Special Issue

Forming and Processing Technologies of Lightweight Metal Materials

Message from the Guest Editor

Forming technologies used to manufacture lightweight metal materials are experiencing profound transformations. Conventional plastic forming processes, such as stamping, deep drawing and bending, face numerous challenges when processing lightweight materials including aluminum alloys, magnesium alloys and titanium alloys. The anisotropic characteristics of materials can present difficulties in controlling forming accuracy and lead to severe springback. Titanium and magnesium alloys exhibit high chemical reactivity, rendering them susceptible to oxidation and grain coarsening during high-temperature forming processes. To address these challenges, this Special Issue aims to compile the latest research achievements regarding forming and processing technologies for lightweight metal materials, covering various aspects including advanced plastic forming techniques, precision machining, additive manufacturing, surface treatment, and joining technologies. This Special Issue provides theoretical guidance and technical support for the efficient forming and precision processing of lightweight metal materials.

Guest Editor

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About the Journal

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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