Special Issue

New Applications of Wireless Sensor Networks: Focus on Structural Health Monitoring and Condition Monitoring of Industrial Machinery

Message from the Guest Editors

Wireless Sensor Networks (WSNs) have emerged as a pivotal technology in modern engineering and research. Their ability to collect, process, and transmit data wirelessly has revolutionized a variety of fields, from environmental monitoring to healthcare. Among the most promising applications are the Structural Health Monitoring (SHM) and Condition Monitoring (CM) of industrial machinery. SHM involves the continuous or periodic assessment of structural integrity and performance, which is crucial for ensuring the safety and longevity of critical infrastructure such as bridges, buildings, and pipelines. Similarly, the CM of industrial machinery uses WSNs to monitor operational parameters and detect anomalies, preventing costly downtime and enhancing the operational efficiency. The integration of WSNs into SHM and CM systems offers unparalleled advantages, including cost-effective deployment, scalability, and real-time data acquisition, making them indispensable tools for modern infrastructure and industrial management.

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