

Special Issue

Manufacturing Systems and Digital Twins: How to Move Towards Sustainability in the Era of Industry 4.0

Message from the Guest Editor

The Special Issue “Manufacturing Systems and Digital Twins: How to Move Towards Sustainability in the Era of Industry 4.0” aims to gather innovative research on the integration of digital twin technologies with sustainable manufacturing processes. The issue will focus on simulation-based design, real-time data-driven decision-making and predictive maintenance for optimizing resource efficiency and circular production systems. It will address multi-scale modeling, interoperability frameworks and AI-assisted optimization methods that enhance transparency and sustainability across product lifecycles. This Special Issue contributes to sustainability by exploring how digital twins can reduce material waste, energy consumption and environmental footprint while improving productivity and adaptability in smart factories. It will complement existing literature on sustainable manufacturing, Industry 4.0 and cyber-physical systems by emphasizing measurable, explainable and replicable digital twin implementations.

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. The journal publishes original research articles, reviews, conference proceedings (peer reviewed full 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

Prof. Dr. Steve W. Lyon

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