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Lightweight Metals: Process, Microstructure, and Properties

Guest Editor:

Dr. Samuel Chao Voon Lim
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Deadline for manuscript submissions:
closed (30 September 2021)

Message from the Guest Editor

Lightweight metals research and development is essential for reducing vehicle/aircraft weight, which can lead to a reduction of fuel consumption, carbon emission, and pollution, and extend their range of travel. Since the late 1990s, aluminum and magnesium alloys have made their way into mass produced passenger cars. The use of aluminum and titanium alloys in aircrafts also increased. This was the result of newly developed lightweight metal alloys and composites that met mechanical property requirements, as well as advances in processing technologies for lightweight metals.

This Special issue will emphasize the ongoing need for innovation and development of lightweight metal technology. Primarily, it will highlight work addressing the challenges of processing and formability of lightweight metals, while studying the process–microstructure property inter-relationship. We hope to be able to attract articles for lightweight metals based on the following areas: composite lightweight metals, new alloys of lightweight metal development, processing of lightweight metals that covers heat-treatment processing, additive manufacturing processing, and thermomechanical processing.

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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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