



## Advances in Welding Science and Technology for Metallic Materials

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### Message from the Guest Editors

Among the metal joining techniques, welding, which began to develop as a modern process in the 19th century with the birth of electric arc welding and electric resistance welding, certainly stands out.

Welding metallurgy studies the interaction between the physico-chemical properties of the metal and the variables of the welding process, as well as the effect of this interaction, on microstructure, mechanical properties and in-service behavior of the welded joint. It is undoubtedly a challenge that is both complex and fascinating. Scientifically based advances in welding processes are reflected in efficient technologies at the service of an increasingly demanding society and an increasingly competitive industry.

The aim of this Special Issue is precisely to contribute to a significant advance, both scientifically and technologically, in both fusion welding and solid-state welding. Advances of interest are within, but not limited to, the following topics: characterization, quality control, modeling and simulation, welding process optimization and in-service behavior.





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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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