Special Issue

Sustainable Optimization for Energy and Environmental Systems Engineering

Message from the Guest Editor

Sustainable optimization in energy and environmental systems engineering is essential for advancing a greener planet, conserving resources, and maintaining ecological balance. Leveraging AI, machine learning, and multi-objective optimization, this approach improves efficiency and reduces carbon emissions across energy generation, distribution, and consumption. By integrating principles like circular economy, life cycle assessment, and equitable resource use, it enables cost-effective, resilient solutions aligned with the UN's Sustainable Development Goals (SDGs). Despite its promise, challenges remain—balancing economic, social, and environmental trade-offs, managing data uncertainty, policy-sensitive modeling, and identifying cross-sector synergies. This Special Issue explores recent advances in sustainable optimization in energy and environmental systems. Topics include (but are not limited to):

- AI-driven energy optimization
- Resource efficiency and circular economy
- Life cycle carbon reduction
- Smart grids and demand response
- Multi-criteria decision analysis
- Sustainable tech and policy strategies

Guest Editor

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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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