SUN TRACKING SYSTEM FOR SOLAR PANEL APPLICATION

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ABSTRACT

Electricity is very important for global community in social and economic developments especially in industrial, agriculture and domestic activities. Many researchers from highly advanced countries have investigated about renewable as well as sustainable energy for electrical power generation and solar power energy is commonly preferred by consumers because of its availability and cost effective for developing the systems. These systems are usually installed and managed by a small community and sometimes for industrial use in electrical power generation. Solar tracker system was design to track the maximum amount of sun energy.

There are several types of solar tracking systems that have been developed such as single axis tracker and dual axis tracker but in this project the focus is on improving the efficiency in tracking, and storing electricity of current dual axis solar tracking system with the dual axis in frame tracking system design for small scale usage. This project involves a combination of mechanical and electrical components that work together to maximize the power production of the solar panel. This project proposed a combination of an Arduino Uno microcontroller with Light Dependent Resistors (LDR) sensors. As the sun moves across the sky an electric actuator system makes sure that the solar panels automatically follow and maintain the optimum angle in order to make the most of the sunbeams.

Here is a solar tracker system that tracks the sun's movement across the sky and tries to maintain the solar panel perpendicular to the sun's rays, ensuring that the maximum amount of sunlight is incident on the panel throughout the day. The capacitor was used to store the energy from the solar panel and the energy will be delivering to the servomotor and current will flow through USB cable and also as the output for this sun tracker project. It does will help the user to supply the energy store in the capacitor to the device for the usage.

TABLE OF CONTENTS