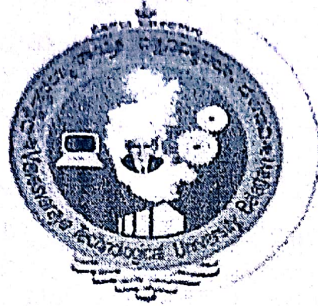


VISVESVARAYA TECHNOLOGICAL UNIVERSITY
JNANA SANGAMA, BELAGAVI-590018, KARNATAKA



A PROJECT REPORT

ON

**“DESIGN AND FABRICATION OF THE SOIL MOISTURE SENSING
ROBOT FOR AGRICULTURE APPLICATION”**

SUBMITTED IN PARTIAL FULFILLMENT FOR THE REQUIREMENT OF
THE AWARD OF DEGREE OF

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING

Submitted By

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DEPARTMENT OF MECHANICAL ENGINEERING
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DEPARTMENT OF MECHANICAL ENGINEERING

CERTIFICATE

This is to certify that the Project work entitled "DESIGN AND FABRICATION OF THE SOIL MOISTURE SENSING ROBOT FOR AGRICULTURE APPLICATION" Successfully carried out by S PAVAN KUMAR (1SV18ME010), VENUGOPAL SV (1SV18ME012), VIVEK R J (1SV18ME013), ANJAN KUMAR H H(1SV19ME001) a bonifide students of SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY in partial fulfilment for award of degree of Bachelor of Engineering in Mechanical Engineering of the Visvesvaraya Technological University, Belagavi during the year 2022-23. It is certified that all corrections and suggestions indicated for internal assessment have been incorporated in the report deposited in the Department. The Project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said degree.

Olle 25/05/23
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ABSTRACT

The research aim was to study the soil moisture control system in agricultural greenhouse based on Arduino microcontroller automation control. This kind of intelligent soil moisture control system helps to control the moisture level of the field and supply the water if required. In this research embedding a control system into an automatic water pump controller depends upon the soil moisture of the soil. "Soil moisture sensing robot" is an automated irrigation vehicle using Arduino microcontroller system which is cost effective and can be used in farm fields or average home garden. The proposed system is developed to automatically water the plants when the soil moisture sensor has detected the soil is insufficient of water by using the Arduino as the Centre core. The automated irrigation system is fully functional prototype which consists of a soil moisture sensor an LCD display to show the moisture percentage and pump status, a relay module which is used to control the on and off switch of the water pump, and a water pump. When the soil moisture sensor senses the dry soil, it will show the moisture percentage on the LCD display, and the relay module will switch on the water pump automatically to start the watering process, or vice versa. Hardware testing is conducted to ensure the proposed system is fully functional.


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