

Special Issue

Advances in Lightweight Alloys: Microstructure, Mechanical Properties and Applications

Message from the Guest Editor

Lightweight alloys play a pivotal role in modern engineering, serving crucial applications across the aerospace, automotive, marine, and transportation sectors. The aim of this Special Issue is to present the latest research and engineering developments related to lightweight alloys, with a particular focus on the relationships between microstructure, mechanical properties, and performance in service. Topics of interest include, but are not limited to, the design and development of novel lightweight alloys; optimization of processing routes; characterization and modeling of microstructural evolution; and evaluation of mechanical behavior under quasi-static, dynamic, cyclic, and thermal loads. Research addressing environmental performance, life-cycle assessment, joining technologies, and industrial case studies are also strongly encouraged. We invite researchers and engineers to contribute original research and review articles that will promote the continued advancement and application of lightweight metallic materials.

Guest Editor

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Deadline for manuscript submissions

20 July 2026



Materials

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



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Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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