# Special Issue

# State-of-the-Art of Crystalline Metals and Alloys

## Message from the Guest Editors

The crystalline structure of alloys refers to the atomic arrangement and packing of metallic elements within solid solutions or intermetallic compounds. The crystal structure of an alloy—whether ordered, disordered, or multiphase—directly influences its mechanical, electrical, magnetic, and corrosion-resistant properties. Understanding the three-dimensional atomic arrangement, defects, and phase distributions in alloys is crucial for tailoring materials with optimized performance for industrial applications. This Special Issue highlights advances in the study of crystalline and polycrystalline alloys, including their synthesis, phase transformations, microstructure characterization, and structure–property relationships. Contributions may cover topics such as alloy design, solidification mechanisms, advanced characterization techniques (e.g., XRD, TEM, atom probe tomography), computational modeling, and applications in aerospace, automotive, energy, and biomedical engineering. By exploring the interplay between atomic-scale ordering and macroscopic properties, this edition aims to foster innovation in the development of high-performance alloys for emerging technologies.

## Guest Editors

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# About the Journal

## 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.

## Editor-in-Chief

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