of Dynamic Response III

Electrode Technology

Mon 03/12/2018 2:30 PM Anode Raw Materials

Tues 03/13/2018 8:30 AM Joint Session with Aluminum Reduction

Tues 03/13/2018 2:00 PM Anode Materials and Properties

Wed 03/14/2018 8:30 AM Cathode Materials and Properties

Wed 03/14/2018 2:00 PM Anode Forming and Baking

Energy Technologies and CO2 Management Symposium

Mon 03/12/2018 8:00 AM CO2 Capture

Mon 03/12/2018 2:30 PM Carbon-based Energy Materials and Sustainable Metallurgical Processes

Tues 03/13/2018 8:30 AM Novel Energy Technologies

Tues 03/13/2018 2:00 PM Technologies for Energy Efficiency

Environmentally Assisted Cracking: Theory and Practice

Mon 03/12/2018 2:30 PM Stress Corrosion Cracking I

Tues 03/13/2018 2:00 PM Hydrogen Embrittlement

Wed 03/14/2018 8:30 AM Stress Corrosion Cracking II

Wed 03/14/2018 2:00 PM Environmental Degradation of Structural Materials

Thur 03/15/2018 8:30 AM Environmentally Assisted Cracking in Aluminum Alloys

Fatigue in Materials: Fundamentals, Multiscale Modeling and Prevention

Mon 03/12/2018 8:00 AM Data-driven Investigations of Fatigue

Mon 03/12/2018 2:30 PM Multiscale Modeling Approaches to Improve Fatigue Predictions

Tues 03/13/2018 8:30 AM Multi-mechanical Interactions During Extreme Environment Fatigue Loadings
Tues 03/13/2018 2:00 PM Relationships among Processing, Microstructure, and Fatigue Properties

Wed 03/14/2018 8:30 AM Fatigue Characterization Using Advanced Experimental Methods in 2D and 3D
Wed 03/14/2018 2:00 PM Fatigue Behaviors in Engineering Materials

Federation of European Materials Societies (FEMS) Keynote Symposium: Energy and Transportation from a European Materials Perspective

Wed 03/14/2018 8:30 AM Keynote Session I
Wed 03/14/2018 2:00 PM Keynote Session II

Fracture: 65 Years after the Weibull Distribution and the Williams Singularity

Mon 03/12/2018 8:00 AM Session I
Mon 03/12/2018 2:30 PM Session II
Tues 03/13/2018 8:30 AM Session III
Tues 03/13/2018 2:00 PM Session IV

Frontiers in Advanced Functional Thin Films and Nanostructured Materials

Mon 03/12/2018 8:00 AM Session I
Mon 03/12/2018 2:30 PM Session II
Tues 03/13/2018 8:30 AM Session III
Tues 03/13/2018 2:00 PM Session IV

Frontiers in Solidification Science and Engineering

Tues 03/13/2018 2:00 PM Eutectic and Dendritic Growth
Wed 03/14/2018 8:30 AM Nucleation and Grain Refinement
Wed 03/14/2018 2:00 PM Effect of Microgravity and/or Convection on Solidification
Solidification Microstructures, Defects, Processing Methods, and Advanced
Thur 03/15/2018 8:30 AM Imaging
Thur 03/15/2018 2:00 PM Computational Modelling of Solidification: From Nano to Macro Scales

High Entropy Alloys VI

Mon 03/12/2018 8:00 AM Thermal and Other Properties I
Mon 03/12/2018 8:00 AM Alloy Development and Applications I
Mon 03/12/2018 2:30 PM Thermal and Other Properties II
Mon 03/12/2018 2:30 PM Alloy Development and Applications II
Tues 03/13/2018 8:30 AM Structures and Mechanical Properties I
Tues 03/13/2018 2:00 PM Structures and Mechanical Properties II
Wed 03/14/2018 8:30 AM Structures and Modeling I
Wed 03/14/2018 8:30 AM Structures and Characterization I
Wed 03/14/2018 2:00 PM Mechanical and Other Properties I
Wed 03/14/2018 2:00 PM Structures and Characterization II
Thur 03/15/2018 8:30 AM Mechanical and Other Properties II
Thur 03/15/2018 8:30 AM Structures and Modeling II
Thur 03/15/2018 2:00 PM Mechanical and Other Properties III
Thur 03/15/2018 2:00 PM Alloy Development and Applications III

High Temperature Corrosion of Structural Materials

Wed 03/14/2018 8:30 AM Ni-base Alloys and Corrosive Environments at Elevated Temperatures
Wed 03/14/2018 2:00 PM Fe-base Alloys, Effect of CO₂, and Coatings
Hot Corrosion, Materials Developed for Corrosive Environments at Elevated
Thur 03/15/2018 8:30 AM Temperatures, and Ti-alloys I
Hot Corrosion, Materials Developed for Corrosive Environments at Elevated
Thur 03/15/2018 2:00 PM Temperatures, and Ti-alloys II

Hume-Rothery Award Symposium: Computational Thermodynamics and Its Implications to Kinetics, Properties, and Materials Design

Mon 03/12/2018 8:00 AM Keynote Session
Mon 03/12/2018 2:30 PM Density Functional Theory Methods
Tues 03/13/2018 8:30 AM CALPHAD Methods
Tues 03/13/2018 2:00 PM Computational Thermodynamic Approaches
Wed 03/14/2018 8:30 AM Data Science and Diffusion
Wed 03/14/2018 2:00 PM Early Career Scientist

Integrative Materials Design III: Performance and Sustainability

		New Directions, Process Optimization, and Computational Modeling in Additive
Mon 03/12/2018	8:00 AM	Manufacturing
		Microstructure Evolution and Fatigue Performance in Additive Manufacturing
Mon 03/12/2018	2:30 PM	& Other Advanced Manufacturing Technologies
		Advanced Materials Characterization & Multi-scale Computational Modeling
Tues 03/13/2018	8:30 AM	for Integrative Design and Reliability
		Role of ICME, Data Management & Integrative Design for Fatigue and High
Tues 03/13/2018	2:00 PM	Temperature Performance
		Integrative Materials Design and Manufacturing: Approaches, Advances, and
Wed 03/14/2018	8:30 AM	Applications
		Energy and Sustainability Considerations in Integrative Materials Design and
Wed 03/14/2018	2:00 PM	Manufacturing

Looking through the Kaleidoscope: Discovering Your Path to Leadership

Tues 03/13/2018	8:30 AM	Morning Session
Tues 03/13/2018	2:00 PM	Afternoon Session

Magnesium Alloy Development: An LMD Symposium in Honor of Karl Kainer

Tues 03/13/2018	8:30 AM	Cast Alloys
Tues 03/13/2018	2:00 PM	Wrought Alloys
Wed 03/14/2018	8:30 AM	Degradation and Microstructure

Magnesium Technology 2018

Mon 03/12/2018	8:00 AM	Keynote Session
Mon 03/12/2018	2:30 PM	Corrosion and Surface Protection
Tues 03/13/2018	2:00 PM	Alloy Design
Wed 03/14/2018	2:00 PM	Primary Production and Casting
Thur 03/15/2018	8:30 AM	Deformation Mechanisms
Thur 03/15/2018	2:00 PM	Thermo-Mechanical Processing

Materials and Fuels for the Current and Advanced Nuclear Reactors VII

Mon 03/12/2018	8:00 AM	Fuels I
Mon 03/12/2018	2:30 PM	Nuclear Materials
Tues 03/13/2018	8:30 AM	Fuels II
Tues 03/13/2018	2:00 PM	Structural Materials I
Wed 03/14/2018	8:30 AM	Structural Materials II
Wed 03/14/2018	2:00 PM	Structural Materials III
Wed 03/14/2018	2:00 PM	Structural Materials IV
Thur 03/15/2018	8:30 AM	Modeling
Thur 03/15/2018	8:30 AM	Structural Materials V
Thur 03/15/2018	2:00 PM	Structural Materials VI

Materials for Energy Conversion and Storage

Mon 03/12/2018	8:00 AM	Energy Storage I
Mon 03/12/2018	2:30 PM	Solid Oxide Fuel Cells I
Tues 03/13/2018	8:30 AM	Solid Oxide Fuel Cells II
Tues 03/13/2018	2:00 PM	Energy Storage II
Wed 03/14/2018	8:30 AM	Functional Materials I
Wed 03/14/2018	2:00 PM	Energy Harvesting I
Thur 03/15/2018	8:30 AM	Energy Storage III
Thur 03/15/2018	2:00 PM	Energy Storage IV

Materials Innovation Keynote

Tues 03/13/2018	8:30 AM	Big Data and Machine Learning for Materials
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Materials Processing Fundamentals

Mon 03/12/2018	8:00 AM	Steelmaking - Processing
Mon 03/12/2018	2:30 PM	Steelmaking - Properties
Tues 03/13/2018	8:30 AM	Multiphysics - Process Modeling and Sensing
Tues 03/13/2018	2:00 PM	Alloy Processing and Properties Modeling
Wed 03/14/2018	2:00 PM	Extractive and Recovery Processing

Mechanical Behavior at the Nanoscale IV

Mon 03/12/2018	8:00 AM	Nanoporous Materials and Thin Films
Mon 03/12/2018	2:30 PM	Twinning at the Nanoscale
Tues 03/13/2018	8:30 AM	Nanolayers and Nanocomposites

Tues 03/13/2018	2:00 PM	2D and Unique Structured Materials
Wed 03/14/2018	8:30 AM	Material Properties in Small Dimensions
Wed 03/14/2018	8:30 AM	Temperature, Rate and Environmental Effects
Wed 03/14/2018	2:00 PM	Damage, Failure and Fracture
Thur 03/15/2018	8:30 AM	Crystallite Effects and the Nanoscale
Thur 03/15/2018	2:00 PM	Atomistic Simulations

Mechanical Characteristics and Application Properties of Metals and Non-metals for Technology: An EPD Symposium in Honor of Donato Firrao

Mon 03/12/2018	8:00 AM	Compounds and Alloys
Mon 03/12/2018	2:30 PM	Steel
Tues 03/13/2018	8:30 AM	Corrosion and Fatigue
Tues 03/13/2018	2:00 PM	Mechanical Properties

Metal-Matrix Composites Innovations, Advances and Applications: An SMD Symposium in Honor of William C. Harrigan, Jr.

Mon 03/12/2018	8:00 AM	Aluminum and Lightweight Metal Matrix Composites
Mon 03/12/2018	2:30 PM	Synthesis and Developments of Emerging Composites
Tues 03/13/2018	8:30 AM	Basic History and Advances in Metal Matrix Composites
Tues 03/13/2018	2:00 PM	Mechanical Behavior of Metal Matrix Composites

Multi-material Additive Manufacturing: Processing and Materials Design

Tues 03/13/2018	8:30 AM	Functionally Graded Metals and Composites
Tues 03/13/2018	2:00 PM	Architected and Mesostructured Materials
Wed 03/14/2018	8:30 AM	Non-beam Based and Emerging AM Technologies for Metals
Wed 03/14/2018	2:00 PM	Extrusion, Stereolithography, Binder Jetting, and Others

Nanocomposites V: Structure-Property Relationships in Nanostructured Materials

Mon 03/12/2018	8:00 AM	Nanolaminates
Mon 03/12/2018	2:30 PM	Nanostructures and Polymer Nanocomposites
Tues 03/13/2018	8:30 AM	Nanocarbon/Metal Composites
Tues 03/13/2018	2:00 PM	Metallic and Ceramic Nanocomposites
Wed 03/14/2018	8:30 AM	Metal Matrix Nanocomposites

Non-equilibrium Features of Grain Boundaries

Mon 03/12/2018	8:00 AM	Thermal Stability of Non-equilibrium Grain Boundaries
Mon 03/12/2018	2:30 PM	Structure of Non-equilibrium Grain Boundaries
Tues 03/13/2018	8:30 AM	Mechanical Responses of Non-equilibrium Grain Boundaries - Part I
Tues 03/13/2018	2:00 PM	Mechanical Responses of Non-equilibrium Grain Boundaries - Part II

Perfluorocarbon Generation and Emissions from Industrial Processes

Tues 03/13/2018	2:00 PM	PFC Generation Mechanisms from Industrial Processes
Wed 03/14/2018	8:30 AM	PFC Measurements, Reduction and Abatement Methods
Wed 03/14/2018	2:00 PM	PFC Emissions Accounting Methods and Global Inventory

Phase Stability, Phase Transformations, and Reactive Phase Formation in Electronic Materials XVII

Wed 03/14/2018	8:30 AM	Phase Stability of Advanced Electronic Interconnection I
Wed 03/14/2018	2:00 PM	Electromigration and Stability of Electronic Materials
Thur 03/15/2018	8:30 AM	Phase Stability of Advanced Electronic Interconnection II
Thur 03/15/2018	2:00 PM	Phase Stability of Energy Materials

Phase Transformation Across Multiscale Material Interfaces

Mon 03/12/2018	8:00 AM	Structural Materials
Mon 03/12/2018	2:30 PM	Modeling and Joined Materials
Tues 03/13/2018	8:30 AM	Nanoscale Interfaces, Grain Boundaries and Coatings

Phase Transformations and Microstructural Evolution

Mon 03/12/2018	8:00 AM	Phase Transformations in Steels I
Mon 03/12/2018	2:30 PM	Phase Transformations in Steels II
Tues 03/13/2018	8:30 AM	Phase Transformations in Non-ferrous Systems I
Tues 03/13/2018	2:00 PM	Phase Transformations in Non-ferrous Systems II
Wed 03/14/2018	8:30 AM	Phase Transformations in Titanium I
Wed 03/14/2018	8:30 AM	Special Topics in Phase Transformations I
Wed 03/14/2018	2:00 PM	Phase Transformations in Titanium II
Wed 03/14/2018	2:00 PM	Special Topics in Phase Transformations II

Powder Metallurgy of Light, Reactive and Other Non-ferrous Metals

Tues 03/13/2018	8:30 AM	Metal Powder Production
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Tues 03/13/2018	2:00 PM	Aluminium Powder Metallurgy and Composites
Wed 03/14/2018	8:30 AM	Porous Metal Materials
Wed 03/14/2018	2:00 PM	Powder Metallurgy Processes of Various Materials
Thur 03/15/2018	8:30 AM	Titanium Powder Metallurgy and Additive Manufacturing I
Thur 03/15/2018	2:00 PM	Titanium Powder Metallurgy and Additive Manufacturing II

Rare Metal Extraction & Processing

Mon 03/12/2018	8:00 AM	Rare Earth Element I
Mon 03/12/2018	2:30 PM	Rare Earth Elements II and Platinum Group Metals
Tues 03/13/2018	8:30 AM	Base and Rare Metals
Tues 03/13/2018	2:00 PM	Ti, V, Mo & W

Recent Advances in Functional Materials for Printed, Flexible and Wearable Electronics

Wed 03/14/2018	2:00 PM	Printed Electronics and Additive Manufacturing
Thur 03/15/2018	8:30 AM	2D/3D Sensors and Devices
Thur 03/15/2018	2:00 PM	Material, Process Integration, and Characterization

Recent Developments in Biological, Structural and Functional Thin Films & Coatings

Mon 03/12/2018	8:00 AM	Biomedical & Polymeric Applications
Mon 03/12/2018	2:30 PM	Functional Films & Coatings I
Tues 03/13/2018	8:30 AM	Functional Coatings for Green Technology and Sustainability
Tues 03/13/2018	2:00 PM	Functional Films & Coatings II

Refractory Metals 2018

Mon 03/12/2018	8:00 AM	Refractory Metal Silicides and Composites
Mon 03/12/2018	2:30 PM	Refractory Metals and Alloys

Scandium Extraction and Use in Aluminum Alloys

Mon 03/12/2018	2:30 PM	Scandium Extraction
Tues 03/13/2018	8:30 AM	Aluminum Scandium Alloys

Solar Cell Silicon

Wed 03/14/2018	2:00 PM	Silicon Photovoltaics
Thur 03/15/2018	8:30 AM	Silicon Recycling, Refining, and Impurity Removal
Thur 03/15/2018	2:00 PM	Silicon Production, Crystallization, and Properties

Stored Renewable Energy in Coal

Wed 03/14/2018	8:30 AM	Stored Renewable Energy in Coal
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Surface Engineering for Improved Corrosion Resistance

Mon 03/12/2018	2:30 PM	Session I
Tues 03/13/2018	8:30 AM	Session II
Tues 03/13/2018	2:00 PM	Session III

Surface Interactions in Materials

Mon 03/12/2018	8:00 AM	Chemical and Physical Interactions
Mon 03/12/2018	2:30 PM	Physical and Mechanical Interactions

Thermal and Mechanical Stability of Nanocrystalline Materials

Tues 03/13/2018	2:00 PM	Thermal Stability of Nanocrystalline Metals I
Wed 03/14/2018	8:30 AM	Thermal Stability of Nanocrystalline Metals II
Wed 03/14/2018	2:00 PM	Joint Session with Non-equilibrium Features of Grain Boundaries
Thur 03/15/2018	8:30 AM	Mechanical Stability and Deformation Behavior
Thur 03/15/2018	8:30 AM	Nanotwin and Oxide Induced Stabilization
Thur 03/15/2018	2:00 PM	Composites and Heterophase Interfaces

Thermo-mechanical Response of Materials with Special Emphasis on In-situ Techniques

Tues 03/13/2018	8:30 AM	High Temperature Mechanical Properties of Materials I
Tues 03/13/2018	2:00 PM	High Temperature Mechanical Properties of Materials II
Wed 03/14/2018	8:30 AM	In-Situ TEM/SEM Nanomechanics
Wed 03/14/2018	2:00 PM	Nanomechanics with Synchrotron Diffraction

Ultrafine-grained Materials X

Mon 03/12/2018	8:00 AM	Pioneers of ECAE/ECAP and HPT
Mon 03/12/2018	2:30 PM	Pioneers of Alternative SPD Methods
Tues 03/13/2018	8:30 AM	Temperature Effects and Thermal Stability
Tues 03/13/2018	2:00 PM	Early Career Scientist
		Grain Boundary Diffusion and Migration Joint Session with Non-Equilibrium
Wed 03/14/2018	8:30 AM	Features on Grain Boundaries
Wed 03/14/2018	8:30 AM	Rolling Studies

Wed 03/14/2018	2:00 PM	Surface Processing and Twinning Phenomena
Wed 03/14/2018	2:00 PM	Radiation Tolerance and Particulate Approaches
Thur 03/15/2018	8:30 AM	High Pressure Torsion and Equal Channel Angular Extrusion/Pressing Studies
Thur 03/15/2018	8:30 AM	Texture Studies and Microstructural Evolution
Thur 03/15/2018	2:00 PM	Bulk Processing and Applications