Special Issue

Construction Materials and Artificial Intelligence

Message from the Guest Editors

Concrete is the most widely used building material in construction industries. It is characterized by high strength and good durability. In contrast, normal concrete exhibits poor deformability and low compression toughness, which affects its ability to withstand dynamic loads. In order to overcome these drawbacks, various admixtures/additives, such as nanomaterials (nanosilica, silica fumes, carbon nanotubes, etc.) crumb rubber, natural and synthetic fibers, and polymer materials, etc., have been incorporated into concrete to modify its properties. However, economical and efficient techniques are required to comprehensively evaluate concrete performance due to the variety in the compositions. Therefore, using artificial intelligent (AI) through the application of soft computing/classical models such as artificial neural network (ANNs), support vector machines (SVMs), multilinear regression (MLR), Adaptive Neuro-fuzzy Inference Systems (ANFISs), Extreme Learning Machines (ELMs), Gaussian regression processes (GPRs), and ensemble models, including Random Forest, XGBoost, etc., are employed.

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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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