THE WORLD COMES HERE.

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:

MATERIALS PROCESSING

Deformation-induced Microstructural Evolution during Solid Phase Processing: Experimental and Computational Studies

Mechanical deformation can be used to modify the microstructure of metallic alloys to achieve supersaturation of solutes, nanoscale precipitate morphology, and novel phase equilibria, all of which in turn can be leveraged to achieve improved mechanical properties. Deformation of materials also leads to the generation of many defects ranging from vacancies, dislocations, stacking faults, sub-grain boundaries, new grain boundaries, and voids. For developing better predictive models of microstructural evolution during such deformation processing, it is critical to understand how all these varieties of deformation induced defects can then influence the diffusion of atoms during the processing and then ultimately dictate the microstructural evolution.

Therefore, this symposium will bring together both experimental researchers using in operando, in-situ and ex-situ characterizations including advanced microscopy and synchrotron-based X-ray methods as well as computational researchers developing new computational approaches to better predict the multiscale microstructural evolution at medium to large strains. Studies of microstructural evolution during traditional severe plastic deformation methods, friction stir processing/welding methods, cold spray, and other deformation processing methods are also of interest.

ORGANIZERS

Arun Devaraj, Pacific Northwest National Laboratory
Pascal Bellon, University of Illinois at Urbana-Champaign
Suhas Eswarappa Prameela, Johns Hopkins University
Mostafa Hassani, Cornell University

SYMPOSIUM SPONSORS

TMS Materials Processing & Manufacturing Division
TMS Shaping and Forming Committee

www.tms.org/TMS2023

QUESTIONS?
Contact programming@tms.org