ABSTRACT

Solar power plant is a system that harnesses the Sun's light energy is converted into electrical energy. Solar power plant using solar cell or photovoltaic energy to receive the light and converted into electrical energy using the photoelectric effect. The power generated from the solar cells depends on the temperature and irradiation of sunlight. In order to make use of the solar panels can work more efficiently then conducted research about the system of Maximum Power Point Tracking (MPPT).

MPPT system is an electronic system that seek maximal work point on photovoltaics in order to generate maximum power. The design of this system using a buck converter as a device to lower voltage due to a load of used water pump 12v dc. MPPT had an algorithm. This MPPT algorithm will be programmed in microcontroller ATMega8535 which serves to find the value of the maximum power point of photovoltaics. Photovoltaics is a source from the system. Algorithms that use Perturb & Orbserve method (P&O).

Results from this study is the value of which is derived from a larger MPPT system in the appeal to non – MPPT, and output of water from water pump 12V dc motor increased by 733mL/min.

Keywords: Photovoltaics, Maximum Power Point Tracking, Buck Converter, Microcontroller ATMega8535