

IEEE Transactions on Consumer Electronics

Call for Papers

Special Section on “Digital Twin Technology for Sustainable Manufacturing of Consumer Electronics”

Theme:

The advent of digital twin technology has opened up new possibilities for sustainable manufacturing in various industries, including the consumer electronics industry. Digital twin technology allows manufacturers to create a virtual replica of their products and processes, enabling them to optimize their manufacturing processes, reduce waste, and minimize their environmental impact. As the demand for sustainable manufacturing practices continues to increase, digital twin technology is poised to play a critical role in the future of consumer electronics manufacturing.

Consumer electronics are ubiquitous in our daily lives, from smartphones and laptops to televisions and home appliances. However, the manufacturing of these products can have a significant environmental impact due to the extensive use of energy, water, and resources required in the manufacturing process. Additionally, the rapid pace of technological innovation in this industry can result in a significant amount of electronic waste. To address these issues, sustainable manufacturing practices have become a priority for manufacturers, and digital twin technology has emerged as a key solution.

This special issue aims to provide a platform for researchers and industry experts to share their latest findings and insights on the application of digital twin technology in sustainable manufacturing of consumer electronics.

Topics of interest in this Special Section include (but are not limited to):

- Digital twin technology for process optimization and waste reduction in consumer electronics manufacturing.
- Sustainable materials and design in the context of digital twin technology.
- Development of digital twin-based quality control systems for sustainable manufacturing.
- Digital twins for consumer electronics sustainable material selection.
- Energy-efficient manufacturing practices enabled by digital twin technology.
- Digital twins for consumer electronics sustainable disposal and recycling.
- Digital twins for sustainability risk assessment and management.
- Digital twins for end-of-life product disposal and recycling.
- Digital twin-based maintenance and repair optimization.
- Integrating AI and ML with digital twin for sustainable productivity of consumer electronics.
- Effective monitoring and control of consumer electronics with digital twin empowered with IoT.
- The role of digital twin technology in product lifecycle management and circular economy in consumer electronics manufacturing.
- Case studies and real-world applications of digital twin technology in sustainable manufacturing of consumer electronics.

Important dates:

- End of submission of Manuscripts: December 31, 2023
- Expected publication date (tentative): 3rd quarter, 2024

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Manuscripts should be prepared following guidelines at: <https://ctsoc.ieee.org/publications/ieee-transactions-on-consumer-electronics.html> and must be submitted online following the IEEE Transactions on Consumer Electronics instructions: <https://ctsoc.ieee.org/publications/ieee-transactions-on-consumer-electronics.html>. During submission, the Special Section on “Digital Twin Technology for Sustainable Manufacturing of Consumer Electronics” should be selected.