Special Issue

Superior Strength–Ductility Combination of Heterostructured Metallic Materials

Message from the Guest Editors

Metallic materials often show the strength–ductility trade-off law, that is, metallic materials are usually either strong or ductile, but rarely to hold both at the same time. Nowadays, severe plastic deformation (SPD) techniques have been widely utilized to enhance strength to a much higher lever, which could be several times higher than their original coarse-grained counterparts. Unfortunately, the ductility sharply decreases to a relatively low degree, which could be attributed to the lack of strain hardening capacity. The raised heterostructured materials could solve the problem mentioned above. This Special Issue features studies on various kinds of heterostructured material processing route and the more in-depth deformation mechanisms.

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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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