K.L.N. COLLEGE OF ENGINEERING, POTTAPALAYAM

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

SUB.CODE&NAME: EE6811 – PROJECT WORK(R-2013) YEAR/SEM: IV/VIII

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		SIVA PRADEEPKUMAR S (910614105321)	
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1. SMART HOME & SMART METER WITH GSM MODULE

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Guided by

Abstract

The emergence of smart meters and applications has meant there is increasing interest in utilizing smart homes. It had increased the comforts of humans and changed their lifestyle in a sophisticated way. The main motto of these smart homes is to ensure, enhance accessibility, minimize operating cost, and to improve the comforts. Home automation is anything that enables us to use our home's lightning, heating and appliances more conveniently and efficiently. Homes had become smart homes by the introduction of automation. It had replaced humans and placed computers over the past decades. Home automation and its comforts are the dual aspects of this project. In older days fans and lights can be operated only manually by using switches. If a person forgot to turn off the switches it will be wastage of energy. So in order to overcome these problems this project had been done. This is the proposed methodology of the project. The visitor counter identifies the number of visitors entering and leaving the room. It sends command to operate the further circuits like LAMPS and FANS. The ceiling fans will be turned on when a person is standing below it for more than 15 seconds. Prepaid energy meter is also integrated with home automation. It is just like recharging the mobile phones. We can use the number of units for which we had paid. GSM module and Arduino were linked with the ENERGY METER. This proposed system will read the energy meter readings. It sends some updates to the user like, low balance alert, cut off alert and recharge alert. Thus using the same set of sensors the dual problems of home automation and its comforts can be solved on a complementary basis.

2. MICROCONTROLLER BASED SEWAGE CLEANER

Project members:

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Guided by

Dr. S.Venkatanarayanan, Prof./EEE

Abstract

In recent years there is a rapid increase in sewer man death counts also it becomes the monthly customer of Debates in TV Channels which should be considered as a biggest social issue after Kashmir War. This issue demanded to develop a Machine or a Robot that cleans the sewage and drainage tank automatically and without human intervention.IR Sensor will sense the blockage in sewer lines. And the motor will move in the corresponding direction of blocked sewer line. Motor pump that connected to the motor will be enabled and the block will get cleared. Due to the gases present in the drainage tank (Especially CO), the sewer workers are get struggled to take oxygen, at the extreme point it causes death. At low capital and maintenance cost this project helps to clean the Drainage Tank and can reduce the Death Cases in upcoming years.

3. AUTOMATIC GATE CONTROL AND TRACK CRACK PREDICTION IN RAILWAYS

Project members:

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Guided by

Mr. T.GOPU, M.E, AP 2/ EEE

Abstract

This paper proposes the realistic operation of the flashing signals at a level railway crossing with automatic gate open or close. Also four pairs of infrared red light Phototransistors to control the operation of the flashers and gate. The IR transmitter feeds coded signal into an IR LED, which has its output focused into a fairly narrow beam that is aimed at a matching IR photo detector in the receiver. If the beam is in corrupted by the train, one pulse will be produced in all the receivers. This pulse will be interfaced with the micro controller, which gives signal to the motor operating circuits through opto coupler circuits. According to the signal the gate will be closed and also giving alarm. After the train leaves the gate fully the sensor fitted in the other side to detect the train leaving will give the signal. Then the gate will be automatically opened. Like this the gate in the track will be automatically open or close and give roadside and track side traffic signal. Series of sensors are used, which senses the continuity of the track by sensing the vibration in the track. When a train passes its vibration in track travels with very great velocity than the train velocity so that it can be detected several kilometers ahead before the train. The output of the sensors are fed to the switching and rectifying circuit which processes the sensed signal ready to feed for the microcontroller. The processed signals are first fed to the opto couplers, output of which is fed to the microcontroller. The microcontroller decides from the received signal about the track discontinuity, and when a discontinuity is found in the track.

4. A NOVEL THREE PORT CONVERTER FOR HYBRID RENEWABLE ENERGY SYSTEM

Project members:

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Guided by

Mr. R. Jeyapandi Prathap., M.E, AP 2/ EEE

Abstract

In this paper, a new three port DC/DC converter is presented for hybrid PV/FC/Battery applications. The proposed structure comprises a conventional buck-boost and a boost converter. Four power switches and four diodes are employed in the proposed converter. The voltage gain of the presented converter is more than conventional boost converter. This advantage and having two unidirectional and a bidirectional inputs make the structure a suitable power electronic interface for hybrid generation applications. In addition, there are no limitations in switching modulation. Therefore, tracking the maximum power of the PV source, setting the FC power, controlling the battery power, and calibrating the output voltage can be equipped by controlling duty ratios of the switches. The input power sources can provide power to the load and either charge or discharge the battery individually or simultaneously. The steady-state analyses of the presented converter are discussed thoroughly in this paper. Finally, in order to validate the feasibility of the presented converter, Experimental results are provided.

5. DESIGN AND IMPLEMENTATION OF WIRELESS CONTROLLED THREE PHASE INDUCTION MOTOR FROM SINGLE PHASE SUPPLY

Project members:

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Guided by

Mr. N.Vimal Radha Vignesh M.E, AP 2/ EEE

Abstract

A single phase to three phase converter topology using MOSFET for domestic use and small vendors is presented in this project. Most of the induction motors required in industries today are working on three phase source of alternating voltage. Three phase AC supply are not available at all this time, particularly in Rural Area. A PWM technique is used to have a variable speed control by varying the frequency in AC induction motors which deals with considerable saving in energy and reduce cost of electricity. Use of dedicated pulse generator (Microcontroller) ATMEL 89S52 for PWM generation and MOSFET IR 840 is used for switching purpose to enhance the performance of the inverter. It generates six pulses required for three phase supply and the phase angle is programmed to 180 degree. In addition to that the wireless control of three phase induction motor is implemented in this project. The output of the microcontroller is given to the opto isolator for amplification of current and voltage from severe damage. Thus the system can become more useful in today's problem of energy crisis.

6. WIRELESS MONITORING AND SPEED CONTROL OF MOTORS USING VARIABLE FREQUENCY DRIVES

Project members:

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Guided by

Dr.S.Parthasarathy., M.E., Ph.D.,

Abstract

Variable Frequency Drives (VFD) are the most important device used in all modern industries, used to operate and control the motors in industry at different speed depending on the requirement of the process of the work that has been carried out by the motors. VFD's are being controlled at the physical location, where the drives were installed. The control of motor at the physical location makes time consuming process and it increases the time for controlling the drives. To overcome this drawback a wireless technology has been utilized in this proposed project to monitor and control the speed of the motor. In this work an IoT is used to control the VFD. IoT module enables the VFD into internet enabled and it can be interacted from remote location with ease. The designed module can also be integrated with existing VFD and make it internet ready. We can also monitor the speed of motor at any given time as it provides the real time data of motor updated at a interval of each second. The speed performance of the motor is also generated as a report by mobile application.

7. FAULT LOCATING SCHEME IN RENEWABLE ENERGY SOURCES BASED ON WIRELESS SENSOR NETWORKS USING DATA ACQUISITION

Project members:

GOWTHAM M (142058),
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JEEVA A (152928),
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Guided by

Mr.R.Jeyapandi Prathap M.E.,

Abstract

With the increasing of monitoring devices and advanced measurement infrastructures, smart grids (SGs) collect large amounts of data every moment, which gives rise to the SG big data. In order to fulfil diverse communication requirements of various energy-related data in SG, it is obviously impractical to rely on a single communication technology and Hybrid communication architecture of low-latency fiber optic and cost-effective wireless technologies could be a promising solution. Wireless Sensor Networks (WSNs) are envisioned to be an important enabling technology for Smart Grid (SG) due to the low cost, ease of deployment, and versatility of WSNs. Limited battery energy is the tightest resource constraint on WSNs .This project develops a fault location scheme for Smart Grid based on wireless sensor networks. Some fault location and detection principles are illustrated based on wireless sensor networks. The scheme is designed according to the requirements of end—to—end delay, reliability, and synchronization in power distribution system and simulation results indicate that it is feasible to implement the Smart Grid fault location based on wireless sensor networks.

8. IOT BASED INFERNO ROBOT

Project members:

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Guided by

Dr. C Vimala Rani, ASP/EEE

Abstract

The word “Inferno” is the name given by us to our robot which literally means a huge fire or a large fire outbreak in a building. The inferno robot is based on internet application. It is a type of mobile robot which will detect the fire and any type of flammable gases where it’s installed. Once the fire is detected the robot automatically turns on and move towards the location of the fire outbreak. The Inferno is equipped with ultrasonic sensor with which it will detect and avoid obstacles it is also equipped with GSM which will convey the information about the fire outbreak to the user. It eliminates the fire once it reaches the destination with the water storage unit and the water pump which sprays water to extinguish the fire. The inferno also access a cell phone through which the camera helps with the live relay of the fire extinguishing process and the GPS of the phone help us track the Inferno’s location.

9. DESIGN AND DEVELOPMENT OF GSM BASED DISASTER ALERT SYSTEM

Project members:

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Guided by

Dr.J.SANGEETHA, ASP/EEE

Abstract

Disasters that threat human lives are more common today. No one can predict when and how it will occur. Everyone would admit that disaster early warning is more important than later treatment and damage repair. In order to avoid these collisions “Design and Development of GSM based disaster alert system” is developed with advanced electronic field. The proposed project informs about the place of emergency condition of FIRE, TREE FALL, FLOOD, & LAND SLIDE at remote place. The conditions of these calamities are frequently checked using wireless sensors. The output of these sensors is given to AT89C51 microcontroller. From AT89C51 the signal is sent to HT12 encoder to encrypt (compress) the signal, and then it is transmitted through Radio frequency (RF) based transmitter at a frequency of 433.92 MHz. The transmitted data is received by RXQ1 receiver and given to the decoding unit. The data decoded by the decoder HT12D is progressed to the microcontroller and the output is progressed to the microcontroller and the output is transferred to GSM module through serial interface RS232.From GSM the SMS is sent to loco pilot so that mandatory actions can be taken to diminish the future consequences.

10. POWER FLUCTUATION MONITORING FOR LT CONSUMER BASED ON INTERNET OF THINGS

Project members:

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Guided by

Dr. C. Vimala Rani, ASP/EEE

Abstract

A power quality monitoring system based on Arduino uno is proposed in this paper. The monitoring system uses the high accuracy precision rectifier unit and low power consumption Arduino uno.The monitoring system can monitor voltage, current, active power, reactive power, apparent power, active energy, reactive energy, power factor, phase difference, and frequency. A proposed method provides the communication between the Electricity Board section and the consumer section using Internet of things (IOT) for transmitting the customer's electricity consumption and bill information that is calculated using Arduino uno. The powers fluctuations are monitored using IOT are fed to the Arduino which indicates it to the Electricity Board. Depending on the power consumption, the house hold devices are controlled automatically. From Electricity Board section the information regarding the bill amount and payment are communicated to the consumer via Global System for Mobile communication. The power and billing information is continuously transmitted by the use of Internet of Things and monitored by the Electricity Board section. Load demand monitoring is done whenever there is a exceed in set value of power consumption, that can be identified and notification can be sent from the Electricity Board section to cut of the auxiliary supply to the customer.

11. INDUSTRIAL PENTON

Project members:

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J.Sridevi, AP/EEE

Abstract

The industrial monitoring and control stations are evolved over the time span. Initially the meters are utilized for measuring purpose and based on their readings the actuators are enabled manually. In the second stage, with the advent of digital meters, computers acquire the data of the process and control based on user defined limits. Now the resource rich smart phones are used to implement a system to control a medium size industrial process. They can use the mobile device to monitor in the phone screen the real state of the process through the sensory system (e,g., load current, speed and temperature) and they can parameterize the process through the actuators (e.g., relay and cooling pumps) with mobile phone graphical interface. The machine is connected through a DAQ card to a gateway. The smart phone communicates with the gateway through Wi-Fi to control the machine and to receive the sensory information of the process. In this work, the smart phone is considered as a pivotal user interface. The smart phone communicates with the machine through Wi-Fi interface as long as the mobile is within the proximity of industries Wi-Fi boundary. The Wi-Fi interface allows interaction between the Smartphone and the process in both directions, so that in addition to monitoring, it can interact with the process and modify its operating parameters.

12. SMART VEHICLE POLLUTANT TRACKING SYSTEM USING GSM AND GPS

Project members:

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Guided by

Dr. S. Rajalingam, M.E., Ph.D.,

Abstract

In this advanced world, Vehicles have turned into a fundamental piece of everybody's life. Circumstances and conditions have made their part overwhelming in one's life. Like each coin has both the sides, this additionally has its own particular impacts. One of the fundamental crises being Air Pollution. Air Pollution is one of the biggest natural wellbeing dangers in world today. One of the key contributors of such natural dangers being vehicles and enterprises. Every last vehicle have emission, however the issue happens because of when it shoots past the determined esteems. The standardized esteems for every toxin were set by The Pollution Control Board. The major cause of this emission is the inadequate burning of the fuel provided to the engine. Different sensors are used to detect such pollutants and furthermore it shows the level in this display. At the point when the contamination/emanation level shoots past the standardized level, there will be a buzz in the vehicle to show that the utmost level has been ruptured and the vehicle will stop after a certain timeframe , a time given for the driver to stop his/her vehicle. While the time frame running, the GPS begins finding the closest service stations. After the time runs out, the fuel provided to the engine will be cut-off and the vehicle must be towed to the technician or to the closest service station. The synchronization and execution of the whole process is checked and controlled by a micro controller. This project, when expanded as an ongoing task, will profit the general public and help in decreasing the air contamination.

13. INTELLIGENT SEWAGE CLEANING ROBOT

PROJECT MEMBERS

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ABSTRACT

With the advancement of technology, robots are getting more attention of researchers to make life of mankind comfortable. This project presents the design, development and fabrication of prototype Smart SEWAGE Cleaning Robot (CLEAR) using ATmega328 for User Interface Elements in Power Control of Electronic Devices employed in Office/Consumer Environments). This robot operates in autonomous mode as well as in manual mode along with additional features like scheduling for specific time and bagless dirt container with auto-dirt disposal mechanism. This work can be very useful in improving life style of mankind. The recent development in robotics has enabled robot technology to solve many practical problems that humans encounter in day-to-day activities. But, even today manual scavenging of the drainage is practiced in all places of India, wherein men enters the manholes and clean the waste materials in the drainage manually with no technical equipment. It is a dreadful process where the drainage wastes are cleaned by the people that may include the basic tools like buckets, brooms for disposing the drainage wastes. This practice might jeopardize the lives of humans; therefore, a drainage cleaning robot is essential to replace the human intervention. The overflow of drainage water leads to several hazards to the environment. The method used now days contains pumps to suck the drainage water but it fails to clean the rock solids inside the drainage hole. In order to overcome this issue, an attempt has been made to design and develop a robot, which can be controlled by the PWD workers and efficiently cleaning and disposing the drainage wastages thereby controlling the overflow of drainage water by transmitting messages from drainage using transmitter encloses bluetooth transmitter and the receiver which has Arduino MEGA with Bluetooth receiver placed on the street poles.

14. SOLENOID VALVE POSITIONING AND MONITORING USING IOT

PROJECT MEMBERS

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ABSTRACT

In the current competitive energy market the Nuclear Industry is committed to lowering the operations and maintenance cost increase productivity and efficiency while maintaining safe and reliable operation. The present operating model of nuclear power plants is dependent on large technical staff that but the nuclear industry at long-term economic disadvantage. Technology can play a key role in nuclear power plant configuration management in offsetting labor costs by automating manually performed plant activities. The technology being developed, tested, and demonstrated the continued safe operation of today's fleet of light water reactors by providing the technical means to monitor components in plants today that are only routinely monitored through manual activities. The IoT enabled valve position indicators that are the subject of this project are able to provide a continuously available valid position indication, rather than only periodically. A real-time (online) availability of valve positions using affordable technologies are vital to plant configuration when compared with long-term labor rates and provide information that can be used for a variety of plant engineering maintenance and management applications.

15. ACCELEROMETER BASED HAND GESTURE CONTROLLED ROBOT USING ARDUINO

PROJECT MEMBERS

KRISHNA KUMAR P (RegNo.910614105312)
NAVEEN KUMAR N (Reg No.910614105318)
PRAVEEN KUMAR B (Reg No. 910614105064)

GUIDED BY

Dr. A.P.S.RAMALAKSHMI, ASSISTANT PROFESSOR /EEE

ABSTRACT

Generally, Robots are programmed to perform specific tasks which physically challenged. To increase the use of Robots where conditions are not certain such as fire fighting or rescue operations, Robots can be made which follow the instruction of human operator and perform the task. This paper describes about the gesture control Robot which can be controlled by hand gesture of human. The transmitter will transmit the signal according to the position of accelerometer and hand gesture. The receiver will receive the signal and make the Robot to move in respective direction. Here, the program is designed by using Arduino IDE. So this new concept is introduced to control the machine with the movement of hand which will simultaneously control the Robot. Nowadays, Robotics is becoming one of the most advanced in the field of technology. The application of Robotics mainly involve in Automobiles, Medical, Construction, defense and also used as a fire fighting Robots to help the people from the fire accident. Then controlling the Robot with a remote or a switch is quite complicated. So, in this project a prototype model is developed titled, “Accelerometer Based Hand Gesture Control Robots”. The main goal of this project is to control the movement of the Robots with hand gesture using accelerometer.

16. REMOTE SENSING ROVER USING ARM PROCESSOR

PROJECT MEMBERS

P. PARTHASARATHI (Reg. No.910614105059)
M. PONBALAMURUGAN (Reg. No.910614105060)
G. PRABHAKARAN (Reg. No.910614105062)
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GUIDED BY

N.Vimal Radha Vignesh, ASSISTANT PROFESSOR /EEE.

ABSTRACT

When world talk about robots, people tend to think that robots are only suitable to use in the industry or just for the scientist to test about new technologies. However, the main function of robots are to help humans in doing work either in the industries or just helping out doing normal household chores. To bridge the gap of the normal perception of “robots are for the industries only”, internet will be use. This paper presents the development of an internet controlled rover with robotic arm. The movement of the robot arm can be controlled by a computer via the internet. The robot is controlled by Raspberry pi that interfaced with the intranet using Broadcom chip built within it. In recent year, with the increase usage of wireless application, the demand for a system that could easily connect devices for transfer of data over a long distance - without cables, grew stronger. This paper presents the development of a remote sensing robotic arm. It can move forward, reverse, turn right and left for a specific distance according to the controller specification. The Interfacing of Raspberry pi to the mobile robotic arm is through wifi/intranet. Analysis such as speed, distance, load that can be lifted of the robot has been done in order to know its performance. Finally, this prototype of the robot is expected to overcome the problem such as placing or picking object that far away from the user, pick and place hazardous object in the fastest and easiest way.

17. PUBLIC WATER SOURCE OVER ABSORPTION LIMITER

PROJECT MEMBERS

B.S.KIRUBA BABU (Reg. No.910614105043)
K.KRISHNAKANTH (Reg. No.910614105044)
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GUIDED BY

Prof. A.MARIMUTHU, ASSOCIATE PROFESSOR /EEE

ABSTRACT

The availability of freshwater resources is keep on reducing due to various human activities and environmental issues such as industrial development, increasing per capita consumption, population explosion, climatic changes and economic developmental activities. This type of activities has directly causes the reduction of water resources. The aim of the project is to limit the over absorption of public water source. Water depended industries such as package drinking water, beverage industries, food industries, etc. These industries are completely depended on public water sources as well as continuously absorption of water source, so the proposed project is to limit the over absorption of our water source. By gathering the water absorption data's from those industries by using water flow sensor that data is transferred through IOT. That transferred data is received in the water management center for their data acquisition purpose. And the microcontroller is programmed to limit the absorption of water if exceeded by using relay circuit.

18. AGRICULTURAL INTELLIGENT ROBOT

PROJECT MEMBERS

M.JOTHILINGAM (910614105034)
G.KARTHICK (910614105038)
T.R.KEERTHICK KUMAR (910614105310)

GUIDED BY

Mrs. K.R.JEYAVELUMANI, ASSISTANT PROFESSOR /EEE

ABSTRACT

This project mainly emphasizes on the usage of automated agricultural equipment in the field. This robot can plough, sow and can level the land. In existing methods humans are intended to work a lot individually for each step in farming viz. plough, sowing, and leveling but this technology has made the existing processes even easier. The robot uses metallic ploughed to plough and level the land. A seed storage tank is placed on the top of the robot and it can disperse the seeds individually along each teeth of the ploughed. The leveler which is placed behind the seed storage tank closes the soil along with soil. The robot travels in a straight manner in the field. The Hall Effect sensor can be used to sense the distance travelled. The sensor makes use of the magnetic field produced by a magnet placed at the bottom of the wheel. The magnet comes in interaction with the Hall Effect sensor and thus produces a voltage signal perpendicular to the current carrying coil. Whenever the magnet interacts with the sensor output is sensed by the controller and a count is set. The no of counts made by the sensor is proportional to the distance travelled. In this way it can automatically sense the distance travelled by the robot and when it reaches the end of the farm it automatically turns accordingly and starts to do the same in the next straight line. In this way the processes are carried out till the end of the farm.

19. DESIGN OF MULTILEVEL INVERTER FOR HIGH VOLTAGE LOADS.

PROJECT MEMBERS

MADUMITHA.C **(Reg. No. 910614105048)**

KARTHIKASUNDARI.S **(Reg. No. 910614105041)**

KARTHIKA.J **(Reg. No. 910614105040)**

GUIDED BY

Mr.S.MANOHARAN , ASSISTANT PROFESSOR /EEE

ABSTRACT

Due to certain features of multilevel inverters, such types of power electronic converters have attracted the attention. Here, a new topology is proposed for multilevel inverter. This topology is based on using coupled inductors. As a result of using coupled inductors, the output voltage is increased while the currents through the power electronic switches are less than output voltage. The number of required power electronic switches against required voltage levels is a major factor in designing of multilevel converter. For the reason, switches define the circuit size, reliability, installation area, cost, and control complexity. To produce maximum number of levels at the output voltage, the proposed symmetrical topology is used for different goals, which includes dc voltage sources, gate driver circuits, the minimization of the number of power electronic switches, power diodes, and blocking voltage on switches. The operations of the proposed multilevel converters have been analyzed with the experimental and simulation results for different topologies. Verification is done using MATLAB simulation. Comparison of the results of various multilevel converters will be investigated to reflect the merits of the presented topologies. The operations of the proposed multilevel converters have been analyzed with the experimental and simulation results for different topologies. Verification of the analytical results is done using MATLAB simulation. In this work, a new topology is proposed for multilevel inverter. This structure can be considered as the perfect solution to reduce the nominal values of switches and increase the output voltage.

20. NET ENERGY METER (BIDIRECTIONAL METER)

PROJECT MEMBERS

MUTHUPANDI D **(Reg. No. 910614105317)**

MANI MARAN S **(Reg. No. 910614105313)**

MANIRATHINAM C **(Reg. No. 910614105314)**

NAVEEN KUMAR M **(Reg. No. 910614105055)**

GUIDED BY

DR.K.GNANAMBAL, PROFESSOR /EEE

ABSTRACT

Bi Directional Metering is available to customers who install renewable fuel generators such as solar, wind, hydro or biomass sources and operate the generator in parallel with their electric company's electrical system.Solar panels generate energy to power a building's electrical systems. In most cases, builders acknowledge that the solar panels installed on the roof will not always be sufficient for the building's electrical needs At these times, the surplus power is exported into the main utility grid. Most utility companies offer credits to buildings that export power in this manner. If more electric energy is produced from the system than the customer needs, the additional kilowatt-hours are measured, fed into the utility's electric system and utilized by other customers. When the monthly electric bill is calculated, if the customer uses more electrical energy than is generated, the customer pays only for the net kilowatt-hours (kWh). If the customer generates more electrical energy than is used from the utility electrical system, then the customer receives a kWh credit, which is applied to future bills. In addition, the customer is required to pay any customer charges and minimums applicable under their rate schedule. In this work, two meters are connected with a micro controller to measure both the inflow and out flow of energy form the house. The meters are idle, when the energy requirement of the house hold is fed from the solar generation itself. The system also tries to contain the energy consumption of the house hold, with the solar generation itself. At the end of the billing cycle, the total cost is calculated by estimating the difference between the inflow and outflow meters.

21. SMART ENCEPHALON-CONTROLLED WHEELCHAIR BY USING TGAM FOR ALS PATIENT

PROJECT MEMBERS

MALATHI . T (910614105049)

MEENAMBIGAI. P (910614105051)

PANDISELVI . N (910614105058)

GUIDED BY

Dr.S.P.RAJARAM, , ASSISTANT PROFESSOR /EEE

ABSTRACT

A brain-computer interface (BCI) is a new communication channel between the human brain and a digital computer. The ambitious goal of a BCI is finally the restoration of movements, communication and environmental control for handicapped people. A brainwave based brain-computer interface was connected with a Virtual Reality system in order to control a wheelchair. It offers an alternative to natural communication and control. It is an artificial system that bypasses the body's normal efficient pathways, which are the neuromuscular output channels. Different brain states are the result of different patterns of neural interaction. These patterns lead to waves characterized by different amplitudes and frequencies. This neural interaction is done with multiple neurons. Every interaction between neurons creates a minuscule electrical discharge. This project dealing with the signals from brain. Different brain states are the result of different patterns of neural interaction. These patterns lead to waves characterized by different amplitudes and frequencies. The signal generated by brain was received by the brain sensor and it will divide into packets and the packet data transmitted to wireless medium (blue tooth).the wave measuring unit will receive the brain wave raw data and it will convert into signal using MATLAB GUI platform. Then the instructions will be sending to the wheelchair to operate. The project operated with human brain assumption and the muscle movement with blinking.

22. SOLAR AND IOT BASED HEALTH MONITORING, CONTROLLING AND TRACKING SYSTEM FOR SOLDIERS

PROJECT MEMBERS

S.KAMALIKA (Reg. No.910614105035)
B.KANAGALAKSHMI (Reg. No.910614105036)
R.KRISHNAVENISHRI (Reg. No.910614105045)

GUIDED BY

Dr. S.M.KANNAN, PROFESSOR & HOD/EEE

ABSTRACT

The basic concept of Solar and IoT Based Health Monitoring, Controlling and tracking system for Soldiers is employed to produce chilling and warming effect for soldiers and additionally track the location of soldiers just in case of abnormal heart beat. In India, soldiers are working in various weather conditions such as very hot or terribly cold temperature. In this project, solar array provides power supply for the entire circuit and it charges the battery. The body heater/cooler is employed to take care of the body temperature. The PIC 16F877A microcontroller receives the information from GPS, GSM and Heart beat detector. LCD is used to display the message and location. The location of the soldiers is traced by GPS Module. The heart rate of the soldiers is sensed by Heart Beat Sensor. When the heart rate is abnormal, the alert messages are going to be sent to the army control unit through the GSM Module.

23. SMART LOAD SHEDDING AND PRICE-BASED ENERGY MANAGEMENT USING MICRO CONTROLLER

PROJECT MEMBERS

NEVADHAA DEVI K (Reg.No.910614105056)

NIVETHA N (Reg.No.910614105057)

PREETHIPASRI B (Reg.No.910614105065)

GUIDED BY

Dr.S.M.KANNAN., PROFESSOR & HOD/EEE

ABSTRACT

Recently, motivated by the rapid growth of electricity consumptions and the urgent need of reducing global carbon emission, the research on the smart grid has drawn wide attentions .The main aim of this project is to reduce the long term electricity cost of smart appliances (SAs) with deferrable operation time in smart grid, we propose a novel energy buffering framework to intelligently schedule the distributed energy storage (DES) for the cost reduction of SAs in this project. The proposed energy buffering framework determines the action policy (e.g., charging or discharging) and the power allocation policy of the DES to provide DES power to proper SAs at proper time with lower price than that of the utility grid, resulting in the reduction of the long term financial cost of SAs. Specifically, we first formulate the optimal decision problem in the energy buffering framework as a discounted cost Markov decision process (MDP) over infinite-horizon. Then, we propose an optimal scheme for the energy buffering framework to solve the discounted cost MDP based on online learning approach.

24. SMART INDUSTRIAL MONITORING AND CONTROLLING USING IoT

PROJECT MEMBERS

KEERTHANA M **(Reg. No. 910614105042)**

NANDHINI R S **(Reg. No. 910614105054)**

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GUIDED BY

Dr. S.VENKATESAN, PROFESSOR /EEE

ABSTRACT

Motors are widely used in Industries and home appliances. The multispeed and multipurpose operations are done by controlling the speed of the motor. In this project, Internet for communicating between the user and the observing unit have been implemented and also monitoring and controlling the speed of the motor. The parameters which are controlled in this system are starting, stopping and speed of the motor. The proposed variable speed drive has power conversion section, switching element of IRF 840 N channel MOSFET. The four IRF 840 MOSFETS are used as H-bridge inverter to provide the alternating current to the motor. In this drive, C124 transistors and MJE 13002 transistors are used as driver circuit to drive the H-bridge inverter. There are two power supplies in this drive. The 12 V power supply is used for frequency control circuit and driver circuit. The speed can be controlled using the webpage through the wifi.

25. AUTOMATION AND OPTIMIZATION OF SOLAR SURVEILLANCE SYSTEM

Batch Members:

SG. Thaiyal Nayagi [142015]
S. Ribu Hassini [142305]
U. Ruba Sri [142307]
IL. Swathika [142014]

Guided by:
Dr. S.P. Rajaram.,ME, PhD., AP/EEE

Abstract:

Solar lighting system plays a vital role in the application of domestic areas as well as in commercial industrial areas. But, the installation of solar in many rural areas, particularly in conventional hiker pathway of villages poses entrenched wiring and inefficient energy management problems. This problem has been solved by using the proposed system and using visible light communication (VLC). This system works with continuous searching of moving objects in the sensor system (human being) by installing many IR motion sensors in side of the pedestrian pathways. The major goal of the work is to destroy and develop a smart solar fed LED street lighting system in a cost effective way. The proposed work overcomes the issues in the conventional street lighting by adopting environment friendly alternative like solar power and by making the LED lighting system in a smarter way. Also smart accident detection can be done with the help of this proposed system in rural areas. The main advantage of this proposed system is the less installation cost for solar lighting system in the hiker walkway and effective management. The effectiveness of the work has been verified with simulation results and reduced energy wastage ensured with hardware implementation.

26. INTELLIGENT DEFROST SYSTEM BASED ON ENERGY MANAGEMENT

Batch Members:

K.Vasumathi (910614105088)

B.G.Vivetha Sri (910614105094)

S.K.Ramya (910614105068)

G.Yuvana shree Muruga Priya (910614105096)

Guided By:

Dr.P.Loganthurai.,ME, PhD., ASP/EEE.

Abstract:

In today's world Energy saving plays an important role, hence we tend to provide an energy management system in refrigerator by defrosting. An optimization aim of energy saving by automatic detection and elimination of frost at needed time. It used to minimizing the side effect of defrost cycles on the storage quality. The temperature sensor can measure the frost thickness. It can be energy saving because it solves the aimless defrost of mechanical timer defrost equipment in existing refrigeration system. A kind of temperature controller thermostat is frost detection sensor and an intelligent defrosts system. The sensor has a good consistency and strong anti-interference ability to prevent the ice interference. The frost thickness identification is determined by scattering of light rays. This propose system reduces the total power consumption which is due to misjudgment rate of timer defrost it leads to energy wastage upto 30%. Detecting the frost is the base of defrosting correctly, if we can detect the frost accurately, we can decide when to defrost so that we can save energy effectively. The only method to detect the frost thickness directly is an infrared detection method developed. but the cost is too expensive that is difficult to be applied in refrigerator so that instead of optical fiber cable these system posses the temperature controller with waterproof thermostat. So that we can solve the aimless of defrost and achieve the goal of energy saving.

27. INTELLIGENT ENERGY SAVING SYSTEM BASED ON STANDBY POWER REDUCTION

Batch Members:

C.K.VISHALI (142033)

K.YOGARAJIKA (142311)

S.VELAMMAL (142019)

Guided By:

M.JEGADEESAN M.E., (PH.D.,) ASP/EEE

Abstract:

The main objective of the project is to develop an energy saving system and to minimize the energy consumption. An energy saving system refers to a system that saves the energy consumed in a building or home, by cutting off the wasted electric power such as standby power. All electronic devices consume some amount of electric power when they are in standby mode which is commonly known as standby power. As a part of energy saving efforts, governments are operating policies that encourage the distribution of energy saving systems. Also, individual households are voluntarily installing energy saving systems to reduce electric power consumption. However, due to fixed system architecture, the existing systems have a disadvantage, lacking in extensibility and usability. Therefore, we propose an intelligent energy saving system to solve these problems. The proposed system controls the power based on the hierarchical relationship among home appliances, behavioral model along with the relationship between user activity and home appliances for standby power reduction. And the third level depends upon presence based control. In all the three modes of operation, the main thing is to cut-off unused power when the system is in partially on state condition (standby).Through this we can achieve attainable power reduction up to 10.5%.

28. ENERGY EFFICIENT WATER PUMPING SYSTEM USING SOLAR POWER

Batch Members:

S.Priyanka IV year /EEE

R.Rajapriya IV year /EEE

Guided By:

Dr.M.Mahalakhsmi AP/EEE

Abstract:

Renewable Energy sources are getting prominent in the recent years as a solution to power crisis which hampers the economic growth of our country. Renewable Energy technology combined with automation technology is the recent trend in Electrical Engineering. With this regard the proposed hardware project focuses on the design and development of automated irrigation system powered by solar energy using Internet of Things (IoT). The project uses a Simple Link Wi-Fi module (CC3200) which connects the hardware system to internet and it monitors PV system, controls the motor and solenoid valve for pumping water to the field on the statistics obtained from the water level sensor and soil moisture sensor. The entire system is overseen and governed by MQTT server (MQTT), which is an android app through internet. The main objective of the paper is to address the problem of water paucity and power dilemma by designing and implementing a smart irrigation system in the crop field. The proposed solar-driven mechanized irrigation system senses the air humidity, moisture content in the soil and irrigates the field as per the appropriate requirement of water to the crop thereby decreasing the water wastage. The proposed system results in reduction of the water scarcity problems, increases the effective utilization of the solar power and as an outcome enhance the crop yield.

29. COMPENSATION OF COMMON MODE VOLTAGE IN INDUCTION MOTOR DRIVES WITH SEPIC CONVERTER

Batch Members:

S.SHEEBA JOSELINE (142021)

A.SUJITHA(142065)

Guided by:

Mrs.M.GANESH KUMARI M.E.,(Ph.D)

Abstract:

Recently the utilization of electric vehicles increasing drastically, because of the environmental changes arises throughout the globe. Based on these issues the project focuses on the induction motor drives used in electric vehicles. Since, PWM inverter has high quality output it is used everywhere. When high switching frequency develops at the output of the inverter it is necessary to suppress the common mode voltage which damages the motor insulation, increases the shaft voltage and bearing currents. Since, the existing methods are complex and expensive, a Common Mode Active filter has been developed, which is capable of suppressing the common-mode voltage generated by high switching frequency PWM inverter. The SEPIC converter is used to step up the voltage so that the efficiency and performance of the motor increases. Using driver circuit the pulses are given to the switches which further reduces the generation of common mode voltage. The driver circuit is controlled by PIC microcontroller using Embedded C. This configuration has been simulated by using MATLAB and the prototype model of the hardware is implemented.

30. **WITRICITY FOR SHORT DISTANCE**

Batch Members:

J. G. VISHNU VARDHAN (142105)

R.R.SATHISHKUMAR (142103)

A. R. YUVARAJASRINIVASAN (142109)

Guided By:

Dr.P.Loganthurai.,ME, PhD., ASP/EEE.

Abstract:

Wireless power transmission is the transmission of electrical energy without using any conductor or wire. It is useful to transfer electrical energy to those places where it is hard to transmit energy using conventional wires. In this paper, we designed and implemented a wireless power transfer system using the basics of magnetic resonant coupling. Numerical data are presented for power transfer efficiency of both receivers. Graphs are given to show the comparison of power and efficiency with distance of both receivers.

31. **REDUCTION OF TORQUE RIPPLE CONTENT IN BLDC MOTOR**

Batch Members:

G.V.Saiganga (142023)

K.S.Srinivasan (142018)

P.Thamodharan (152904)

M.Vigneswaran (142005)

Guided By:

Dr. S. Venkatesan Prof/EEE

Abstract:

The smoothness of variable speed drive operation is critical and a viable measure used in the design and development of motion control applications. The torque produced in a brushless DC (BLDC) motor with trapezoidal back electromotive force (BEMF) is constant under ideal conditions. However, in practice, torque ripple appears on the delivered output torque. Some of these ripples result from the natural structure of torques could be minimized throughout the machine design process. Another source of the motor, while some are related to the motor design parameters. Nevertheless, these introduces a torque ripple compensation technique for a Brushless DC (BLDC) motor drive that is operated without a DC link capacitor along with a fuzzy controller . The ripples is associated with the control and drive side of the motor. This project proposed scheme uses a single switch control strategy, resembles that of a buck converter during operation at any switching state .The impact of operation without the DC link capacitor on the torque produced is investigated, along with the fuzzy controllers speed stability and torque ripple reduction. The effectiveness of the proposed scheme have been verified with Matlab/Simulink.

32. MONITORING AND CONTROL OF SOLAR PANEL VOLTAGE USING IOT

Batch Members:

S.RAFIC BASHA – (910614105319)

B.VIJAY – (910614105324)

B.YOGESH WARAN – (910614105328)

Guided By:

Mr.M.JEYAMURUGAN M.E., AP (Sr.Gr.)/EEE

Abstract:

In this project using the Internet of Things Technology for supervising solar photovoltaic power generation can greatly enhance the performance, monitoring and maintenance of the plant. With advancement of technologies the cost of renewable energy equipments is going down globally encouraging large scale solar photovoltaic installations. In this project the development of a smart automated monitoring & controlling system for the solar panel is described, the core idea is based on IoT (The Internet of Things). The measurements of data are made using sensors, block management data acquisition modules, and a software system. Then, all the real-time data collection of the electrical output parameters of the PV plant such as voltage, current and generated electricity is displayed and stored in the block management. The proposed system is smart enough to control MPPT and boosting voltage if the panel is not working properly, to display errors, to remind about maintenance of the system through IOT. The advantages of the system are the performance of the solar panel system which can be monitored and analyzed.

33. **INDUSTRIAL DOWNTIME MONITORING USING GSM**

Batch Members:

V.THALAPATHI PRABAKARAN
S.SARAVANAKUMAR
C.VIVEK
D.VIJAYAPANDI

Guided By:

Dr.A.P.S.RAMALAKSHMI

Abstract:

The technology and processes associated with manufacturing have undergone a major change during the last few decades: for being able to compete in today's economy, the time-to-market has to be reduced while at the same time, mass production with high quality standards is required. While these aspects are true for products in almost any domain, the notable ones are automotive and aerospace, having a high rate of production involving operations like cutting, shaping, molding, welding, polishing and assembly operations and in the large processing industries such as rubber, chemical and nuclear industries, where time- or process critical and hazardous operations are involved. Thus, the demand for high-production rate coupled with strict-quality norms can be achieved with less and less direct human interaction and an increasing degree of automation.[1] This project makes a study on the design and development features of Self Organizing Sensor Networks for Automation and Process Monitoring.[2] The project aims at development and prototypical implementation of software and hardware components for monitoring of industrial production processes, a closed loop control, network self-organization and wireless components. The System can be divided into data acquisition part, controlling part and data sending part.[3] The first part is the temperature measure system; the second is a phase control circuit which maintains the heat of bead winding material; the third is fault message sending system.[4] The temperature measure system is mainly responsible for the temperature data acquisition and display on the LCD. The phase control section will control the voltage to heater section to maintain temperature constant. And sending terminal sends data to the distant. In case any one of the component is activated, the whole workstation is usually stopped. Typically the operator will notice the system failure i.e. from the light tower placed on top of the machine indicating the machine error state. The normal procedure for the operator then is to go through all the safety components and check which one has caused the alarm. In case of a large system with tens of widely distributed safety components, significant production time can be lost. Another drawback of this type of activity is that the fail states i.e. opening and closing of safety interlock switches are not recorded. Storing this historical information can be very useful for instance detecting how the system is operated and recognizing the most critical issues to be improved. These are defined as obsolescence and organizational ageing. Moreover, older structures may have particular problems compared to more modern ones, thus they require a different attention.

34. REAL TIME FISH FEEDER MANAGEMENT SYSTEM USING IoT

Batch Members:

A.Vijay

S.Vignesh

D.Ruben Kennady

Guided By:

A.Manoj,M.E.,AP/EEE

Abstract:

Our project is the automatic fish feeder system using Internet of Things the emphasis on choosing this as the title is because to initially give a solution to the problem faced by almost everyone. Human interference on the part of taking care of pet when they are busy is difficult and hence over the system will be efficient enough to overcome the hurdles faced by human in taking care of pet. The pet care system is a complete equipment for monitoring the pet activities and also by making the pet feel free The increase in growth of fish farming /aquaculture has lead to a lot of research work in this field management of food delivered plays an important role here. The purpose of this research is to reduce the manual work and save the time through making system automated .This is related to a system device which feeds the fishes with predetermined amount of food at the decided time. The principle of working model is based on controlling the amount of food fed in the fish tank unit at a different intervals of time .The prototype which is a combination of mechanical and electrical devices uses the concept of stepwise rotation of stepper motor for the giving precise the amount of food output in proper time. Thus saving labour time.

35. **SMART INGRESS AND EGRESS SYSTEM FOR INDIAN RAILWAYS**

Batch Members:

R.SARAVANA KUMAR (910614105074)

M.SATHISHKUMAR (910614105075)

V.SURIYAKUMAR (910614105082)

S.VIVEKRAM (910614105093)

Guided By:

Mr.M.JEGADEESAN M.E.,(P.hD)

Abstract:

Our project describes the solution for the problem which occurs in the railway Network. The major problem is people travelling without proper ticket, this can be averted by Digitalization of railway Junction by providing E-Ticket to the Passenger . This can be done by generating the Ticket with the barcode and the barcode is valid only at the time of Journey, after completing the journey the barcode will get expired and the Servo mechanism at the entry of the railway junction will not get opened for the expired ticket. Additional feature of our project is fire alarm that is going to be placed in all the compartments of the train. If the fire broke out in any compartment the sensor attached in the compartment senses the fire and gives the warning signal to the driver. Hence the train will be stopped and the passengers can able to leave the train safely. The fire gets automatically extinguished using the water in the train. The water supply is taken from toilet`s water supply through pipes.

36. CANE UNLOADED EOT CRANE HOIST LIMITED AND ERC CHAIN LOOSE ALARM

Batch Members:

M.SUDHARSAN

B.SURIYAPRAKASH

K.VADIVARASAN

Guided By:

Mr.M.Jeyamurugan.,M.E., AP/EEE

Abstract:

This work develops as a overload protection of EOT crane in EID PARRY INDIA LIMITED, NELLIKUPPAM,CUDDALORE **.**

Overhead cranes are often subjected to heavy stresses on its structure as they carry heavy loads. Stress on its structure leads to unwanted vibrations that lead to structural damages and thereby reduced life span. Whereas, Chain hoists are used for lower capacity, lighter duty applications and for projects in which cost is a primary deciding factor. Due to the overload of applying on the crane, the chain hoist gets loose and damage while lifting the materials .In this project, we are concentrating on the misbehaviors of Electric Overhead Travelling Crane (EOT) and Elevated Rake Carrier (ERC) chain hoist. When the chain gets changes in their structure or behavior, an alerting system of alarm will be intimated to the authority by using a proximity sensor.EOT cranes are used in industries for lifting materials from one place to another.ERC conveyer is used to collect Bugasse and send for further process. Problems occurred in EOT and ERC are when they overloading the process is stopped. To rectify those problems we are using inductive proximity sensor.By using proximity sensor we can identify and send signals to operator when EOT and ERC are overloaded. The main advantages of using proximity sensor in those cases the process is simple and cost is very less.

37. AUTOMATED MARITIME BOUNDARY DETECTION SYSTEM WITH CYCLONE ALERT USINGLORA

Batch Members:

Ranjith K (Roll No. 142007)

Sujithkumar D (Roll No. 142060)

Sivapradeep Kumar S (Roll No. 152911)

Guided By:

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Abstract:

Maritime boundary violation and intrusion by fishing boats has been a recurrent problem not only for the errant fishermen but also a massive burden on governments and public alike. This is due to the restrictions on maritime boundary conditions and the illiterate nature of poor fishermen who depend on fishing in the dangerous waters for their livelihood. The chief solution is to safe guard these fishermen from the danger which they are encountering in everyday life for their livelihood. Thus the main objective of the proposed work is to implement an efficient scheme to help the fishermen from crossing the International Maritime Boundary Line and also enables the fishermen to report to the Coast Guard on spotting an intruder. The proposed system consists of a combination of GPS and LoRa based technology for tracking the location of boat and transmission of data to the control room, and a PIC micro controller which controls the operation of the entire system. The Boat Unit installed in each fisherman's boat continuously retrieves its GPS coordinates and also calculates the distance between the boat and the stored values of the maritime border. When the distance between the boat and the country's border is below the reference value, an alarm is triggered which alerts the fishermen. When the distance between boat and maritime border further decreases to a minimum value the coordinates of the fisherman boat is sent to the main server by the GPS module. The main server forwards the location to the nearest available Coast Guard patrol boat and also to base station located on the shore indicating that a vessel has crossed the border using LoRa wireless transmission system.