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Mechanical Properties of Advanced Metallic Materials

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Deadline for manuscript
submissions:

closed (15 December 2022)

Message from the Guest Editors

With many of today's emerging technologies, the primary emphasis is on the mechanical properties of the metallic materials used in the fields of ocean, air and aerospace, bridge and nuclear engineering. Strength is the main indicator of the mechanical property. Different strengthening mechanisms, such as phase transformation strengthening, solid-solution strengthening, dislocation strengthening, grain-boundary strengthening, precipitation strengthening, and load transfer via the introduction of strong phases, can be used to achieve high strength/hardness. These strengthening methods accompany with various deformation mechanism, such as Transformation Induced Plasticity (TRIP) and Twinning Induced Plasticity (TWIP) et al.

This Special Issue will bring together high-quality research and review articles on preparation, microstructure, mechanical properties, and diverse applications of metallic materials. Potential topics include, but are not limited to:

Alloy design and preparation of metallic materials;
Microstructure characterization and mechanical properties of steel, high entropy alloy, aluminum alloy et al.;
EBSD, TEM and APT;
Strengthening and deformation mechanisms.



mdpi.com/si/105316

Special Issue



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Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

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