



## Dislocation Mechanics of Crystal/Polycrystal Mechanical Strength Properties

Guest Editor:

**Prof. Dr. Ronald W. Armstrong**

Department of Mechanical  
Engineering, A. James Clark  
School of Engineering, University  
of Maryland, College Park, MD  
20742, USA

Deadline for manuscript  
submissions:

**closed (31 January 2023)**

### Message from the Guest Editor

Dear Colleagues,

The purpose of the present *Crystals* Special Issue is to assemble dislocation mechanics descriptions commensurate, in part or overall, with corresponding crystal/polycrystal material strength properties. The Special Issue is intended to include the major sub-topics of: (1) dislocation deformation dynamics and corresponding mechanistic descriptions over a range of loading rates and temperatures; and (2) dislocation mechanisms operative at internal structural levels from the macro- to nano-dimensional scales. Crystal stress–strain, strain hardening, creep, impact, shock, hardness, fatigue, and ductile and brittle fracturing properties are to be included, along with correspondingly measured and/or computationally simulated crystal/polycrystal strength property determinations.

measured and/or computationally simulated crystal/polycrystal strength property determinations.





*crystals*



an Open Access Journal by MDPI

## Editor-in-Chief

### **Prof. Dr. Alessandra Toncelli**

Department of Physics, University  
of Pisa, 56126 Pisa, PI, 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](#), [Ei Compendex](#), [CAPlus / SciFinder](#), and [other databases](#).

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

## Contact Us

---

*Crystals* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/crystals](http://mdpi.com/journal/crystals)  
[crystals@mdpi.com](mailto:crystals@mdpi.com)  
[X@Crystals\\_MDPI](#)