

Flexible Wind Turbine Blade with Actively Variable Twist Distribution for More Efficient Wind Energy Harvesting

Researchers at the University at Buffalo have developed novel technology to improve wind energy harvesting by optimizing wind turbine blade design. Consequently, companies that generate wind energy employing this new technology will be able to maximize the amount of energy produced by each wind turbine while keeping installation costs down, which will result in profit maximization. Recent concerns about climate change and volatility in the price of fossil fuels have sparked increased interest in renewable sources of energy. Correspondingly, research in wind energy has increased with researchers working on techniques that improve the aerodynamic efficiency of wind turbines. Our proprietary modular design of blades enables wind turbine blades to achieve an ideal twist angle and to have the appropriate stiffness to harvest wind energy more efficiently than traditional wind turbine blades.



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ADVANTAGES

- Lower costs associated with installation over traditional blades
- Better performance - more energy harvested per blade

APPLICATIONS AND MARKETS

- Wind energy harvesting
- Alternative energy sources

PATENT STATUS

Provisional Patent Filed April 28, 2018

RELATED PUBLICATIONS

Hamid Khakpour Nejadkhaki, John F Hall , "A Design Methodology for a Flexible Wind Turbine Blade With an Actively Variable Twist Distribution to Increase Region 2 Efficiency," *ASME 2017 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*, (2017). V02AT03A025-V02AT03A025.

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