

Special Issue

Melting and Crystal Growth in Induction Furnaces

Message from the Guest Editor

Functional crystals are high-tech solid materials that possess a high degree of purity and perfection and are engineered for the desired application. Mainly, such applications can include functional properties that transform one form of energy into another. A functional crystal plays an important role in different fields. The demand for large bulk and high-quality single crystals significantly imposes the rapid development of crystal growth methods. The current trend is focused on the production of low-dimensional crystals precisely tailored to be a part of multifunctional devices, including scintillation detectors, photo-converters, solid-state lasers, semiconductors. Those tailored crystals possess better physical and chemical properties. Melt growth of crystals is the most popular method of growing large single crystals at relatively high growth rates. Mostly, functional crystals are characterized by a high melting point. Functional crystals are mostly grown using the induction heating method. Over half of industrial crystals are produced using this technology. Mostly, oxides, halides, chalcogenides, elemental semiconductors, and metals are obtained in the induction furnaces.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

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.

Editor-in-Chief

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