



Microstructure and Deformation of Advanced Alloys

Guest Editors:

Dr. Yuanbiao Tan

Guizhou Key Laboratory of
Materials Mechanical Behavior
and Microstructure, College of
Materials and Metallurgy,
Guizhou University, Guiyang
550025, China

Dr. Nikolai Zarkevich

U.S. Department of Energy, Ames
Laboratory, Ames, IA 50011, USA

Deadline for manuscript
submissions:

29 July 2024

Message from the Guest Editors

The microstructure evolution and deformation mechanisms in alloys were researched during over eight decades. While the initial work was mostly experimental, studies of defects (including dislocations) and their motion during deformations resulted in mathematical models describing deformation mechanisms. Collected in this Topic are contributions related to characterization of defects, microstructure evolution, deformation modelling, design of advanced alloys, and alloy processing during manufacturing (including additive manufacturing and thermomechanical treatment). The goal of this Special Issue of Crystals is to elucidate the relationships among behaviour of defects, microstructure evolution, deformations, and thermomechanical properties of advanced alloys. Submissions to this Special Issue are welcome in the following areas:

- metals and alloys
- defects
- texture
- microstructure
- deformation
- aging
- properties
- hot-working
- cold-working





crystals



an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Alessandra Toncelli

Department of Physics, University
of Pisa, 56126 Pisa, Italy

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.

Author Benefits

Open Access: free for readers, with [article processing charges \(APC\)](#) paid by authors or their institutions.

High Visibility: indexed within [Scopus](#), [SCIE \(Web of Science\)](#), [Inspec](#), [CAPlus / SciFinder](#), and [other databases](#).

Journal Rank: JCR - Q2 (*Crystallography*) / CiteScore - Q2 (*Condensed Matter Physics*)

Contact Us

Crystals Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/crystals
crystals@mdpi.com
[X@Crystals_MDPI](#)