Special Issue

Hydrogen Embrittlement of Metals: Behaviors and Mechanisms

Message from the Guest Editors

Hydrogen is a clean alternative to traditional energy sources and a key feature of the energy transition strategies of many countries. However, the development and utilization of hydrogen energy comprise dynamic processes, including the preparation, storage, transportation, and safe application of hydrogen. Changes in failure behavior in metal materials in a hydrogen-containing environment are very important. Moreover, internal hydrogen is present in metal materials during casting and processing, which will have a key impact on the mechanical properties of these materials. Therefore, it is necessary to thoroughly research hydrogen behaviors and damage mechanisms in metal materials. For this Special Issue, we welcome articles that focus on research into the behaviors and mechanisms of hydrogen embrittlement in metals. Potential subjects covered in this Special Issue include hydrogen diffusion and permeation, hydrogen transport and storage, microstructure evolution in a hydrogen-containing environment, the mechanisms behind hydrogen-induced material failure, and hydrogen-embrittlement-resistant materials and technology.

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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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