

A NOVEL METHOD OF MAXIMUM POWER POINT TRACKING FOR GRID CONNECTED PHOTO VOLTAIC SYSTEMS

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ABSTARCT

Photovoltaic systems (PV) convert incident solar radiations into electricity and are the promising source of alternative energy for the future. Major limitation of a Photovoltaic (PV) generation is many times a PV system may not yield the optimum power output for which it is designed. Hence tracking of the photovoltaic array to maintain it normal to solar radiation and to optimize the power output from the panel is very essential. Electrical methods of tracking photovoltaic array are the latest and popular technique used for maximum power point tracking(MPPT).There are many approaches for this problem and this paper is one such attempt to work the PV panel at its MPPT.

In the scheme proposed Tata B P solar panel model no TBP 1210 M is used. The converter used is boost converter, which is operated at continuous conduction. An error signal derived from sensing the voltage and current of the panel is compared with a triangular voltage source. The generated pulse width modulated (PWM) signal is used for driving the gate of the MOSFET. This method is developed with an objective of minimizing the cost, size, losses with added simplicity. The new Circuit is designed, simulated and implemented. The results of both simulation and experimental are also plotted.

Keywords: Photovoltaic system, Maximum Power point tracking, boost converter, TBP solar module. pulse width modulation