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Purification Metallurgy in Steelmaking

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Message from the Guest Editors

Dear Colleagues,

Inclusions have been the focal point of researchers' endeavors to reduce their presence. However, it is not feasible to completely eliminate inclusions from steel. Therefore, a primary objective in managing inclusions is to minimize their adverse effects by controlling their composition, size, morphology, and other properties, and even leveraging them to enhance steel performance. One of the most frequently employed approaches to controlling inclusions is the utilization of modifiers in steel, which modify their properties and fulfill the performance requirements. How to effectively achieve the harmlessness, reduction in harm, or even beneficial effects of inclusions is hot topic in research.

In this Special Issue, we invite articles that focus on the research progress of inclusions and carbides, their control, and modification. This includes research related to the influence of inclusions on steel properties, physical and numerical simulations of inclusion removal and the evolution of inclusions during solidification processes, as well as the control and modification of inclusions during refining processes.

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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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