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High- and Ultra-High Performance Concrete: Properties, Developments and Applications

Guest Editor:

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Message from the Guest Editor

Dear Colleagues,

Engineers and material scientists are pushing the boundaries of science and technology in an effort to build higher and stronger and more sustainable, robust, durable structures, adaptable to a variety of conditions, climate change, heritage compatibility, etc. For this, tailor made cement and concrete mixes are designed, developed, tested and launched in the market or in specific projects. This Special Issue celebrates all the recent advances in the cement and concrete industry with respect to high- and ultra-high performance concrete, its properties, developments and applications. Laboratory studies, industrial studies, case studies on materials, their properties and the structural performance of new or repaired structures and elements are welcome in all related areas; these include pre-fabrication elements; nanomodified, fiber-reinforced, 3D-printed, recycled materials; fabric or polymer concretes and cements; high- and ultra-high strength concretes. Let us make this Special Issue a great celebration of the recent advances in cement and concrete design and innovation.

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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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