Special Issue

Fracture Mechanics and Fatigue Design in Metallic Materials

Message from the Guest Editor

Devices, working structures, and their elements are subjected to the influence of various loads. The accumulation of damage and the development of fatigue cracks under the influence of loads is a common phenomenon that occurs in metals. To slow down crack growth and ensure an adequate level of safety and optimal durability of structural elements, experimental tests and simulations are required to determine the influence of various factors. Research carried out in this field and the results obtained are necessary to guide development towards the receipt of new and advanced materials that meet the requirements of the designers. This Special Issue aims to provide the data, models, and tools necessary to perform structural integrity and lifetime prediction based on the stress (strain) state and, finally, the increase of fatigue cracks in the material, which would result in the application of advanced mathematical, numerical, and experimental techniques. This Special Issue is to gather the most recent research advancements regarding crack growth and fatigue design in metals.

Guest Editor

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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

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