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Design and Development of Wind Turbine Emulator to Operate with 1.5 kW Induction Generator

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Abstract : This paper contributes to design a Wind Emulator coupled to 1.5 kW Induction generator for Wind Energy Conversion System. A wind turbine emulator (WTE) is important equipment for developing wind energy conversion systems. It offers a controllable test environment that allows the evaluation and improvement of control schemes for electric generators that is hard to achieve with an actual wind turbine since the wind speed varies randomly. In this paper a wind emulator is modeled and simulated using MATLAB. Verification of the simulation results is done by experimental setup using DC motor-Induction generator set, LABVIEW and data acquisition card.

Keywords : Wind Turbine Emulator, LABVIEW, matlab, induction generator
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