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Modeling Corrosion Causes, Behavior, and Effect on Steel Structures and the Environment

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Deadline for manuscript submissions:
closed (31 December 2023)

Message from the Guest Editors

Corrosion is considered the most damaging phenomenon to steel structures, and it is well-known that this process is strongly related to the surrounding environment. Corrosion reduces the residual life of infrastructures, putting the entire system at risk of failure, which can have serious consequences for humans and the environment. Therefore, to maintain the safety of such steel structures, it is of great importance to understand the corrosion process in its numerous forms. In recent decades, researchers from various disciplines have conducted experimental programs to better understand the causes, behavior, and effects of corrosion on various steel structures based on their location and environmental impact. The use of artificial intelligence and statistical models, as well as their integration with reliability analysis and probabilistic modeling, are recent advances in modeling approaches that are intended to be effective tools for modeling corrosion in complex environments.

We welcome articles on all aspects of corrosion, including modeling and experimental studies of corrosion causes, behavior, and impact on steel structures and the environment.

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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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