





Special Issue Reprint

Energy Efficiency and Carbon Neutrality in Buildings

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Climate change is the greatest environmental challenge of our time. A major source of this challenge is the buildings and construction sector, which represents an estimated 37% of global operational energy use and process-related carbon emissions, making it the biggest global climate offender. To address the critical global climate change challenge, we need to improve and transform the energy and carbon performance of the buildings and construction sector to secure a future that is energy efficient, resilient, and has net-zero carbon emissions.

Energy Efficiency and Carbon Neutrality in Buildings features 13 papers that collectively explore innovative solutions to promoting energy efficiency and carbon neutrality in the buildings and construction sector, with the aim of addressing climate change and improving peoples' health, well-being, and quality of life. Topics include low-carbon policies, demand-side energy management, building energy modeling, sustainable concrete solutions, and the use of innovative technologies such as artificial intelligence and solar-tracking movable louvers to manage and reduce energy use and carbon emissions in buildings. The included studies also address key competencies and project management strategies required by professionals to support the attainment of energy efficiency and carbon neutrality goals in the buildings and construction sector. In addition, they offer valuable insights into how these goals can be achieved across various building types, from residential to public buildings.



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