Special Issue

Advances in Low-Temperature Nitriding and Carburizing of Stainless Steels and Metallic Materials: Formation and Properties

Message from the Guest Editors

The formation of expanded austenite phase (S-phase) by low-temperature nitriding and carburizing of stainless steels was developed 35 years ago. Initially, this method was applied to austenitic stainless steels, but it has been extended to duplex stainless steels and martensitic precipitation-hardening stainless steels. The discovery of important scientific findings and their practical application in industry have been achieved. In recent years, it has been combined with new processes such as thermal spray coating and is expected to contribute to the manufacturing of the next generation. This Special Issue on “Advances in Low-Temperature Nitriding and Carburizing of Stainless Steels: Formation and Properties” intends to cover original research and critical review articles on recent advances in all aspects of low-temperature nitriding and carburizing. In particular, the topics of interest include, but are not limited to the following:

- Fundamentals and new concepts
- Material properties and metallurgical characterization
- Application to novel stainless steel alloys
- Combined with other manufacturing processes
- Industrial applications

Guest Editors

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Deadline for manuscript submissions

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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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