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**TMS 2020**

**149<sup>th</sup> Annual Meeting & Exhibition**

February 23-27, 2020 • San Diego, California, USA



Submit an abstract to:

**Physical Metallurgy**

## **Computational Thermodynamics and Kinetics**

The study of the thermodynamics and kinetics of materials has not only resulted in essential fundamental understanding and new physics, but has opened the door to the discovery and even design of novel materials and processes. Computer simulations have quickly positioned themselves alongside theory and experiment, older members of the scientific method, as a powerful approach to reach scientific truths. Machine learning, the availability of big data and cheap computation, novel tools for collaboration, and breakthroughs in theory and algorithm development have revolutionized and invigorated a respected and historied field. Fast approaching its two-decade anniversary, the Computational Thermodynamics and Kinetics (CTK) symposium at TMS has chronicled and featured many of these breakthroughs.

Since its inception, this symposium has highlighted the evolving landscape of tools, techniques, processes, and applications to the vast area of materials science and technology. This year, we are proud to continue this tradition. We welcome submissions related to innovative developments and applications of CTK techniques in understanding materials phenomena, discovery, synthesis, and processing.

This year, topics of interest include but are not limited to:

- Computational modeling using modern data methods, machine learning, and inference that advances our understanding of materials and/or introduces new tools
- Computational modeling of rare events, systems out of equilibrium, and materials at extremes
- Computational studies of the role of phonons, magnons, and other excitations, including interactions between them, in the stabilization of phases and/or phase transformations
- Computational models of phase equilibria, transformations and microstructural evolution, including the effect of defects
- Computational techniques for the calculation of diffusion, transport, and thermally activated processes for a wide range of applications, such as alloy design, microstructure control, multi-phase/multi-component systems

We welcome submissions from all facets of CTK and encourage those that deal with liquids, interfaces, melting, solidification, and soft matter.

### **ORGANIZERS**

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Abstract Deadline is July 1, 2019. Submit online at  
[www.programmaster.org/TMS2020](http://www.programmaster.org/TMS2020).

**Questions?**  
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