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Numerical Modelling in Steel Metallurgy 2022

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Deadline for manuscript submissions:
closed (31 December 2022)

Message from the Guest Editor

Dear Colleagues,

The main idea of the current, new SI in 2022, “Numerical Modelling in Steel Metallurgy 2022”, is to cover all aspects related to new developments in the mathematical and numerical modelling as well as the thermodynamic calculation of the metallurgical processes of steelmaking.

The method of mathematical and numerical modelling plays an irreplaceable role, especially in demanding metallurgical conditions where it is very difficult to obtain information about the effect of the boundary conditions (BCs) on the steel flow in metallurgical reactors (BOF, EAF, LF, ladle, tundish, mould, and SEN), about the effect of BCs on steel refining during its treatment (LF, VD, RH, and AOD), or about the casting and solidification of steel with the prediction of internal defects (ingot casting, continuous casting, central porosity, macrostructure, hot tears, cracks, oscillation marks with cracks, etc.). Mathematical methods can also be used to evaluate the quality of ore raw materials. The multicriteria character includes models for their evaluation. The thermodynamic calculations of metallurgical processes (e.g., desulphurization) are also very useful.

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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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