metals

IMPACT FACTOR 2.6

CITESCORE 4.9

an Open Access Journal by MDPI

Deformation and Fracture of Condensed Materials in Extreme Conditions

Guest Editor:

Prof. Dr. S. V. Razorenov
Institute of Problems of Chemical Physics of Russian Academy of Sciences, 142432 Chernogolovka, Russia

Deadline for manuscript submissions:
closed (31 March 2023)

Message from the Guest Editor

Under high strain rate pulsed shock wave load with duration from tens of picoseconds to microseconds, the flow and fracture stress in metals have a temperature-rate dependence. New evidence has been obtained that demonstrates the strong multiplication of dislocations produced by the elastic precursors following the compression shock waves. In the next decade, we should expect a significant expansion of the use of shock wave technology to solve problems of materials science and the physics of strength and plasticity. Further studies of strength variations at the meso-level and elucidations of the mechanism of formation of localized shear bands will contribute to the design of new high-strength materials and the improvement of their processing technology. Obtaining the details of the mechanism of brittle fracture during compression will contribute to the advancement in the creation and application of superhard materials, and aid in earthquake prediction.

We expect scholars and researchers from academia and industry around the world to contribute to this Special Issue.

metals

IMPACT FACTOR 2.6

CITESCORE 4.9

an Open Access Journal by MDPI

Editors-in-Chief

Prof. Dr. Hugo F. Lopez
Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

Prof. Dr. Yong Zhang
Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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 (*Metallurgy and Metallurgical Engineering*) / CiteScore - Q1 (Metals and Alloys)

Contact Us

Metals Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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

mdpi.com/journal/metals
metals@mdpi.com
X @Metals_MDPI