Special Issue

Research Progress in Lightweight High-Strength Materials and Mechanical Properties

Message from the Guest Editors

The demand for lightweight, high-strength materials is rapidly increasing across various industries such as the automotive, aerospace, and energy sectors, in which reducing weight while maintaining or even improving performance is necessary. This Special Issue aims to present the latest research and developments in the design, processing, and characterization of advanced lightweight materials. We invite papers focusing on a wide range of materials, including advanced high-strength steels (AHSSs), aluminum and magnesium alloys, titanium alloys, metal matrix composites, and high-entropy and multi-principal-element alloys, with superior mechanical properties. Papers that highlight microstructural features, deformation mechanisms, corrosion resistance, and mechanical performance are especially welcome. Studies employing experimental methods, computational modeling, or a combination of both are highly encouraged. Through this Special Issue, we seek to provide a comprehensive overview of cutting-edge research and foster interdisciplinary dialogue toward the development of next-generation structural materials.

Guest Editors

Dr. Nabil Bassim
Faculty of Engineering, McMaster University, Hamilton, ON, Canada

Dr. Bita Pourbahari
Department of Materials Science and Engineering, McMaster University, Hamilton, ON, Canada

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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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