# Special Issue

# Advances in Refractory Materials: Design, Microstructure, Properties and Applications

## Message from the Guest Editor

Refractories (or refractory materials) are inorganic, non-metallic, porous, and heterogeneous materials, which are composed of thermally stable mineral aggregates, a binder phase, and additives. Cement, lime, steel, non-ferrous metals, glass, ceramics, and other materials are essential to our daily lives are made through a high-temperature heat treatment process. The use of refractories is essential for these processes. This Special Issue will accept papers concerning, e.g., enhanced corrosion resistance of refractories, physical properties and corrosion resistance of refractories, cement-containing and cement-free castables, spinel-containing and spinel-forming castables, raw materials for refractories, environment-friendly and chromium (Cr)-free refractories, carbon (C)-containing refractories, recycling of refractories, deep learning and machine learning in refractories technology, prediction of refractory wear with machine learning methods, calcium aluminate cement hydration, novel binders alternative to calcium aluminate cements, cements for high performance concretes, methods of refractories investigation, and other important topics.

## Guest Editor

Prof. Dr. Dominika Madej

Department of Ceramics and Refractories, Faculty of Materials Science and Ceramics, AGH University of Science and Technology, al. A. Mickiewicza 30, 30-059 Krakow, Poland

## Deadline for manuscript submissions

closed (20 June 2023)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/143665

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

mdpi.com/journal/materials

# Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/journal/materials

MDPI

# About the Journal

## 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

## 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)