

Special Issue

Innovations in Cementitious Materials: Degradation, Mitigation, and Sustainability

Message from the Guest Editor

Cement and concrete technologies are evolving to address environmental challenges through the use of low-carbon systems that depart from traditional clinker-based production. In parallel, many regions, including parts of the United States, are phasing out ASTM C150 Portland cement in favor of blended formulations, such as ASTM C595 Portland–limestone cements. We welcome both experimental and numerical studies, including laboratory testing, material characterization, the modeling of transport and corrosion processes, and multiscale simulations. Studies that propose mitigation strategies—such as improved mix design, protective treatments, or performance-enhancing admixtures—are also encouraged. This collection aims to advance our understanding of chloride-induced degradation in modern cementitious systems and support their reliable use in aggressive environments such as coastal infrastructure and regions exposed to deicing salts.

Guest Editor

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About the Journal

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.

Editor-in-Chief

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