Special Issue

Advances in Condition Monitoring, Diagnosis, and Prognostics for Power Equipment

Message from the Guest Editors

Condition monitoring, fault diagnosis, and prognostics have emerged as critical research areas in modern power systems. As global energy demands grow, the reliability, efficiency, and safety of power equipment become paramount. Failures in key components such as transformers, circuit breakers, generators, and renewable energy resources can lead to significant downtime, costly repairs, and disruptions in energy supply. Advances in sensor technology, artificial intelligence (AI), the Internet of Things (IoT), and data analytics have revolutionized the ability to monitor the health of equipment, predict potential failures, enable real-time decision making, and implement predictive maintenance strategies in addition to conventional periodic maintenance. These innovations are pivotal for transitioning to smarter, more resilient power systems, especially in the context of renewable energy integration and grid modernization.

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- power equipment diagnostics
- condition monitoring
- asset management
- state estimation
- fault prognostics
- predictive maintenance
- electrical equipment reliability

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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 guest-edited by leading experts in selected topics of interest.

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