



*sensors*



*Special Issue Reprint*

## **Machine Health Monitoring and Fault Diagnosis Techniques (Volume II)**

[www.mdpi.com/books/reprint/10234](http://www.mdpi.com/books/reprint/10234)

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ISBN 978-3-7258-2723-7 (Hardback)  
ISBN 978-3-7258-2724-4 (PDF)



This Special Issue brings together groundbreaking research focused on the enhancement of fault diagnosis and condition monitoring across various mechanical and electrical systems, leveraging advanced sensor technologies and intelligent diagnostic methods. The contributions encompass innovative approaches such as deep learning models for transformer and rolling bearing fault detection using vibration signals and time–frequency analyses, significantly boosting diagnostic accuracy and robustness. This collection also explores cutting-edge methodologies like Bayesian-optimized machine learning techniques and the application of vision transformers and convolutional neural networks to manage complex fault scenarios. With a strong emphasis on cross-domain diagnostics, the articles provide insight into the adaptive models capable of maintaining their performance across different operational conditions, enhancing real-time monitoring capabilities. This Special Issue is an essential resource for professionals and researchers dedicated to developing resilient and efficient solutions for equipment reliability, operational safety, and predictive maintenance. The collection reflects the forefront of sensor-based condition monitoring, fostering advances that support the sustainable and safe operation of critical systems.



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