Special Issue

Advanced Condition Monitoring and Fault Analysis in Industrial Electronics

Message from the Guest Editors

Modern industrial electronic and electrical systems—such as converters, controllers, and electric motor drives—are prone to failures that can lead to production losses, service interruptions, and, in the worst cases, environmental disasters. These failures are typically caused by electrical, mechanical, or thermal stresses, either directly or indirectly. To mitigate these risks, regular maintenance and inspections following manufacturers' schedules are essential. In addition to hardware solutions, combining virtual sensors (VS) with advanced artificial intelligence (AI) tools presents a promising approach for addressing these issues. The integration of AI tools, IoT, and cloud computing in the development of monitoring solutions will bring significant benefits to the industry, enabling more efficient and reliable operation of industrial electronic systems. Keywords

- industrial electronics
- electronic circuits
- predictive control
- failure analysis
- digital twins
- automation
- Internet of Things
- Internet of Vehicles

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Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guestedited by leading experts in selected topics of interest.

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