

ABSTRACT

In this final assignment has been designed solar *tracker* that is can track the sun. The advantage of using solar *tracker* that implemented in *solar panel* is its can get more power. So in economicaly, it will decrease the cost for building a solar home power system. Nowadays, perhaps no many people using solar home power system because the price per watt still higher, compared with power generated by fossil fuel. But sometimes, if fossil fuel has price more expensive, many people will consider to using this alternate energy source.

The three main component of solar *tracker* is vision system, processor, and movement system. Vision system in this final assignment used matriks vision sensor, which it's a number of light sensor that arranged in matriks. For processor was used microcontroller for data acquisition and control the panel position. And for the last, movement system is combining two DC motor to get the panel moving in two axis.

After the test in real condition, solar *tracker* was work properly. But some condition that have to take is solar *tracker* must be placed in same direction of solar path. The system can occur malfunction if this condition is not apply. But this problem can removed by using compass guide or using solar path recorder. Another test has been done to proof the inceasing solar power output by using solar *tracker*. From the test has been found that the percentage of increasing solar power output is 31.84% without calculate the power consumed by *tracker* controler itself, and if its calculate the percentage of increasing solar power output is 11.45%.

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