Special Issue

Physical Metallurgy of Light Alloys and Composite Materials

Message from the Guest Editor

Aluminum-, magnesium-, and titanium-based alloys are known as the lightest alloys among the construction materials widely used in industry. A favorable combination of good strength properties and low density often makes these alloys preferable to steels. The use of light alloys in products used for new technologies (e.g., automotive, aviation, construction, energy) has increased significantly over the last few decades. The use of light alloys for medical products is also expanding now. Whereas magnesium and titanium are used to produce implants, aluminum has been used for manufacturing important elements of exoskeletons. The scope of this Special Issue focuses on the formation of the structure of light alloys (during solidification, deformation, and heat treatment) and its relationship with the mechanical and technological properties. Design of light alloys (including composite materials) based on experimental and theoretical study is also considered.

Guest Editor

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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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