



RVS COLLEGE OF ENGINEERING AND TECHNOLOGY

KumaranKottam Campus, Kannampalayam (Po),Coimbatore – 641 402
(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)
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B.E-ELECTRICAL & ELECTRONICS ENGINEERING

ACADEMIC YEAR 2022-23

S.No.	Name Of The Course That Include Experiential Learning Through Project Work/ Internship	Course Code	Page No
1	Embedded Systems	EE8691	2
2	Renewable Energy Systems	EE8703	7
3	Control of Electrical Drives	EE8009	12
4	Electric Energy Generation, Utilization And Conservation	EE8015	17
5	Special Electrical Machines	EE8005	21
6	SMPS & UPS	EE8014	25
7	Power Plant Engineering	ME8792	30



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EE8691

EMBEDDED SYSTEMS

LTPC

3 0 0 3

OBJECTIVES:

To impart knowledge on the following Topics

- Building Blocks of Embedded System
- Various Embedded Development Strategies
- Bus Communication in processors, Input/output interfacing.
- Various processor scheduling algorithms.
- Basics of Real time operating system and example tutorials to discuss on one real time operating system tool.

UNIT I INTRODUCTION TO EMBEDDED SYSTEMS

9

Introduction to Embedded Systems –Structural units in Embedded processor , selection of processor & memory devices- DMA – Memory management methods- Timer and Counting devices, Watchdog Timer, Real Time Clock, In circuit emulator, Target Hardware Debugging.

UNIT II EMBEDDED NETWORKING

9

Embedded Networking: Introduction, I/O Device Ports & Buses– Serial Bus communication protocols RS232 standard – RS422 – RS 485 - CAN Bus -Serial Peripheral Interface (SPI) – Inter Integrated Circuits (I2C) –need for device drivers.

UNIT III EMBEDDED FIRMWARE DEVELOPMENT ENVIRONMENT

9

Embedded Product Development Life Cycle- objectives, different phases of EDLC, Modelling of EDLC; issues in Hardware-software Co-design, Data Flow Graph, state machine model, Sequential Program Model, concurrent Model, object oriented Model.

UNIT IV RTOS BASED EMBEDDED SYSTEM DESIGN

9

Introduction to basic concepts of RTOS- Task, process & threads, interrupt routines in RTOS, Multiprocessing and Multitasking, Preemptive and non-preemptive scheduling, Task communication shared memory, message passing-, Inter process Communication – synchronization between processes- semaphores, Mailbox, pipes, priority inversion, priority inheritance.

UNIT V EMBEDDED SYSTEM APPLICATION AND DEVELOPMENT

9

Case Study of Washing Machine- Automotive Application- Smart card System Application-ATM machine –Digital camera

TOTAL : 45 PERIODS

OUTCOMES:

- Ability to understand and analyze Embedded systems.
- Ability to suggest an embedded system for a given application.
- Ability to operate various Embedded Development Strategies
- Ability to study about the bus Communication in processors.
- Ability to acquire knowledge on various processor scheduling algorithms.
- Ability to understand basics of Real time operating system.

TEXT BOOKS:

1. Peckol, “Embedded system Design”, John Wiley & Sons,2010
2. Lyla B Das,” Embedded Systems-An Integrated Approach”, Pearson, 2013
3. Shibu. K.V, “Introduction to Embedded Systems”, 2e, Mc graw Hill, 2017.

REFERENCES

1. Raj Kamal, ‘Embedded System-Architecture, Programming, Design’, Mc Graw Hill, 2013.
2. C.R.Sarma, “Embedded Systems Engineering”, University Press (India) Pvt. Ltd, 2013.



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**INDUSTRIAL MONITORING AND CONTROL USING
INTERNET OF THINGS**

APROJECTREPORT

Submitted by

ABIU SANTHOSH M (712819105001)

ARUNANP (712819105003)

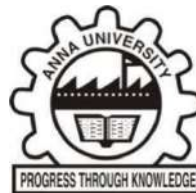
In partial fulfillment for the award of the degree

Of

BACHELOR OF ENGINEERING

IN

ELECTRICAL AND ELECTRONICS ENGINEERING



RVS COLLEGE OF ENGINEERING AND TECHNOLOGY

COIMBATORE-641 402

ANNA UNIVERSITY: CHENNAI 600 025

MAY 2023

ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report “**FASTEST HYBRID POWER PLANT SWITCHING SCHEMES USING WEB SERVER DURING PRECARIOUS PERIOD**” is the bonafide work of “**BHARATHKUMAR.V (712819105004), HARIVIGNESH.G (712819105301)**” who carried out the project work under my supervision.



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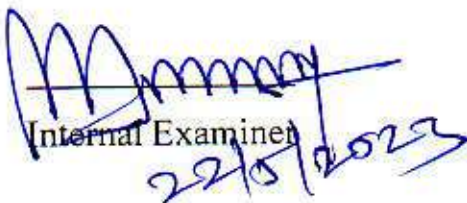


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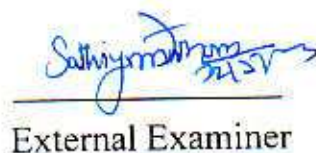
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Submitted for the Project Viva-Voice examination held on 22.05.2023



Internal Examiner
22/5/2023



External Examiner

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ABSTRACT

Industrial Monitoring and Control is essential to collect all the relevant information, statistics and data related to the various industrial processes, motors, machines and devices employed in industry premises. This aims at controlled access, better productivity and high-quality results of industrial products being manufactured. In this new era of technological developments remote control and monitoring via communication techniques such as ZigBee, RF, Infrared, techniques have been widely used in Industries. However, these wireless communication techniques are generally restricted to simple applications because of their slow communication speeds, distances and data security. In addition, they are easily affected by noise and bad weather conditions such as snow, fog and rain. In the Present project, a new solution is adopted for the traditional monitoring and controls of Industrial applications through the implementation of Internet of things (IOT) using high quality communication, low cost and high security.



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CONCLUSION

We hope to gain hands-on experience with the trending technologies of "Embedded System" and "Internet of Things" through this project. IoT-enabled industrial monitoring systems have become increasingly popular in a variety of industries because they improve safety standards by providing real-time monitoring of critical parameters such as temperature, humidity, and smoke, as well as alerting officials and workers regularly. The implementation is not only for safety reasons, but it also has the potential to increase industry yields. In our project, the Internet of Things (IoT) is used to collect data and communicate through the internet. We hope that our project will be beneficial enough to be implemented in industries across India, saving lives and property from accidents and risks that are often overlooked by industry personnel and users. Companies in the industrial and logistics sectors can better meet the new era of instant needs by utilizing the Industrial Internet of Things (IIoT). IIoT technologies are used in manufacturing processes and across supply chains in the Industrial Internet of Things. Industrial IIoT strategy should include machine learning and big data technology in addition to data from devices and sensors, harnessing the combination of existing sensor data, machine to machine (M2M) connectivity, and automation technologies to deliver greater insight back to the business.



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EE8703 RENEWABLE ENERGY SYSTEMS

OBJECTIVES:

To impart knowledge on the following Topics

- Awareness about renewable Energy Sources and technologies.
- Adequate inputs on a variety of issues in harnessing renewable Energy.
- Recognize current and possible future role of renewable energy sources.

UNIT I RENEWABLE ENERGY (RE) SOURCES

Environmental consequences of fossil fuel use, Importance of renewable sources of energy, Sustainable Design and development, Types of RE sources, Limitations of RE sources, Present Indian and international energy scenario of conventional and RE sources.

UNIT II WIND ENERGY

Power in the Wind – Types of Wind Power Plants (WPPs)–Components of WPPs-Working of WPPs- Siting of WPPs-Grid integration issues of WPPs.

UNIT III SOLAR PV AND THERMAL SYSTEMS

Solar Radiation, Radiation Measurement, Solar Thermal Power Plant, Central Receiver Power Plants, Solar Ponds.- Thermal Energy storage system with PCM- Solar Photovoltaic systems : Basic Principle of SPV conversion – Types of PV Systems- Types of Solar Cells, Photovoltaic cell concepts: Cell, module, array ,PV Module I-V Characteristics, Efficiency & Quality of the Cell, series and parallel connections, maximum power point tracking, Applications.

UNIT IV BIOMASS ENERGY

Introduction-Bio mass resources –Energy from Bio mass: conversion processes-Biomass Cogeneration-Environmental Benefits. Geothermal Energy: Basics, Direct Use, Geothermal Electricity. Mini/micro hydro power: Classification of hydropower schemes, Classification of water turbine, Turbine theory, Essential components of hydroelectric system.

UNIT V OTHER ENERGY SOURCES

Tidal Energy: Energy from the tides, Barrage and Non Barrage Tidal power systems. Wave Energy: Energy from waves, wave power devices. Ocean Thermal Energy Conversion (OTEC)- Hydrogen Production and Storage- Fuel cell : Principle of working- various types - construction and applications. Energy Storage System- Hybrid Energy Systems.

TOTAL : 45 PERIODS

TEXT BOOKS:

1. Joshua Earnest, Tore Wizeliu, ‘Wind Power Plants and Project Development’, PHI Learning Pvt.Ltd, New Delhi, 2011.
2. D.P.Kothari, K.C Singal, Rakesh Ranjan “Renewable Energy Sources and Emerging Technologies”, PHI Learning Pvt.Ltd, New Delhi, 2013.
3. Scott Grinnell, “Renewable Energy & Sustainable Design”, CENGAGE Learning, USA, 2016



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**FASTEST HYBRID POWER PLANT SWITCHINGSCHMES
USING WEB SERVER DURING PRECARIOUS PERIOD**

PROJECT REPORT

Submitted by

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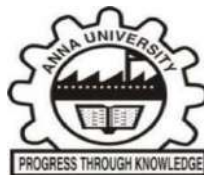
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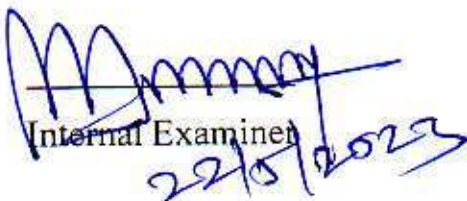


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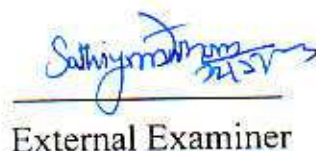
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ABSTRACT

In modern technological development for power switching, demand for uninterrupted power services. Electrical source is vital for the progress of a nation and it has to be conserved in a most efficient manner. Not only the technologies should be developed to produce energy in a most environment-friendly manner from all varieties of fuels but also enough importance should be given to conserve the energy resources in the most efficient way. As need or demand of electricity is increasing, use renewable energy sources to generate more amount of energy in the industries and home appliances is also increasing. The renewable energy sources such as solar and wind hybrid generation system are economical, freely available in the environment. The use of renewable energy technology to meet the energy demands has been steadily increasing for the past few years, however, the important drawbacks associated with renewable energy systems are their inability to guarantee reliability and their lean nature. Import of petroleum products constitutes a major drain on our foreign exchange reserve. Renewable energy sources are considered to be the better option to meet these challenges. The two main reasons to design hybrid power plant system using the renewable energy source are power reliability in varying weather condition and cost. In the proposed system, we are introducing the reliability to deliver continuous supply of load, monitoring and emergency switching process during precarious periods with the help of IoT (web server) interfacing. The system consists of a wind turbine, PV solar, charge controller, battery, inverter, grid and IoT system for monitoring electrical parameters of the system. Advantage of IoT system is that the operator can know the updated electrical parameters from anywhere and anytime.

Keywords: Hybrid power, Web server (IoT), UPS, Renewable Energy etc.,



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CONCLUSION

The system is successfully completed to control the operation of power grid using internet protocol. All the grid connections are interfaced with controller unit and IoT module. This hybrid system can be standalone or can be grid connected. The grid connected hybrid system is more reliable to deliver continuous power because if there is any shortage of power or fault in the renewable energy sources then the load are directly connected to the grid. The controller controls the hybrid power plant operation through the command via internet connectivity.



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EE8009 Control of Electrical Drives

OBJECTIVES: To impart knowledge about the following topics:

- To understand the DC drive control.
- To study and analyze the Induction motor drive control.
- To study and understand the Synchronous motor drive control.
- To study and analyze the SRM and BLDC motor drive control.
- To analyze and design the Digital control for drives.

UNIT I CONTROL OF DC DRIVES

9

Losses in electrical drive system, Energy efficient operation of drives, block diagram/ transfer function of self, separately excited DC motors --closed loop control-speed control current control - constant torque/power operation - P, PI and PID controllers--response comparison.

UNIT II CONTROL OF INDUCTION MOTOR DRIVE

9

VSI and CSI fed induction motor drives-principles of V/f control-closed loop variable frequency PWM inverter with dynamic braking- static Scherbius drives- power factor considerations- modified Kramer drives-principle of vector control- implementation-block diagram, Design of closed loop operation of V/f control of Induction motor drive systems.

UNIT III CONTROL OF SYNCHRONOUS MOTOR DRIVES

9

Open loop VSI fed drive and its characteristics--Self control--Torque control --Torque angle control --Power factor control--Brushless excitation systems--Field oriented control -- Design of closed loop operation of Self control of Synchronous motor drive systems.

UNIT IV CONTROL OF SRM AND BLDC MOTOR DRIVES

9

SRM construction - Principle of operation - SRM drive design factors-Torque controlled SRM-Block diagram of Instantaneous Torque control using current controllers and flux controllers. Construction and Principle of operation of BLDC Machine -Sensing and logic switching scheme,-Sinusoidal and trapezoidal type of Brushless dc motors – Block diagram of current controlled Brushless dc motor drive.

UNIT V DIGITAL CONTROL OF DC DRIVE

9

Phase Locked Loop and micro-computer control of DC drives--Program flow chart for constant constant torque and constant horse power operations Speed detection and current sensing circuits and feedback elements.

TOTAL: 45 PERIODS

OUTCOMES:

- Ability to understand various control strategies and controllers for AC and DC Motor Drive systems.

TEXT BOOKS:

1. Dubey, G.K, Power semiconductor controlled devices, Prentice Hall International New jersey, 1989.
2. R.Krishnan,, Electric Motor Drives - Modeling, Analysis and Control Prentice- Hall of India Pvt. Ltd., New Delhi, 2003.



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HYBRID POWER GENERATION USING SOLAR AND WIND ENERGY

A PROJECT REPORT

Submitted by

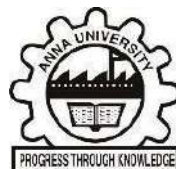
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MAY 2023

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Certified that this project report “**HYBRID POWER GENERATION USING SOLAR AND WIND ENERGY**” is the bonafide work of “**KAVIN S M (712819105006), SATHEESHKUMAR S (712819105012)**” who carried out the project work under my supervision.

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ABSTRACT

The ultimate aim of this project is to construct a savonius type of vertical axis wind turbine that will be combined with a solar panel to create direct current (DC) electricity that will be used to charge a battery. This system will meet the house's basic electrical needs. When combined with a solar panel, the device may generate more amount of electricity. The major goals of this project are to decrease pollution and preserve the environment by reducing the use of fossil fuels, increasing windmill power output, and developing hybrid machines to create more electricity with zero emissions. Reaching the non-electrified rural population is currently not possible through the extension of the grid, since the connection is neither economically feasible, nor encouraged by the main actors. Further, the increases in oil prices and the unbearable impacts of this energy source on the users and on the environment, are slowly removing conventional energy solutions, such as fuel-based systems, from the rural development agendas. This problem can overcome by using “HYBRID POWER GENERATION USING SOLAR AND WIND ENERGY”. Hybrid systems have proved to be the best option to deliver “high quality” power.



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CONCLUSION

Final design, which will quench the need for an alternative energy solution available on a residential level. Looking forward, our windmill's uses could be expanded to government highways, commercial high rise buildings, schools, beach fronts, etc. The possibilities are only as limited as the creativity of the user-wind envelops the human race daily. The solution to our energy supply worries has blustered mankind preceding electricity. While these works are being completed a huge amount of knowledge has been collected and vast area in the CFD field has to be explored. Sometimes weeks have been spent for solving problems in fluent which encountered in simulations. Throughout the simulation process more than 400 simulations have been done and each simulation was spent around 1-2 hours' time to be simulated. For those simulations more than 50 meshes have been drawn. In the case of simulations most of the Laptops available easily were hardly fulfilled the requirement of the software. So the simulating speed had been reduced. So, lot more time has to be spent on it. For some problems came across some areas of the software had to be explored. Those problems were unique problems for user to user. Then there weren't enough information in internet too. Then wearers had to be explored with great courage. So it is all about learning new and challenging things. As the results were presented with respect to C_p , then it also had to be rearranged and process the data that had been obtained by the simulations. So the data had to be recorded correctly and in a proper manner for the easiness of the Reading and processing. But attend we could manage to finish the simulation part within the time period that it is allocated. In the fabrication process lot of knowledge has been grabbed about the practical aspects and how to do certain things in workshop. We were given money for the project. That was very help full to achieve our primary goal.



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EE8015 ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION

OBJECTIVES:

To impart knowledge on the following Topics

- To study the generation, conservation of electrical power and energy efficient equipments.
- To understand the principle, design of illumination systems and energy efficiency lamps.
- To study the methods of industrial heating and welding.
- To understand the electric traction systems and their performance.

UNIT I ILLUMINATION

Importance of lighting – properties of good lighting scheme – laws of illumination – photometry - types of lamps – lighting calculations – basic design of illumination schemes for residential, commercial, street lighting, factory lighting and flood lighting – LED lighting and energy efficient lamps.

UNIT II REFRIGERATION AND AIR CONDITIONING

Refrigeration-Domestic refrigerator and water coolers - Air-Conditioning-Variou s types of air-conditioning system and their applications, smart air conditioning units – Energy Efficient motors: Standard motor efficiency, need for efficient motors, Motor life cycle, Direct Savings and payback analysis, efficiency evaluation factor.

UNIT III HEATING AND WELDING

Role of electric heating for industrial applications – resistance heating – induction heating – dielectric heating - electric arc furnaces. Brief introduction to electric welding – welding generator, welding transformer and the characteristics.

UNIT IV TRACTION

Merits of electric traction – requirements of electric traction system – supply systems – mechanics of train movement – traction motors and control – braking – recent trends in electric traction.

UNIT V DOMESTIC UTILIZATION OF ELECTRICAL ENERGY

Domestic utilization of electrical energy – House wiring. Induction based appliances, Online and OFF line UPS, Batteries - Power quality aspects – nonlinear and domestic loads – Earthing – Domestic, Industrial and Substation.

TOTAL: 45 PERIODS

TEXT BOOKS:

1. Wadhwa, C.L. “Generation, Distribution and Utilization of Electrical Energy”, New Age International Pvt. Ltd, 2003.
2. Dr. Uppal S.L. and Prof. S. Rao, 'Electrical Power Systems', Khanna Publishers, New Delhi, 15th Edition, 2014.



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ONLINE MONITORING AND PRODUCTION FOR TRANSFORMER USING SAMRT GUI APP

A PROJECT REPORT

Submitted by

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In partial fulfillment for the award of the degree of

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in

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MAY 2023

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Certified that this project report "ONLINE MONITORING AND PRODUCTION FOR TRANSFORMER USING SMART GUI APP" is the bonafied work of "JEYLES M (712819105005), PERIYASAMY V (712819105011)" who carried out the project work under my supervision.


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22/5/2023


EXTERNAL EXAMINER



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CONCLUSION

This system provides schemes for ensuring that personnel performing energized electrical work, including oil temperature, vibration testing and diagnostics are trained in the safety aspects of such work and have been qualified by their supervisor to perform the task assigned. The system offered by transformer health safety associated with this program covers personal safety issues regarding work on electrical distribution systems and includes relative information to be gathered while analyzing electrical-related hazards.

The system is successfully completed for monitoring the transformer health by using through sensors, GUI-APP and BLUETOOTH device



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EE8005 SPECIAL ELECTRICAL MACHINES

OBJECTIVES:

To impart knowledge on the following Topics

- Construction, principle of operation, control and performance of stepping motors.
- Construction, principle of operation, control and performance of switched reluctance motors.
- Construction, principle of operation, control and performance of permanent magnet brushless D.C. motors.
- Construction, principle of operation and performance of permanent magnet synchronous motors.
- Construction, principle of operation and performance of other special Machines.

UNIT I STEPPER MOTORS 9

Constructional features –Principle of operation –Types – Torque predictions – Linear Analysis – Characteristics – Drive circuits – Closed loop control – Concept of lead angle - Applications.

UNIT II SWITCHED RELUCTANCE MOTORS (SRM) 9

Constructional features –Principle of operation- Torque prediction–Characteristics Steady state performance prediction – Analytical Method – Power controllers – Control of SRM drive-Sensor less operation of SRM – Applications.

UNIT III PERMANENT MAGNET BRUSHLESS D.C. MOTORS 9

Fundamentals of Permanent Magnets- Types- Principle of operation- Magnetic circuit analysis- EMF and Torque equations- Power Converter Circuits and their controllers - Characteristics and control- Applications.

UNIT IV PERMANENT MAGNET SYNCHRONOUS MOTORS (PMSM) 9

Constructional features -Principle of operation – EMF and Torque equations - Sine wave motor with practical windings - Phasor diagram - Power controllers – performance characteristics - Digital controllers – Applications.

UNIT V OTHER SPECIAL MACHINES 9

Constructional features – Principle of operation and Characteristics of Hysteresis motor- Synchronous Reluctance Motor–Linear Induction motor-Repulsion motor- Applications.

TOTAL : 45 PERIODS

OUTCOMES:

- Ability to analyze and design controllers for special Electrical Machines.
- Ability to acquire the knowledge on construction and operation of stepper motor.
- Ability to acquire the knowledge on construction and operation of stepper switched reluctance motors.
- Ability to select a special Machine for a particular application.

TEXT BOOKS:

- K.Venkataratnam, ‘Special Electrical Machines’, Universities Press (India) Private Limited, 2008.
- T. Kenjo, ‘Stepping Motors and Their Microprocessor Controls’, Clarendon Press London, 1984



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**ARTIFICIAL INTELLIGENCE WITH MACHINE LEARNING BASED AUTOMATIC
ELECTRICITY POWER DISTRIBUTION CONTROL FOR PREVENTING
PUBLIC LIFE FROM RAIN HAZARD**

A PROJECT REPORT

Submitted by

MUHAMMED SHIBILI P K 712819105008

SUKESH S 712819105302

In partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

ELECTRICAL AND ELECTRONICS ENGINEERING



**RVS COLLEGE OF ENGINEERING AND TECHNOLOGY
COIMBATORE**

ANNA UNIVERSITY: CHENNAI- 600 025

MAY 2023

ANNA UNIVERSITY : CHENNAI 600025

BONAFIDE CERTIFICATE

Certified that this project report "ARTIFICIAL INTELLIGENCE WITH MACHINE LEARNING BASED AUTOMATIC ELECTRICITY POWER DISTRIBUTION CONTROL FOR PREVENTING PUBLIC LIFE FROM RAIN HAZARD" is the bonafied work of "MUHAMMED SHIBILI P K (712819105008), SUKESH S (712819105302)" who carried out the project work under my supervision.


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INTERNAL EXAMINER


EXTERNAL EXAMINER



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CONCLUSION

In this project is very useful and real time project. It can be utilized all type of distribution / transmission lines. This project successfully designed for communicating the information about the breaking of EB power line to near EB station or corresponding officers. We proposed an EB line fault or broken detection system and it will send an immediate response to control unit of electricity board. The circuit uses Nvuoton Microcontroller to communication with the digital display to send the text. The information will then be quickly processed by the microcontroller for save the human life.

Finally, the project is done successfully and it verified in hardware model with 99% efficiency.



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EE8014

SMPS AND UPS

OBJECTIVES: To impart knowledge about the following topics:

- Modern power electronic converters and its applications in electric power utility.
- Resonant converters and UPS

UNIT I DC-DC CONVERTERS

Principles of step down and step up converters – Analysis and state space modeling of Buck, Boost, Buck- Boost and Cuk converters.

UNIT II SWITCHED MODE POWER CONVERTERS

Analysis and state space modeling of fly back, Forward, Push pull, Luo, Half bridge and full bridge converters- control circuits and PWM techniques.

UNIT III RESONANT CONVERTERS

Introduction- classification- basic concepts- Resonant switch- Load Resonant converters- ZVS , Clamped voltage topologies- DC link inverters with Zero Voltage Switching- Series and parallel Resonant inverters- Voltage control.

UNIT IV DC-AC CONVERTERS

Single phase and three phase inverters, control using various (sine PWM, SVPWM and PSPWM) techniques, various harmonic elimination techniques- Multilevel inverters- Concepts - Types: Diode clamped- Flying capacitor- Cascaded types- Applications.

UNIT V POWER CONDITIONERS, UPS & FILTERS

Introduction- Power line disturbances- Power conditioners –UPS: offline UPS, Online UPS, Applications – Filters: Voltage filters, Series-parallel resonant filters, filter without series capacitors, filter for PWM VSI, current filter, DC filters – Design of inductor and transformer for PE applications – Selection of capacitors.

TOTAL : 45 PERIODS

TEXT BOOKS:

1. Simon Ang, Alejandro Oliva, "Power-Switching Converters", Third Edition, CRC Press, 2010.
2. KjeldThorborg, "Power Electronics – In theory and Practice", Overseas Press, First Indian Edition 2005.
3. M.H. Rashid – Power Electronics handbook, Elsevier Publication, 2001.



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**SPEED CONTROL OF
ELECTRICVEHICLEBYUSINGBLDCMOTOR**

A PROJECT REPORT

Submitted by

NAVEEN KUMAR K (712819105010)

TAMIL SELVAN J (712819105014)

ANAND R (712819105701)

In partial fulfillment for the award of the degree of

BACHELOROFENGINEERING

in

ELECTRICALANDELECTRONICSENGINEERING



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ANN AUNIVERSITY: CHENNAI 600 025

MAY 2023

BONAFIDE CERTIFICATE

Certified that this project report **“SPEED CONTROL OF ELECTRIC VEHICLE BY USING BLDC MOTOR”** is the bonafide work of **“NAVEEN KUMAR K (712819105010), TAMILSELVAN J (712819105014) ANAND R (712819105701)”** who carried out the project work under my supervision.


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Internal Examiner


External Examiner



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ABSTRACT

A motor converts supplied electrical energy into mechanical energy. Various types of motors are in common use. Among these, brushless DC motors (BLDC) feature high efficiency and excellent controllability, and are widely used in many applications. Brushless DC motors have some significant advantages over their competitors, such as brushed motors, largely because of the electronic commutation. It allows the controller to switch the current promptly and thus regulate the motor's characteristics effectively. The BLDC motor has power saving advantages relative to other motor types. In this project we are going to control the speed of the brushless motor it is important to control the speed of the motor because it has a direct effect on the operation of the machine and is crucial for the quality and the outcome of the work. The speed of the motor is controlled by power electronics makes the motor more effective and efficient. Power electronics means converting one form of electric power into another form of electric power with proper control. This paper provides a technical review of position and speed sensor less methods for controlling Brushless Direct Current (BLDC) motor drives, including the background analysis using sensors, limitations and advances. The performance and reliability of BLDC motor drivers have been improved.



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CONCLUSION

- Thus this project is used to control the brushless DC motor.
- The booster used here to control the voltage and current of the BLDC motor.
- From which the inverter and speed controller controls the speed of the motor.
- The calculated speed is displayed using LCD used in this project.



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EE8014

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**ONLINE WITH NON-CONTACT TRANSFORMER
HEALTH PREDICTION SYSTEM
USING SMART GUI APP RAIN HAZARDS**

PROJECT REPORT

Submitted by

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PERIYASAMY.V 712819105011

In partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

in

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MAY 2023

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Certified that this project report “**DEVELOPMENT OF FACIAL FEATURES MONITORING FOR A REAL TIME DROWSINESS AND ACCIDENT DETECTION SYSTEM**” is the bonafied work of “**VIGNESH S (712819105015), MANOJKUMAR P (712819105007)**” who carried out the project work under my supervision.

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INTERNAL EXAMINER

EXTERNAL EXAMINER



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ABSTRACT

Electrical power plays a important role in people's daily activities. Power transformers are one of the most important pieces of equipment in a power system, and their operation reliability is directly related to the safety of the power system. Due to the advancement of technology Android technique is used in most real-time applications. Various sensors are used to collect real data from the environment or objects. With the help of the Android GUI (Graphical User Interface) APP concept, people can create a machine to machine connection. This proposed system was designed to monitor and detect the online parameters of the transformer sections and immediately sent the message to the authenticated person through wirelessly (non-contact). The important indicators used to measure the condition of the transformer are temperature, oil level, load current, voltage regulation as well as vibration due to load current switching. This system can reduce manpower and increases the stability, accuracy, and efficiency of the transformer. The systems also support the preventing of electrical loads through switch unit during the period of transformer malfunction. The sensor data transfer to the controller and check these values with standard reference. If the sensor values cross the threshold value the alert message transfer to the concerned people. All the sensor values are sent to the android phone through IEEE 802.11 wireless protocol.

Keywords: online transformer health prediction, wireless protocol etc.,



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CONCLUSION

This system provides schemes for ensuring that personnel performing energized electrical work, including oil temperature, vibration testing and diagnostics are trained in the safety aspects of such work and have been qualified by their supervisor to perform the task assigned. The system offered by transformer health safety associated with this program covers personal safety issues regarding work on electrical distribution systems and includes relative information to be gathered while analyzing electrical – related hazards.

The system is successfully completed for monitoring the transformer health by using through sensors, GUI-APP and BLUETOOTH device.