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Ultra- and High-Performance Concrete—Experimental Behavior and Structural Computational Modelling and Design

Guest Editor:

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Deadline for manuscript submissions:
closed (28 December 2024)

Message from the Guest Editor

High-performance concrete (HPC) refers generally to concrete with higher durability and structural properties compared to normal-strength concrete (NSC). The advantages of HPC for constructing buildings and bridges are many; however, the structural behaviour of HPC can be different from NSC. Thus, designing structural HPC elements is not a trivial matter and requires special knowledge and data that are not always available.

The aim of this Special Issue is to present the state-of-the-art research performed on the structural behaviour of HPC including experimental results, computational modelling, case studies, design aspects, and comprehensive review papers. This Special Issue will provide the engineering community with a collection of high-quality and peer-reviewed papers addressing different aspects of the structural behaviour of HPC.

Keywords:

- High-performance concrete (HPC)
- High-strength concrete (HSC)
- Ultra-high-strength concrete (UHSC)
- Fiber-reinforced concrete (FRC)
- Seismic behavior
- Ductility
- Structural/mechanical properties
- Impact resistance
- Tall buildings
- Long-term behavior

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Editor-in-Chief

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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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