



metals



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Severe Plastic Deformation Techniques of Metal Alloys

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Message from the Guest Editor

Plenty of effort has been devoted to targeting structural materials with optimized mechanical properties, especially in the fields of civil, medical, transportation, piping, aerospace, and energy engineering. Metallic material strength and ductility are two of the most important mechanical properties to be considered when designing these materials to be used for structural purposes. To obtain materials with a high strength and high ductility, significant changes of the microstructure are mandatory. In this respect, a drastic reduction of the metallic alloy grain size, possibly down to a nanoscale level, was shown to possess a good combination of high stress and high ductility, without sacrificing their specific strength.

Scope of the present Issue is to promote a collection of the latest research works and results on both the severe plastic deformation (SPD) techniques and approaches: bottom-up and top-down. This Issue aims at providing an overview of the state of the art of SPD techniques and achievements for different metallic materials and alloys.



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Message from the Editorial Board

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.

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