Special Issue

Advanced Solidification Metallurgy

Message from the Guest Editor

Control of the cast structure is the underlying object of solidification metallurgy. Recent advances and developments in solidification metallurgy have made it possible to produce high purity castings for superalloys, aluminum, magnesium, titanium, and copper alloys, and rapidly solidified structural components and castings with unique microstructures. Recent advances in processing technology have also been developed that allow us to have better producibility and reliability in some metal castings. These developments have all stemmed from a good understanding of the science of solidification metallurgy, as well as an appreciation of the merits of structural control by using advanced solidification processing. In addition, numerous works have also been developed on both experimental and analytical/computer modeling aimed at disclosing the fundamental aspects of metallurgical processes, phase formation and growth within liquid melts, and numerous types of calculated software were used to clarify the solidification, such ProCAST, AnyCasting, Magma, Micress, etc.

Guest Editor

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About the Journal

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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