Special Issue

Advanced Solidification Processing

Message from the Guest Editors

Solidification is a first-order phase transition process in which a substance changes from a liquid state to a solid state. Nonequilibrium solidification is an important branch in the science of solidification. Under certain temperatures, pressures, or strong external fields, it allows the alloy melt to achieve a much faster cooling rate or a much larger undercooling than conventional processes. In this case, the liquid alloy completes the liquid/solid phase transition process in a very short time, deviating from the equilibrium state, and is therefore called nonequilibrium solidification. Nonequilibrium solidification technology provides new ideas and methods for the development of new materials or the improvement of traditional materials, which is of great significance in the field of material research. This Special Issue, “Advanced Solidification Processing”, is dedicated to the latest scientific achievements in the field. This issue welcomes contributions of any kind in the field of solidification processing. Any phenomena of solidification and any processing technology, including undercooling or rapid cooling, are also welcome.

Guest Editors

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Deadline for manuscript submissions

closed (30 November 2024)

Metals

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Impact Factor 2.5
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mdpi.com/si/207692

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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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