Special Issue

Research Progress on Hydrogen Embrittlement and Fracture Mechanics of Materials

Message from the Guest Editors

Hydrogen embrittlement (HE) is a problem of major concern in the engineering field. The synergistic action of a stress–strain state (applied load or manufacturing-induced residual stress) and the presence of hydrogen from diverse sources (manufacturing, environment, etc.) causes a premature failure in certain metals. In this Special Issue, recent advances on the study of HE in metals are highlighted and discussed, including but not limited to the following: hydrogen damage (HD); hydrogen-enhanced localized plasticity (HELP); hydrogen-enhanced decohesion (HEDE); hydrogen-assisted fracture (HAF) and hydrogen-assisted cracking (HAC); hydrogen transport by diffusion and dislocation dragging; hydrogen and plasticity; hydrogen and dislocations; hydrogen trapping; role of stress–strain fields on HE; hydrogen-assisted fatigue; multiscale approaches to HE; computational approaches to the process of HE; microscopic approaches; fractographic analysis of the damage/fracture process. It is our pleasure to invite you to submit a manuscript for this Special Issue. Full papers, communications, and reviews are all welcome.

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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