Special Issue

Physical Metallurgy of Refractory Alloys (2nd Edition)

Message from the Guest Editor

The high melting temperature, high strength at elevated temperatures, low thermal expansion, and high heat conduction of refractory metal alloys make them a favored candidate material for terrestrial energy production facilities. Niobium, molybdenum, tantalum, tungsten, and their alloys are fabricated as powders through the reduction of their oxides, consolidation by sintering, activated sintering, or liquid phase sintering. Heavy tungsten alloys bound by nickel, iron, or copper are used as radiation shields, balancing weights, and penetrators. At higher temperatures under a protective atmosphere, tungsten is used for heating filaments and elements, and electrodes are used for welding.

A Special Issue of Metals will be devoted to the physical metallurgy of refractory alloys. It intends to give an account of the scientific and technological state of the art of recent and potential developments of refractory alloys and environmental protection (see the Keywords/Topics below). Your contribution to this work will be highly valued and appreciated.

Guest Editor

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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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