Special Issue

Preparation, Properties and Applications of Porous Metal

Message from the Guest Editor

With the rapid development of industrial technology, the demand for lightweight, energy absorption, and multi-functionalities is increasing in many fields, such as automobile manufacturing, transportation, energy, and aerospace. Porous structural-functional materials, such as metal foams and lattice structures, have entered the field of vision due to their light weight, high specific strength, high stiffness, and large specific surface area. Graded porous metals in particular exhibit immense potential in applications for impact resistance, toxicant filtering, medical implants, etc. However, limited due to their preparation efficiency, performance, and cost controllability, porous structural materials have not been widely applied in the industry. Therefore, this issue focuses on the development and application of lightweight porous metals, with particular attention to preparation technology and the properties of graded metal foams and lattices. In this Special Issue, we invite articles on metal foams, lattices, and other newly developed lightweight porous metals with respect to preparation processes and properties.

Guest Editor

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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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