Special Issue

Advances in Modeling and Characterization of Cementitious Composites

Message from the Guest Editors

The urgent need for more efficient, innovative design concepts for sustainable infrastructures as well as binder substitution becomes evident when considering the annual global cement production and the corresponding CO2 emission. A fundamental prerequisite for achieving this goal is a deep understanding of the main dissipative mechanisms and a realistic prediction of the behavior of cementitious composites under general loading conditions. This Special Issue addresses the most recent research findings related to recent advances in modeling approaches and characterization methods for cementitious composites. Topics may include the constitutive modeling of cementitious composites and their applications within the nonlinear finite element analysis of concrete members and structures under general loading conditions. This Special Issue may also cover topics related to recent characterization methods and experimental approaches of cementitious composites in combination with various types of metallic and non-metallic reinforcements.

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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.

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