Special Issue

Inclusions in Steels and Alloys

Message from the Guest Editors

Inclusions have adverse effects on the continuity of the matrix and the properties of steels and alloys. The size, quantity, type, morphology and distribution of inclusions in the matrix have impacts on the properties and final service life of steels and alloys. Therefore, the realization of the high quality and cleanliness of the variety steel is closely related to the metallurgical engineering of the inclusions.

This Special Issue aims to provide a platform for academic exchange to explore new methods and technologies for three-dimensional characterization, quantitative analysis, and phasing characterization of non-metallic inclusions in steel; understand the formation, growth, floating removal, slag adsorption and shell capture of inclusions in molten steel in a metallurgical reactor; analyze the source and evolution of non-metallic inclusions in steel, the relationship between them and the properties of the final products; understand the inheritance relationship and genetic law between inclusions in alloys and the cleanliness of steels; and to show more new achievements and discoveries related to inclusions.

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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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