Special Issue

Environmentally Assisted Cracking in Advanced High Strength Alloys

Message from the Guest Editors

Environmentally assisted cracking (EAC), an intricate interaction between the environment, stress state, and material, results in brittle fracture of otherwise ductile materials. EAC covers a broad range of failure in materials, such as stress corrosion cracking (SCC), corrosion fatigue, hydrogen embrittlement, sulfide stress cracking, hydrogen enhanced fatigue, irradiation induced SCC, to name a few. All different forms of EAC have been studied extensively, and, for a relatively long time, generating a vast body of knowledge. This Special Issue presents the latest research on EAC of advanced alloys. Our topics of interest include, but are not limited to:

- Stress corrosion cracking;
- Environmentally assisted fracture;
- Hydrogen embrittlement;
- Mechanical aspects of corrosion;
- Hydrogen enhanced cracking;
- Irradiation-induced SCC;
- In situ testing

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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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