

SOLAR PANEL SYSTEM PROTOTYPE EQUIPPED WITH SOLAR TRACKER MODULE AND IOT-BASED AUTOMATIC DUST CLEANER

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ABSTRACT

Today the utilization of power plants using solar energy is growing, one of which is a solar tracker where solar panels can move to detect sunlight. However, in practice, solar panels are often exposed to dust or dirt, which can reduce the absorption of heat energy from the sun. Therefore the author aims to make a solar tracker that is able to clean dust automatically while adding an IoT feature to monitor the voltage and current that charges the battery. After formulating the problem, the author then looks for the right literature for reference for making this tool, then proceed with making the tool. The result obtained from making a solar tracker with an automatic dust cleaner is that the tool is able to work properly. For a comparison of the performance of a solar tracker using an automatic dust cleaner with a solar tracker without a dust cleaner, the average voltage is 3.92 V and the average current is 52.42 mA, while the results obtained after testing with the dust cleaner get an average voltage of 4.42 V and an average - average current 53.20 mA. The peak voltage and peak current are 4.30 V with a current of 84 mA for a solar tracker with a dust cleaner while without a dust cleaner, namely a voltage of 4.12 V with a current of 82.9 mA at the same conditions, time and angle. Based on data collection on solar tracker testing, it can be concluded that solar trackers with dust cleaners are better at capturing heat from the sun's rays so that the results obtained are better than solar trackers without dust cleaners.

Keywords: *Solar Tracker, Dust Cleaner, Internet of Things, Voltage, Current.*