



an Open Access Journal by MDPI

Recent Advances in Mechanisms of Fracture and Fatigue

Guest Editors:

Message from the Guest Editors

Prof. Jaroslav Pokluda Brno University of Technology, Brno, Czech Republic

Prof. Reinhard Pippan

Erich Schmid Institute of Materials Science, Leoben, Austria

Deadline for manuscript submissions: closed (20 April 2022) In recent years, we have witnessed a rapid development in our ability to understand fracture and fatigue processes from the point of view of underlying damage mechanisms. A massive application of advanced experimental methods has significantly contributed to this progress. Finite element models based on higher-order elasticity and plasticity started to be applied in fracture mechanics, and in addition, atomistic approaches based on density functional theory and/or molecular dynamics resulted in multiscale models unifying the nano-micro-macro description of damage mechanisms. At the same time, research focused on fracture and fatigue mechanisms in special materials and components such as biological materials, smart materials, ultrafine grained materials, nanomaterials, high-entropy alloys, concrete and metal/ceramics composites, materials with coatings, of microelectronic complex structures and micromechanical devices, epitaxial films or additive manufactured materials has become prominent compared to investigations of classical metallic materials.









an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Maryam Tabrizian

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

Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The iournal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites. advanced materials characterization, porous materials, manufacturing processes and svstems. 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.

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)

Contact Us

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