Special Issue

Advanced Structural Performance of Concrete Structures

Message from the Guest Editors

As is widely recognized, the extensive use of concrete structures around the world is crucial for economic and social development. However, key properties such as durability, mechanical behavior, and long-term serviceability are closely tied to environmental impacts across their life cycle. Furthermore, the durability and efficiency of concrete structures influence how often they require maintenance, retrofitting, or replacement—directly affecting resource use and carbon emissions. Improving structural performance through innovative materials, advanced construction techniques, and better assessment methods is essential to reducing environmental footprints and achieving climate-neutral buildings. This Special Issue seeks to gather the latest advances in the performance of concrete structures, aiming to provide innovative solutions for enhancing their safety and durability.

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About the Journal

Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

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