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TMS2024
153rd Annual Meeting & Exhibition

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HYATT REGENCY ORLANDO
ORLANDO, FLORIDA, USA
#TMSAnnualMeeting



SUBMIT AN ABSTRACT FOR THE FOLLOWING TMS2024 SYMPOSIUM:

DATA-DRIVEN AND COMPUTATIONAL MATERIALS DESIGN

Hume-Rothery Symposium on Alloy Microstructure Science and Engineering

This symposium will bring together experts in advanced theory, computation, and experimental characterization of microstructural evolution during solid-state phase transformations and plastic deformation in complex multicomponent alloys. The development of modern computational and experimental tools has led to better fundamental insights into pathways and mechanisms of solid-state transformations and deformation.

The symposium will survey the current state-of-the-art fundamental understanding of transformation and deformation mechanisms and the intrinsic coupling between the two processes, leading to the development of new alloy design principles and strategies. Since integration between experiment and computation has become a hallmark in alloy microstructure science and engineering, sessions will cover mechanism-based modeling and simulations motivated and informed by experimental characterization and novel alloy microstructure design and engineering guided by computation.

The specific topics will include but not be limited to:

- Phase transformation pathways and deformation mechanisms in complex multicomponent alloy systems such as Ni-/Co-base superalloys, Ti-, Al- and Mg-alloys, HEAs, and shape memory alloys
- Phase transformation and deformation in compositionally and/or structurally modulated or graded materials.

Presentations in this symposium are by invitation only.

ORGANIZERS

Long-Qing Chen, Pennsylvania State University, USA
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