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Investigations on the Properties of Welded Metallic Materials

Guest Editor:

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Deadline for manuscript submissions:
closed (31 January 2023)

Message from the Guest Editor

Dear Colleagues,

Due to the pressing demands for weight reduction and energy efficiency in transportation, the usage of lightweight materials has been increasing. As one of the lightweighting structures, tailor welded blanks (TWBs) are single-piece semi-finished parts produced by joining sheets of the same or different gauges or sheets of different alloys using a variety of welding methods. Typical joining technologies involve arc welding, tungsten inert gas welding (TIG), laser beam welding (LBW), friction stir welding (FSW), etc.

This Special Issue focuses on the Properties of Welded Metallic Materials. The scope includes properties related to all techniques mentioned above. For example, laser welding has been attractive for industrial applications due to its high productivity, flexibility and precision.

We look forward to articles investigating the underlying mechanisms between welding processes and microstructure, which eventually determine the post-welding properties and the development of numerical models for welded materials which can simulate deformation behavior or predict mechanical properties under complex loading conditions.

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Message from the Editor-in-Chief

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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