

Special Issue

Heat Treatment of Aluminum Alloys

Message from the Guest Editor

Environmental awareness and resource efficiency, along with the development of high quality and high performing aluminum components, both wrought and cast, require alloy and process-parameter optimization. The microstructure, which is the result of alloy and process selections, and henceforward the mechanical and physical properties of aluminum alloys can be further tailored by proper selections of heat treatment parameters. The properties are then a function of temperature and time during the annealing or solution heat treatment and ageing steps, but also of the quenching operation. The complex relationship that exist between the alloy, process and heat treatment parameters can be modelled in order to bring this knowledge closer to the designer, enabling further component optimization, realizing less physical testing and hence faster components to market. This Special Issue aims, therefore, to present the latest research related to microstructure formation for optimized properties through heat treatment, as well as to demonstrate the latest modelling approaches that enable predictions of microstructural features.

Guest Editor

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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.

Editor-in-Chief

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