

Solar Radiation Instrumentation And Related Parameters Study

Dr. K Yakoob¹, G. Pranay², D Shravan Kumar³, V Abhishek⁴

¹Associate Professor, Department of Mechanical Engineering

^{2,3,4}UG Student, Department of Mechanical Engineering

Christu Jyothi Institute of Technology & Science, Jangaon, Telangana, India

Abstract: *The increasing demand for clean and sustainable energy has positioned solar power as a vital component of future energy strategies. This project presents the development of a solar radiation measurement and monitoring system using an Arduino Uno, a pyranometer, and a DHT11 temperature-humidity sensor. Real-time data on irradiance, temperature, and humidity is recorded to assess solar availability in Jangaon, Telangana during May 2025. Data analysis confirms a strong correlation between sensor output and solar conditions, validating the system for practical applications like site assessment and agricultural planning.*

Keywords: *Pyranometer, Solar Radiation, Arduino, DHT11 Sensor, Calibration*

