Special Issue

Steelmaking and Ironmaking: Fundamental Research to Technology Innovation

Message from the Guest Editors

This Special Issue focuses on the fundamentals of ironmaking and steelmaking and their impact on subsequent stages. The Special Issue invites research on both theoretical and applications aspects, including physical chemistry, mass transport phenomena, solidification, and experimental investigations ranging from laboratory scale to pilot and industrial trials. Topics on modeling, simulation, machine learning, and big data analytics aimed at process understanding and optimization, and alloy development are highly encouraged. In line with the industry's evolution, the Special Issue also welcomes studies on advanced manufacturing, Industry 4.0 technologies, automation, and digital twins in steel production. Topics related to environmental sustainability are also encouraged, reflecting the growing importance of sustainable practices in modern metallurgy. Materials essential to steelmaking are also within scope, as are investigations into advanced steel grades, including their microstructure–property relationships and performance in downstream applications.

Guest Editors

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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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