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Physical Metallurgy of Microalloyed Steels

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Deadline for manuscript submissions:
closed (25 April 2025)

Message from the Guest Editors

Dear Colleagues,

Microalloying in steel was introduced in the 1960s, and since then became the standard metallurgical approach for producing thermomechanically processed steels. In recent years, the body of knowledge on the physical metallurgy of microalloys has been steadily increasing as novel characterization techniques have allowed a much deeper insight into the specific functionality of microalloying elements and their interactions with other alloying elements. A prominent example relates to improving the resistance against hydrogen embrittlement in ultra-high-strength steels.This Special Issue invites authors to report on recent findings regarding the fundamental understanding of microalloy effects and functionality in steel as well as the product-related design and processing of microalloyed steels. Contributions should focus on physical metallurgical effects, interaction with processing and application properties. Reviews reflecting on the state-of-the-art developed in specific aspects of microalloying are also welcome.

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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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