Special Issue

Characterization and Electrical Properties of Construction Materials

Message from the Guest Editors

The characterization of the electrical and dielectric properties of construction materials has developed from the most fundamental non-destructive signal–property correlation for integrity assurance (i.e., corrosion, permeability, porosity, moisture transport, etc.), to innovative materials such as cementitious composites, geopolymers, lime mortars, and composites with multifunctionalities utilizing electrically derived properties (i.e., self-sensing, self-powering, energy-harvesting, etc.). This Special Issue, therefore, seeks to attract original research papers on the electrical and dielectric properties of construction materials that address research areas including, but not limited to, the following topics: laboratory-based methods and methodologies for accurate and repetitive signal acquisition, phenomenological (or empirical) and physics-based modelling works on intrinsic properties and proof-of-concept advancements, signal–property correlations, the development of innovative multifunctional materials, and environmentally induced physico-chemical changes in materials.

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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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