

琉球大学学術リポジトリ

グリーンハウス用風力発電の渦電流ブレーキシステムに関する研究

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Abstract

Title : Study on wind turbine braking system based on eddy current applied on DC green house

This research aims to develop an eddy current based wind turbine brake system for the small-scaled wind turbine and analyze the power supply performance of the DC green house. We developed this system in a simulation based environment. Matlab/Simulink application is used as the software platform of the system. We have done the simulation for different wind velocity patterns including high wind and gust occurrence. Since the modern wind turbine brake systems use the brake pad based wind turbines to control the angular velocity of the system these brake pads could be running out of time because of the friction. But the eddy current brake system doesn't have a contact with the rotor. Therefore, we believe this brake can use for longer time than the normal friction brake pad based wind turbine system. Also, the energy loss will be reduced. Eventually the feasibility of eddy current brake system is confirmed in simulation results.

Keywords: Eddy current brake system, Small-scaled wind turbine, DC green house, High wind

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