Special Issue

Characterization, Applications and New Technologies of Civil Engineering Materials and Structures

Message from the Guest Editors

Civil materials and structures are essential to engineering, but are very vulnerable to harsh environments, freeze–thaw actions, loading, etc. These factors can cause damage to civil structure and infrastructure by exerting negative influences on the mechanical and functional properties of civil materials (e.g., asphalt and cement concretes). With the continuous development of large-scale maintenance of infrastructure, accurate, reasonable and efficient mechanical behavior evaluation and performance prediction of civil materials and structures have become the key to improve the service durability and intelligent maintenance management for infrastructure. The multi-component composition, multi-scale characteristics and multi-field dependence of civil materials lead to extremely complex mechanical behaviors. The phenomenological method based on empirical tests is an important means to understand and evaluate civil materials, but the low efficiency and high consumption cannot meet the design and application requirements of civil materials.

Guest Editors

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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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