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Special Issue Reprint

Advanced Building Technologies for Energy Savings and Decarbonization

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The building sector is a major consumer of energy, making it essential to explore innovative strategies for reducing its environmental impact. As we shift our focus toward decarbonization and electrification, the need for advanced building operation techniques and equipment becomes increasingly urgent. These advancements are crucial for maintaining or enhancing indoor environmental quality while simultaneously minimizing energy consumption. This Special Issue aims to showcase cutting-edge technologies in building energy management, alongside effective measurement and verification methods. It will also address fault detection and diagnosis approaches, leveraging both simulation and experimental studies. The ultimate goal is to highlight solutions that not only reduce CO₂ emissions but also improve indoor environmental quality, creating healthier and more sustainable living and working spaces. By presenting a diverse array of research contributions, this Special Issue will provide valuable insights into the latest advancements in building energy technologies. It will drive the discussion around effective strategies for energy efficiency and environmental sustainability in the building sector. These efforts can help transform buildings from energy consumers into more efficient spaces that contribute to reducing our overall carbon footprint.

