



**SUBMIT AN ABSTRACT BY JULY 1**

**FEBRUARY 27-MARCH 3, 2022**  
**ANAHEIM CONVENTION CENTER & ANAHEIM MARRIOTT**  
**ANAHEIM, CALIFORNIA, USA**  
**#TMSAnnualMeeting**

**SUBMIT AN ABSTRACT FOR THE FOLLOWING TMS2022 SYMPOSIUM:**

## **MATERIALS DESIGN**

### **Fatigue in Materials: Fundamentals, Multiscale Characterizations and Computational Modeling**

This symposium features novel methods and new discoveries for understanding all aspects of material fatigue. It brings together scientists and engineers from all over the world to present their latest work on current issues in characterizing and simulating fatigue damage; identifying microstructural weak links; enhancing fatigue strength and resistance; reporting on quantitative relationships among processing, microstructure, environment, and fatigue properties; and providing methods to perform life predictions. This symposium further provides a platform for fostering new ideas about fatigue at multiple scales and in multiple environments, numerically, theoretically, and experimentally.

The proposed 2022 TMS symposium will be organized into six sessions:

- Advanced Experimental Characterization of Microstructurally Driven Fatigue Behavior
- Microstructure-based Fatigue Studies on Additive-Manufactured Materials (to be jointly organized with AM Fatigue & Fracture symposium)
- Multi-mechanical Interactions during Extreme Environment Fatigue Loading
- From Cyclic Plastic Localization to Crack Nucleation and Propagation
- Data-Driven Investigations of Fatigue
- Multiscale Modeling Approaches to Improve Fatigue Predictions

The proposed six sessions will be carried out over three full days, with morning and afternoon sessions each day. Throughout the six sessions, there will be an estimated 50 oral presentations, with 2-4 of those being keynote presentations. Additionally, a poster session will be held to supplement the oral presentations and to encourage student involvement. Students may submit an abstract for a poster presentation, an oral presentation, or both. Prizes for best posters will be awarded. A possible edited volume of extended articles on select topics discussed in this symposium will be evaluated during the meeting.

#### **ORGANIZERS**

**Jean-Charles Stinville**, University of California-Santa Barbara  
**Garrett Pataky**, Clemson University  
**Ashley D. Spear**, University of Utah  
**Antonios Kotsos**, Drexel University  
**Brian Wisner**, Ohio University  
**Orion L. Kafka**, NIST

#### **SYMPOSIUM SPONSORS**

TMS Additive Manufacturing Committee  
TMS Advanced Characterization, Testing, and Simulation Committee  
TMS Computational Materials Science and Engineering Committee  
TMS Integrated Computational Materials Engineering Committee  
TMS Mechanical Behavior of Materials Committee

[www.tms.org/TMS2022](http://www.tms.org/TMS2022)

**QUESTIONS?**  
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