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TMS 2017
146th Annual Meeting & Exhibition



February 26 – March 2, 2017
San Diego, California, USA

ADVANCED CHARACTERIZATION TECHNIQUES FOR QUANTIFYING AND MODELING DEFORMATION MECHANISMS

This symposium will provide a venue for presentations regarding 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 dislocations, twinning, and stress induced phase transformations, and the microstructural changes accompanying deformation such as texture evolution, grain morphology changes, and localized strain. A variety of relatively new techniques are being applied to both structural and functional materials. These techniques, in combination with modeling, are improving our understanding of deformation and failure during material processing/forming and under normal or extreme conditions in service. In situ techniques are also providing enhanced understanding of individual mechanism interactions and direct validation of plasticity models.

This symposium provides a place to talk about new advances in current techniques or in technique development. Areas of interest include:

- Dislocations, deformation twins, and stress-induced phase transformations
- All advanced X-ray-based techniques including Bragg CDI
- All advanced electron-based techniques including HR-(S)TEM, EBSD, HR-EBSD, PED, and in situ TEM
- All structural and functional materials systems
- Advances in material modeling through the use of advanced characterization techniques
- Industrial applications
- Technique development

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