Special Issue

Processing of Mechanically Alloyed Powders

Message from the Guest Editor

Mechanical alloying refers to the solid-state powder processing method that involves the repeated cold-welding, fracturing, and rewelding of powder particles in a high-energy ball mill. With this process, it is possible to synthesize a wide range of non-equilibrium phases, such as supersaturated solid solutions, nanocrystalline materials, metallic glasses, high-entropy alloys, nanocomposites, and many others. Due to the fineness, work-hardening, and partially oxidized nature of mechanically alloyed powders, their consolidation to full density without any porosity being present is a challenging problem and several novel processes have been developed to overcome this issue. This Special Issue will focus on the processing of mechanically alloyed materials and an evaluation of their properties, with specific emphasis on recent developments.

Guest Editor

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Deadline for manuscript submissions

closed (29 February 2024)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/164290

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Message from the Editor-in-Chief

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

Editor-in-Chief

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