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**A RESEARCH PAPER ON SOLAR TRACKING**

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**ABSTRACT**

*Solar energy is a very effective method to increase the supply of renewable energy. The design and development of a microcontroller-based Solar Panel Tracking System is discussed in this article. Sunlight is a non-conventional energy source, since the author has erected solar panels to meet our electrical needs. The solar source, i.e. the sun, does not constantly face the plate due to the earth's rotation, resulting in less power being generated. The energy panel will face the SUN until the SUN appears, which should happen within a day. The block diagram below shows the device design, which contains an LDR sensor that provides maximum solar power to the microcontroller through an ADC that digitizes the LDR's performance. The controller then makes a decision based on the algorithm and tilts the panel in the direction of the LDR's greatest energy with the aid of a DC Motor. As a DC geared motor driver, the system is controlled by two relays, while the main processor is a microcontroller. A single axis protects this project, which is designed for low-power and home applications. The system can monitor and follow the Sunlight intensity from the hardware test regardless of motor speed to get maximum solar power at the output. This solar tracker system may be updated in the future using new technologies such as the Internet of Things (IOT) and utilized at home.*

**KEYWORDS:** *LDR, Microcontroller, Motor Driver, Photovoltaic Cell, Solar Panel.*

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