

Maximum Power Point Tracking Using Perturb & Observe Algorithm and Compare With another Algorithm

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Abstract – Compared to the traditional energy resources, photovoltaic (PV) system that uses the solar energy to produce electricity considered as one of renewable energies has a great potential and developing increasingly fast compared to its counterparts of renewable energies. Such system can be either stand-alone or connected to utility grid. While, the disadvantage is that PV generation depended on weather conditions. The major problem with photovoltaic (PV) systems is the amount of electrical power generated by solar arrays depends up on a number of conditions (i.e. solar irradiance, temperature and angle of incident light etc.). In order to maximize the output of a PV system, continuously tracking the maximum power point (MPP) is necessary. In this thesis there is a implementation of maximum power point tracking (MPPTs) algorithm for a PV system so as to extract maximum power from the solar arrays during unfavorable condition, also the effect on V-I and V-P characteristics of PV array module due to change in irradiance and temperature are delineated. MPPT algorithm plays an important role in increasing the efficiency of system. A proposed MPPT algorithm is implemented in boost converter and compared with various MPPTs Algorithm.

Keywords – Photovoltaic, Maximum power point tracking (MPPT), Perturb and Observe Algorithm.