Special Issue

Advanced Lightweight Materials: Processing, Characterization and Applications

Message from the Guest Editor

We are pleased to invite you to publish original contributions in the area of processing, characterization and applications of advanced lightweight materials. Advanced lightweight materials, such as aluminum alloy, magnesium alloy and titanium alloy, are important structural metal materials with excellent characteristics of high specific strength, high specific stiffness and excellent lightweight effect, etc. However, poor formability and the difficulty of trade-off of strength and ductility in advanced lightweight alloys limit the application of the materials. Articles concerning the theories, technologies and applications related to the processing, characterization and applications of advanced lightweight materials are welcome. Therefore, this Special Issue will cover—but is not limited to—the following fundamental and applied research topics:

- Advanced lightweight alloys;
- Processing and forming processes;
- Material characterization;
- Mechanical properties;
- Damage and fracture;
- Constitutive modelling;
- Strengthening mechanisms;
- Process and system modelling;
- Applications.

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

Prof. Dr. Yong Zhang
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