VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI - 590018
2019 –2020

A
Project Report Phase-II
on

"*THE REAL TIME CONDITION MONITORING AND CONTROL SYSTEM FOR INDUCTION MOTOR*"

Submitted in the partial fulfillment of the requirement
for the VIII Semester Project - 15EEP85 for the award of degree of

Bachelor of Engineering
in
Electrical and Electronics Engineering
by

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THRIVENI H N	1GV15EE019

Carried at
Dr.T.THIMMAIAH INSTITUTE OF TECHNOLOGY
Under the Guidance of
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(Formerly Golden Valley Institute of Technology)
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DEPARTMENT OF ELECRTICAL AND ELECTRONICS ENGINEERING

CERTIFICATE

Certified that the **Project Work** entitled ***"THE REAL TIME CONDITION MONITORING AND CONTROL SYSTEM FOR INDUCTION MOTIR"*** is a bonafied work carried out **by** **DIVYA M - 1GV16EE004, SHALINI R - 1GV16EE014 and THRIVENI H N -1GV15EE019** in the partial fulfillment for the award of degree of Bachelor of Engineering in **Electrical and Electronics Engineering** of the **Visvesvaraya Technological University**, Belagavi during the year 2019-2020. It is certified that all corrections/suggestions indicated for the assessment have been incorporated in the report deposited in the departmental library. The Project report has been approved as it satisfies the academic requirement in respect of **Project Work- 15EEP85** prescribed for the Bachelor of Engineering Degree.

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Examiners.

1. Dr. N. Lakshmipathy — 18/8/2020
2. Mr. Ronald Lawrence. J — 18/8/20.

ABSTRACT

In today's scenario the industrial motor plays a predominant role in industrial application. Generally predictive maintenance of induction motors is well suited for small to larger scale industries in order to reduce downtime, increase efficiency and reliability. The various parameters like temperature, vibrations, induction machine load current and voltage send to the processing unit (Arduino) in order to analyze and gather specific information that can predict motor's failure. Well analyzed vibration signal easily shows the difference between the running operation of the healthy and faulty motor. Using IoT (Internet of things), real Time Condition Monitoring System for Industrial Motors the data from the sensors is analyzed and transformed into an appropriate form to monitor vibration peaks. The aim is to design and implementation of IoT technology to monitor and diagnose the condition of Induction motors.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI - 590018

2019–2020

A

Project Report

on

"SOLAR ENERGY BASED ELECTRIC VEHICLE WITH SMART INVERTER"

Submitted in the partial fulfillment of the requirement for the VIII Semester Project work 15EEP85 for the award of degree of

Bachelor of Engineering

in

Electrical and Electronics Engineering

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Signature of project guide	Signature of HOD	Signature of Principal
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Mr. RONALD LAWRENCE.J	Dr. N. LAKSHMIPATHY	Dr. SYED ARIF
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Name of Examiners	Signature with Date
1. Dr. N. LAKSHMIPATHY	18/08/2020
2. MR. RONALD LAWRENCE.J	18/8/20

ABSTRACT

This project is mainly to build solar and electrically powered car. The greater community on alternative energy and its applications, as well as to build a practical solar and electrically powered car that could have real world applications upon further technological advances. This project has a strong desire to innovate and use local technology and resources. When sunlight falls on the solar panel then solar energy gets converted into electrical energy and stored in the battery, since petrol and diesel is not required it uses solar energy which is abundant in nature. Sunlight is now-a-days considered to be a source of energy which is implemented in various day to day applications. Solar energy is being used to produce electricity through sunlight. With the help of this technology we aim to make solar and electrical energy powered car. Preliminarily our objective would be to implement our idea on a remote-control toy car and afterwards with help of this prototype we can extend our future work on building an actual car powered by the solar and electrical energy which is both cost effective and of course environment friendly.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI - 590018

2019 –2020

A

Project Report Phase II

on

"GLACIER MONITORING USING SENSOR TECHNIQUES POWERED BY RENEWABLE ENERGY RESOURCES"

Submitted in the fulfillment of the requirement
for the VIII Semester Project - 15EEP85 for the award of degree of

Bachelor of Engineering

in

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Name of Examiners	Signature with Date
1. Dr. N.LAKSHMIPATHY	1. 18/8/2020
2. Mr. RONALD LAWRENCE.J	2. 18/8/2020
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ABSTRACT

Glaciers in the Indian Himalayas provide an important environmental economic service by releasing melted water for the northern and North-Eastern part of the country during the dry season, May – September, when little to no rainfall occurs. The Himalayas have the largest concentration of glaciers outside the polar caps with glacier coverage of 33,000 sq. km the region is aptly called then **"Water Tower of Asia "** as it provides around $8.6x10^6 m^3$ of water annually.

Melted water from these glaciers form an important source of run-off into the North Indian Rivers, Glacial-retreat monitoring plays a vital role in glacio-hydrological and climate change studies. Glaciological studies in high altitude terrain and under extreme weather conditions as in higher Himalayas become difficult by conventional means.

Glacier changes, especially the changes of mountain glaciers, are one of the most sensitive indicators of terrestrial climate change. Melt water discharge from mountain glaciers is a significant water source for dry and semi-dry areas. Observations from present day indicate that a gradual change in global climatic conditions is a major cause of natural disasters. Glaciers are one among many phenomena that are directly affected by climate change. Glaciers are vast body of ice moving over landmass due to its own weight and slope of the underlying topography. Meanwhile, the dramatic glacier fluctuation increases the risk of geological and flood disasters. Glacial lakes outburst floods have become a present and looming danger for the population in current neighborhood of these retreating glaciers. This calls for an informative approach toward studying the dynamics of this huge river of moving ice. Therefore the monitoring of glacial changes has been the subject of much research interest.

Golden Valley Educational Trust

Dr. T Thimmaiah Institute of Technology

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Certificate of Presentation

Knowledge Partner

ICTACADEMY

This is to certify that,the paper entitled

Glacier monitoring using sensor techniques powered by renewable energy resources

Authored by

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Innovation Partner

INSTITUTION'S INNOVATION COUNCIL
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Under the guidance of ***Mrs Sridevi A*** *has successfully Contributed in 2nd International (Virtual) Conference on Recent Trends in Technology, Engineering and Applied Science [ICRTTEAS] organised by,*

Dr.T.Thimmaiah Institute of Technology on 24th ar

ICRTTEAS 2020
July 24 - 25

25.07.2020	25/07/2020	25/7/2020
Prof. Ruckmani Divakaran	**Dr. H G Shenoy**	**Dr.Syed Ariff**
ICRTTEAS- Convenor	Vice Principal	Principal

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI - 590018
2019 –2020

A

Project Report Phase II

on

"An IoT Based Smart Inverter"

Submitted in the partial fulfillment of the requirement for the VIII Semester Project - 15EEP85 for the award of degree of

Bachelor of Engineering

in

Electrical and Electronics Engineering

by

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17/8/2020 — 17/8/2020 — 17/8/2020

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Signature with date

18/08/2020

18/8/20

ABSTRACT

The industrial revolution in power has become the most fundamental element required to fuel an economy. Every section of society like industries, homes and the government itself is heavily dependent on power for its smooth functioning. However, the population expansion has resulted in an increased demand for power. Pollution due to conventional energy sources is already at an all-time high.

Hence, it is time we use renewable energy sources in order to reduce pressure on power grids. Therefore, it is extremely important to focus on the concept of energy generation using renewable sources and energy storage in an efficient manner to reduce the pressure on power grids. Energy storage comes in handy during emergencies like floods, storms, equipment failure etc which result in long power cuts. The population explosion has also resulted in a power shortage and consequential power cuts. But with the ever-rising technological advances the inverter is expected to be much smarter than it is now.

One way of doing it is to let the consumer monitor its status remotely. In this project we mainly focus on monitoring of inverter's battery, displaying the run-time utilization of the loads and controlling of loads wirelessly. Inverters found in most households and industries are powered by non-renewable energy resources and are primitive in their architecture and usage. Most consumers are caught off-guard when the inverter's battery dies out as the existing inverters lack the ability to alert the users about the power consumption and battery life remaining. A smart inverter must use renewable energy to charge its battery, it should be adaptive and able to send and receive messages quickly, as well as share data with the owner. Hence there is scope for retrofitting the existing inverters to make them more user-friendly by displaying the battery voltage and also providing information on the run-time of his loads while using the battery, which will also promote judicious use of available energy by the consumer.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI - 590018

2019–2020

Phase II

Project Report

on

"*DESIGN OF ELECTRIC POWERED BICYCLE*"

Submitted in the partial fulfillment of the requirement for the VIII Semester Project - 15EEP85 for the award of degree of

Bachelor of Engineering

in

Electrical and Electronics Engineering

by

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1. DR. N. LAKSHMI PATHY
2. MR. RONALD LAWRENCE. J

Signature with Date

1. 18/08/2020
2. 18/8/20

ABSTRACT

The e-bike is a human electric hybrid vehicle. Basically, these bikes are for people who want an alternative to a car, get exercise, go fast without increased effort, and get you where you want to be. The e-bike is made not to leave the rider completely idle but to assist in the movement over hills as well as flat ground. Peddling on the part of the rider can be used both to move the bicycle and to recharge the batteries. It's an amazing, fast and efficient vehicle that respects the environment. With this vehicle, it is possible to enjoy a leisurely and relaxing cruise and arrive at destinations (such as work) at the same time. A new model of power-assisted bicycle has been designed, set up and tested. Electric bicycles have been gaining increasing attention worldwide. The electrically assisted bikes are normally powered by rechargeable battery, and their driving performance is influenced by battery capacity, motor power, road types, operation weight, control, and, particularly, by the management of the assisted power. A classification of the electrically assisted bikes can be based on two categories a first kind is represented by a pure electric bike, which integrates electric motor into bicycle frame or wheels, and it is driven by motor force just using a handlebar throttle; a second kind is a power-assisted bicycle, or called pedelec hereafter, which is a human–electric hybrid bicycle that supports the rider with electric power only when the rider is pedalling. The pedelec are characterized by a driving torque due to both an electric motor torque and a rider one [2]. Consequently, the management of the assistance torque is of particular interest in order to reach the desired performances in terms of driveability and comfort.