Sun Tracking Solar Panel

Abstract:

- This project presents the design and implementation of a sun tracking system for solar panels aimed at maximizing energy generation efficiency.
- The primary objective is to develop a mechanism that automatically adjusts the orientation of solar panels to continuously face the sun throughout the day, optimizing sunlight exposure and energy capture.
- The sun tracking system integrates light sensors or solar tracking algorithms to determine the position of the sun relative to the solar panel's location.
- Based on this information, a microcontroller unit (MCU) controls servo motors or actuators to adjust the tilt and azimuth angles of the solar panel.
- The project aims to enhance the efficiency of solar energy harvesting by enabling solar panels to capture maximum sunlight throughout the day, regardless of seasonal variations or changes in the sun's position.
- This results in increased energy output and improved cost-effectiveness of solar power systems.