A Major Project report on

BLUETOOTH BASED SOLAR PANEL CLEANING ROBOT

Submitted to

Jawaharlal Nehru Technological University, Hyderabad

In partial fulfillment of the requirement for

the award of degree of

BACHELOR OF TECHNOLOGY

in

ELECTRONICS & COMMUNICATION ENGINEERING

by

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2022-2023

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CERTIFICATE

This is to certify that the major project entitled **"BLUETOOTH BASED SOLAR PANEL CLEANING ROBOT"** submitted to **JNTUH** is carried out by the following students of **IV B. Tech** in the partial fulfillment for the award of the B. Tech degree in **Electronics and Communication Engineering** during the academic year 2022-2023.

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ABSTRACT

Solar panel is vulnerable to accumulated dust on its surface. The efficiency of the solar panel gradually decreases because of dust accumulation. A Bluetooth-based solar panel cleaning robot is a specialized robot that uses Bluetooth technology to communicate and control its movements. It is designed to clean solar panels, removing dirt and debris to maintain their efficiency. The robot utilizes a combination of motors, Bluetooth technology, and a cleaning mechanism to navigate and clean the solar panel surfaces. A wiper to swipe the dust from the panel surface. A dc motor is used to power the wiper. The Bluetooth connectivity allows for wireless control and monitoring of the robot's actions, making it an efficient and automated solution for maintaining solar panels. Experimental results show that the proposed cleaning system can operate with an efficiency of 87-96% for different types of sand.

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