International Journal of Hydrogen Energy

Volume 40, Issue 39, 2015, Pages 3737-3748

Energy storage based on maximum power pointtracking in photovoltaic systems: A comparisonbetween GAs and PSO approaches

M.Bechouat, Y.Soufi, M.Sedraoui, S.KAHLA

Abstract: In this paper, a comparison between GAs and PSO Approaches is considered to select andgenerate an optimal duty cycle which varies with photovoltaic parameter in order toextract the maximum Power from Photovoltaic System using real values of temperatureand insolation. The energy storage has very important role in renewable energy. To illustratethe energy storage, we have used a battery type lead-acid simulated in Matlab/Simulink. The obtained simulations results show the effectiveness and the robustness ofthe proposed approaches.

Keywords : Photovoltaic systems, Chopper, MPPT, PSO, GAs, Energy storage