Special Issue

Electric Arc Furnace and Converter Steelmaking

Message from the Guest Editors

Electric arc furnace steelmaking is one of the most important steelmaking routes and currently accounts for almost 30% of worldwide crude steel production. The EAF serves as the basis for plans to melt DRI produced using hydrogen reduction to produce carbon-free steel. Traditional converter steelmaking is affected drastically by the challenge to reduce the CO2 emissions of the steel industry. To confront this challenge, steelmakers are looking for ways to improve the material and energy efficiency of the converter processes further. In this Special Issue of *Metals*, we welcome contributions on recent advances in all aspects of electric arc furnace and converter steelmaking, including, but not limited to, process optimization and efficiency, the application of new sensors and equipment, reduction in CO2 emissions and environmental impact, process modelling and simulation, scrap handling and alternative/new charge materials, as well as slag properties and valorisation. We also encourage the submission of reviews on EAF steelmaking technologies.

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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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