

Special Issue

Hydrogen Embrittlement of Metallic Materials: Past, Present and Future

Message from the Guest Editor

This Special Issue seeks work on the following topics (but is not limited to them):

- Hydrogen embrittlement (HE); Hydrogen degradation (HD); Hydrogen damage (HD).
- Hydrogen enhanced localized plasticity (HELP).
- Hydrogen enhanced decohesion (HEDE).
- Hydrogen enhanced delamination or debonding (HEDE).
- Hydrogen assisted fracture (HAF) and hydrogen assisted cracking (HAC).
- Hydrogen transport by diffusion and dislocational dragging.
- Hydrogenation *versus* cracking. Coupled effects. Effect of history.
- Hydrogen and plasticity. Hydrogen and dislocations. Hydrogen trapping.
- Hydrogen deformation interactions. Role of stress-strain fields.
- Effect of cyclic loading on hydrogen embrittlement. Hydrogen assisted fatigue.
- Fracture and structural integrity at all scales in a hydrogen environment.
- Computational approaches to the process of embrittlement or degradation.

Accordingly, original articles, review articles, and technical reports covering the topic of hydrogen embrittlement/degradation/damage are invited.

Guest Editor

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Deadline for manuscript submissions

closed (31 July 2019)



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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

Prof. Dr. Yong Zhang

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.7 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the second half of 2025).