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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:

MATERIALS DESIGN

Alloy Development for Energy Technologies: ICME Gap Analysis

The critical role of integrated computational materials engineering (ICME) in materials selection and rapid development of alloys is widely accepted. However, there remain several gaps in our understanding that impede the effective use of ICME. One such gap is the integration of modeling schemes for alloys at different scales. The paucity of high quality data of known provenance for data-driven physics-informed models is another gap. Open data platforms are also a key research need to advance this field.

This symposium will explore the tools, data, models, and open frameworks needed to accelerate alloy development for advanced energy technologies that are key to a decarbonized economy. Topics of interest include, but are not limited to, the following:

- Connecting atomistic studies to mesoscale models
- Tools for microstructure analysis
- Computational thermodynamics and kinetic models
- Development of processing-microstructure-property relationships
- Development of shared materials data infrastructure
- Data quality and metadata standards
- Physics-informed machine learning for alloy development

ORGANIZERS

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SYMPOSIUM SPONSORS

TMS Materials Processing and Manufacturing Division
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QUESTIONS?
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