Special Issue

AI and Data Analytics for Energy-Efficient and Healthy Buildings

Message from the Guest Editors

The COVID-19 pandemic is revolutionizing building designs, operations and commissioning, with an increased emphasis on healthier, smarter and more efficient environments. With the increasing penetration of smart sensors, increasing electrification of buildings and overwhelming amounts of data, artificial intelligence (AI) and big data analytics have shown extraordinary potential for building performance improvement. However, the actual performance of emerging technologies has not been fully tested due to the complex, interdependent, time-dependent stochastic nature of building systems spanning various types, functions, vintages and climates. Topics of interest include, but are not limited to: smart digital technology for energy conservation and COVID-19 prevention; transfer learning for modelling, diagnosis and optimization in smart buildings; probabilistic modelling and risk-based decision support for building energy systems; data-driven ensemble AI models for energy and infection risk forecast; big data analytics for building and facility management; etc.

Guest Editors

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Deadline for manuscript submissions

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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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