Special Issue

Reliability of Onshore and Offshore Wind Energy Generation Systems

Message from the Guest Editors

When harvesting wind energy by using wind turbines, we face challenges such as the sudden failure of mechanical (e.g., gearboxes), structural (e.g., blades), and electrical components. This Special Issue aims to focus on the reliability studies of blades, foundations, gearboxes, main bearings, and other rotating components as well as electrical components such as generators, power electronics, and battery storage systems. These reliability studies can include, but are not limited to, advanced methodologies such as machine learning, artificial intelligence, digital twins, finite element analysis, signal processing, non-destructive and non-contact techniques, structural health monitoring, and Bayesian inference. Detailed topics:

- (Probabilistic) prognostic and health management (PHM): sensing, diagnosis, and prognosis;
- Application of Bayesian Inference in PHM;
- Application of deep and machine learning in PHM;
- Uncertainty quantification;
- Risk and reliability analysis;
- Modeling: physics-based and data-driven;
- Dvelopment of effective and efficient damage precursor detection methods;
- Artificial intelligence and digital twins;
- Structural health monitoring.

Guest Editors

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Deadline for manuscript submissions

closed (5 September 2024)

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I encourage you to contribute a research or comprehensive review article for consideration for publication in *Sustainability*, an international Open Access journal which provides an advanced forum for research findings in areas related to sustainability and sustainable development. *Sustainability* publishes original research articles, review articles and communications. I am confident you will find the journal contributes to enhancing understanding of sustainability and fostering initiatives and applications of sustainability-based measures and activities.

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