

# **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**"Jnana Sangama" Belagavi – 590 010**



## **PROJECT REPORT ON “DESIGN AND IMPLEMENTATION OF SOIL MOISTURE ANALYSER”**

**Submitted in partial fulfillment of the requirements for the award of degree**

**BACHELOR OF ENGINEERING  
IN  
ELECTRONICS & COMMUNICATION ENGINEERING**

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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY**

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# ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

MOODBIDRI – 574 225

(Affiliated to VTU, BELAGAVI)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

## CERTIFICATE

*Certified that the project work entitled "DESIGN AND IMPLEMENTATION OF SOIL MOISTURE ANALYSER" is a bona fide work carried out by*

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in partial fulfillment for the award of **BACHELOR OF ENGINEERING** in **ELECTRONICS & COMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2019–2020. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.



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## ABSTRACT

The efficient irrigation management practices based on the monitoring of the moisture in the soil provide a great benefit for the appropriate amount of water applied in the fields. In recent years, the aging of agricultural workers has progressed rapidly, successor problem is becoming more serious. Under such circumstances are coming out also new farmers that will beginner to agriculture. However, the establishment of farming technology has become a major management challenge for new farmers. In this study, we focused on the fact that to compensate for the water management is a part of the management challenges of the new farmers (establishment of farming technology), to build a soil moisture measurement system due to moisture sensor. The measurement of soil moisture is the basis for the refinement of agriculture to implement water-saving irrigation. A new soil moisture sensor was designed based on its theoretical basis and analysis of the dielectric constant characteristics of soil.

This project proposes design and development of a soil moisture sensor and a response monitoring system. The probes used in this sensor are made of nickel which is an anti- corrosive and robust material for use in agricultural related applications. The response monitoring system measure the moisture of the soil, compare it with the desired values given by the user and generate alert if soil moisture goes below desired value. It helps in problems related to growing of crops in which irrigation is required at irregular interval. It is also helpful in monitoring of soil moisture in golf fields