

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama” Belagavi – 590 010



PROJECT REPORT ON

**“AN EFFICIENT SMART HOME ENERGY
MANAGEMENT SYSTEM”**

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

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

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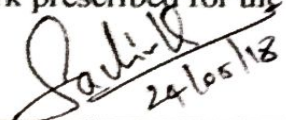
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CERTIFICATE

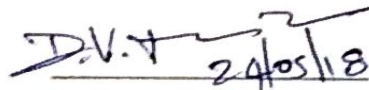
Certified that the project work entitled "AN EFFICIENT SMART HOME ENERGY MANAGEMENT SYSTEM" is a bonafide work carried out by

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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 2017-2018. 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.


24/05/18

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ABSTRACT

The overall design of an efficient smart Home energy management system with low cost and wireless system is presented in this project. This system is designed to assist and provide support for elderly and disabled in home. Also the smart home concept in the system improves the standard living at home. The main control system implements wireless technology to provide remote access from smart phone. The system intended to control electrical appliances and devices in house and analyses the power consumption of different appliances with relatively low cost design, user-friendly interface and ease of installation.

The purpose of the design is to implement wireless remote control system for automation of home appliances and energy management using smart phone. Gas sensors and temperature sensors are interfaced to Arduino microcontroller. In the system the appliances are controlled through Bluetooth module which is interfaced with the Arduino microcontroller. The project work describes the controlling of house hold appliances and analysis of power consumption with cost of money charged using an Arduino microcontroller. The system will detect the smoke and Liquid Petroleum Gas (LPG) leakage and notifies the user through a buzzer. The temperature in home will be displayed in Fahrenheit on the Liquid Crystal Display (LCD) screen. The system will record the time interval between on-off of a home appliance with power consumption details and also the cost of money for each appliances used and also sending those details to the user through E-mail. The user can access the power analysis details in the E-mail provided. The E-mail contains the list of appliances available, the time interval, the power consumed and the cost of money that will be charged by the respective electricity board.