



## Cement and Concrete Research

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### Message from the Guest Editors

Dear Colleagues,

Over the last few decades, rapid urbanisation due to population growth has caused the redevelopment of housing sectors and infrastructures in many cities worldwide. These redevelopments produce an enormous quantity of demolition waste due to the destruction of existing infrastructures, e.g., buildings and bridges. Concrete is the single most widely used construction material around the world to produce structural and non-structural elements of buildings, even with the existence of many new materials. Cement is an essential ingredient of concrete, and the use of concrete is unavoidable for infrastructural development. About 3.4% of the global carbon dioxide is generated from fossil fuel combustion and cement production. Therefore, decreasing cement consumption and thus controlling the carbon footprint is vital. Relevant topics to this Special Issue include, but are not limited to, the following subjects:

- Low-carbon building materials
- Recycled materials in concrete
- Alternative cements/binder systems
- Life cycle assessment of buildings
- Additives and admixtures for sustainable concrete production

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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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