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Potential Research Avenues and Future Opportunities in Electrical and Instrumentation
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Authors:

Gowtham D

Royrichard T

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Abstract

This project deals with a grid connected wind-PV hybrid distributed generation system employing permanent magnet synchronous generator(PMSG) driven by a variable speed wind turbine and PV array connected to a load and the grid. PMSG wind turbine connected to a dc-dc converter via three phase diode rectifier and PV array along with a dc-dc converter connected to the DC link which operates under a centralized three phase inverter. The optimum torque tracking scheme is employed to achieve maximum power extraction in wind power generation system. The incremental conductance algorithm is used to achieve MPPT in PV system. In the proposed system, the wind and PV system alone cannot meet the load demand due to the uncertainty in weather conditions causing a high degree of mismatch between the power generation and consumption. To avoid this problem, wind energy

conversion system and PV system are made to operate alternatively to meet the load demand based on its availability.

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Index Terms

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Keywords

Distributed Generation Hybrid System Wind - Pv System