Special Issue

Microstructure Evolution and Phase Transformation in Metallic Materials

Message from the Guest Editors

The macroscopic properties of metallic materials are fundamentally governed by their internal microstructure and the phase transformations that occur during preparation, processing, and service. This Special Issue aims to present cutting-edge research on microstructure evolution and phase transformation across metallic systems, covering the entire lifecycle from solidification and thermomechanical processing to service behavior. We invite contributions exploring transformation kinetics, microstructural control, corrosion resistance, and mechanical properties, with attention to novel processing routes and alloys for extreme environments. Topics of interest include, but are not limited to, the following:

- Solidification and microstructure evolution in high-performance alloys;
- Phase transformation mechanisms during processing and heat treatment;
- Advanced characterization of microstructural evolution (in situ, multi-scale);
- Computational thermodynamics and kinetics for alloy design;
- Structure and property relationships in structural metallic materials.

Assistant

Guest Editors

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Message from the Editorial Board

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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