Special Issue

High-Performance Steel–Concrete Composite Structures

Message from the Guest Editors

The development of high-performance materials, e.g., high-strength steel and high-performance concrete, provides more alternatives to develop high-performance steel–concrete composite structures. This issue aims to incorporate the state-of-the-art developments of steel–concrete composite structures using these new high-performance materials, e.g., high-strength steel, weathering steel, high strength concrete, fiber-reinforced concrete, green concrete, lightweight concrete, recycled concrete, etc. Moreover, the applications of steel–concrete composite structures in mega projects are especially preferred, e.g., high-speed train bridges, long-span bridges, immersed tunnels, offshore structures, and tunnels. Including the developments and experimental studies on these high-performance steel–concrete composite structures, new theory and numerical methods on analyzing or simulating static, dynamic, or seismic responses of these high-performance steel–concrete composite structures are also included in this issue.

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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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