

***DESIGN AND CONTROL OF A SOLAR WATER PUMP
BASED ON ARDUINO UNO (MONITORING CHARGING
BATTERY TO RUN THE WATER PUMP)***

Nama Mahasiswa : Amin Sholihin
Nim : 3103191169
Dosen Pembimbing : Zulkifli, S. Si., M.Sc
Email : sholihina@gmail.com

ABSTRACT

Electrical energy is one of the most important needs for humans, because all daily activities cannot be separated from Electrical Energy. One of them is the farmers who work to grow rice in the fields, electrical energy is used to turn on the water pump and the needs of farmers cannot be separated from electrical energy. One of the efforts that can be done to assist farmers in irrigating their agriculture is the use of environmentally friendly and renewable technology that is inexpensive. Solar-powered irrigation is an alternative to agricultural water pumps that can be developed. Indonesia is a country that is quite rich in renewable energy potential such as solar energy, wind energy, nuclear energy. Especially for solar energy, utilizing existing energy is then converted into electrical energy through solar cells for solar power generation. From the test results, the voltage generated from the 150 wp solar panel is 19.6 VDC to 21.2 VDC. The use of a DC pump (180 watts) with a battery capacity of 12V/120AH at night takes an average of 130 minutes and produces an average water volume of 2665 liters, or the average produced is 20.5 liters/minute.

Keywords – Solar cell, battery. Pump, arduino, INA219 sensor, step down