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Research on Sustainable Low-Carbon Construction Materials and Technology in Civil Engineering

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Deadline for manuscript submissions:
closed (20 September 2023)

Message from the Guest Editors

The production of building materials consumes a considerable amount of natural resources and energy every year worldwide, followed by intensive environmental impacts and CO_2 emissions. The development of innovative materials and construction technology is necessary to satisfy the design and construction of eco and sustainable buildings and industries. Industrial and municipal by-products, even collected waste CO_2, have been gradually converted from disposed solid wastes into precursors of green building materials by the applications of new design, activation, and manufacturing methods. Great attention has been paid to the investigation of sustainable low-carbon construction materials and technologies.

The main aim of this Special Issue is to explore the latest studies and technologies of sustainable low-carbon constructions. Topics include but are not limited to:

- New candidates for SCMs (supplementary cementitious materials) in concrete;
- CO_2-captured building materials;
- Low-carbon-construction technologies, calculation, and assessment;
- Ultra-high-performance green composites;
- Durability of concrete;
- Fast solidification of contaminates in engineering construction.

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Special 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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