

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

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



**PROJECT REPORT ON**

**“ADVANCED UTILIZATION OF IRRIGATION  
SYSTEM BY USING SUSTAINABLE ENERGY”**

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

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

**Submitted By**

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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

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

**MOODBIDRI – 574 225.**

**2016-2017**

# 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 "Advanced Utilization of Irrigation System by Using Sustainable Energy" is a bona fide work carried out by*

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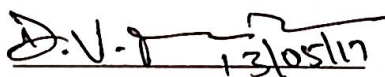
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in partial fulfillment for the award of BACHELOR OF ENGINEERING in ELECTRONICS & COMMUNICATION ENGINEERING of the VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI during the year 2016–2017. It is certified that all corrections/suggestions indicated 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.



Signature of the Guide

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# ABSTRACT

The demand for power generation has turned to be a major problem, so a renewable source of energy is the most suitable method for solving this crisis. A common practice is to combine the wind and solar energy is called hybrid renewable source. The proposed irrigation technology is automatic water-saving irrigation technology powered by renewable sources of energy. Energy is one of the major parameters for establishing growth and progress of the country, rather the standard of living depends directly upon the per capita energy consumption. Wind and solar energy can be harvested forever, providing farmers with a long-term source of income. This project is an overview of renewable energy uses for farmers on how they can help make renewable energy a growing source of energy. The soil moisture sensor uses capacitance to measure dielectric permittivity of the surrounding medium. In soil, dielectric permittivity is a function of water content which makes our system automatic.

The main aim from this advanced system is carried out by using various sensors which not only provides the awareness about changing condition of humidity level according to weather but also provides an ability to schedule the proper timing for water supply. It is the proposed solution for the present energy crisis for the Indian farmers. This system conserves electricity by reducing the usage of power and conserves water by reducing water losses. Under practical consideration the proposed system occupies its efficiency by which supports aggressive water management for the agricultural land. This architecture is based on the capabilities of next generation microcontroller and their application. The model provides an output voltage of 4.5V to 6.6V of energy conserved with the usage of solar panel also the other renewable resources that is by using wind energy the model conserves the energy of 6V and more. When the proposed model is approached for real time application in the farmer field it can be able to provide sufficient energy with huge solar panel installed and wind turbine operation. The model is also provided with fencing circuit for protection for other hazards which uses voltage doubler circuit and protects the farmer field by transferring sufficient voltage for fencing.