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Solidification and Casting of Metals and Alloys

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Deadline for manuscript submissions:
closed (15 May 2024)

Message from the Guest Editor

The Special Issue is intended to review the latest developments in the various aspects of solidification metallurgy. Specifically, we aim to cover: (a) metallurgical control of the composition and microstructure of metals or castings; (b) micro- and macrosegregation mechanisms, as well as the microstructural evolution of solidification microstructures; (c) multi-scale experiments and simulations for solidification using different calculated methods; (d) fundamental aspects such as nucleation, grain growth, and the development of the mushy zone; and (e) thermal, compositional effects on the development/avoidance of casting defects, etc.

The proposed issue is intended to provide a comprehensive account of the "state of the art" in current endeavors, aimed at elucidating the fundamental mechanistic aspects of phase formation during solidification. Thus, we invite submissions covering all of the aspects related to recent advances in solidification fields, including metallurgy, processing, fluid flow, solute and thermal transport based on experimental, analytical and computer simulations.

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Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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