

Uiet CSJM University Kanpur



PROJECT

“Real Time Solar Power Plant Data Collection Project”

Under the Supervision of Ex. Anand Gupta & Mrs. Neetu
Yadav

Krishna Kumar

CSJMA22001390145

Department of Electronics and Communication Engineering

Certificate



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(FORMERLY KANPUR UNIVERSITY)

CERTIFICATE OF PARTICIPATION

This is to Certify That

Krishna Kumar

B.Tech. ECE Second Year Roll no. CSJMA22001390145

Has Successfully Participated in "Real Time Solar Power Plant Data Collection Project"
under the Supervision of Er. Anand Gupta & Mrs. Neetu Yadav

Dr. Brishti Mitra
Director, UIET

Dr. Vishal Awasthi
Co-ordinator, ECE

Certificate No.: ECE/Solar/23-24/79

Project: Real-Time Solar Power Plant Data Collection

- **Project Overview**

This project focuses on real-time data collection and analysis of solar power generation. The objective is to monitor and record the daily power output of a solar energy system and analyze its efficiency under varying conditions. The work was carried out under the guidance of teachers, ensuring accuracy and adherence to best practices in renewable energy research.

- **Project Objectives**

1. Real-Time Monitoring: Collect real-time data on solar energy generation.
2. Daily Power Output Analysis: Measure the total power generated by the solar panels in a day.
3. Performance Evaluation: Analyze how different factors (such as sunlight intensity, weather conditions, and panel orientation) affect power generation.
4. Data Logging & Reporting: Store the collected data for further analysis and generate reports on energy trends.
5. Efficiency Optimization: Identify ways to improve solar panel efficiency for better energy utilization.

- **Methodology**

1. Hardware Setup: Used solar panels, power meters, and data logging sensors to track energy generation.
2. Software Implementation: Utilized data logging tools and software to record and visualize real-time power output.

3. Data Collection & Analysis: Recorded hourly and daily energy production to study efficiency trends.

4. Teacher Supervision: Worked under expert guidance to ensure accuracy and reliability of data.

- **Key Findings**

1. The amount of solar energy generated daily varied based on weather conditions, panel efficiency, and sunlight exposure.

2. Consistent data collection helped in identifying patterns and peak energy production hours.

3. The study provided insights into potential optimizations for increasing solar power output.

- **Conclusion**

This project successfully demonstrated real-time monitoring and analysis of solar power generation, providing valuable insights into renewable energy efficiency. By working under expert guidance, the study ensured accurate data collection and helped in understanding the practical aspects of solar energy utilization.