ECE-25

Design and Implementation of Sun Tracking System

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This paper presents the design and implementation of a semi-autonomous system device capable to move the solar cell in a rotational motion via light dependent resistor (LDR) sensors that sense the sun light and control the motor using a microcontroller. The sun tracker also has a temperature sensor that senses and monitors the temperature. This work is based on 16F877A PIC microcontroller that controls the sun tracker to obtain the best location for the solar cell.
The sun tracker uses only one stepper motor, two LDR sensors, temperature sensor LM35 and LCD that displays the measured values. In this work, simulation programs "Proteus" and "Solid works" are used to test the electrical and mechanical parts of the system. The proposed system achieve the high efficiency of sun tracking system with low cost compared to other systems.