

A New MPPT Strategy for Distributed DFIG Using Fuzzy Logic Controller

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This paper presents control of Wind Energy Conversion Systems (WECS) based on Doubly Fed Induction Generator (DFIG). A new maximum power point tracking (MPPT) strategy based on the fuzzy logic controller was developed. At given wind velocity, the pitch compensation (pitch controller) is controlled to get the maximum power can be extracted from the turbine. The proposed control strategy that achieved via a fuzzy controller is properly tuned using genetic algorithms (GA). The effectiveness of the proposed control strategies is validated by theoretical analysis and simulation carried out using Matlab/Simulink environment.

Biography:

Maher A. El-Dessouki gained an M.Sc. degree in power systems in 1986 at Ain Shams university, Cairo, and a Ph.D. degree from Warsaw University of technology, Poland in 1994 in dynamic study of power systems considering electrical machines as dynamic loads. His research interests include modeling, simulation, control of electrical machines and PV set, power systems dynamics and stability, use of the artificial intelligent in the control of both the electrical machines and power systems. He supervised many research projects in both undergraduate and postgraduate studies. He teaches many courses of electrical machines and power system inside and outside Egypt in different universities. Now he is an associate professor in the Department of Electrical Power and Machines, Faculty of Engineering, Ain Shams University, Cairo, Egypt. He is a Senior Member of the Association of Energy engineers (AEE) in the USA. He is currently applying for Ain Shams University Prize for international publishing in 2014.