

ABSTRACT

Solar energy can be converted into electrical energy using solar cells. However, the utilization is not optimal because solar cells cannot absorb the maximum solar energy. In this final project will make solar cells can move automatically following the direction of the movement of sunlight so that the electrical energy produced is more optimal. Try it at 9am to 4pm in the open space when the weather is clear. The limit of the angle of solar cells is between -75° up to +75° from the normal line and has one degree of freedom.

Solar cells are embedded with automatic position control systems using FLC and use LDR sensors to detect the intensity of sunlight received by solar cells. The intensity of sunlight received will be processed and the output of the controller will be forwarded to the DC motor to move the solar cell in the direction of the sunlight.

In this final project research can implement software and hardware in the control system using the FLC method and can produce 20.79% greater power output compared to static solar cell output (ignoring the energy requirements of DC motors) because these solar cells will follow the direction come sunlight.

Keywords: *solar cell, position control system, and FLC.*