



Research on Mechanical Properties of Cement-Based Composites

Guest Editors:

Dr. Hui Wang

School of Civil & Environmental
Engineering and Geography
Science, Ningbo University,
Ningbo 315211, China

Dr. Feiting Shi

School of Civil Engineering,
Yancheng Institute of
Technology, Yancheng, China

Dr. Tao Du

School of Mechanics and Civil
Engineering, China University of
Mining and Technology, Xuzhou,
China

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Message from the Guest Editors

The mechanical properties of materials determine their applications in construction engineering. In order to address the limited applications of ordinary cement-based materials due to poor toughness, high brittleness, and low tensile strength, cement-based composites are gaining more and more attention. Given that cement-based materials are usually used in harsh environments, durability is considered an important performance indicator. Meanwhile, to maintain human health and protect the environment, developing sustainable building materials is also necessary.

This Special Issue aims to collect the latest research on cement-based composites, explore new chemical and mineral additives to modify cement, and expand the production and application of such materials.

The research areas may include but are not limited to the following:

- ecological cement;
- functional cement;
- ultra-high-performance concrete;
- durability of concrete;
- CO₂-cured concrete;
- reinforced concrete;
- fiber concrete.



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Special Issue



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Editor-in-Chief

Prof. Dr. David Arditi

Construction Engineering and Management Program,
Department of Civil,
Architectural, and Environmental
Engineering, Illinois Institute of
Technology, 3201 South
Dearborn Street, Chicago, IL
60616, USA

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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Buildings
MDPI, St. Alban-Anlage 66
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