Department of Electrical Engineering

1.3.2

Project Documents

"Shri Gajanan Maharaj Prasanna"
P. R. Pote Patil Edu. & Welf. Trust's, Group of Institutions,
College of Engineering & Management, Amravati Institute Code : 1107
(Recognized by AICTE, New Delhi, Approved by Govt. of Maharastra & Affiliated to SGBAU, Amravati)
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Department of Electrical Engineering (Shift-I)

List of Projects with Project Title
Class: BE Final Year Sem-8
Session: 2021-22

Sr. No	Group	Project Title	Guide	PRC Members
1	Vaishnavi Sunilrao Shirbhate Yogini Yashwant Chauragade Hariti Vinod Raut Samiksha Jaykumar Dhote Sharvaree Vasant Raut	Intelligent Highway of the Future Utilizing Green Energy	Mrs. Y.D. Shahakar	Mr.A.A.Ghute, Mr. A.P.Pundkar
2	Anand Mugal Sanit Isal Naved Khan Sopan Lipte Tejas Jawanjal Avinash Wakde	IOT Based Alert System	Dr. A.S. Telang	Ms.P.M. Mankar, Mr.S.V.Sonkhaskar
3	Avantika R. Devikar Grishma Bhalavi Komal Agarkar Akshay Dhurde Akash Nawalkar	Transformer Paramete Monitoring by IOT	Ms. P.R. Rane	Mr.D.A.Shahakar, Mr. A.K.Duchakke
4	Pawan Baliram Ingle Shilvant Devendra Hatole Kashyap Pramod Bodile Prashik Arun Tayade Sumit Balkrushna Patkar	Power Genration Using Waste Heat by Thermo Electric Genrator	Mr. A.P.Pundkar	Mr.S.A.Jalit, Mr.S.V.Sonkhaskar
5	Rani B. Sakhe Ruchita Charate Snehal Pojage	Automatic Power Factor Detector and Corrector Using Ardino Mini Pro	Ms. P.M. Mankar	Dr.S.B. Warkad, Mr. A.P.Pundkar

	Sagar Deshmukh Rutuja Dhawane			
6	Aniket Ghurde Himanshu Dakode Prajwal Parve Yashraj Mandpe Roshan Bhakare Pranjali Uike	Electrical Vehicle Charging Station by Solar	Mr. S.A. Jalit	Dr.A.S.Telang, Mr.D.A.Shahakar
7	Kajal Ingale Vaishnavi Awaghad Vaishnavi Dahane Shardhha Ingole Pallavi Pakhale Pranali Pakhale	Design of Iot Based Overcurrent Protection-Realization of Overcurrent Relay Characteristics	Dr. S.B.Warkad	Ms. P.R. Rane, Mr.A.A.Ghute
8	Sham Bhatusing Rathod Kanchan Ganeshrao Makode Dipak Dilip Rathod Pankaj Jatale Anushree Shivanand Khandokar Shubham Katore	Solar Operated Farm Protection Alert Device	Mr.. A.K.Duchakke	Mrs.Y.D.Shahakar, Ms. S.V. Kalmegh
9	Bhavana Mule Anuja Thakare Aniket Balveer Vijay Taksande Sheikh Maroof Kanchan Khandare	Detection of Fault Location in Underground Cable Using Arduino Technology	Mr. D.A.Shahakar	Mr. S. A. Jalit, Mr. A. K. Duchakke
10	Mayur Thorat Krishna Wankhede Vaishanavi bhuyarkar Hitesh bhurghate Priti sanjay Ingale Ram Malkhede	IOT Based Fall Detection Monitoring System for Old Age People	Ms. S.V. Kalmegh	Mrs. Y. D.Shahakar, Dr. S.B.Warkad
11	Rhushikesh Ingole Hrutik Bisane Pranav Chikate Prathamesh Tigane	Iot based biometric attendance system	Mr. A.A. Ghute	Dr. A. S.Telang Ms. S.V. Kalmegh

	Tejas Gulhane Shubham Waware			
12	Abhishek Shinde Akash modhe Pranav Chaudhari Abhinav Shinde Saurabh Bhandare	Fault Detection in Three Phase Transmission Line	Mrs. Y.D. Shahakar	Ms. P.R. Rane, Mr. A. A. Ghute
13	Jagdish Pote Divyani Aher Gauri Khate Sarika Chavan Rutiksha Shevatkar	Self Defence Device for Women Safety	Dr. A.S. Telang	Dr. S.B. Warkad, Mr. S.A. Jalit
14	Tejas Kale Aman Waghmare Rutik Hiwse Aditya Dongre Rahul Bhagat Rutwik Holey	Wireless charging of electrical vehicle battery	Mr. A.A. Ghute	Mr. D.A.Shahakar, Mr. S.V.Sonkhaskar
15	Shrayesh Awaghad Vaishali Kale Vaishnavi Akotkar Gunjan Dhanorkar Sahil Bhalerao	IoT Based Patients Health Monitoring System	Ms. P.M.Mankar	Mr. A.K.Duchakke, Mr. A.P.Pundkar

H.O.D. (Elect. Dept.)
P.R.Pote (Patil) College of Engg.& Management
Amravati.

Prof. D. A. Shahakar
Head of the Department

Code-1107

Department of Electrical Engineering (Shift-II)

List of Projects with Project Title

Class: BE Final Year Sem-8

Session: 2021-22

Sr. No	Group	Project Title	Guide	PRC Member
1	Onkar Bhagat Sumit Raut Rushikesh Madavi Nikhil Harley Aditya Raut Rushikesh Hete	Data Transmission through visible light by using Light-fidelity technology	Mr.S.V.Sonkhaskar	Mr.A.A. Ghute, Ms. S.V. Kalmegh
2	Rudrapratap Somwanshi Sarwesh Raghuwanshi Indrajeet Rum Shreyas Landge Yashodeep Pakhre Anand Matkar	Gas leakage Detection using Arduino And GSM module	Mr.A. K. Duchakke	Mr.D.A.Shahakar, Mr.A.P.Pundkar
3	Shubham Mahulkar Pooja Mondhe Prajkta Shrirao Komal Pimpalkar Harshal Kaikade Sampada Wankhade	Home Automation System	Ms. S.V. Kalmegh	Ms.P.R.Rane, Mr.S.V.Sonkhaskar
4	Palak Jaiswal Rutuja Madhav Tidake Renuka Vijay Navghare Tarika Govindrao Kale Nisha Ratale Anjali warkad	Uvc Sanitisation Sterilizationcabinet	Mrs. Y.D. Shahakar	Mr.S.A.Jalit, Mr.A.P.Pundkar
5	Vyanktesh Shrikrushna Hande Shashikant Deshmukh Abhishek Umbarkar Mayur Deshmukh Adarsh Gadge Hemant Dhok	Distance Calculation of Underground Cable Fault	Mr. S.A. Jalit	Mr.D.A.Shahakar, Ms. S.V. Kalmegh
6	Tushar Khande Sanket Kakde Viraj Zambre Prashant Chauhan Ishaque Sheikh	Smart Energy Meter	Mr. A. P. Pundkar	Dr.S.B.Warkad, Mr.A. K. Duchakke

	Gopal Chude			
7	Rushikesh a Banagle Rushikesh Wankhade Pradumnya Gangane Nandini Sonar Vaishanavi Mandwale	Design and Implementation on Iot Based Residual Current Circuit Breaker	Dr.S.B. Warkad	Mrs.Y.D.Shahakar , Mr.S.V.Sonkhaskar
8	Manashri Rajendrarao Nerkar. Gauri Yawale. Prachi Vaidya. Prathamesh Tarale. Prajwal Gawai. Karan Band	Hybrid charging power station	Mr.S.V.Sonkhaskar	Ms.P.M. Mankar, Mr.A. K. Duchakke
9	Prassana Gulaxe Abhinav Gangiwale Swapnil Bhad Sushil Karhale Ashutosh Jawanjal Roshan R Vairalkar	Implementation of Vehicle Black Box System by IOT Based Apporoch	Mr.A.P.Pundkar	Mr.S.A.Jalit, Ms. S.V. Kalmegh
10	Hemsiddhi Sanjay Kayande Anushri Kanholakar Deepali Aher Ashwini Ingle Saurabh Vyavhare	Smart Sleeping Pod	Mr.D.A.Shahakar	Ms. P.M. Mankar, Mr.A. K. Duchakke
11	Bhagyashri Ban Sakshi Thote Shrutika Bijwe Prajvali Meshram Pranali Bobade	Iot Based Energy Management System	Ms. S.V. Kalmegh	Ms.P.M. Mankar, Mr.A.P.Pundkar
12	Tushar Mohurle Dinanath Komrekar Mayur Shinde Sakshi Thakre Mayuri Mahajan	Solar Water Pump Control With Four Different Times Slots With Power Saving Application	Ms. P.M.Mankar	Ms. P.R. Rane, Mr.A.A. Ghute
13	Prathamesh Umap Prashant Datey Ajay Ingle Nikhil Kaikade Dhiraj Dhoke	Wavelet Entropy Based Protection of Transmission Line	Dr.A.S.Telang	Mr.A.A. Ghute, Mr.S.V.Sonkhaskar
14	Vaibhav Malokar Ajay Kandarkar Mukesh Dhale Dipti Nimkarde Nikita Gawande	Battery managment system using IOT	Mr.A.A. Ghhute	Dr.A.S.Telang, Mr.S.A. Jalit
15	Arati Sunil Lande Pratiksha Gondane Darshana Kedar Bhushan chaware Neha Rathod	Underground Fault Detection	Ms. P.M. Mankar	Ms. S.V. Kalmegh, Mrs. Y.D. Shahakar
16	Mandar Wajpe Ravindra Rakhonde Tejas Puri	Vehicle-to-grid Technology in a Micro-grid Using Dc Fast	Mr. D.A.Shahakar	Mr.A.A. Ghute, Dr.S.B.Warkad

	Nikhil Chaudhari Vikas Dhule Hrushikesh Chinchkhede	Charging Architecture		
17	Mrunal Choudhary Saurabh Mishra Arpita Gadekar shruti Dongre Tanaya Bhombe Aaditya Mankar	Iot Based Accident Prevention and Tracking System	Prof. P. R. Rane	Mr.A.K.Duchakke, Mr.S.A. Jalit

H.O.D. (Elect. Dept.)
P.R.Pote (Patil) College of Engg.& Management
Amravati.

Prof. D. A. Shahakar
Head of the Department

Code-1107

"INTELLIGENT HIGHWAY UTILIZING GREEN ENERGY"

Project Report

Submitted in partial fulfilment of the Requirements

For the Degree

of

Bachelor of Engineering

In

Electrical (Electronics & Power)

By

Vaishnavi S. Shirbhate

Yogini Y. Chauragade

Hariti V. Raut

Sharvaree V. Raut

Samiksha V. Dhote

Under the Guidance of

Prof. Y.D.SHAHAKAR

Department of Electrical (Electronics and Power) Engineering

P. R. Pote (Patil) Edu. & Welfare Trusts, Group of Institutions, College of Engineering and Management

Amravati-444605 (M.S.)

Department of Electrical Engineering

P. R. Pote(Patil) Edu. & Welfare Trusts, Group of Institutions.
College of Engineering and Management
Amravati-444605

2021-22

CERTIFICATE

Certified that the contents of this thesis entitled **"Intelligent Highway Utilizing Green energy"** is a bonafide work carried out under my supervision by **Vaishnavi Shirbhate , Yogini Chauragade, Sharvaree Raut , Hariti Raut , Samiksha Dhote** in partial fulfilment of the requirements for the degree in Electrical Engineering (Electronics and Power).

Date : 07/05/2022

Prof. Y.D. Shahakar
Guide

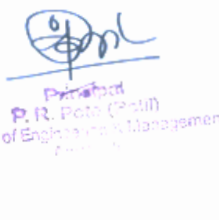
Prof. D.A. Shahakar
HOD

Dr. D.T. Ingole
Principal

ABSTRACT

In todays globalized world , Highway is the means to join countries , cities, towns, etc. In recent years all the old technologies changes into new technology like fridge, TV ,Washing Machine , cooler etc. All the "Smart Highway" is the concept to make highway road smarter ,safer ,and more energy efficient for generating electricity using solar energy and wind energy and it will be stored in a battery storage.using these energy in three ways , first is a automatic street lighting second for charging station to charging the vehicals and third for tree watering purpose.

Automatic street lighting the automatically ON/OFF the light in day time it will remain OFF and in the time of evening when the vehical pass on road it will ON with full intencity. Also providing the panic emergency and fault button to the pole for safty purpose.The energy generated by solar and wind will be give to the charging stion to charge the vehical. In Tree watering we are using sensors to sense the level of moistures and it work as per the requirement of the water. so in this paper we are trying to throw some light of techniques of utilizing green energy on Highway in fruitful manner.



"Electric Vehicle Charging Station Using Solar Power"

Project Report

Submitted in partial fulfilment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical (Electronics & Power)

By

Aniket Ghurde

Himanshu Dakhode

Roshan Bhakre

Prajwal Parve

Pranjali Uike

Hansraj Mandpe

Under the Guidance of

Prof. S.A. Jalit

Department of Electrical (Electronics and Power) Engineering

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6A

Department of Electrical Engineering

P. R. Pote (Patil) Edu. & Welfare Trusts, Group of Institutions,
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Amravati-444605

2021-22

CERTIFICATE

Certified that the contents of this thesis entitled **"Electric Vehicle Charging Station using solar power"** is a Bonafede work carried out under my supervision by **Prof. S.A. Jalit** in partial fulfilment of the requirements for the degree in Electrical Engineering (Electronics and Power)

Date :

Prof. D.A. Shahakar

HOD

Prof. S.A.Jalit

(Guide)

Principal
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P.R. Pote (Patil) Edu. & Welf. Trusts Group of Inst. Code-1107 AMRAVATI

Abstract

Global warming has led to the large adoption of Electric Vehicles(EVs) which appear to be the best replacement to IC engines. Due to increased number of EVs in the road, charging of the vehicles with conventional fossil fuel-based grid is not economical and efficient. Thus, a renewable energy-based charging station finds immense potential and control for electric vehicle charging. An electric vehicle charging station integrating solar power and a Battery Energy Storage System (BESS) is designed for the current scenario. For uninterrupted power in the charging station an additional grid support is also considered without becoming an extra burden to the grid. An efficient design of charging station with MPPT, PID and current control strategy is developed for the optimal power management between solar, BESS, grid with the EVs in the charging station.

"Design of IoT based Overcurrent Protection- Realization of Overcurrent Relay Characteristics"

Seminar Report

Submitted in partial fulfilment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical (Electronics & Power)

By

Kajal D. Ingale
Shraddha S. Ingole
Vaishnavi D. Dahane
Vaishnavi S. Awaghad
Pallavi S. Pakhale
Pranali N. Pakhale

Under the Guidance of

Dr. SANJAY WARKAD

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Department of Electrical Engineering

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions

College of Engg. & Management

Amravati-444605 (M.S.)

2021-2022

CERTIFICATE

This is to certify that the seminar report entitled

"Design of IoT based Overcurrent Protection- Realization of Overcurrent Relay Characteristics"

Submitted by

Kajal D. Ingale
Shraddha S. Ingole
Vaishnavi D. Dahane
Vaishnavi S. Awaghad
Pallavi S. Pakhale
Pranali N. Pakhale

Is in partial fulfilment of the requirement for the award of Engineering in Electrical ((Electronics & Power) by SGBAU, Amravati and is a bonafied work carried out and completed under any guidance and supervision during 2020-2021 session.

Dr. S. B. Warkad

(Guide)

Prof. D. A. Shahakar

(Head of Department)

Code-1107

Principal
P. R. Pote (Patil)
College of Engineering & Management

ABSTRACT

The purpose of electrical protective relays is to de-energize the faulted part of the system and prevent the rest of the system from being affected in the event of an abnormal condition or fault, such as a short circuit. Overcurrent protection mainly used in the power system for protection of apparatus, transmission lines having various characteristics. Earlier electromagnetic relay was dominant to address power system protection issues. Later, digital protection systems are adopted to gain its benefits. This article proposes a Internet of Things (IOT) based over current relay used for protection of apparatus. In this article a IOT based overcurrent relay is designed and implemented to realize characteristics of overcurrent relay i.e. instantaneous, definite time, inverse definite time and extremely inverse time. A design methodology is proposed which includes components of IOT based relay, programming to realize overcurrent characteristics. The module includes two microcontroller and Node MCU, current sensors, relay module, switches and wifi module. The module is tested on various overcurrent characteristics and results are presented. The overcurrent protective relay is working for various characteristics and notifications are received by the users through wifi module

"SOLAR OPERATED FARM PROTECTION DEVICE"

Project Report

Submitted in partial fulfilment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical (Electronics & Power)

By

Sham B. Rathod

Dipak D. Rathod

Anushri S. Khandokar

Pankaj V. Jatale

Shubham R. Katore

Kanchan G. Makode

Under the Guidance

of

Prof. A. K. Duchakke

Department of Electrical (Electronics and Power) Engineering

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20121-22

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Certified that the contents of this thesis entitled "**SOLAR OPERATED FARM PROTECTION DEVICE**" is a bonafide work carried out under my supervision by **Sham Rathod , Pankaj Jatale , Dipak Rathod , Shubham Katore , Anushri Khandokar , Kanchan Makode** in partial fulfilment of the requirements for the degree in Electrical Engineering (Electronics and Power).

Date : 19/05/22

Prof. A. K. Duchakke

Guide

Prof. D. A. Shahakar

HOD

Dr. D. T. Ingole

Principal

Code-1107

Principal
P. R. Pote (Patil)
College of Engineering & Management

ABSTRACT

Crops in farms are many times ravaged by local animals like buffaloes, cows, goats, birds, and fire etc. This leads to huge losses for the farmers. It is estimated that 30-40 percent of crops are destroyed annually due to attacks by wild animals in India. Elephants, pigs, boars and deer are the most common perpetrators of the destruction. In some districts of Odisha and Kerala, elephants destroy up to 60 percent of crops the claims for which were not payable by insurance companies. It is not possible for farmers to barricade entire fields or stay on field 24 hours and guard it. So here we propose automatic crop protection system from animals.

This is a Automatic Battery charging system Using Solar cell. This system uses a light sensor(LDR) to activate alarm System during night to return the wild animals approaching near the field . In such a case the sensor signals (Signal from LDR) activates the alarm system and Lighting system made To scare the animals. The alarm also gives alert to the farmer to about animals if he is near to field. Therefore, the designed system is affordable and useful to the farmers. The designed system won't be harmful to animals and person , and it protects the farm areas. further implementation can be carried out according to the requirement of farm , Device can adjust and modified.

A

PROJECT REPORT

On

"Implementation of Digital Notice Board Using Raspberry Pi And IOT"

Submitted in partial fulfilment of the Requirements

For the Degree of Bachelor of Engineering

In

Electrical Engineering

By

Mr. Aditya S. Dadgal

Mr. Sumit K. Sande

Mr. Prajwal R. Ramekar

Mr. Prathamesh R. Kadam

Ms. Vaishnavi V. Pihulkar

Under the Guidance of

Dr. S. B. Warkad

Department of Electrical Engineering

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions,

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Amravati-444605

2021-2022

Department of Electrical Engineering
P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions
College of Engg. & Management
Amravati-444605 (M.S.)

2021-2022

CERTIFICATE

This is Certified that the project report entitled, **"Implementation of Digital Notice Board using Raspberry Pi and IOT"** in the partial fulfilment of the requirements for the award of **Bachelor of Engineering in Electrical**. The result of the work completed by us under guidance within the three walls of the institute.

Submitted By

Mr. Aditya S. Dadgal

Mr. Sumit K. Sande

Mr. Prajwal R. Ramekar

Mr. Prathamesh R. Kadam

Ms. Vaishnavi V. Pihulkar

Date :

Dr. S. B. Warkad

(Guide)

Prof. D. A. Shahakar

(H.O.D)

Dr. D. T. Ingole

(Principal)

Abstract

Notice board is a necessary thing in any institution or public utility places like bus stations, railway stations, schools, shopping centres, etc. But pasting various notices day today is a difficult process. A separate person is required to do this task. This project is about an advanced wireless notice board. By replacing conventional Analog type notice boards with digital notice boards we can make information dissemination much easier in a paperless community. The project is built with raspberry-pi which is most important in this system. The display is obtained on an LCD monitor display. Wi-Fi is used for data transfer. At any time we can add as well as remove the text according to our requirement. At transmitter authorized android phone, as well as desktop/laptop, is used for sending notices. Raspberry system's coding will be done using python language. The implementation of project is validated for Electrical Department of PRPCEM. Many users can access updated notices on the digital notice board by providing a password.

A

PROJECT REPORT

ON

"LIGHT FIDELITY TECHNOLOGY AUDIO TRANSMISSION THROUGH VISIBLE LIGHT"

Project submitted to

Sant Gadge Baba Amravati University

In

Partial fulfillment of requirement for degree of

Bachelor of Engineering

In

Electrical (Electronics & Power)

Submitted By

Mr. Onkar P. Bhagat

Mr. Sumit G. Raut

Mr. Rushikesh G. Madavi

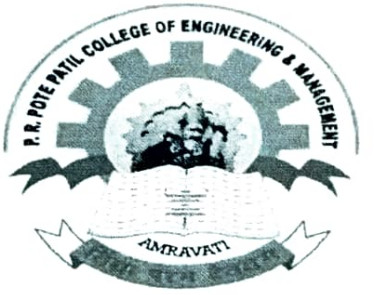
Mr. Aditya D. Raut

Mr. Nikhil V. Harle

Mr. Rushikesh R. Hete

Guided by

Prof. A. A. Ghute



Department of Electrical (Electronics and Power) Engineering

P. R. Pote (Patil) Edu. & Welfare Trusts, Group of Institutions, College of Engineering and Management

Amravati-444605 (M.S.)

ACADEMIC YEAR 2021-22

P. R. Pote (Patil) Edu. & Welfare Trusts, Group of Institutions, College of Engineering and Management

Amravati-444605 (M.S.)

ACADEMIC YEAR 2021-22

CERTIFICATE

DEPARTMENT OF ELECTRICAL (Electronics and Power)

ENGINEERING.

This is to certify that the Project report entitled, **"LIGHT FIDELITY TECHNOLOGY, AUDIO TRANSMISSION THROUGH VISIBLE LIGHT"** which is being submitted herewith for the award of Degree. Is the result of the work completed by us under our supervision and guidance within the four walls of the institute and the same has not been submitted elsewhere for the award of any degree.

SUBMITTED BY

Mr. Onkar P. Bhagat
Mr. Sumit G. Raut
Mr. Rushikesh G. Madavi
Mr. Aditya D. Raut
Mr. Nikhil V. Harle
Mr. Rushikesh R. Hete

Prof. A. A.Ghute
(Guide)

Prof. D. A. Shahakar
(H.O.D)

Principal
P. R. Pote (Patil)
College of Engineering & Management
Amravati

Abstract-

Whether you're using wireless internet in a coffee shop, stealing it from the guy next door, or competing for bandwidth at a conference, you've probably gotten frustrated at the slow speeds you face when more than one device is tapped into the network. As more and more people and their many devices access wireless internet, clogged airwaves are going to make it increasingly difficult to latch onto a reliable signal.

But radio waves are just one part of the spectrum that can carry our data. What if we could use other waves to surf the internet? One German physicist, DR. Harald Haas, has come up with a solution he calls "Data Through Illumination"—taking the fiber out of fiber optics by sending data through an LED light bulb that varies in intensity faster than the human eye can follow. It's the same idea behind infrared remote controls, but far more powerful.

Haas says his invention, which he calls D-Light, can produce data rates faster than 10 megabits per second, which is speedier than your average broadband connection. He envisions a future where data for laptops, smart phones, and tablets is transmitted through the light in a room. And security would be a snap—if you can't see the light, you can't access the data.

Li-Fi is a VLC, visible light communication, technology developed by a team of scientists including Dr Gordon Povey, Prof. Harald Haas and Dr Mostafa Afgani at the University of Edinburgh. The term Li-Fi was coined by Prof. Haas when he amazed people by streaming high-definition video from a standard LED lamp.

Keywords- Li-Fi Transmission, Wi-Fi, RFID Tags, Light-emitted diode (LED)

Abstract-

Whether you're using wireless internet in a coffee shop, stealing it from the guy next door, or competing for bandwidth at a conference, you've probably gotten frustrated at the slow speeds you face when more than one device is tapped into the network. As more and more people and their many devices access wireless internet, clogged airwaves are going to make it increasingly difficult to latch onto a reliable signal.

But radio waves are just one part of the spectrum that can carry our data. What if we could use other waves to surf the internet? One German physicist, DR. Harald Haas, has come up with a solution he calls "Data Through Illumination"—taking the fiber out of fiber optics by sending data through an LED light bulb that varies in intensity faster than the human eye can follow. It's the same idea behind infrared remote controls, but far more powerful.

Haas says his invention, which he calls D-Light, can produce data rates faster than 10 megabits per second, which is speedier than your average broadband connection. He envisions a future where data for laptops, smart phones, and tablets is transmitted through the light in a room. And security would be a snap—if you can't see the light, you can't access the data.

Li-Fi is a VLC, visible light communication, technology developed by a team of scientists including Dr Gordon Povey, Prof. Harald Haas and Dr Mostafa Afgani at the University of Edinburgh. The term Li-Fi was coined by Prof. Haas when he amazed people by streaming high-definition video from a standard LED lamp.

Keywords- Li-Fi Transmission, Wi-Fi, RFID Tags, Light-emitted diode (LED)

"Hybrid Charging Station"

Project Report

Submitted in partial fulfilment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical (Electronics & Power)

By

Manashri R. Nerkar

Gauri L. Yawale

Prachi P. Vaidya

Prathamesh U. Tarale

Prajwal H. Gawai

Karan R. Band

Under the Guidance of

Prof. P. R. Rane

Department of Electrical (Electronics & Power) Engineering

P. R. Pote (Patil) Edu. & Welfare Trusts, Group of Institutions, College of Engineering and Managemet Amravati-444605 (M.S)

8B

Department of Electrical Engineering

P. R. Pote (Patil) Education & Welfare Trusts, Group of Institutions,

College of Engineering and Management

Amravati-444605

2021-2022

CERTIFICATE

Certified that the contents of thesis entitled **"Hybrid Charging Station"** is a bonafide work carried out under my supervision by **Prof. P.R. Rane** in partial fulfilment of the requirements for the degree in Electrical Engineering (Electronics and Power).

Date: 26/5/22

Prof. P. R. Rane

Guide

Prof. D. A. Shahakar

HOD

Code-1107

Principal
P. R. Pote (Patil)
College of Engineering & Management

Principal

Abstract

A hybrid micro grid-powered charging station reduces transmission losses with better power flow control in the modern power system. However, the uncoordinated charging of battery electric vehicles (BEVs) with the hybrid micro grid results in ineffective utilization of the renewable energy sources connected to the charging station. Furthermore, planned development of upcoming charging stations includes a multiport charging facility, which will cause overloading of the utility grid. The project works on (1) the energy management strategy and converter control of multiport BEV charging from a photovoltaic (PV) source and its effective utilization; (2) maintenance of the DC bus voltage irrespective of the utility grid overloading, which is caused by either local load or the meagerness of PV power through its energy storage unit (ESU). In addition, the charge controller provides closed loop charging through constant current and voltage, and this reduces the charging time. The aim of an energy management strategy is to minimize the usage of utility grid power and store PV power when the vehicle is not connected for charging. To balance the load demand, the proposed system is connected to the grid through a three phase bidirectional DC-AC (alternating current) inverter. The obtained results show that the proposed renewable charging mechanism is suitable for EV charging thus help creating pollution free environment.

Keywords: Electric Vehicles, Synchronous Generator, Recharging Mechanism, Solar Energy, Wind Energy hybrid microgrid, battery electric vehicle, energy management strategy.

"Detection Of Fault Location In Underground Cable Using IOT"

Project Report

Submitted in partial fulfillment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical (Electronics & Power)

By

Bhavana Mule

Aniket Balvir

Shaikh Maroof

Anuja Thakare

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Department of Electrical Engineering

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Certified that the contents of this thesis entitled **"Detection Of Fault Location In Underground Cable Using IOT"** is a bonafide work carried out under my supervision by **Bhavana Mule** in partial fulfillment of the requirements for the degree in Electrical Engineering (Electronics and Power).

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Abstract

The report is intended to detect the location of fault in underground cable lines from the base station to exact location in kilo meters using an Arduino micro controller kit. In the urban areas, the power cable runs in undergrounds instead of overhead lines. Whenever the fault occurs in underground cable it is difficult to detect the exact location of the fault for process of repairing that particular cable. The proposed technology uses Arduino controller to identify the fault and it is indicated in LCD display in kilo meters. Main advantages of this system are low cost, less complexity, long distance applications.

KEYWORDS- **Underground Cable, Fault Location, Location Methods, Arduino**

A

Project Report

On

"Battery Monitoring System using ESP8266 & Arduino IOT Cloud"

Submitted in partial fulfillment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical Engineering (Electronics & Power)

By

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Mukesh R. Dhale

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ABSTRACT

This paper describes the application of Internet-of-things (IoT) in monitoring the performance of electric vehicle battery. It is clear that an electric vehicle totally depends on the source of energy from a battery. However, the amount of energy supplied to the vehicle is decreasing gradually that leads to the performance degradation. This is a major concern for battery manufacture. In this work, the idea of monitoring the performance of the vehicle using IoT techniques is proposed, so that the monitoring can be done directly.

The proposed IoT-based battery monitoring system is consists of two major parts i) monitoring device and ii) user interface. The Battery management system monitors all the properties of the battery like the voltage, current, temperature & auto cut-off system. This ensures the safety and proper handling of electrical vehicle battery. Based on experimental results, the system is capable to detect degraded battery performance and sends the battery status on their smart phones or Computer Dashboard from anywhere. In our project we use 16x2 LCD Display in this IoT-based battery monitoring system, we will use ESP8266 wifi module along with Arduino Uno to send the battery status data to Thing Speak Cloud. The Thing speak will display the battery voltage along with the battery percentage in both the Charging and discharging cases

Keywords—Battery, Battery Management System, Autonomous Vehicles, Electric Vehicles, Internet-of-Things

A

PROJECT REPORT

ON

"Solar Street Light with Auto Intensity"

Project submitted

To

Sant Gadge Baba Amravati University

In

Partial fulfilment of the requirement for the award of degree of

Bachelor of Engineering

In

Electrical Engineering

Submitted By

Mr. Rushikesh S. Bhivate

Mr. Yash S. Thakur

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Date : 26/05/2022

Prof. A. P. Pundkar
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Prof. D. A. Shahakar
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ABSTRACT

The main aim of this project is to utilize the application of the arduino board to control the intensity of street light. As the traffic decreases slowly during late-night hours, the intensity gets reduced progressively till morning to save energy and so, the street lights switch on at the dusk and then switch off at the dawn, automatically. The process repeats every day. White Light Emitting Diodes (LED) replaces conventional HID lamps in street lighting system to include dimming feature. The intensity is not possible to be controlled by the high intensity discharge (HID) lamp which is generally used in urban street lights. LED lights are the future of lighting, because of their low energy consumption and long life.

LED lights are fast replacing conventional lights because intensity control is possible by the pulse width modulation. This proposed system uses an Arduino board and a rectified-power supply. String of LED is interfaced to the Arduino board with a MOSFET device. The intensity control of the LED light is possible by varying duty cycle from a DC source. A programmed Arduino board is engaged to provide different intensities at different times of the night using PWM technique. This project is also enhanced by integrating the LDR to follow the switching operation precisely.

"IOT BASED ACCIDENT Prevention & Tracking ~~DETECTION AND RESCUE~~ SYSTEM"

Project Report

Submitted in partial fulfilment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical (Electronics& Power)

By

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Certified that the contents of this thesis entitled **"IOT BASED ACCIDENT DETECTION AND RESCUE SYSTEM"** is a bonafide work carried out under my supervision by **Mrunali B. Chaudhari , Tanaya A. Bhombe , Saurabh P. Mishra , Aditya V. Mankar , Arpita G. Gadekar , Shruti R. Dongre** in partial fulfilment of the requirements for the degree in Electrical Engineering(Electronics and Power).

Date : 21/05/2022

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ABSTRACT

Road accidents are very unpredictable. Every day, a considerable amount of valuable lives are lost as result of car collisions. It is the most critical field that requires significant exploration, given the high rates of fatalities related to road crashes. Driver error and delays in emergency department response time are the two most common causes. To rescue wounded people, an efficient road accident identification and information sharing system is needed. A device that communicates information about the crash site to local emergency responders to respond quickly is critical.

Numerous scholars have suggested a variety of automatic accident warning systems in the research literature. Among them are Smartphone-based accident detection, Global System for Mobile Communications (GSM) and Global Positioning System (GPS) technology, vehicular ad hoc networks, various machine learning algorithms, and mobile apps. Every vehicle should have an automatic road accident detection and information communication system installed. We offer a critical review of numerous emerging methodologies for forecasting and avoiding road crashes in this article, emphasizing their benefits, shortcomings, and problems that must be resolved in order to ensure traffic safety and save lives.

KEYWORDS: IOT, SAFETY CHAIN, SENSORS , BLYNK APPLICATION, GPS.

A

PROJECT REPORT

On

"Distance calculation of underground cable fault"

Submitted in partial fulfilment of the Requirements

For the Degree of Bachelor of Engineering

In

Electrical Engineering

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Department of Electrical Engineering

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ABSTRACT

Underground cable power transmission and distribution system aresusceptible to faults. Accurate fault location for transmission lines is of vital importance. A quick detection and analysis of faults is necessity of power retailers and distributors. To locate a fault in the cable, the cable must first be tested for faults. This prototype uses the simple concept of OHMs law. The current would vary depending upon the length of fault of the cable. This prototype is assembled with a set of resistors which represents cable length in Kilo meters and fault creation is done by a set of switches at every known Kilo meters (km's) to cross check the accuracy of the same. The fault occurring at what distance and which phase is displayed on a 16X2 LCD interfaced with the microcontroller. The program is burned into ROM of microcontroller. The power supply consists of a stepdown transformer 230/12V, which steps down the voltage to 12V AC. This is converted to DC using a Bridge rectifier. The ripples from DC are removed by using a capacitive filter which is then regulated to +5V using a voltage regulator 7805 that is required for the operation of the microcontroller and other components in the circuit.

IOT Based Home Automation System

Project Report

Submitted in partial fulfilment of the Requirement

For the Degree of

Bachelor of Engineering

In

Electrical (Electronics & Power)

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ABSTRACT

This project presents the overall design of Home Automation System (HAS) with low cost and wireless system. It specifically focuses on the development of an IOT based home automation system that is able to control various components via internet or be automatically programmed to operate from ambient conditions. In this project, we design the development of a firmware for smart control which can successfully be automated minimizing human interaction to preserve the integrity within whole electrical devices in the home. We used Node MCU, a popular open source IOT platform, to execute the process of automation. Different components of the system will use different transmission mode that will be implemented to communicate the control of the devices by the user through Node MCU to the actual appliance. The main control system implements wireless technology to provide remote access from smart phone. We are using a cloud server-based communication that would add to the practicality of the project by enabling unrestricted access of the appliances to the user irrespective of the distance factor. We provided a data transmission network to create a stronger automation. The system intended to control electrical appliances and devices in house with relatively low-cost design, user-friendly interface and ease of installation. The status of the appliance would be available, along with the control on an android platform. This system is designed to assist and provide support in order to l fulfil the needs of elderly and disabled in home. Also, the smart home concept in the system improves the standard living at home.

"Solar Water Pump Irrigation With Different Time Slots"

Project Report

Submitted in partial fulfilment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical

By

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Date:21/05/2022

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ABSTRACT

The purpose of using Non renewable sources of energy in excess mount for our needs. As this type of minerals like coal etc. are exhausting so we have to depend on the renewable sources of energy like solar, wind, etc. For smaller application it is better to use renewable energy. Irrigation is done to ensure availability of water for plant growth. Traditional irrigation methods are not very efficient and require human operator for there day-to-day operations. Automatic irrigation systems are more efficient and less dependent on human operators and are therefore cheaper on the long run. Different approaches at developing automatic irrigation system have been reported with their different advantages and disadvantages.In this paper, a smart irrigation system which has capacity to remotely monitor essential farm variables such as soil moisture, and remotely operate the irrigation equipment is developed. Experimental tests on the developed system show that it is effective and could be adapted easily for practical use. Cost effective solar power can be the answer for all our energy needs. Solar powered smart irrigation systems are the answer to the Indian farmer. This system consists of solar powered water pump along with an automatic water flow control using a moisture sensor. It is the proposed solution for the present energy crisis for the Indian farmers. This system conserves electricity by reducing the usage of grid power and conserves water by reducing water losses.

Keywords: Solar Energy, Arduino, Dc Motor, Soil Moisture Sensor, Solenoid Valve.

A

Project report

On

"Automatic Phase Selector with Regulating Power Supply"

Submitted in partial fulfillment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical Engineering

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This is Certified that the project report entitled, "**Automatic Phase Selector With Regulating Power Supply**" in the partial fulfilment of the requirements for the award of Bachelor of Engineering in Electrical. The result of the work completed by us under guidance within the three walls of the institute.

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ABSTRACT

Power stability in developing countries creates a need for automation of electrical power generation. This automation is required as the rate of power outage becomes predominantly high. Most industrial and commercial processes being dependent on power supply, if the processes of change-over are manual, serious time is not wasted but also creates devices or machine damage from human error during the change-over connections, which could bring massive losses. This change over switch box separate the source between the generator and public supply when there is power supply outage from public supply, someone must go and change the line to generator. Thus, when power supply is restored someone must put OFF the generator and then change the source line from generator to public supply.

"Remote Electricity Billing System Using GSM Modem"

Project Report

Submitted in partial fulfilment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical (Electronics& Power)

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Abstract

The remote meter reading and spot billing are well recognized by the various electricity boards in the country today. Not only does spot billing lead to much greater revenue-collection efficiencyand better decision systems, it also brings intangibles like transparencyand better customer serviceto the system. Though there exist various devices in the market that aid in spot-meter billing, none has become either an industry standard or widely prevalent. The reasons range from limited computing power and lack of customizability to high price and absence of local technical support.Remote electricity billing is a unique concept, in which the electricity board can collect the consumed units data from consumer on mobile phone using GSM network. Each consumer is provided with a unique energy meter, which is having a GSM modem, microcontroller unit and a display unit internally. A SIM card is required for communication. Whenever this system receives an SMS from electricity board, it calculates the number of units consumed and billing amount on slab rate, displays on LCD for user interface. This system also sends the same message to the electricity board for departmental information and database.The unique feature of this system is, the electricity board can disconnect or reconnect the connection from remote place through the mobile phone. As this project works on GSM network, the system can be controlled from any part of the world.

"Implementing Vehicle Black Box System by IoT Based Approach"

Project Report

Submitted in partial fulfillment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical (Electronics & Power) By

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Abstract

The Black Box concept is derived from the aviation industry, a flight recorder, colloquially known asa black box; although it is now orange-colored for easy search, is an electronic recording device placed in an aircraft for the purpose of facilitating the investigation of aviation accidents and incidents. With the advancement in technology and cost coming down, in our project we attempt to build similar device for our cars, not only this device will help us in post-crash analysis but also it will help us in quicker emergency rescue operation. Our research has been targeted towards building an integrated system for emergency rescue services in the event of a road accident. The purpose of the project is to find the accident location using GP module and to send this location by means of sending a message using GSM module to the pre-coded number. system is usually placed inside the vehicle. It reduces the time it takes for emergency rescue to arrive at the crashlocation.

A Project Report

on

"IOT Based Patient Health Monitoring System"

Submitted in partial fulfilment of the Requirements

For the Degree of Bachelor of Engineering

In

Electrical Engineering

By

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Mr. Shreyash S. Awaghad

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Certified that the contents of this thesis entitled **"IOT BASED PATIENTS HEALTH MONITORING SYSTEM" a** bonafide work carried out under my supervision by in partial fulfilment of the requirements for the degree in **Electrical Engineering**

Submitted By
Ms. Vaishnavi N. Akotkar

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ABSTRACT

Healthcare is given the extreme importance now a- days by each country with the advent of the novel corona virus. So, in this aspect, an IoT based health monitoring system is the best solution for such an epidemic. Internet of Things (IoT) is the new revolution of internet which is the growing research area especially in the health care. With the increase in use of wearable sensors and the smart phones, these remote health care monitoring has evolved in such a pace. IoT monitoring of health helps in preventing the spread of disease as well as to get a proper diagnosis of the state of health, even if the doctor is at far distance. In this paper, a portable physiological checking framework is displayed, which can constantly screen the patient's heartbeat, temperature and other basic parameters of the room. We proposed a nonstop checking and control instrument to screen the patient condition and store the patient information's in server utilizing Wi-Fi Module based remote correspondence. A remote health monitoring system using IoT is proposed where the authorized personal can access these data stored using any IoT platform and based on these values received, the diseases are diagnosed by the doctors from a distance.

A

PROJECT REPORT

ON

"Power Generation from Waste Heat by Using Thermoelectric Generator"

Project submitted

To

Sant Gadge Baba Amravati University

In

Partial fulfillment of requirement for the award of degree of

Bachelor of Engineering

In

Electrical (Electronics & Power)

Submitted By

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ACADEMIC YEAR 2021-22

P. R. Pote (Patil) Edu. & Welfare Trusts, Group of Institutions, College of Engineering and Management

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2021-22

CERTIFICATE

Department of Electrical (Electronics and Power) Engineering

Certified that the content of this thesis entitled **"Power Generation from Waste Heat by using Thermoelectric Generator"** is a bonafide work under my supervision in partial fulfillment of the requirements for the degree in Electrical Engineering (Electronic & Power)

SUBMITTED BY

Mr. Pawan B. Ingle
Mr. Sumit B. Patkar
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Mr. Kashyap P. Bodile
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ABSTRACT

The increasingly worldwide problem regarding rapid economy development and a relative shortage of energy, the internal combustion engine exhaust waste heat and environmental pollution has been more emphasized heavily recently. Out of the total heat supplied to the engine in the form of fuel, approximately, 30 to 40% is converted into useful mechanical work; the remaining heat is expelled to the environment through exhaust gases and engine cooling systems, resulting in to entropy rise and serious environmental pollution, so it is required to utilized waste heat into useful work.

In recent years, global warming and the limitations in use of energy resources increase environmental issues of emissions. Also In industry, most of the expenses are due to energy (both electrical and thermal), labour and materials. But out of them energy would relate to the manageability of the cost or potential cost savings and thus energy management will help in cost reduction. The possibilities of thermoelectric systems' contribution to "green" technologies, specifically for waste heat recovery from industry exhausting flue gases. It results into extensive research on green technologies producing electricity. As waste heat recovering techniques, such as thermoelectric generator (TEG) is developed. Its implementation in automobile industry is carried out in many ways.

A

PROJECT REPORT

On

"Automatic Power Factor Detector And Corrector Using Arduino Mini Pro"

Submitted in partial fulfilment of the Requirements

For the Degree of Bachelor of Engineering

In

Electrical Engineering (Electronics & Power)

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CERTIFICATE

Certified that the contents of this thesis entitled "**Automatic Power Factor Detector and Corrector using Arduino Mini Pro**"is a bonafide work carried out under my supervision by **Mr. Sagar Deshmukh, Miss. Rani Sakhe, Miss. Ruchita Charate, Miss. Snehal Pojge, Miss. Rutuja Dhawane** in partial fulfilment of the requirements for the degree in Electrical Engineering (Electronics and Power).

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ABSTRACT

In recent years, the power quality of the ac system has become great concern due to the rapidly increased numbers of electronic equipment, power electronics and high voltage power system. Most of the commercial and industrial installation in the country has large electrical loads which are severally inductive in nature causing lagging power factor which gives heavy penalties to consumer by electricity board. This situation is taken care by PFC. Power factor correction is the capacity of absorbing the reactive power produced by a load.

In case of fixed loads, this can be done manually by switching of capacitors, however in case of rapidly varying and scattered loads it becomes difficult to maintain a high power factor by manually switching on/off the capacitors in proportion to variation of load within an installation.

The APFC panel was implemented on various loads operating together three phase Induction motor connected in parallel to series combination of a variable resistive and variable inductive load. In accordance to the instantaneous recorded value of power factor, the apposite capacitors are injected into the circuit to improve the power factor values. Improvised instantaneous values of the power factor were observed.

This drawback is overcome by using an APFC panel. In this paper measuring of power factor from load is done by using Atmega328 microcontroller and trigger required capacitors in order to compensate reactive power and bring power factor near to unity.

KEYWORDS: Automatic power factor correction, embedded technology, Efficiency of the system increases, Improve the power system performance.