Special Issue

Microstructure Characterization, Modelling, and Simulation of Metal Deformation, Damage, and Failure

Message from the Guest Editors

Production processes, microstructures, and mechanical properties are intimately related, and their relationships have always represented a key issue in the industrial production and application of metals, and materials in general. In fact, metallic materials result in microstructures that are dependent on their physical properties, but also on the different possible production routes, which confer them specific mechanical properties. [...] In this scenario, the characterization, modeling, and simulation of nucleation and the growth of cracks in metallic materials are relevant for two reasons: to improve our understanding of how defects can be significant to the failure of materials, thereby defining a hierarchy of defects useful to assess material quality, and to predict the life/behavior of metallic components during working conditions. Articles and reviews dealing with microstructure characterization and modelling aiming at defining microstructure–properties relationships in terms of deformation, crack nucleation, and growth, with simulation applications, are welcome.

Guest Editors

Dr. Giuliano Angella

Chemical Science and Material Technologies, Italian National Research Council, CNR, Rome, Italy

Dr. Christophe Pinna

Department of Mechanical Engineering, The University of Sheffield, Western Bank, Sheffield S10 2TN, UK

Deadline for manuscript submissions

closed (31 March 2021)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/37774

Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

mdpi.com/journal/materials

MDPI

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/journal/materials

About the Journal

Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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), PubMed, PMC, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Metallurgy and Metallurgical Engineering) / CiteScore - Q1 (Condensed Matter Physics)