



Material and Process Design for Lightweight Structures

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Message from the Guest Editor

Dear Colleagues,

The drive toward increased fuel efficiency and a reduction in the harmful emission of greenhouse gases associated with energy generation and transportation has led, in recent years, to a resurgence of interest in light alloys and new lightweight alloy design strategies. In automotive industry, the need to reduce vehicle weight has led to extensive research efforts to develop aluminum and magnesium alloys for structural car body parts. In aerospace, the move toward composite airframe structures demands an increased use of formable titanium alloys. Given the extensive scientific and technological importance of this timely subject, it is expedient to collect concise reports—to be presented in this Special Issue—on the current status in the field in the areas of manufacturing and processing technologies of light metals, microstructure and texture manipulation, innovative alloy design concepts and advanced characterization methods and in-situ techniques.

Dr.-Ing. Talal Al-Samman
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.

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