

JOINT EVENT

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Condition monitoring and fault diagnostics of wind turbines

As one of the typical renewable energy sources, wind energy has experienced an immense growth with respect to both the turbine size and the market share and led to a rapid development of the wind-power equipments. Owing to the highly volatile rough working conditions in real wind farms due to wind gust, dust, corrosion and heavy yet unpredictable load, wind turbines are particularly prone to suffer failure and damage. Such damage can lead to a catastrophic failure of the entire wind turbine, and consequently heavy investment and productivity losses. Therefore, wind turbine condition monitoring and diagnosis become crucial. In this presentation, the development status of the wind energy all over the world, particularly in China, is briefly summarized. The research situations of the existing condition monitoring and fault diagnosis methods for the main failure components of wind turbines are then analyzed, such as gearboxes, bearings and blades. Finally, the problems to be solved and new development trend for wind power equipment monitoring and fault diagnosis are discussed.

Biography

Fulei Chu received his PhD from Southampton University in UK. He is now a Professor of Mechanical Engineering at Tsinghua University in Beijing, China. He is the Vice President of the Chinese Society for Vibration Engineering (CSVE). He serves as Member of the editorial Board for many journals, including *Journal of Mechanical Engineering Science*, *Journal of Vibration Engineering*, and others. His research interests include rotating machinery dynamics, machine condition monitoring and fault detection, nonlinear vibration and vibration control. He has published more than 300 papers in peer review journals, including more than 30 papers in the *Journal of Sound and Vibration* and 25 papers in the *Journal of Mechanical Systems and Signal Processing*. He has received many awards in China, including the Outstanding Young Researcher Award from Natural Science Foundation of China.

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