

# TMS2016

145<sup>th</sup> Annual Meeting & Exhibition

FEBRUARY 14-18 DOWNTOWN NASHVILLE,  
TENNESSEE MUSIC CITY CENTER

Connecting the Global Minerals, Metals, and Materials Community.



## High Entropy Alloys IV

This symposium will provide a new venue for presentation of research on the fundamental understanding and theoretical modeling of high-entropy alloy (HEA) processing, microstructures, and mechanical behavior. In contrast to conventional alloys, which are based upon one principal element, HEAs have multiple principal elements, often five or more. The presence of multi-principal elements leads to simplified microstructures, which in many cases is because high mixing entropy enhances the formation of simple solid-solution phases, such as the face-centered-cubic and body-centered-cubic structures. Moreover, these alloys often have unprecedented tailorable properties that frequently far surpass their conventional counterpart alloy systems. Such properties in HEAs include high strength, ductility, corrosion resistance, oxidation resistance, fatigue and wear resistance. These properties will undoubtedly make HEAs of interest for use in biomedical, structural, mechanical, and energy applications. Given their novel nature, HEAs are poised for significant growth.

### Topics of interest include

- Material fabrication and processing
- Advanced characterization, such as neutron scattering
- Thermodynamics and diffusivity
- Nanocrystalline materials and composites based on HEAs
- Mechanical behavior
- Shear-band formation, fatigue, deformation, and fracture mechanisms
- Corrosion, physical, magnetic, electric, thermal, coating, and biomedical behavior
- Theoretical modeling and simulation
- Industrial applications

### Organizers include:

Peter Liaw, University of Tennessee (USA)

Michael Gao, National Energy Technology Lab (USA)

Suveen Mathaudhu, University of California Riverside (USA)

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