Special Issue

Advanced Technologies for Net-Zero and Climate-Resilient Buildings

Message from the Guest Editor

The transition toward net-zero and climate-resilient buildings is a key priority in response to global decarbonization goals and increasing climate risks. Buildings contribute significantly to energy consumption and greenhouse gas emissions, while also facing growing challenges from extreme weather and changing environmental conditions. Addressing these challenges requires the integration of advanced technologies across design, construction, operation, and retrofit stages. This Special Issue focuses on emerging technologies that enable high-performance, low-carbon, and resilient buildings. Topics of interest include, but are not limited to, the following:

- High-performance building envelopes;
- Energy-efficient HVAC systems;
- Renewable energy integration and energy storage;
- Smart controls and building automation systems;
- Building energy modeling and simulation;
- Digital twins and data-driven optimization;
- Artificial intelligence applications in building performance;
- Retrofit strategies and operational optimization.

We welcome original research, case studies, and review papers that contribute to advancing sustainable and climate-resilient built environments.

Guest Editor

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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