

Special Issue

Structure and Application of Porous Metallic Materials

Message from the Guest Editors

A unique mixture of physical and mechanical properties is delivered by porous metals, in combinations that dense metals cannot achieve. The interest mainly lies in exploiting their ability to be incorporated into strong, stiff, lightweight structures. The applications of porous metals and metal foams depend on their structure. Closed-cell foams with pores divided by metal cell walls are mainly used for structural applications. On the other hand, open-cell foams with a continuous network of metallic structures in each strut frame are connected, weaker, and primarily used in functional applications. Due to the specific nature (mechanical properties vs. weight) and possibilities to reduce the final product's total weight, research and development should be encouraged in this field. Materials engineering in the field of porous metals includes mainly powder metallurgy, with manufacturing possibilities like additive manufacturing, sintering etc. Such materials have an exponentially growing range of applications, and thus need to be developed and studied in detail.

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About the Journal

Message from the Editor-in-Chief

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.

Editor-in-Chief

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