



Multiscale Modelling and Crystal Plasticity of Metals

Guest Editor:

Dr. Carola Celada-Casero

Materialia Research Group,
Centro Nacional de
Investigaciones Metalúrgicas
(CENIM-CSIC), Av. Gregorio del
Amo 8, 28040 Madrid, Spain

Deadline for manuscript
submissions:

closed (29 February 2024)

Message from the Guest Editor

The following fields are of high-interest to the progress of multiscale modelling: 1) the development of algorithms for the accurate generation of synthetic microstructures, i.e., based on microstructure geometrical descriptors, statistics, or artificial intelligence; 2) the development of multiscale bridging and optimization methods to speed up the numerical computation of statistical and high-resolution synthetic microstructures as well as to enable the application to component scale; 3) the understanding and proper management of material properties needed in multiscale modelling (i.e., constitutive behaviour of the individual phases and their mechanical interactions) with respect to the microstructural characteristics resulting from the applied thermal processing; and 4) smart strategies to compare simulations output results with experimental results at different length-scales.

For all the above-described aspects, this Special Issue aims to present the latest research findings in the field of multiscale modelling of metallic alloys for structural applications.





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](#), [CAPus / 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

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