

# **On -Off Control based Particle Swarm Optimization for Maximum Power Point Tracking of Variable Speed Wind Energy Conversion Systems**

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**Abstract :** In recent years, there has been an evolution of electricity production based on wind energy, such as the effects of pollution. In this paper, Particle Swarm Optimization (PSO) is proposed to generate an On-Off Controller. On-Off Controller based maximum power point tracking is proposed to control a squirrel-cage induction generator (SCIG) of wind energy conversion system. Simulation studies are made with Matlab / Simulink to verify the effectiveness of the purposed method.

**Keywords :** Wind Energy Conversion System (WECS), Maximum Power Point Tracking, On-Off Control, Particle Swarm Optimization (PSO)