

# **SISTEM PENDINGIN PANEL SURYA OTOMATIS UNTUK MENINGKATKAN DAYA LISTRIK YANG DIHASILKAN**

*(Automatic Solar Panel Cooling System To Increase Electricity Produced. Dosen Pembimbing (Dedy Eko Rahmanto, S.TP, M.Si)*

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## ***ABSTRACT***

*The sun is one of the most abundant renewable energies. One of the uses is for Solar Power Generation (PLTS), namely by converting solar energy into electrical energy using the photovoltaic principle. The high surface temperature of the solar panel, which is past 25 ° C, will affect the output voltage of the solar module, so that the power generated will also decrease. This study aims to see the effect of solar panels on the power produced. This research was conducted for 5 months from January to May 2020. This research was conducted using 2 solar panels. One solar panel is designed to be equipped with an automatic cooling device and one solar panel that is not ranked as a comparison for results. Data retrieval starts from 09:00 to 15:00 with a time span of 1 minute. Data obtained with several sensors that have been connected to Arduino so that the data obtained will be stored directly on the datalogger that has been set. Some of these sensors are ACS712 20 A current sensor, DC voltage sensor, DS18B20 temperature sensor. The water pump will turn on for 1 minute when the temperature sensor DS18B20 reads the value of the surface temperature of the solar panel is greater than 35 ° C, then after 1 minute there is a DS18B20 temperature sensor reading the surface temperature value is less than 35 ° C then the pump will automatically shut down with the command arduino uno. Based on the results of the analysis of the coolant installed on the surface of the solar panel, it can increase the average power generated by 17.06%. Increasing the surface temperature of the solar panels has a big impact on the voltage generated. Increasing the surface temperature of the solar panels has little effect on the current generated. The use of automatic solar panel cooling does not require the power required for the cooling system to be greater than the excess power generated by solar panels that have been cooled.*

**Keywords:** *Automatic cooling device, Output Voltage, Solar Panel.*