Special Issue

AI-Optimized Design and Management in Environmental Engineering Towards Climate-Neutral Infrastructure

Message from the Guest Editor

The urgent transition to climate-neutral infrastructure demands innovative approaches that integrate cutting-edge technologies with sustainable engineering practices. Artificial intelligence (AI) has emerged as a powerful tool to optimize design, monitoring, and management processes, enabling smarter decision-making in environmental engineering, energy systems, and construction. This Special Issue explores how AI-driven solutions can accelerate the development of low-carbon infrastructure, from energy-efficient buildings to resilient water management systems and renewable energy integration. Key focus areas include the following:

- AI-enhanced modeling for reducing embodied carbon in construction materials and structures;
- Machine learning applications in predictive maintenance of green infrastructure (e.g., smart grids, urban drainage systems);
- Digital twins and IoT for real-time monitoring of emissions and energy consumption in built environments;
- Algorithm-aided planning of circular economy systems in waste and resource management.

Guest Editor

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Deadline for manuscript submissions

2 May 2026

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Message from the Editor-in-Chief

I encourage you to contribute a research or comprehensive review article for consideration for publication in *Sustainability*, an international Open Access journal which provides an advanced forum for research findings in areas related to sustainability and sustainable development. *Sustainability* publishes original research articles, review articles and communications. I am confident you will find the journal contributes to enhancing understanding of sustainability and fostering initiatives and applications of sustainability-based measures and activities.

Editor-in-Chief

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