

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

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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.

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