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TMS 2023

152nd Annual Meeting & Exhibition

MARCH 19–23, 2023
SAN DIEGO CONVENTION CENTER &
HILTON SAN DIEGO BAYFRONT
SAN DIEGO, CALIFORNIA, USA
#TMSANNUALMEETING

SUBMIT AN ABSTRACT BY JULY 1 FOR THE FOLLOWING TMS2023 SYMPOSIUM:

CHARACTERIZATION

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. Advances in characterization technology have greatly improved our ability to quantify deformation mechanisms such as dislocation motion, twinning, and stress-induced phase transformations, and the microstructural changes accompanying deformation such as texture evolution, grain morphology changes, dislocation accumulation and localized strain. A variety of relatively new techniques are being applied to both structural and functional materials. 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, are providing 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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