

## Special Issue

# Advances in Technology and Research in Smart Manufacturing Systems

### Message from the Guest Editors

Smart manufacturing is entering a new era where physics-based modeling, data intelligence, digital transformation, immersive platforms, and autonomous decision-making converge to build resilient, sustainable, and human-centric industries. This Special Issue highlights five transformative paradigms driving Industry 5.0:

- **Physics-Informed Neural Networks (PINNs):** physics-guided machine learning for accuracy and interpretability.
- **Intelligent Reality:** beyond digital twins with 3D, sensor fusion, and immersive collaboration.
- **Trust LLMs with RAG:** semantic reasoning that transforms data into actionable insights.
- **Agentic AI:** autonomous, goal-driven agents and smart robots for adaptive production.

We warmly invite you to submit your latest research or review to this Special Issue. Together, these contributions will showcase pathways that advance Industry 5.0 and accelerate the digital and green transformation of manufacturing.

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### Guest Editors

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### Deadline for manuscript submissions

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## Applied Sciences

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### Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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### Editor-in-Chief

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