**SUN TRACKING SOLAR PANEL TO TRACK THE MAXIMUM RAYS BY USING SERVO MOTOR**

**ABSTRACT**

This project employs sun tracking solar panel to track the maximum rays by using servo motor**.** This is better compared to the light-sensing method that may not be accurate always – for example, during cloudy days. With the impending scarcity of non-renewable resources, people are considering to use alternate sources of energy. Barring all the other available resources, the solar energy is the most abundant and it is comparatively easy to convert into electrical energy. The usage of solar panel to convert Sun energy into electrical energy is very popular, but due to the transition of sun from east to west, the fixed solar panel may not be able to generate optimum energy. The proposed system solves this problem by an arrangement for the solar panel to track the maximum Sun rays.

This tracking movement is achieved by coupling LDR sensors with the help of servo motor. We are making arrangement such a way that the panel maintains its face always perpendicular to the sun to generate maximum energy. This is achieved by using a programmed ARDUINO IC. We are placed LDR sensors such a way that, when the one of the LDR is in dark then another LDR tries to catch the maximum rays the motor will be rotated in clockwise or anticlockwise direction for tracking the maximum rays with the help of LDR’s. So whenever both the LDR’s tracks the maximum rays then motor was stop rotating i.e. solar panel stops tracking sun rays. While rotating it will show the angle of tracking position. And also it will display on LCD that the solar panel’s rotating direction. This project is used arduino board so that it is capable of handling the power requirements of the motor.

Furthermore, this project can be enhanced by using an RTC (Real Time Clock) to follow the sun rays maximum. This helps in maintaining the required position of the panel even if the power is interrupted for some time.

**BLOCK DIAGRAM**

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