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Mechanical Properties of Stainless Steel

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Message from the Guest Editors

In recent years, the so-called lean duplex steels, which, thanks to chemical composition optimisation, can be cheaper, while maintaining high mechanical properties and corrosion resistance. Many applications require both wear and corrosion resistance, and this is where martensitic grades are used. Their wide range of material properties makes stainless steels more widely used in virtually every area of life and industry.

This Special Issue will address the phenomena related to stainless steels' mechanical properties. This Issue's scope is extensive, providing the possibility to present developments and research in all aspects of this field, and includes various processes causing changes in the mechanical properties of stainless steels, such as heat treatment, surface treatment, thermomechanical treatment, and forming and joining methods. The influence of service conditions (heat, creep, thermal shock, fatigue, erosion, wear, corrosion, etc.) on the microstructural changes and mechanical properties' alteration will also be addressed.

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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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