

**TMS 2018**  
147<sup>th</sup> Annual Meeting & Exhibition**MARCH 11 – 15, 2018**  
**PHOENIX, ARIZONA****SUBMIT AN ABSTRACT TO:****MECHANICS AND STRUCTURAL RELIABILITY****THERMO-MECHANICAL RESPONSE OF MATERIALS  
WITH SPECIAL EMPHASIS ON IN-SITU TECHNIQUES**

The focus of this symposium is to discuss current research and key developments in techniques and experimental methods to measure thermo-mechanical properties of materials in-situ and ex-situ in application-oriented environments. These environments may include high temperature, cryogenic temperature, electrical and magnetic field, gas, radiation, chemical, pressure extremes, and humidity. In situ mechanical testing using SEM, TEM, AFM, Raman, synchrotron, X-ray, IR, and FTIR observation techniques during testing are becoming increasingly popular for studying mechanical behavior of materials. Many such techniques have been developed to probe material response to stimuli across nano- to macro-length scales.

The intent of this symposium is to provide a forum for researchers from national laboratories, academia, and industry to discuss research progress in the area of in operando and/or in-situ mechanical testing for nanomechanical studies and to accelerate the development and acceptance of innovative materials and testing techniques.

Topics include:

- Development of instruments and experimental methodology for in-situ techniques and/or testing at non-ambient conditions
- Mechanics of deformation of high-temperature materials, high-strength materials, thin films, 1D, 2D, and other low-dimension nanostructures, and interfaces
- Imaging and analytical techniques to correlate microstructure, defects, crystal orientation, and strain field with mechanical properties
- Microstructural observations using in situ techniques across length scales

**ORGANIZERS**

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**SPONSORS**

TMS Functional Materials Division; TMS Structural Materials Division

TMS Advanced Characterization, Testing, and Simulation Committee; TMS Thin Films and Interfaces Committee; TMS Chemistry and Physics of Materials Committee

**ABSTRACT DEADLINE IS JULY 1, 2017. SUBMIT ONLINE AT [www.programmaster.org/TMS2018](http://www.programmaster.org/TMS2018).****QUESTIONS? CONTACT [programming@tms.org](mailto:programming@tms.org)**