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Environmental Fatigue Assessment of Metallic Materials and Components

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Deadline for manuscript submissions:
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Message from the Guest Editors

Dear Colleagues,
When dealing with safety issues in structural components and constructed installations, material fatigue is a cause of major concern. Additionally, recent literature demonstrates that there are currently several significant gaps when performing fatigue assessments, with empirical observations and theoretical issues that have not been properly addressed. Besides, by purely mechanical conditions, the fatigue life may also be affected by the operational environment, which may accelerate the crack initiation and propagation stages, significantly reducing the fatigue life.

This Special Issue intends to provide significant advances to the existing knowledge about environmental fatigue. It is proposed within the framework of the INCEFA-PLUS project, which deals with environmental fatigue analyses in nuclear power plants, but contributions from other sectors are welcome and appreciated. The effect of factors such as the environment, the mean stress, the existence of hold time periods or surface roughness are of particular relevance, together with their corresponding interactions.

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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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