

CONTROL STRATEGY FOR QUALITY IMPROVEMENT OF ELECTRICAL POWER PRODUCED BY STAND ALONE WIND ENERGY CONVERSION SYSTEM

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ABSTRACT

Wind energy provides an environmental energy generated and helps to satisfy the power demand. But due to the wind speed and the load power fluctuations, the quality of electrical power is affected especially when the wind energy conversion system operates without ancillary services in remote area. This paper deals to the quality improvements of electrical power generated by stand-alone wind energy conversion system (SAWECS). In this paper the studied system is depicted and modeled. Then, the new load control strategy based on vector control is elaborated and selective harmonics elimination (SHE) technique is used in order to fight against harmonics. Simulation results are obtained using MATLAB/SIMULINK and show the effectiveness and reliability of control strategy proposed.

Key words: *wind energy, electrical power, control strategy, quality*