





Special Issue Reprint

# Applied Artificial Intelligence for Industrial Nondestructive Evaluation NDE4.0

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This Special Issue reprint, "Applied Artificial Intelligence for Industrial Nondestructive Evaluation" (NDE4.0), brings together a collection of innovative research that showcases the transformative impact of artificial intelligence on modern industrial inspection and monitoring. As industries face growing demands for reliability, safety, and efficiency, AI has emerged as a powerful tool for addressing the long-standing challenges of nondestructive evaluation, namely, noisy data environments, complex defect characterization, and the integration of intelligent systems into real-world workflows.

Across 11 peer-reviewed contributions, the reprint covers a diverse range of applications, including additive manufacturing, battery health monitoring, rolling element diagnostics, pipeline inspection, surface defect detection, and thermographic data interpretation. Techniques such as deep learning, attention mechanisms, time-series modeling, and hybrid optimization approaches are applied to achieve enhanced precision and predictive capabilities.





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