

# CALL FOR ABSTRACTS

SUBMIT YOUR ABSTRACTS BY  
MARCH 15, 2021

Technical Meeting and Exhibition

# MS & T 21

MATERIALS SCIENCE & TECHNOLOGY

GREATER COLUMBUS CONVENTION CENTER | COLUMBUS, OH, USA

OCTOBER 17 – 21, 2021

WHERE MATERIALS INNOVATION HAPPENS

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## TECHNICAL PROGRAM

### ADDITIVE MANUFACTURING

- Additive Manufacturing: Advanced Characterization for Industrial Applications
- Additive Manufacturing: Alloy Design to Develop New Feedstock Materials III
- Additive Manufacturing: Large-Scale Metal Additive Manufacturing
- Additive Manufacturing: Mechanisms and Mitigation of Aqueous Corrosion and High-temperature Oxidation
- Additive Manufacturing: Processing, Microstructure and Material Properties of Titanium-based Materials
- Additive Manufacturing of Metal: ICME Gaps: Material Property and Validation Data to Support Certification
- Additive Manufacturing of Metals: Equipment, Instrumentation and In-Situ Process Monitoring
- Additive Manufacturing of Metals: Microstructure, Properties and Alloy Development
- Additive Manufacturing Modeling and Simulation: Microstructure, Mechanics, and Process
- Additive Manufacturing of Ceramic-based Materials: Process Development, Materials, Process Optimization and Applications
- Additive Manufacturing of High and Ultra-High Temperature Ceramics and Composites: Processing, Characterization and Testing

### ARTIFICIAL INTELLIGENCE

- Accelerating Materials Science with Big Data and Machine Learning
- AI for Big Data Problems in Advanced Imaging, Materials Modeling and Automated Synthesis
- Materials Informatics for Images and Multi-dimensional Datasets

### BIOMATERIALS

- Next Generation Biomaterials
- Porous Materials for Biomedical Applications
- Surface Engineering and Characterization of Titanium and Titanium Alloys

### CERAMIC AND GLASS MATERIALS

- Ceramic Matrix Composites
- Ceramics and Glasses Modeling by Simulations and Machine Learning
- Engineering Ceramics: Microstructure-Property-Performance Relations and Applications
- Glasses and Optical Materials: Current Issues and Functional Applications
- Journal of the American Ceramic Society Awards Symposium
- Manufacturing and Processing of Advanced Ceramic Materials
- Phase Transformations in Ceramics: Science and Applications
- Pre-ceramic Polymers; Synthesis, Processing, Modeling, and Derived Ceramics
- Solid-state Optical Materials and Luminescence Properties
- Thermal Shock Resistance of Ceramics and Composites

### ELECTRONIC AND MAGNETIC MATERIALS

- Advances in Dielectric Materials and Electronic Devices
- Functional Defects in Electroceramic Materials

### PROGRAM COORDINATING COMMITTEE

Chair and TMS Representative

**SARYU FENSIN**, Los Alamos National Laboratory

ACerS Representative

**TAYLOR SPARKS**, University of Utah

AIST Representative

**DANIEL BAKER**, General Motors

### ABSTRACT SUBMISSION DETAILS

Submit a 150-word abstract by March 15, 2021. Visit [matscitech.org/mst21](https://matscitech.org/mst21) and follow the submission instructions. Conference organizers will receive electronic notification of all submitted abstracts.

### NEED ASSISTANCE?

Should you have questions concerning the online abstract system, contact the programming administrator at (724) 776-9000, ext. 239 or at [programming@programmester.org](mailto:programming@programmester.org).

# MS & T 21

## MATERIALS SCIENCE & TECHNOLOGY

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### ENERGY

- Advanced Characterization of Materials for Nuclear, Radiation, and Extreme Environments
- Energy Materials for Sustainable Development
- Hybrid Organic—Inorganic Materials for Alternative Energy

### FUNDAMENTALS AND CHARACTERIZATION

- Deformation-induced Phase Transformations
- Dynamic Behavior of Materials: Experiments and Molecular Dynamics Simulations
- Emergent Materials under Extremes and Decisive In Situ Characterizations
- Grain Boundaries, Interfaces, and Surfaces in Ceramics: Fundamental Structure—Property—Performance Relationships
- High Entropy Materials: Concentrated Solid Solutions, Intermetallics, Ceramics, Functional Materials and Beyond II
- Integration between Modeling and Experiments for Crystalline Metals: From Atomistic to Macroscopic Scales III
- Materials vs Minerals: Bridging the Gap between Materials Science and Earth and Planetary Science
- Nucleation of Solid-State Phase Transformations
- Probing Defect Properties and Behavior under Mechanical Deformation and Extreme Conditions
- Processing—Microstructure—Property Relationships of Titanium and Titanium Alloys

### IRON AND STEEL (FERROUS ALLOYS)

- Advancements in Steel Structural Refinement
- Advances in Ferrous Metallurgy
- Advances in Metallic Coated Advanced Steels
- Developments in Plate and Line Pipe Steels
- Fracture of Steels: New Approaches to Modeling and Experimental Characterization
- New Frontiers in Physical Metallurgy of Steels
- Surface Hardening of Steels: Recent Developments and Deeper Understanding

### MATERIALS-ENVIRONMENT INTERACTIONS

- Advanced Coatings for Wear and Corrosion Protection
- Advanced Materials for Harsh Environments
- Coatings to Protect Materials from Extreme Environments
- Computation Assisted Materials Development for Improved Corrosion Resistance
- Progressive Solutions to Improve Corrosion Resistance for Nuclear Waste Storage
- Thermodynamics of Materials in Extreme Environments

### MODELING

- Multi Scale Modeling of Microstructure Deformation in Material Processing
- Phonon Properties of Materials: Modeling and Experimentation

### NANOMATERIALS

- Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials
- Mechanistic Insights into the Synergistic Properties of Nanocomposites
- Nanotechnology for Energy, Environment, Electronics, Healthcare and Industry

### PROCESSING AND MANUFACTURING

- 13<sup>th</sup> Symposium on Green and Sustainable Technologies for Materials Manufacturing and Processing
- Advances in Surface Engineering
- Aspects of Conventional Powder Metallurgy
- Development of Light Weight Alloys and Composites
- Innovative Process Design and Processing for Advanced Structural Materials
- Light Metal Technology
- Powder Metallurgical Components in High Performance Applications
- Processing and Performance of Materials Using Microwaves, Electric and Magnetic Fields, Ultrasound, Lasers, and Mechanical Work: The Rustum Roy Symposium
- Surface Finishing of Additive Manufactured Metals
- Synthesis, Characterization, Modeling and Applications of Functional Porous Materials

### SPECIAL TOPICS

- 50 Years of Characterizing Structural Ceramics and Glasses: Recognizing the Contributions of George Quinn
- ACerS Education and Professional Development Symposium
- ACerS Frontiers of Science and Society: The Rustum Roy Lecture
- ACerS Richard M. Fulrath Award Session
- ACerS/EPDC: Arthur L. Friedberg Ceramic Engineering Tutorial and Lecture
- Curricular Innovations and Continuous Improvement of Academic Programs (and Satisfying ABET along the Way): The Elizabeth Judson Memorial Symposium
- Resisting Degradation from the Environment: A Symposium Honoring Carolyn M. Hansson's Research and Pioneering Experiences as a Women in STEM
- Online Teaching Best Practices for the COVID Era and Beyond
- Research Lightning Talks

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The American Ceramic Society  
550 Polaris Parkway, Suite 510  
Westerville, OH 43082-7132 USA



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