Special Issue

Fatigue Design of Steel and Composite Structures

Message from the Guest Editor

Fatigue is believed to be one of the key factors that cause failure of engineering structures. Design against fatigue is a must for safety assurance of most engineering structures and components. The structures have been designed based on infinite lifetime, fail-safe, safe-life and damage tolerance concepts, which have been well represented in various national and international code and standards. Recently, risk management of structures has been required to ensure that probability of failure remains below an acceptable level; in addition, there is a new need to design for long-lasting stability. The core consideration of fatigue design on which the criterion is based has evolved from material strength to structural discontinuities, notches, cracks, and even micro-defects, which are related to metallurgical and manufacturing processes. All of these unpin the necessity of the research on “Fatigue Design of Steel and Composite Structures” for a better understanding of failure mechanisms, material capacity, design methods and manufacturing parameters.

Guest Editor

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Deadline for manuscript submissions

closed (30 April 2023)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/76152

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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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