

Special Issue

Innovations in Digital Twin Technologies for Industry 5.0

Message from the Guest Editors

We are pleased to invite you to contribute to this Special Issue. We aim to collate interdisciplinary contributions focused on innovations in Digital Twin technologies that serve as key enablers for Industry 5.0. This Special Issue aims to cover topics related to the design, implementation, and application of Digital Twins, including theoretical studies, practical solutions, and case studies applicable to cyber-physical systems, smart production lines, collaborative supply chains, human-robot work environments, and more.

- Cognitive and scalable architectures for Digital Twins in Industry 5.0.
- Integration of generative AI, physics-based simulation, and data models in Digital Twins.
- Frameworks for human-Digital Twin collaboration and augmented decision-making.
- Implementation of Digital Twins for sustainability and the circular economy.
- Interoperability, standardization, and security in Digital Twin ecosystems.
- Digital Twins for prescriptive maintenance and remaining useful life prediction.
- Integration of Digital Twins with edge computing and the industrial metaverse.
- Ethical, social, and governance aspects of Digital Twin development.

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About the Journal

Message from the Editor-in-Chief

Machines is an international, peer reviewed journal on machinery and engineering. It publishes research articles, reviews and communications.

Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers. Full experimental and/or methodical details must be provided.

There are, in addition, unique features of this journal: Manuscripts regarding research proposals and research ideas will be particularly welcomed; Electronic files or software regarding the full details of the calculation and experimental procedure - if unable to be published in a normal way can be deposited as supplementary material.

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