

Special Issue

From Machine Health to Supply Chain Resilience: Intelligent Diagnostics and Prognostics in Manufacturing Systems

Message from the Guest Editors

Modern systems grow complex with advanced manufacturing and mechatronics. Real-time monitoring, fault detection and prognostics ensure reliable operation. Data-driven AI enhances maintenance, efficiency and supply chain resilience. This Special Issue covers intelligent fault diagnosis for smart manufacturing research. Original research and reviews are welcome; relevant topics include:

- AI-enabled monitoring & predictive maintenance for electromechanical systems;
- Deep learning, probability modeling & sensor fusion for fault diagnosis/prognostics;
- Structural health monitoring and non-destructive evaluation for mechanical/additive manufacturing components;
- Digital twins and data-driven models for intelligent manufacturing and autonomous systems;
- Additive manufacturing for flexible, resilient decentralized supply chains;
- Edge computing, IoT, and smart sensors for real-time machine health management;
- Intelligent quality control for additive manufacturing;
- Manufacturing defect propagation and its impact on downstream supply chains;
- Data-driven monitoring integrated with inventory and demand management;
- Case studies on vehicles, robotics, turbomachinery and micro/nano systems.

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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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