

Special Issue

Inclusions in Steel and Other Metallic Materials

Message from the Guest Editor

Nonmetallic inclusions can be divided into endogenous (produced by the chemical reaction between components dissolved in liquid metal) and exogenous (from the outside, in the form of particles of refractory or slag). They can arise at all stages of the process. The increasing requirements of metal purity necessitate the reduction in number and size of nonmetallic inclusions in it. The tightening of standards forced to take a number of studies to understand the phenomena of liquid metal and inclusions flow at different stages of its production. Since the inclusions are lifted by the liquid metal, it is necessary to analyze the structure of the flow and possibilities of the inclusions separation from metal. The current Special Issue focuses on the newest research concerning different techniques used to investigate the inclusions in metallic materials. Since the experimental research performed on the liquid metal—during standard operating conditions—is limited due to the high temperatures and opacity of the fluid, the process is often analyzed based on the research on the physical (mostly water) models and using numerical modeling techniques.

Guest Editor

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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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