Special Issue

Advances in Ultra-High-Performance Concrete (UHPC) and UHPC Structures

Message from the Guest Editor

Aging buildings and infrastructure need immediate actions to repair, strengthen, or replace due to either structural defeciency or functional obsolescence. Ultra-high-performance concrete (UHPC) is a fiber-reinforced, cementitious composite material with mechanical and durability properties that far exceed those of conventional concrete materials. UHPC has shown an immense potential as a repair/strengthening material due to its high workability, excellent compressive, tensile, and bond strength, and remarkable resistance to ingress of water and chemicals. This Special Issue highlights the latest advances in developing UHPC mixtures for the repair and strengthening of buildings and structures made of structural steel and/or reinforced/prestressed concrete. UHPC can outperform conventional materials in the repair/strengthening of beams, columns, slabs, and joints. The Special Issue considers articles on material properties, construction procedures, analysis methods, experimental investigations, and case studies.

Guest Editor

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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.

Editor-in-Chief

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