



metals



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Advances in Lightweight Metal Matrix Composites

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Deadline for manuscript
submissions:

30 June 2024

Message from the Guest Editors

Metal matrix composites (MMCs) have attracted great interest from the materials community due to superior mechanical and tribological properties compared with their metal counterparts, such as better strength and wear resistance, modulus, and higher working temperature. The use of novel reinforcements, such as nanotubes and 2D materials, together with new production technologies as additive manufacturing have driven advances in this field in the last few years.

Additionally, the combination of these upgraded properties with lightweight metallic matrices results in a great weight reduction potential for different sectors. Tailoring different properties for fulfilling several demands by scientists and engineers is also desirable. Improved thermal, magnetic, and electrical characteristics or self-healing attributes are pursued to obtain functional or multi-functional MMCs.

This Special Issue will face challenges and opportunities for lightweight metal matrix composites to show the progress beyond the state of the art in the research of Al, Mg, and Ti-based MMCs and their improved functionalities, above all using novel reinforcements, such as carbon nanotubes or graphene.



mdpi.com/si/69323

Special Issue



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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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Journal Rank: JCR - Q2 (*Metallurgy & Metallurgical Engineering*) / CiteScore - Q1 (*Metals and Alloys*)

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