

Special Issue

Nanoporous Metals

Message from the Guest Editor

Nanoporous metals prepared by the dealloying (selective leaching) of a solid-solution alloy or compound represent an emerging class of materials. Nanoporous metal has a three-dimensional structure of randomly interpenetrating ligaments/nanopores, of which sizes can be tuned, from 5 nm to several tens of microns, by altering conditions. Nanoporous metals have several merits for application compared with other nanostructured materials; bicontinuous structure, tunable pore size, bulk form, good conductivity, and high structural stability. Therefore, nanoporous metal is an ideal 3D material to meet various applications, and the attractive versatile functionality such as catalysis, optical sensing, actuation or energy storage and conversion has been emerged. The understanding of the atomistic description of surface roughening and nanopore formation is also important to maximize the functionality. This Special Issue focuses on recent advances of nanoporous metals by alloy corrosion from fundamental aspects to various applications. We welcome contributions from experimentalists, theorists, and computational scientists in this research field.

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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