
Simulation results show that the proposed variable degree-of-freedom control system can effectively realize active power control and structural load suppression of wind turbines in a ...

The ability to strengthen products for any environment is an ideal skillset to ruggedize future wind-turbine-pumped, two-phase systems for harsh weather environments and cor-rosion potentials ...

Abstract Active power control (APC) is an effective way to deal with the instability problem caused by high wind energy penetration in power systems. This study presents a ...

Pitch control and yaw systems are key technologies of modern wind turbines. They ensure maximum energy yields, reduce maintenance ...

In order to extract more wind energy, the wind turbine rotor becomes larger and the tower becomes taller. With more flexibility and smaller damping, wind turbine tower is prone to ...

When the turbine experiences high winds, the aerodynamic power can be reduced by controlling the incidence angle through the rotational speed and/or pitch angle. The appearance of the ...

This study presents an improved active yaw control technique for a horizontal-axis wind turbine that is driven by a full power converter ...

In this study, grid utilities are simulated as a wind turbine power system with maximum power extraction, i.e., 3MW at 11 m/s wind speed and 2MW at six m/s wind speed. ...

Pitch control and yaw systems are key technologies of modern wind turbines. They ensure maximum energy yields, reduce maintenance costs and significantly reduce the ...

Through their precise design, construction, and maintenance, wind turbine towers enhance the efficiency, durability, and safety of wind energy systems.

The renewable power system can supply a three-phase load, such as 2.5 MW. The proposed method was modeled and designed to simulate, analyze, and investigate its performance in ...

The supplementary active power control (SAPC) that is integrated into wind turbines has been widely used for improving the frequency stability of power systems with high ...

ACTIVE SYSTEMS FOR WIND TURBINES In order to cool high-power electronics in wind-turbine ap-plications, an active pumped two-phase system should be considered. In a pumped two ...

Abstract This study presents a simple voltage oriented vector control scheme to regulate active and reactive power in a grid connected ...

A wind turbine is a sophisticated system of components that must all work together to efficientlyproduce power. Like most sophisticated systems, it can be

Discover techniques for active load control in wind turbines, enhancing efficiency, reducing fatigue, and improving structural integrity in varying conditions.

Active power in wind turbines is controlled through a combination of mechanical and electrical systems. The pitch angle of the turbine blades and the speed of the rotor can be ...

Comprehensive guide to wind farm technology covering turbines, systems, innovations, and future trends. Expert insights on modern wind energy solutions.

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