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Plastic Deformation of Lightweight Alloys

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Message from the Guest Editors

Lightweight alloys are a critical class of structural materials with high specific strength. Further development of such alloys with superior mechanical performances is also predicated on a deep understanding of their plastic deformation process at different length scales. Recent advancements in experimental and computational methods would facilitate investigations of plastic deformation under a multiscale scheme to likely reveal new insights. This new knowledge will enable innovative processing routes using plastic deformation and enhanced mechanical properties by controlling the deformation mechanisms.

This Special Issue aims to collect a set of original research articles on various topics around the plastic deformation of lightweight alloys. Potential topics include, but are not limited to: Design, processing and characterization of lightweight wrought alloys; Experimental and/or computational investigation of plastic deformation phenomena in lightweight alloys at all length scales; Correlation between plastic deformation mechanisms and mechanical properties in lightweight alloys; and Strain, strain rate and temperature effect on deformation mechanisms in lightweight alloys.



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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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