Special Issue

Mechanical Alloying: Processing and Materials

Message from the Guest Editor

Mechanical alloying is a versatile process for the production of powders. The size and size distribution of the particles change as a result of continuous fracture – welding. It has been utilized in different areas of materials processing and applied to obtain different material systems: oxide dispersion strengthened materials, intermetallics, ceramics, composites, nanostructured materials, amorphous materials, mechanochemical reaction materials. The products obtained after MA process depends on several parameters as: geometric and dynamic parameters of mill design, the character of motion of milling bodies, the physical and mechanical characteristics of milling bodies, the characteristics of processed substances, a mass ratio of milling bodies to powder, temperature of the vial, milling atmosphere, selection of process control agents, the filling factor of the vial. Moreover, the experimental milling devices to perform the alloying process are very different: attritor, shaker mill, horizontal ball mill, planetary mill, ball mill controlled by magnetic force.

Guest Editor

Prof. Dr. Joan-Josep Suñol

Department of Physics, Campus Montilivi s/n, University of Girona, 17003 Girona, Spain

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

mdpi.com/journal/metals

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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

Prof. Dr. Yong Zhang
Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

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