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Special Issue Reprint

Alloy Strengthening Mechanisms, Microstructure Control, and Performance Optimization

Edited by: Hongling Zhou and Keqin Feng

This Reprint highlights the current advances in alloy strengthening mechanisms, microstructure control, and performance optimization in alloys and metal matrix composites. As key materials for modern engineering, these systems are increasingly important for applications in aerospace, automotive manufacturing, marine engineering, energy technologies, and advanced electronics. This Reprint brings together high-quality research that examines how alloy design, processing strategies, and microstructural evolution influence the final material properties. It emphasizes innovative approaches to fabrication, forming, and characterization, while also addressing the optimization of strength, ductility, thermal stability, and corrosion resistance. By presenting recent achievements in this field, this Reprint serves as a valuable reference for researchers and engineers who are working to develop the next generation of high-performance metallic materials.

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