Special Issue

Mechanical Properties in Progressive Mechanically Processed Metallic Materials

Message from the Guest Editors

One of the possible ways to effectively increase the utility properties of metallic materials is to decrease their grain size. The introduction of thermomechanical treatment represented a breakthrough in grain refinement. Contrary to conventional production technologies, the main advantage of such treatment is the possibility to precisely control structural phenomena. Grain boundaries can significantly contribute to material strengthening; however, the final effect depends on the ratio of grain boundaries and grain interiors.

Thermomechanical treatment can only decrease the grain size to the scale of microns. However, further research devoted to pushing materials' performance beyond the limits led to the introduction of severe plastic deformation (SPD) methods providing producers with the ability to acquire ultra-fine-grained and nanoscaled metallic materials with superior mechanical properties. SPD methods can be performed with the help of conventional forming equipment; however, many newly designed processes have been introduced.

It is my pleasure to invite you to submit a manuscript for this Special Issue. Full papers, communications, and reviews are all welcome.

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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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