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Research on Properties of Cement-Based Materials and Concrete

Guest Editors:

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Deadline for manuscript submissions:
closed (30 September 2024)

Message from the Guest Editors

Dear Colleagues,

Cement-based materials are the most widely used building materials, the performances determine the service life of buildings to a great extent. Concrete is the most common cement-based materials. In recent years, with the continuous deepening of modern engineering construction, the construction environment has become more and more complex and harsh, this puts forward higher requirements for the performance of cement-based materials. Therefore, the main aim of this Special Issue is to explore the recent challenges and developments of the properties of cement-based materials and concrete. Topics include but are not limited to:

- Study on the properties of high huctility cement-based composite materials
- Mix proportion design, formulation of curing regime, and improvement of preparation
- Performance improvement for mechanical properties, durability and volume stability
- Finite element simulations of mechanical properties, durability, hydration process
- Interface characteristics between cement-based materials and fiber, steel bars or FRP
- Service-life prediction and repair of cement-based materials
- Working performance of cement-based materials

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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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