

Special Issue

Fatigue Crack Propagation Micromechanisms of Metallic Materials

Message from the Guest Editor

Since the dawn of the industrial revolution, fatigue has been among the most important and dangerous damaging mechanisms, responsible for crashes in transport, industry, medical devices, etc. The investigation on the damaging micromechanisms started with empirical macroscopical analyses of the fracture surfaces and today implies a multiscale approach starting from the nano-micro level, considering the atomic bonding breaking, up to the macroscopical behavior, with the failure analysis of the broken components.

This Special Issue aims to offer to the readers a synoptic view of the possible damaging mechanisms in metallic materials, considering the influence of all the possible aspects, and the possible different approaches to the topic. Topics addressed in this Special Issue may include but are not limited to: Multiscale approach to fatigue crack initiation and propagation; Fatigue damaging micromechanisms in different alloys; Fatigue crack propagation and failure analysis; Experimental and/or numerical techniques; Environment and/or loading condition influence.

Guest Editor

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About the Journal

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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