



# IMECE® International Mechanical Engineering Congress & Exposition®

Oregon Convention Center, Portland, Oregon  
Committee Meetings & Special Events: November 13 – 19, 2020  
Conference: November 16 – 19, 2020  
Exhibition: November 15 – 18, 2020

## Advanced Materials: Design, Processing, Characterization and Applications

### Submit an abstract by **March 16, 2020**

Sponsored by the Materials Division, Track 3 gathers a set of sessions focused on the design, processing, and characterization of modern materials used in a wide range of engineering applications

- Topic 3-1: Modeling, Simulation, and Design of Multifunctional Materials
- Topic 3-2: Multifunctional Nanomaterials
- Topic 3-3: Manufacturing, Integration and Characterization of Multifunctional Structure and Devices
- Topic 3-4: Bioinspired Materials, Structures and Applications
- Topic 3-5: Soft Robotics and Soft Machines
- Topic 3-6: Modeling and Experiments in Nanomechanics and Nanomaterials
- Topic 3-7: Plasticity, Damage, and Fracture in Metallic Materials
- Topic 3-8: Modeling and Experimentation of Geomaterials
- Topic 3-9: Modeling and Experimentation of Polymer Mechanics
- Topic 3-10: Constitutive Modeling of Non-Metallic Materials
- Topic 3-11: Materials for Biology and Medicine
- Topic 3-12: Integrated Computational Materials Engineering (ICME) and Multiscale Modeling for Materials Design
- Topic 3-13: Design of Engineered Materials and Components for Additive Manufacturing
- Topic 3-14: Navigating NSF DMREF-Designing Materials to Revolutionize and Engineer our Future
- Topic 3-15: DOE/BES: Materials Discovery, Design, and Synthesis
- Topic 3-16: Bio-inspired and Architected Materials: Design for Multifunctionality
- Topic 3-17: Design of Metamaterials, Metasurfaces, and Metadevices
- Topic 3-18: Nanoengineered, Nano Modified, Hierarchical, Multi-Scale Materials and Structures
- Topic 3-19: Material Processing of Flexible/Emerging Electronics, Sensors, and Devices
- Topic 3-20: Processing of Ceramics and Composites for Additive and Advanced Manufacturing
- Topic 3-21: Fracture and Damage: Nano- to Macro-Scale
- Topic 3-22: Phase Transformations in Materials Processing
- Topic 3-23: Recent Developments in Tribology
- Topic 3-24: Materials for Energy
- Topic 3-25: Mechanics of Thin-Film and Multi-Layer Structures
- Topic 3-26: Mechanics of Adhesion and Friction
- Topic 3-27: Mechanics and Materials of Soft and Biocompatible Electronics/Structures
- Topic 3-28: Printed Hybrid Electronics, Sensors and Energy Devices
- Topic 3-29: Multifunctional Intelligent Materials and Systems
- Topic 3-30: Multifunctional Composite/Safety Materials
- Topic 3-31: Congress-Wide Symposium on NDE & SHM - Nondestructive Characterization and Damage Prognosis in Composite and Heterogeneous Materials
- Topic 3-32: Congress-Wide Symposium on NDE & SHM - Engineering Materials with Sensing Capabilities

[event.asme.org/IMECE](http://event.asme.org/IMECE)