H-type vertical axis wind turbine blade design

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to performance enhancement of H-type Darrius VAWT using blade pitch angle regulation. By pointing out the current technological develo. ment, the main advantages and ...

To enhance the aerodynamic performance of the vertical axis wind turbine (VAWT), a method of arranging grooves on the blade surface is proposed. By the orthogonal experimental ...

The H-rotor is a typical vertical axis wind turbine that falls under the category of Darrieus Wind Turbines. This design consists of a number of airfoil blades mounted on a rotating shaft.

We perform automated experiments using a scaled-down turbine model coupled to a genetic algorithm optimiser to identify optimal pitching kinematics at on- and off-design operating ...

Hybrid wind turbines are promising technique for enhancing the performance of vertical axis wind turbines by combining Savonius and Darrieus turbines which could lead to an increase their ...

Recently, there are many researchers from the academic and industry sectors that have turned their attention to developing the vertical axis wind turbine (VAWT), where the main advantage of the ...

Therefore, an optimal method of H-type VAWT blade airfoils in different ranges of angles of attack is presented. It can be expressed by airfoil integrated function. Then, an optimized ...

Numerical simulations are conducted to improve the energy acquisition efficiency of H-type vertical axis wind turbines through the optimization of the related blade airfoil aerodynamic ...

This paper presents a critical review of the existing literature, with a dual focus on blade design and manufacturing. In terms of design, particular attention is given to finite element studies, ...

The research provides useful guidance for the integrated design of structure and aerodynamics of wind turbine blades.

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