Sustainable Utilization of Metals - Processing, Recovery and Recycling

Message from the Guest Editor

Dear Colleagues,

The high demand on advanced metallic materials raises the need for an extensive recycling of metals and a more sustainable use of raw materials. Advanced materials are crucial for technological applications, coexisting with an increasing scarcity of natural resources. This Special Issue is dedicated to the latest scientific achievements in efficient production of metals, purposing a sustainable resource use.

The idea of a circular economy is the point of origin for contributions, aiming on the recirculation of metal-rich waste streams—such as Waste Electric and Electronic Equipment (WEEE), multi-metal alloys and composite materials—back into metal production. This topic goes along with pursuing the holistic use of input materials, resulting in the avoidance of waste by-products. In order to minimize material losses and energy consumption, this issue explores concepts for the optimization concerning the interface between mechanical and thermal pre-treatment and metallurgical processes.

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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.