Special Issue

Advanced Sensors and Artificial Intelligence for Condition Monitoring of Power Electronic Systems

Message from the Guest Editors

Advanced sensors and artificial intelligence (AI) are revolutionizing the condition monitoring of power electronic systems. On one hand, advanced sensors play a crucial role in monitoring the health and performance of power electronic systems. These sensors can detect various parameters such as temperature, current, and voltage, providing real-time data that are essential for predictive maintenance and fault diagnosis. The integration of advanced sensors allows for more accurate and timely detection of anomalies, which can prevent failures and extend the lifespan of systems with power electronics. On the other hand, AI enhances the capabilities of condition monitoring systems by analyzing the vast amounts of data collected by sensors. AI techniques such as machine learning and fuzzy logic can identify patterns and predict potential issues before leading to system failures. Therefore, the integration of advanced sensors and AI provides a powerful approach to condition monitoring that paves the way for more intelligent and resilient power electronic systems, ensuring the efficient and reliable operation of power electronic systems.

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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