Special Issue

The Behaviours of Alloys under Thermo-Mechanical Treatment

Message from the Guest Editor

Industrial processes, such as forging, rolling, and extrusion to form metallic materials, involve high temperatures and plastic deformations applied by different machines at the industrial scale. All these processes are, not only used to give a form to a metallic part, but also to modify its microstructure and, with this, its performance in service. On the other hand, during these processes, undesirable damage at different size scales can occur. This Special Issue is dedicated to scientific works that can describe, explain, model and simulate the flow, damage and microstructure evolutions of alloys during plastic deformation and thermal treatments. Experimental, as well as validated modelling results, are welcome, with the main focus being on material behavior.

Guest Editor

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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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