Special Issue

Evaluation of Mechanical Properties and Microstructure of Lightweight Alloys

Message from the Guest Editor

Lightweight alloys, which include aluminum, magnesium, and titanium alloys, are celebrated for their low density, high strength, excellent corrosion resistance, and outstanding high-temperature performance. These attributes make them the preferred material across a variety of sectors, such as aerospace, automotive manufacturing, rail transportation, and electronics. Evaluating the mechanical properties and microstructure of lightweight alloys is essential to guarantee their dependability across a range of applications. Precise testing and analysis facilitate the assessment of key performance indicators, such as yield strength, tensile strength, hardness, toughness, and fatigue resistance. Additionally, microstructural analysis reveals the internal grain structure, phase distribution, and defect conditions of the alloys, providing a deeper insight into their performance and a scientific basis for future material improvements. This Special Issue aims to establish a platform for the dissemination of cutting-edge research and insights into the advancements within the lightweight alloy domain.

Guest Editor

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