

ABSTRACT

The use of solar energy in the generation of electrical energy has been carried out using solar cell panels, but the solar cell panels installed so far are still static which results in solar panels not being able to capture sunlight optimally and the electrical energy produced is not optimal. To overcome the limitations of static solar cell panels, in this final project research designed a solar cell panel that can be moved to follow the movement of the sun.

From the test results, it can be concluded that the addition of a PID controller is very useful for moving one-axis solar panels because the system response to reach the setpoint becomes more accurate. The results of this test compare the output produced by a fixed solar panel system and a single-axis solar panel system. The power output of single-axis solar panels has an increase of 16.24% compared to fixed solar panel systems (0° axis). This is because the single axis system can be moved so that the Solar Panel is perpendicular to the sun which results in maximum power being generated.

Keyword : Solar tracker, PID Control, Solar Panel