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Wind Turbine Blade Load Monitoring

An inexpensive and reliable method provides accurate, timely wind profile information to wind turbine controllers, maximizing efficiency in low winds and preventing stress damage in high winds.

Although wind turbines have been used for centuries, there is no accurate method to measure the total physical load placed on the wind turbine. This information is necessary to control the output of the rotation of the wind turbine, especially in applications like electricity generation. Current technologies use rpm and thrust on the wind turbine as input to control algorithms; however, there is a need for better information.

Researchers at Purdue University have developed an inexpensive and reliable method to provide more accurate and timely information about changing wind profiles to the controllers of wind turbines. This technology can maximize efficiency in low wind conditions while protecting the wind turbine from stress damage due to high winds.

Advantages:

-Maximizes wind turbine efficiency during low wind conditions

-Protects wind turbine from damage

-Inexpensive

Potential Applications:

-Wind turbine operations

-Wind monitoring

TRL: 6

Intellectual Property:

Provisional-Patent, 2008-05-13, United States | NATL-Patent, 2009-05-13, Canada | NATL-Patent, 2009-05-13, European Patent | PCT-Patent, 2009-05-13, WO | NATL-Patent, 2010-11-15, United States

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Energy & Power Systems/Power Generation

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