

Special Issue

Review of Hydrogen Embrittlement in Metals

Message from the Guest Editor

The problem of hydrogen embrittlement is a quite serious phenomenon for metals. During the process of preparation, processing and service, the mechanical properties and corrosion resistance of materials are reduced due to the absorption of hydrogen. The harm of hydrogen to materials involves a wide range of fields. The hazards of hydrogen to metals include hydrogen-induced cracking, high-temperature hydrogen corrosion, hydride and hydrogen-to-martensitic transformation etc. The research on hydrogen embrittlement has begun to form a system, but the interaction mechanism of the complex microstructure of metal materials with hydrogen and the hydrogen-induced failure under the coupling of heat and force are still unknown. Articles including but not limited to the following topics are welcomed.

- New mechanisms, new theories, new phenomena of hydrogen embrittlement of steel or light alloy.
- Researches and development of hydrogen removal process in metal.
- The interaction between hydrogen, fatigue and crack growth.
- Action laws of other hydrogen-induced failure forms.
- Other corrosion issues related to hydrogen.
- Fatigue, fracture and failure are also welcome.

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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