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Monitoring and Controlling of Solar Power Plant Based on IoT

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Abstract: *Solar power plants need to be monitored for optimum power output. This helps retrieve efficient power output from power plants. Use of nonconventional energy sources is increasing day by day the most favorite way is to generate and energy using cell solar rays by making use of solar panels so we need and monitoring system which will monitor the generation as well as security and controlling of the Solar generation stations and for this purpose we were going to develop the system this system is basically and internet based system over which we can monitor and control the Solar Power Station where we will monitor the generation using the power generated on the solar panels using voltage and current sensor this data is calculated and stored on to the iot based server also we will going to monitor and security for the power station where we will use and safety sensors are facing sensors which will monitor the boundary of the power plant and maintain the security of the system also we are going to use and Solar tracking system to generate maximum energy from the solar panels To monitor the environmental conditions we are going to use and light intensity sensor and temperature sensor which will monitor the light intensity and temperature at the power plant so this all data generated by the system is transferred to an iot based server using an iot module here we are going to use esp32cam module which can generate the data and send it to the iot server also it has an built-in camera which will give you visual data to the monitoring authority we will provide and display on to this system which will display all the data from the sensors also we can control the distribution lines or distribution contactor. This makes remotely monitoring of solar plants very easy and ensure best power output.*

Keywords: Solar plant automation system, IOT, temperature sensing, light intensity sensing, solar Tracking, mismatched environmental condition, Series connected PV modules

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