Special Issue

Metals in Hydrogen Technology

Message from the Guest Editor

The world transition to a sustainable and reliable carbon free economy is the greatest challenge of the 21st century. Hydrogen is widely considered as a key element for a potential energy solution. The possibility to produce hydrogen utilizing renewable energy sources and to store in it energy, presents multiple advantages. On the one hand, energy will be harvested and stored nearly without the production of harmful pollutants, and on the other hand the security of energy supply will be granted. In addition, the implementation of hydrogen as "energy carrier" is expected to result in an effective and synergic utilization of renewable energy sources. Hydrogen storage technology is a key roadblock towards the use of H2 as an energy carrier. Although, in the last decades enormous progress has been made in the development of hydrogen storage materials and hydrogen infrastructures, a lot still has to be done to efficiently support such epochal transition. The study of interaction between metals, metal alloys and metal-based compounds and hydrogen is of primary importance.

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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