Special Issue

Advanced Materials and Numerical Approaches for Biomedical Engineering, Biomechanics and Safety Applications

Message from the Guest Editors

This Special Issue will provide a platform for interdisciplinary studies that connect materials science, mechanical engineering, and biomedical engineering, contributing to the advancement of modern safety systems focused on human well-being. Topics of interest include, but are not limited to, the following:

- Crashworthiness and energy-absorbing materials, including meta-materials with tailored mechanical properties;
- Design, modeling, and analysis of passive safety systems, such as airbags, helmets, gloves, body armor, and automotive interior components;
- Numerical methods for material modeling and impact simulation, including finite element analysis and multi-physics approaches;
- Biomechanical modeling and injury prediction, including human head and brain biomechanics, skull and cranial impact analysis, and traumatic brain injury (TBI) modeling;
- Tissue and dental material modeling under dynamic and complex loading conditions;
- AI and machine learning in material design, optimization, and crash analysis;
- Impact resistance in oral biomechanics and dental trauma assessment;

Guest Editors

Dr. Mariusz Ptak

Faculty of Mechanical Engineering, Wroclaw University of Science and Technology, Lukasiewicza 7/9, 50-371 Wroclaw, Poland

Dr. Kamil Sybilski

Faculty of Mechanical Engineering, Military University of Technology, Gen. Sylwestra Kaliskiego Street 2, 00-908 Warsaw, Poland

Dr. Rafał Kubacki

Akademia Wychowania Fizycznego we Wroclawiu, Wroclaw, Poland

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

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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

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