Special Issue

Thermodynamic Modeling of Materials: Microstructure and Properties

Message from the Guest Editor

This Special Issue aims to collect predictive modeling approaches, allowing for an in-depth understanding of microstructural trends and their consequences for macroscopic materials properties and their multicomponent and multimaterials extensions toward predictions for real technological materials. A major research task refers to the assessment of the role of local chemical and microstructural heterogeneities and their dynamics for materials properties and behavior. Moreover, this issue will be open to pressing issues which are important in the scope of sustainability of multicomponent/multimaterial technological systems, namely, microstructure degradation under varying thermomechanical treatments. Answers to these questions require a deeper understanding of the coupling between materials composition variations, heat treatment, phase stabilities and evolution, and strengthening and mechanical materials response. Modeling activities, as represented by high-quality contributions to this Special Issue, are aimed to constitute puzzle pieces toward the realization of the dream of an integrated, predictive computational materials design.

Guest Editor

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Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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