# Special Issue

# Rational Design and Application of UHPC for Advanced Structural Systems

## Message from the Guest Editors

The trend toward large-scale, lightweight, and durable infrastructure reveals limitations in conventional reinforced concrete. Ultra-High-Performance Concrete (UHPC), with superior strength, toughness, and durability, offers a promising solution. However, its high material cost limits widespread use. Strategically utilizing UHPC's properties to achieve an optimal performance-cost balance in structural applications is therefore a critical research focus. This Special Issue aims to advance UHPC implementation in structural engineering. We invite submissions on its integration in hybrid and composite systems, use in prefabricated construction, and application in strengthening existing structures. Topics may include material optimization, detailing, long-term performance, sustainability, and economic feasibility. Both fundamental studies and case histories are welcome to bridge material innovation and structural system development. We encourage high-quality research, reviews, and case studies that contribute to design guidelines, optimized construction, and sustainable infrastructure through the rational use of UHPC.

## Guest Editors


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Dr. Chang Su

Dr. Xinyu Hu

Dr. Kaidi Jiang


## Deadline for manuscript submissions

31 August 2026


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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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