Special Issue

Study on Mechanical Properties of Concrete Structures and RC Beams

Message from the Guest Editors

Concrete structures and RC beams play pivotal roles in infrastructure development. To ensure the long-term safe operation, it is essential to detect and assess the mechanical properties of existing concrete structures and RC beams. This typically involves structural health detection techniques, such as visual inspection, non-destructive testing, load testing, and monitoring. The integration of artificial intelligence (AI) techniques has also significantly advanced structural condition detection by harnessing sophisticated data analytics, predictive modeling, and real-time monitoring. The recent adoption of the digital twin concept offers a promising solution for structural assessment.

To further the investigation into the long-term mechanical properties of concrete structures and RC beams, this Special Issue delves into various topics, including but not limited to durability experiments, multi-scale modeling, advanced non-destructive testing, integration of AI, and the implementation of the digital twin concept. We welcome experimental, numerical, and theoretical work exploring any aspect within the scope of this research area. Your valuable contributions are eagerly anticipated.

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Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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