



an Open Access Journal by MDPI

Combined Fatigue and Multi-scale Simulation

Guest Editor:

Dr. Hong Zhang

Failure Mechanics and Engineering Disaster Prevention, Key Laboratory of Sichuan Province, College of Architecture and Environment, Sichuan University, Chengdu 610065, China

Deadline for manuscript submissions: 10 February 2025

Message from the Guest Editor

Dear Colleagues,

To improve and reflect on material design and engineering applications, combined fatigue behavior and multi-scale simulation should be addressed. On the other hand, knowledge of the relationship between combined fatigue, including creep-fatigue, low-high-cycle fatigue, and veryhigh-cycle fatigue, is necessary and should be generated based on experiments and simulations.

This Special Issue provides an exchange of opinions on recent developments in the field of combined fatigue and multi-scale simulation. It is devoted to the development of experimental and theoretical methods and multi-scale models to evaluate and descript the behavior of materials subjected to various types of combined loads, including, but not limited to, the following topics:

- Creep fatigue;
- Low-high-cycle fatigue;
- Very-high-cycle fatigue;
- Deformation/damage mechanisms;
- Microstructure evolution;
- Fatigue life assessment;
- Multi-scale simulation.









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 - Q1 (Metallurgy and Metallurgical Engineering) / CiteScore - Q2 (*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