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IoT Based Dual Axis Solar Tracking System

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Abstract: *This paper focuses on the development of a dual-axis solar tracker system that integrates IoT (Internet of Things) technology. Solar energy is a renewable, clean, and efficient energy source. Using solar trackers that move photovoltaic panels towards the sun can increase the energy output of solar panels. This paper presents the design and implementation of a dual-axis solar tracker system that is controlled by an IoT ESP32 microcontroller drive unit. The system also includes a LDR sensor that monitors ambient light. This sensor allows the system to adjust the angle of the photovoltaic panels to ensure maximum exposure to the sun. The system is also equipped with an IoT monitoring system using an ESP32 microcontroller that allows users to observe data such as voltage-current, and the power generated by the photovoltaic panels. The goal of this system is to improve the efficiency of solar panels and provide a convenient method for users to monitor the performance of their solar energy systems*

Keywords: Solar Panel, ESP32 Microcontroller, 4 LDR, 2Moter, Mechanical Structure, cloud, IOT

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