ABSTRACT

Solar Power Plants (PLTS) are a growing solution in the field of renewable energy. This final project presents the design and development of an Internet of Things (IoT)-based monitoring system to observe basic parameters of solar panels, including voltage, current, temperature, and light intensity. The system utilizes the ESP32 microcontroller as the main data processor, connected to various sensors and an I2C multiplexer module. Collected data is transmitted to the ThingSpeak platform for graphical display. The system also features a safety mechanism using a relay that disconnects battery charging when temperature or voltage exceeds certain thresholds. Implementation and testing were conducted to evaluate the system's response to environmental changes

Keywords: IoT, PLTS, ESP32, ThingSpeak, temperature sensor, current sensor