



## Wind power umbrella power



### Overview

The project employs a land-based high-altitude wind power generation technology, utilising an innovative umbrella-ladder combination. The umbrella section is tethered to a cable and flown to a specific altitude, resembling a kite. The invention discloses an umbrella-type wind generation system with high power and the system comprises a track rope, a lift guide body, umbrella ladders and a power generation apparatus, wherein one end of the track rope traverses the umbrella ladders and is tied with the lift guide body, and the. This paper presents an optimization method for hybrid energy systems based on Model Predictive Control (MPC), Long Short-Term Memory (LSTM) networks, and Kolmogorov–Arnold Networks (KANs). The proposed WPPGS is installed in the medians of highways, and it can simultaneously capture the solar energy and wind energy produced by running vehicles. This paper introduced the composition and working principle of umbrella adjusting mechanism, analyzed the tower shadow effect of leeward wind turbine in the theory, and. Taking the 5 kW umbrella wind turbine as the research object, the finite element simulation software ANSYS was used to carry out numerical simulation research on the flow field characteristics of the wind turbine under different shrinkage angle conditions, and the following conclusions were drawn.



## Article Content

Numerical Simulation Research on Flow Field Characteristics ...

Therefore, this study proposed an umbrella-shaped wind turbine that controls its output power by controlling the retraction angle of the wind rotor by a servo motor to fold the wind rotor and ...

(PDF) Optimization of Hybrid Energy Systems Based on MPC ...

The proposed method is applied to a high-altitude wind energy work umbrella control system, where it aims to enhance the stability and efficiency of energy utilization.

High-altitude Wind Power, This Technology to Go ...

The form of the system for the umbrella ladder combined land-based high-altitude wind power generation technology, that is, more ...

An Innovative Umbrella-Type Rotor of Horizontal Axis Wind ...

The concept of innovative umbrella-type rotor of horizontal axis wind turbine is proposed in current study. This rotor type is designed to realize both active power regulation and wind thrust ...

Optimization of Hybrid Energy Systems Based on MPC-LSTM ...

Application to High-Altitude Wind Energy: The proposed framework is applied to a high-altitude wind energy work umbrella, demonstrating its effectiveness in managing wind ...

Umbrella-type wind generation system with high power

The present invention relates to a kind of high-power umbrella-type wind power generation system, relate in particular to a kind of wind energy acting that utilizes, produce the power...

Power Output Test of 5kW Umbrella Wind Turbine | Bao

This paper introduced the composition and working principle of umbrella adjusting mechanism, analyzed the tower shadow effect of leeward wind turbine in the theory, and carried out the ...

Capturing Wind 3,000m High: China's High-Altitude ...

The project employs a land-based high-altitude wind power generation technology, utilising an innovative umbrella-ladder ...

A hybrid wind-photovoltaic power generation system based ...

In this paper, a portable wind-photovoltaic power generation system (WPPGS) based on the foldable umbrella mechanism is presented. The proposed WPPGS is installed in the medians ...

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