Special Issue

Mechanical Alloying and Powder Compaction of Crystalline and Amorphous Composites

Message from the Guest Editor

Mechanical alloying is widely recognized as a powder processing technique leading to the formation of many non-equilibrium and equilibrium structures, like extended solid solutions, amorphous alloys, nanocrystalline (nanostructured) alloys, intermetallic compounds, or in situ composites. The next step following the mechanical alloying process is usually powder compaction, preserving their non-equilibrium structure. Various techniques are employed for powder consolidation, like cold pressing followed by sintering, hot pressing, hot isostatic pressing, explosive compaction, and spark plasma sintering. This Special Issue of *Materials* will be a detailed overview of recent research and development in the field of mechanical alloying/milling of metallic/ceramic powders followed by their compaction to get bulk amorphous/nanocrystalline materials and composites. Potential topics include, but are not limited to:

- Mechanical alloying
- Mechanical milling
- Mechanochemical reactions
- Amorphous and nanocrystalline powders
- Bulk amorphous and nanostructured alloys
- Metallic composites
- Ceramic composites
- Powder compaction

Guest Editor

Prof. Dariusz Oleszak

Faculty of Materials Science and Engineering, Warsaw University of Technology, 141 Woloska Str., 02-507 Warsaw, Poland

Deadline for manuscript submissions

closed (10 December 2022)

Materials

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 5.8
Indexed in PubMed

mdpi.com/si/68179

Materials
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 3.1
CiteScore 5.8
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 - Q1 (Metallurgy and Metallurgical Engineering) / CiteScore - Q2 (Condensed Matter Physics)