

THE WORLD COMES HERE.
TMS2024
153rd Annual Meeting & Exhibition

MARCH 3–7, 2024
HYATT REGENCY ORLANDO
ORLANDO, FLORIDA, USA
#TMSAnnualMeeting



SUBMIT AN ABSTRACT FOR THE FOLLOWING TMS2024 SYMPOSIUM:

ADVANCED CHARACTERIZATION METHODS

Advanced Characterization Techniques for Quantifying and Modeling Deformation

This symposium will provide a venue for presentations featuring the use of advanced characterization techniques in all classes of materials to quantify and model deformation mechanisms.

Background and Rationale: Advances in characterization technology for both structural and functional materials have greatly improved our ability to understand deformation mechanisms such as dislocation motion, twinning, and stress-induced phase transformations; as well as the microstructural changes in crystallographic texture, grain morphology, dislocation structures accompanying deformation. In combination with modeling, these techniques improve our understanding of deformation and failure during material processing/forming and under normal or extreme conditions in service. In situ techniques, especially, provide an enhanced understanding of individual mechanisms, their interactions, and the direct validation of simulations from computational materials science models.

This gathering offers a venue to discuss and share new advances in current techniques or new technique development or in pairing with algorithms or simulations as they apply to deformation behavior.

Areas of interest include, but are not limited to:

- Improving the understanding of deformation mechanisms in structural or functional materials – elasticity, dislocation plasticity, mechanically-induced twinning or phase transformations, damage, and fracture
- Advances in characterization techniques: X-ray-based techniques, electron-based techniques (including HR-(S)TEM, EBSD, HR-EBSD, ECCI, PED), scanning probe microscopy techniques, and others – in particular in-situ.
- Advances in materials deformation modeling– with specific emphasis on the integration with advanced characterization techniques

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