

Special Issue

Industry 5.0: Key Enabling Technologies, Requirements, Current Applications and Future Directions

Message from the Guest Editors

The evolution of industrial systems is transitioning from the efficiency-driven paradigm of Industry 4.0 toward the value-oriented vision of Industry 5.0, which emphasizes sustainability, resilience, and human-centricity. This next phase in industrial innovation seeks to embed human values directly into the design and operation of smart systems, ensuring that technology enhances—not replaces—human capabilities. This Special Issue invites original research articles and reviews that explore the technological, methodological, and ethical foundations of Industry 5.0. We seek contributions that demonstrate how emerging technologies enable sustainable, adaptive, and human-aligned industrial solutions. Topics of interest include, but are not limited to:

- Comparative analysis of Industry 4.0 and Industry 5.0 technologies;
- Human-centric system design;
- Collaborative robotics and human–robot interaction;
- Digital twins and CPHS;
- AI-driven maintenance and diagnostics;
- Immersive interfaces and cognitive ergonomics;
- Sustainable and ethical design of industrial systems;
- Human–machine interfaces and immersive technologies.

Guest Editors

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Deadline for manuscript submissions

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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.

Editor-in-Chief

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