Proceedings of the Third National Conference

on

Innovations and Advancements in Electrical Sciences

NCIAES'18

23rd March , 2018

Organized by
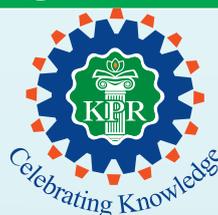
Department of Electrical and Electronics Engineering

KPR

Institute of Engineering and Technology

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai)

Accredited by NBA (CSE, ECE, EEE & MECH) and NAAC with 'A' Grade

AN ISO 9001:2015 and ISO 14001:2015 Certified Institution

DSIR Certified Scientific and Industrial Research Organization

Arasur, Coimbatore - 641 407

Knowledge Partners

PREFACE

The Third National Conference on Innovations and Advancements in Electrical Sciences (NCIAES'18) is organised by Department of EEE, KPR Institute of Engineering and Technology (KPRIEnT) in association with ISTE, IEEE Madras Section, IE(I) and IETE. KPRIET promoted by KPR groups, is a renowned institution that focuses to offer quality education to the younger generation to strengthen our nation in the field of Engineering and Technology.

The NCIAES is emphasis on "Greener Energy for future Generation". The conference accomplishes on recent trends in the field of Electrical, Electronics, Communication and Computer Science Engineering. A substantial number of technical papers has been received in variety of disciplines for deliberations, the outcome of which is aimed at emerging trends in the respective field.

More than 50 presented papers maintained the high promise suggested by the full length papers and the programme was chaired in a professional and efficient way by the session chairmen. We are indebted to those who served as session chairs. We would like to thank all the participants for their contributions to the conference and for their contribution to these Proceedings. It is appropriate that we record our thanks to our fellow members of the Organizing Committee for their support to make the conference highly successful. We would also like to bestow our appreciation for all the faculty members in making excellent logistical arrangements. The efforts set have made a great contribution to the success. The continuing success of conference like this will lead for fruitful upliftment in a continuous series.

Dr. V. KUMAR CHINNAIYAN, HoD, EEE
Convenor

MESSAGE FROM CHAIRMAN

I am pleased to invite you for the upcoming Third National Conference on Innovations and Advancements in Electrical Sciences (NCIAES'18) with the theme "Greener Energy for future Generation" on 23rd March 2018. I am happy to know that through this conference, the college proposes to showcase the current and emerging trends in the engineering and technology. As the topic for the conference discusses the recent trends in the field of Renewable Energy and allied sectors, definitely creates a forum for young budding engineers and research scholars. I congratulate the organizers for taking the initiative to host this national conference. I am confident that this conference will be a grand success, and that all participants will enjoy a fruitful and enlightening discussion. I wish the participants, all the very best in their future endeavors.

Thiru.K.P.Ramasamy
Chairman, KPR Groups

MESSAGE FROM PRINCIPAL

It is my pleasure and honour to invite the technocrats for Third National Conference on Innovations and Advancements in Electrical Sciences (NCIAES'18). I appreciate the organizers for choosing the theme of national importance, "Greener Energy for future Generation". I am very much happy to note that this conference is organized in association with ISTE, IEEE Madras Section, IE(I), IETE. I am sure that the conference would set the stage for academicians across the spectrum of technology and industry to discuss and review the status of technological advancements in the country in renewable energy sector. I hope, this would go a long way to set a frame work to upgrade and improve the ever changing panorama of renewable power generation, Electrical vehicle technology, distribution and utilization. I wish the organizers of the conference the best in their endeavors to make the conference a grand success.

Dr.K.Bommanna Raja
Principal

MESSAGE FROM ORGANIZING SECRETARIES

On behalf of the Organizing Committee, it is our pride and privilege to invite you for Third National Conference on Innovations and Advancements in Electrical Sciences (NCIAES'18) to be held in KPR Institute of Engineering and Technology, Coimbatore. All the faculty members of our department are eagerly looking forward to welcome participants from various part of the country.

Our college has sprawling lush green lawns and is spacious with buildings of architectural excellence. Coimbatore, Manchester of south India is known for its textile, motor industry, auto component industry, medical tourism and hospitality. Apart from this, the city has more than 50 engineering colleges and five universities and has become an education hub of Tamilnadu.

Improving quality in Engineering is the dream and aspiration of all Engineers. This kind of conferences will definitely create a forum for young budding engineers and technocrats to discuss the advancements in the various fields of engineering. Amidst the power packed technical sessions, we, the organizing committee is committed to host a conference conducive to a plethora of knowledge sharing through key note addresses of eminent personalities. We hope that this conference will be a positive contribution towards building the youngest generation with good quality of technical skills.

We look forward to welcoming you to KPRIET, Coimbatore and assure that your stay would be pleasant and productive.

Prof.S.VIVEKANANDAN
Prof.G.SARAVANAN
Organizing Secretaries

ORGANIZING COMMITTEE

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ABOUT THE INSTITUTION

KPR Institute of Engineering and Technology (KPRIEnT) is a new generation engineering college established in the year 2009 at Coimbatore, Coimbatore District, Tamil Nadu under KPR Educational Trust of KPR Group, one of the largest industrial conglomerates and vertically integrated apparel manufacturing companies in India.

KPRIEnT approved by AICTE, New Delhi and Affiliated to Anna University, Chennai, Accredited by NBA (CSE, ECE, EEE & MECH), NAAC with "A" Grade, An ISO 9001:2015 and ISO 14001:2015 certified Institution, DSIR Certified Scientific and Industrial Research Organization, Top 200 at National Level in NIRF ranking, is dedicated for an unparalleled learning experience.

KPRIET offers six undergraduate programmes (4 years) in Bachelor of Engineering namely
- Biomedical Engineering
- Civil Engineering
- Computer Science & Engineering
- Electronics and Communication Engineering
- Electrical and Electronics Engineering and
- Mechanical Engineering

And four post graduate programmes (2 years) in Masters of Engineering namely
- CADD / CAM
- Computer Science & Engineering.
- Structural Engineering
- VLSI Design

Ever since the inception, KPRIEnT is committed to holistic education and making the teaching – learning process more meaningful. The zeal and dedication with which KPRIET revolves is well depicted in its motto "CELEBRATING KNOWLEDGE", making it different from many institutions offering engineering education at large.

This commitment to excellence is supported by a strong team of experienced professionals and is best reflected in its goal to become a globally recognized institute of engineering and technology.

The **KPR group of companies** has established a lead position in South India with interests in Textiles, Wind energy and Sugar. The companies are threaded by a unified code of values: commitment to excellence, quality and the willingness to give back to the environment.

KPRIEnT being an initiative by KPR Educational Trust, these unified code of values are enthralled in crafting the below governing disciples of KPRIEnT.

Vision of the Institute

To become a premier institute of academic excellence by imparting technical, intellectual and professional skills to students for meeting the diverse needs of the industry, society, the nation and the world at large.

Mission of the Institute

- Commitment to offer value based education and enhancement of practical skills.
- Continuous assessment of teaching and learning process through scholarly activities.
- Enriching research and innovative activities in collaboration with industry and institute of repute.
- Ensuring the academic process to uphold culture, ethics and social responsibility.

Quality Policy

- To impart education to bring academic excellence.
- To ensure students upholds moral and ethical values.
- To cater the demand driven needs of various stakeholders.
- To promote research and facilitate technology transfer of societal significance.

Vision of the Department

To be the centre of higher learning in the field of Electrical and Electronics Engineering by educating the students to meet the global challenges with professional ethics and social consciousness.

Mission of the Department

- Providing technical, intellectual and ethical environment to the students through knowledge centric education and research.
- Collaborating with industries in the vicinity, nationally and internationally for exposure and innovation.
- Enabling the students to serve the society through prolific ideas.

23rd March, 2018

Department of Electrical and Electronics Engineering

PROGRAM OUTLINE

9.00 am - 10.00 am	Registration
10.30am - 10.45 am	Inauguration
10.45 am - 11.00 am	Networking Tea/Coffee Break
11.00 am - 1.00 pm	Parallel Sessions-I
1.00 pm - 2.00 pm	Lunch Break
02.00 pm - 3.30 pm	Parallel Sessions-II
03.30 pm - 3.45 pm	Networking Tea/Coffee Break
03.45 pm - 4.45 pm	Valediction

Date: 23.03.2018

Paper ID	Title of the Paper
NCIAES 1001	A NOVEL BATTERY AND SUPER CAPACITOR USING IOT TO INTERFACE RENEWABLE ENERGY SOURCES WITH DUAL DIRECTION AND ITS APPLICATION
NCIAES 1002	RAPID CHARGING STATIONS FOR AUTOMOBILES USING BIASED POWER CHOPPER
NCIAES 1003	UBIQUITOUS ENERGY
NCIAES 1004	A SMART WEARABLE SYSTEM FOR PATIENT MONITORING BY USING IOT
NCIAES 1005	REMOTE POWER EXCHANGE FOR ELECTRIC VEHICLE APPLICATION
NCIAES 1006	TROLLEY FOLLOWER FOR HYPERMARKETS
NCIAES 1007	DESIGN AND IMPLEMENTATION OF REAL TIME EMBEDDED BASED VEHICLE TO VEHICLE COMMUNICATION SYSTEM
NCIAES 1008	ENERGY METER MONITORING AND CONTROLLING USING INTERNET OF THINGS
NCIAES 1009	AUTOMATING AND ANALYSING GREENHOUSE HYDROPONIC FARMS USING IOT
NCIAES 1010	SMART CLASSROOM AUTOMATION SYSTEM USING INTERNET OF THINGS(IOT)
NCIAES 1011	MISSION ON SECURITY SYSTEM BASED SMART BIKE IN EMBEDDED SYSTEM
NCIAES 1012	SMART SHOPPING TROLLEY
NCIAES 1013	IOT BASED WASTE MANAGEMENT FOR SMART CITY
NCIAES 1014	FLAW DETECTION SYSTEM IN RAILWAY LINES USING INTERNET OF THINGS
NCIAES 1015	AADHAR CARD BASED ELECTRONIC VOTING MACHINE
NCIAES 1016	DESIGN AND ANALYSIS OF PV BASED INTERLEAVED BOOST CONVERTER FOR SINGLE PHASE APPLICATIONS
NCIAES 1017	EMBEDDED BASED ELECTRONIC HEALTHCARE MONITORING SYSTEM
NCIAES 1018	DIGITAL FUEL LEVEL INDICATOR USING LEVEL SENSOR WITH SECURITY SYSTEM BASED ON GSM MODULE

NCIAES 1019	DESIGN OF TRANSFORMER MONITORING SYSTEM USING GSM TECHNOLOGY
NCIAES 1020	SMART ENERGY SAVING AND SAFETY SYSTEM
NCIAES 1021	SWIMMER TRACKING SYSTEM
NCIAES 1022	WIRELESS ELECTRONIC DIGITAL NOTICE BOARD USING GSM
NCIAES 1023	A SINGLE STAGE SINGLE PHASE RECONFIGURABLE INVERTER TOPOLOGY FOR A SOLAR POWERED HYBRID AC/DC USING FUZZY LOGIC CONTROLLER
NCIAES 1024	VOICE AND DATA COMMUNICATION USING LI-FI WITH HUMAN DETECTOR SENSOR UNDER OCEAN
NCIAES 1025	SMART CITIES SAFETY AND SECURITY MONITORING SYSTEM BASED ON IOT
NCIAES 1026	UNDERWATER IMAGE ENHANCEMENT BASED ON COLOR BALANCE TECHNIQUE
NCIAES 1027	SMART CLASS ROOM SYSTEM FOR STUDENT MONITORING AND LOCATION TRACKING
NCIAES 1028	ARDUINO BASED PROTECTION AND MONITORING OF ELECTRICAL MACHINES
NCIAES 1029	ARUDINO AND PROTEUS BASED PROTECTIVE RELAY APPLICATION IN POWER SYSTEM AGAINST OVER VOLTAGE AND UNDER VOLTAGE
NCIAES 1030	AUTOMATION IN GREENHOUSE MONITORING SYSTEM
NCIAES 1031	INTELLIGENT TRAFFIC CONTROL SYSTEM USING IOT
NCIAES 1032	MEMS SENSOR INTELLIGENCE DAMAGE DETECTION FOR WIND TURBINES
NCIAES 1033	HEALTH CARE MONITORING USING IOT
NCIAES 1034	PLC BASED SMART WATER DISTRIBUTION AND MANAGEMENT SYSTEM
NCIAES 1035	MINIMIZING INDUSTRIAL PENALITY BY ENGAGING THYRISTOR SWITCHING CAPACITOR AND DATA LOGGING USING IOT
NCIAES 1036	BABY INCUBATOR CONDITION MONITORING AND ALERT SYSTEM
NCIAES 1037	VOICE AND DATA COMMUNICATION USING LI-FI WITH HUMAN DETECTOR SENSOR UNDER OCEAN
NCIAES 1038	MULTIPHASE MOTOR CONTROL USING SINGLE MICROCONTROLLER
NCIAES 1039	DIGITAL FUEL METER FOR AUTOMOBILES
NCIAES 1040	GSM BASED SMART IRRIGATION SYSTEM

NCIAES 1041	AN INTENSIVE FARMING TECHNIQUE IN MODERN CITIES USING IMAGE PROCESSING
NCIAES 1042	REDUCING THE COST OF ELECTRICITY USING IOT
NCIAES 1043	TOPOGRAPHIC TRACING BY BIONIC PERSONS
NCIAES 1044	IOT BASED HYBRID SOLAR/WIND RENEWABLE ENERGY RESOURCES FOR INDUSTRIAL APPLICATION
NCIAES 1045	DEVELOPMENT OF ULTRA CLEAN PEM FUEL CELL BY USING SODIUM HYDROXIDE WITH SOLAR PANEL
NCIAES 1046	FUZZY CONTROL FOR PV ENERGY HARVESTING BASED ON CASCADED POWER OPTIMIZERS
NCIAES 1051	A SMART SYSTEM TO PREVENT CHILDREN FROM FALLING INTO BOREWELLS

Paper ID:NCIAES 1001

A NOVEL BATTERY AND SUPER CAPACITOR USING IOT TO INTERFACE RENEWABLE ENERGY SOURCES WITH DUAL DIRECTION AND ITS APPLICATION

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Assistant professor ,Dept. of EEE, Excel College of Technology, Komarapalayam, India
[#] *Professor, Dept. of EEE, K.S.R College of Engineering, Tiruchengode, India*
Dept. of EEE, Excel College of Technology, Komarapalayam, India

Abstract:

A multi-input DC-DC help converter is proposed to get control from a few info sources and to supply the managed yield voltage to the heap from the sources. The information sources are the sustainable sources like sun based, wind, power module and vitality stockpiling frameworks like battery and super capacitor the IOT innovation was utilized as a part of this procedure to monitor and control. The battery used is bidirectional in its energy stream consequently the converter topology empowers the charging and releasing of the capacity component through information control sources. The task will be in the bidirectional route for the battery and the super capacitor. The control procedure proposed for this converter depends on stage move control and to manage the voltage to utilize PI controller. The proposed topology has the benefit of intrinsic bidirectional power stream, negligible number of transformation steps, high effectiveness and concentrated control can be executed.

Paper ID: NCIAES 1002

RAPID CHARGING STATIONS FOR AUTOMOBILES USING BIASED POWER CHOPPER

S.Sankarananth*, M.Karthiga[#], S.Muthuraj, *M.Yogalatha*
Assistant professor, Dept. of EEE, Excel College of Technology, Komarapalayam, India
[#]*Assistant Professor, Dept. of CSE, Bannari Amman Institute of Technology, Sathyamangalam, India*
Dept. of EEE, Excel College of Technology, Komarapalayam, India

Abstract:

This paper proposes an interleaved partial power converter (PPC) for the DC-DC conversion stage of Electric automobiles for rapid charging stations from the solar panel. The proposed conversion topology is mainly based on the dual H-Bridge converter. The main function of the PPC is to allow a fraction of power for the conversion purpose and the remaining is bye passed and directly supplied to the load so that the efficiency is increased in the converter. The dual H-Bridge converter is mainly used for the fast charging purpose. The MPPT is designed for using easy and effective of charge control by using MPPT (Maximum Power Point Track).It enhance the battery life by providing higher efficiency to it. The principle of operation of the proposed PPC is theoretically analyzed. Simulations are provided for the charging of EV battery.

Paper ID: NCIAES 1003

UBIQUITOUS ENERGY

S.R.Sundar Raju
Dept of EEE, P.A.College of Engineering and Technology, Pollachi, Coimbatore, India

Abstract:

Ubiquitous Energy is the concept of energy retrieving from the sun via solar power satellites , transmit as the radio frequency waves and beamed to a receiver site on earth and reconverted to electricity by using transmitting and receiving antenna with the technology of wireless power transmission. In this paper, I present the concept of transmitting power without using wires i.e., transmitting power as microwaves from one place to another is in order to reduce the transmission and distribution losses. I also included merits, demerits and applications of this concept.

Paper ID: NCIAES 1004

A SMART WEARABLE SYSTEM FOR PATIENT MONITORING BY USING IOT

C.Satheshkumar, R.Boobathi, K.Vijay
Dept. of EEE, Maharaja Engineering College, Avinashi, Coimbatore, India

Abstract:

The objective of the work is providing an effective application for real time health monitoring and tracking using internet of things (IOT). The system will track, trace, monitor patients and facilitate taking care of their health, so efficient medical services could be provided at appropriate time. By using specific sensors, the data will be captured and compared with a configurable threshold via Arduino Uno which is defined by a specialized doctor who follows the patient; in any case of emergency a short message service(SMS) will be sent to the Doctor's mobile number along with the measured values through global system for mobile communication (GSM) module. Further more, the global positioning system (GPS) provide the position information of the monitored person who is under surveillance all the time. In the earlier mode of operation the patients were monitored individually which had a major drawback of monitoring single person for only particular period of time and the doctor duty was also increased. Usually ward evaluation does not imply continuous physiological parameters monitoring and therefore patient relax is not uncommon, this system aims to offer mobile support in order to facilitate faster and better medical interventions in emergency case. The present paper describes the steps taken to design and build a low cost modular monitoring system prototype. Health monitoring systems have rapidly evolved recently and smart system have been proposed to monitor patient current health conditions in our proposed and implemented system. This system will be able to bridge the gap between patients in dramatic health change occasion and health entities who response and take actions in real time applications.

REMOTE POWER EXCHANGE FOR ELECTRIC VEHICLE APPLICATION

G.Keerthana, J.Mohamed Ashick, S.B.Shabir, B.M.Prabhu[*]
Assistant professor, Dept. of EEE, Angel College of Engineering and Technology, Tirupur, India
Dept. of EEE Angel College of Engineering and Technology, Tirupur, India

Abstract:

Wireless power transfer (WPT) using magnetic resonance is the technology which could set human free from the annoying wires. In fact, the WPT adopts the same basic theory which has already been developed for at least 30 years with the term inductive power transfer. WPT technology is developing rapidly in recent years. At kilowatts power level, the transfer distance increases from several millimeters to several hundred millimeters with a grid to load efficiency above 90%. The advances make the WPT very attractive to the electric vehicle (EV) charging applications in both stationary and dynamic charging scenarios. This project reviewed the technologies in the WPT area applicable to EV wireless charging. By introducing WPT in EVs, the obstacles of charging time, range, and cost can be easily mitigated. Battery technology is no longer relevant in the mass market penetration of EVs. It is hoped that researchers could be encouraged by the state-of-the-art achievements, and push forward the further development of WPT as well as the expansion of EV.

TROLLEY FOLLOWER FOR HYPERMARKETS

V.Manirathinam, K.Mohamed Usama Khan, M.Sasikumar, C.K.Vijayalakshmi[*]
Assistant professor, Dept. of EEE, Angel College of Engineering and Technology, Tirupur, India
Dept. of EEE Angel College of Engineering and Technology, Tirupur, India

Abstract:

A shopping trolley is a vital instrument for shopping in general stores or markets. In any case, there are shopping trolleys deserted wherever in stores in the wake of being utilized. Likewise, there are additionally shopping trolley wellbeing issues, for example, sliding down from an elevator. It is known to be a bother and time squandering for clients who are in race to look for wanted items in a market. In this way, a programmed human and line following shopping trolley with a brilliant hopping frame work is created to take care of these issues. A line following versatile robot is introduced under the trolley to lead the clients to the things' area that they intend to buy in the store. This paper introduces the equipment and programming outline of the compact robot. The aftereffect of the testing on the utilized sensors like ultrasonic and line sensors is introduced. In conclusion, the graphical UI of Android application amid the shopping trolley in activity is clarified.

Paper ID: NCIAES 1007

DESIGN AND IMPLEMENTATION OF REAL TIME EMBEDDED BASED VEHICLE TO VECHILE COMMUNIUCATION SYSTEM

P.Sriram, M.Palanichamy, G.Alexander, G.Vijay, R.Sathish[*]
Assistant professor, Dept. of EEE, Angel College of Engineering and Technology, Tirupur, India
Dept. of EEE, Angel College of Engineering and Technology, Tirupur, India

Abstract:

Nowadays people are driving very fast, accidents are occurring frequently while driving such as zone wise, hills area and highways. To avoid such kind of accidents and to alert the drivers about the speed limits in such kind of places the highways department have placed the signboards. But sometimes they may not be possible to view that kind of signboards and there will be a chance for accident. To intimate the driver about the speed limit and to detect crashes automatically, a smart device is placed in each and every vehicle for communication purpose with control room and with various incoming vehicles. A sensor is placed in front and back of the vehicle to alert the nearby vehicle and control room when the vehicle met with an accident. IR sensor and LCD display are used to alert and indication purpose in every vehicle. These are all controlled by using PIC controller. A smart device is used to measure the fuel level in fuel tank in terms of liters. Four types of alerting signals accident, natural disaster, road block and traffic are can be given to the driver in order to alert nearby vehicle. The alerting signals are unlocked when the vehicle travels at the speed of 30 km/hour for 10 minutes. The result of the proposed protocol achieves high potential in delivering emergency warnings and efficient bandwidth usage in stressful road scenarios.

Paper ID: NCIAES 1008

ENREGY METER MONITORING AND CONTROLLING USING INTERNET OF THINGS

D.Aarthi Sri, J.Kowsalaya, R. Mohan Kumar, R. Prem Kumar, B.Gopalakrishnan[*]
Assistant professor, Dept. of EEE, Angel College of Engineering and Technology, Tirupur, India
Dept. of EEE, Angel College of Engineering and Technology, Tirupur, India

Abstract:

The Existing household Energy meter perusing frameworks all around exist numerous issues, for example, trouble in development, excessively limit transmission capacity, too low rate, poor ongoing, not two way correspondence rapidly and so forth. To take care of above issues, this paper utilizes the remote innovation for Automatic Meter Reading framework. A proposed strategy gives the correspondence between the Electricity Board area and the purchaser segment utilizing Internet of things (IOT) for transmitting the client's power utilization and bill data that is figured utilizing PIC microcontroller. The power changes are checked utilizing the voltage sensor and current sensor are sustained to the microcontroller which demonstrates it to the Electricity Board. Contingent upon the power age, the house hold gadgets are controlled consequently. From Electricity Board area the data in regards to the bill sum and installment are conveyed to the shopper by means of Global System for Mobile correspondence. The power and charging data is ceaselessly transmitted by the utilization of Internet of Things and checked by the Electricity Board segment. At whatever point there is control robbery distinguished can be sent from the Electricity Board segment to slice the supply to the client.

Paper ID: NCIAES 1009

AUTOMATING AND ANALYSING GREENHOUSE HYDROPONIC FARMS USING IOT

S.Keerthana, K.Devika, S.Sathiyadevi, M.Priyanka
Dept. of ECE, SSEC, Coimbatore, India

Abstract:

Hydroponics is a subset of hydro culture and is a method of growing plants using mineral nutrient solutions, in water, without soil. This paper presents Intelligent Plant Care Hydroponic that exercises environment driven control methods through an Internet-of-Things (IOT) management tool called IOT talk. IOT talk provides a scalable and configurable software for users to easily and quickly add/remove/exchange the sensors and actuators and program their interactions. From the experimental measurement results, the developed environment driven control methods include sensors, LED lighting, water spray and water pump which can effectively lower the CO2 concentration, the temperature and increases the water level respectively.

Paper ID: NCIAES 1010

SMART CLASSROOM AUTOMATION SYSTEM USING INTERNET OF THINGS (IoT)

P. Mohan Raj, P. Rajeshkumar, I. Sivaranjani, S. Karthick Kumar[*]
*Assistant professor, Dept. of EEE, Angel College of Engineering and Technology, Tirupur, India
Dept. of EEE, Angel College of Engineering and Technology, Tirupur, India

Abstract:

This paper proposes the design of Inter of Things (IoT) based classroom automation system using Raspberry pi. Currently in day today's life we can hardly find a place without a automation system. This project is intended to construct a classroom automation system that uses any mobile device to control the appliances. This classroom automation system is based on IoT. Automation is very exciting field when it uses new technologies like Internet of Things (IoT). Raspberry pi is credit card size computer. Raspberry pi supports large number of peripherals. Raspberry pi is having different communication media like Ethernet port, HDMI port, USB port, Display Serial Interface, Camera Serial Interface, Bluetooth, Bluetooth low energy. It allows to control number of appliances simultaneously. Here local server is created on Raspberry pi. User required to use different mobile devices like smart phones, Laptops, Tablets to operate the appliances like fan, light with the help of UI created on web page.

Paper ID:NCIAES 1011

MISSION ON SECURITY SYSTEM BASED SMART BIKE IN EMBEDDED SYSTEM

E.Elanchezhiyal ,V.Jithu, S.Kanagavalli, V.Vasundhra
Dept. of ECE, Sree Sakthi Engineering College, Karamadai, Coimbatore, India

Abstract:

India has the highest number of road accidents in the world. 30% of the accidents victims die at the crash site, 14% in the ambulance and the rest in the hospital. Drunken driving killed over more than 10,000 people across India in 2011.Driving is a complex task. Drivers need to use a number of skills while driving. Any lapse in concentration increases the risk of the vehicle being involved in a crash. Driving while using a hand held mobile phone can cause both physical and mental distraction which impairs driving performance. Using a mobile phone while driving can significantly impair a driver's reaction time, visual search patterns, ability to maintain speed and position on the road, ability to judge safe gaps in the traffic, general awareness of other road users. Research shows that using a mobile phone while driving increases the risk of crashing. Using a mobile phone while driving can bring even greater danger to novice drivers as they may experience difficulty in balancing the many demands on their driving - from perceptual, mental and physical tasks. Research has found novice drivers who use a mobile phone spend less time looking at the road ahead. They are also more likely to wander over the road (across traffic lanes) and take longer to notice driving hazards. A mobile phone can be important in an emergency. If you need to use your mobile phone to call for help, stop and park safely where you will not endanger other road users.

To remove these hazards a new efficient type of speed control device is used while driving is proposed using Microcontroller. In this new design we are going to control the speed of vehicle by using the Microcontroller. We are going to do it using a 433MHz frequency which has a public license.

Paper ID: NCIAES 1012

SMART SHOPPING TROLLEY

Aishwarya Ashokan, N.Manjubharathi, R.Manjula devi, S.Sobina, Dr.A.Sridevi*
HoD, Dept. of EEE, Sree Sakthi Engineering College, Karamadai, Coimbatore, India
Dept. of ECE, Sree Sakthi Engineering College, Karamadai, Coimbatore, India

Abstract:

In today's world everything is automated but still we have to stand in a long queue in supermarket and shopping malls. In this system we are using RFID and ultrasonic to scan the products and the total amount will be displayed in the LCD, with the help of Bluetooth the product information is transferred to our mobile phone. It reduces the time consumption in billing section and minimizes the error.

IOT BASED WASTE MANAGEMENT FOR SMART CITY

T.S.Karthika, M.Moneshwarya, M.Sountharya, Soumiya Sankar
Dept. of ECE, Sree Sakthi Engineering College, Karamadai, Coimbatore, India

Abstract:

The increase in population, has led to tremendous degradation in the state of affairs of hygiene with respect to waste management system. It creates unhygienic condition for the people and creates bad smell around the surroundings this leads in spreading some deadly diseases & human illness, to avoid such a situation we are planning to design "IOT Based Waste Management for Smart City". This paper is proposed IOT based smart waste clean management system which checks the waste level over the dustbins by using Sensor systems. Using GPS Module to track the location where the dustbin gets filled. Once it detected immediately this system altered to concern authorized through IoT. These details can be accessed by the concern authorities from their place with the help of Internet and an immediate action can be made to clean the dustbins and make the city clean.

FLAW DETECTION SYSTEM IN RAILWAY LINES USING INTERNET OF THINGS

S.Gomathi, R.Shobana, M.Santhiya, A.Ragavi
Dept. of ECE, Sree Sakthi Engineering College, Karamadai, Coimbatore, India

Abstract:

Currently, most of railway track inspections are manually conducted by railroad track inspectors. Practically, it is not possible to inspect the thousands of miles of railway track by trained human inspector. This inspection takes too much time to inspect the defected railway track and then inform to the railway authority people. In this way it may lead to disaster. Hence to avoid delay and improve the accuracy, our propose system will automatically inspect the railway track by sensor based method and This method proposes continuous monitoring and assessment of the condition of the rail tracks which prevent major disasters. Our proposed system will inspect the crack. In this project we introduced the integration of infrared and total station for railway track geometry surveying system. This project consists sensors for crack detection. The IOT help us to find and sending railway geometric parameter of crack detection to nearest railway station. The real-Live video streaming is used to detection defects on railroad. The rail is detected by applying Hough Transform and image processing to rail images obtained from the real time camera.

AADHAR CARD BASED ELECTRONIC VOTING MACHINE

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Abstract:

Voting is the opportunity to contribute the political process, this was created for everyone's participate. All our votes are actually matters and the nation needs to hear our opinion .A democracy is a system of government in which entirety of the population participates. This paper is based on aadhar card. To avoid a electoral frauds, we are going use a aadhar card for voting. At the time of voting, the fingerprint sensor are used to decode the enrolment ID printed on the aadhar card in which our database is already stored. After the authentication of voters, which allows to vote on electronic ballot. This system shows the number of voting in any stages ,if the higher official/authenticate person are required.It also includes the features of avoiding a second time voting.

DESIGN AND ANALYSIS OF PV BASED INTERLEAVED BOOST CONVERTER FOR SIGLE PHASE APPLICATIONS

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Abstract:

Increasing energy demand and depleting nature of conventional energy resources will lead the power generation from renewable energy sources. Out of all the renewable, solar power generation plays a vital role because of its ease implementation. The photovoltaic (PV) generator exhibits nonlinear V-I characteristics and maximum power point varies with solar insolation. In this paper, the maximum power point tracking system is implemented using perturb and observe method. In order to reduce the input current ripple, coupled inductor based interleaved boost converter is used. The interleaved boost converter consists of switched capacitors and two coupled inductors. This combination can provide a relatively high voltage boost gain while operating with small duty cycle. Depending on the error and change of error signals, the fuzzy controller generates a control signal for the pulse-width-modulation generator which in turn adjusts the duty ratio of the inverter. Simulation is carried using MATLAB/Simulink tool to verify the theoretical results.

Paper ID:NCIAES 1017

EMBEDDED BASED ELECTRONIC HEALTHCARE MONITORING SYSTEM

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Abstract:

With rapid aging and economic growth, people are now more interested in their long-term health, fitness and wellness. Embedded based remote health care monitoring system allows an individual to check the medical parameters such as Heart beat, Body temperature, Height, Weight regularly without the need of visiting hospitals. The measurements are done using appropriate sensors that are all incorporated in an ATM center. An individual can check the medical parameters after fingerprint connected.

Paper ID: NCIAES 1018

DIGITAL FUEL LEVEL INDICATOR USING LEVEL SENSOR WITH SECURITY SYSTEM BASED ON GSM MODULE

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Dept. of EEE, KPR Institute of Engineering and Technology, Arasur, Coimbatore, India

Abstract:

In recent day's world has become digitized, if we make digital fuel meter in the vehicle it will help to know the exact amount of fuel exists in the fuel tank. Here, we are indicating the amount of fuel present in the fuel tank digitally (numerical value). Fuel theft is also a major problem nowadays. In our project whenever there is fuel theft, a text message is sent to the owner of the vehicle by using GSM technology. Also, we are included mileage and kilometer can run on this system. The previous vehicle systems do not have such functionality. In addition, we have included keypad security system, when we lost the vehicle key the owner can enter the security password and start the vehicle normally. If the password is incorrect a buzzer will give an indication.

Paper ID:NCIAES 1019

DESIGN OF TRANSFORMER MONITORING SYSTEM

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Abstract:

Distribution transformer is considered one of the most important element in the power distribution system. Distribution transformers are currently monitored manually where a person visits a transformer site for maintenance and recording the parameters. The information about occasional overloads cannot be obtained in this type of monitoring. This project presents a mobile embedded system that monitors distribution transformer parameters like over voltages, load currents, oil level temperature and send messages to specified mobile whenever any abnormality or emergency situation occurs. The proposed monitoring system integrates Global System for Mobile Communication (GSM), with a standalone single chip microcontroller and sensor packages. It is installed at the distribution transformer site and parameters stated above are recorded and processed. The detection of power theft has also been included in this system. The mobile system helps for the optimum utilization of transformers and identifies problems before any catastrophic failure occurs. This system is an advanced step to the automation by diminishing human dependency, it is a wireless communicating system, there is no need of large cables. Thus it provides a way for transformer monitoring.

Paper ID: NCIAES 1020

SMART ENERGY SAVING AND SAFETY SYSTEM

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Dept. of EEE, KPR Institute of Engineering and Technology, Arasur, Coimbatore, India

Abstract:

Energy is essential thing in this world. Global energy sources are gradually decreasing nowadays. Generating power source to meet the demand with renewable resources is difficult nowadays. So the energy management is highly necessary in industries as well as in domestic. The saving of energy is small in domestic and industry. When it is calculated for an area or city, the energy saving will be more and this energy will be useful for any rural areas. Automation is done by the values obtained from sensors and comparing it with set values. Switching off the unused electrical appliances is the energy conservation one can do. Awareness must be created among the pupil to avoid the wastage of energy. This project work investigates the potential of Full Home Control, which is the aim of the home automation systems in near future. The analysis and implementation of the home automation technology using Global System for Mobile Communication (GSM) to protect home appliances. The energy is studied by using IoT

SWIMMER TRACKING SYSTEM

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Abstract:

Swimmer tracking system deals with a safety system designed to safeguard the swimmers from drowning. While swimming in deep water resource such as sea or river, swimmers may face sudden change in the velocity of water due to rapid tides and waves in the water. Under such critical situations, even a trained swimmer may face difficulties in swimming against such a large flow of water. There is a possibility of loss of lives, if the swimmers get drowned in water. Hence, there is a need to design a safety system to track the swimmers and protect their lives during emergency. The Swimmer Tracking System proposed in this paper tracks the swimmer and sends signal to rescuers based on the condition of heart beat of swimmers. This will enable rescuers to provide the necessary help to swimmers.

WIRELESS ELECTRONIC DIGITAL NOTICE BOARD USING GSM

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Abstract:

Scrolling display board is a common sight today. Advertisement is going digital. The use of LED scrolling display board at big shops, shopping centers, railway station, bus stands and educational institutes are becoming an effective mode of communication in providing information to the people. But these off the shelf units are somewhat inflexible in terms of updating the message instantly. If the user wants to change the message it needs to be done using a computer and hence the person needs to be present at the location of the display board. It means the message cannot be changed from wherever or whenever. Also the display board cannot be placed anywhere because of complex and delicate wiring. GSM based led scrolling display board is a model for displaying notice or message at place that require real time noticing, by sending messages in the form of SMS through the mobile. The paper aims to develop a moving sign board which empowers the user to change the scrolling message using SMS service instantaneously and it also displays date, time and surrounding temperature.

Paper ID:NCIAES 1023

A SINGLE STAGE SINGLE PHASE RECONFIGURABLE INVERTER TOPOLOGY FOR A SOLAR POWERED HYBRID AC/DC USING FUZZY LOGIC CONTROLLER

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Abstract:

This project suggested a reconfigurable single phase inverter topology for a hybrid AC/DC solar powered home. This inverter possess a single phase single stage topology and the main advantage of this converter is that it can perform DC/DC, DC/AC and grid tie operation, thus reduces loss, cost, size of the converter. This hybrid AC/DC home has appliances of both AC and DC types. This type of home helps to reduce the power loss by avoiding unnecessary double stages of power conversion and improves the harmonic profile by isolating DC type loads to DC supply side and rest of AC side. Firstly, simulation is done in MATLAB and secondly, obtained results are validated with hardware implementation using Fuzzy logic controller. Such type of solar powered home and inverter would be a basic building block.

Paper ID: NCIAES 1024

VOICE AND DATA COMMUNICATION USING Li-Fi WITH HUMAN DETECTOR SENSOR UNDER OCEAN

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Abstract:

This paper focuses on developing a light fidelity (Li-Fi) based system and analyzing its performance with respect to underwater applications. Wi-Fi is great for general wireless coverage within a building, where as Li-Fi ideal for high density wireless data coverage in confined area and for reliving radio frequency interference issues. Li-Fi provides better bandwidth, efficiency and security than Wi-Fi. By leveraging low –cost LEDs lightings units there are many opportunities to exploit this medium, for public internet access through street light to auto-piloted cars that communicate through their head lights. This technology envisions a future where data for laptops, smart phones, and tablets will be transmitted in an economic and eco-friendly medium of light

Paper ID:NCIAES 1025

SMART CITIES SAFETY AND SECURITY MONITORING SYSTEM BASED ON IOT

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Dept. of ECE, Christ the King Engineering College, Karamadai, Coimbatore, India

Abstract:

This paper presents a novel platform for smart cities deployments .The proposed framework helps in the organization and utilization of extracted in formation coming from the different communication technologies and sensors deployed In the cities.one of the most important goal of this paper is it involves in the people safety and security monitoring systems by using Hyper text transfer protocol in the smart cities.it is one of the efficient management for accident reporting systems .After the occurrence of the accident a surveillance camera could make the short videos of the situation and video is transfer through the Wi-Fi till it reaches the access point in the infrastructure of the city to alert the emergencies services

Paper ID: NCIAES 1026

UNDERWATER IMAGE ENHANCEMENT BASED ON COLOR BALANCE TECHNIQUE

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Abstract:

Reciprocating the exact underwater image is very difficult and we miss a lot of minute details in the image. The primary obstacle faced by underwater photographers is the loss of color and contrast when submerged to any significant depth. The subjects farther away from the camera also appear colorless and indistinct. To enhance the image captured underwater, we use a single image approach. Two images are obtained from the original degraded image. One is color compensated image and the other is white balanced image. By the fusion of these two images and by the weight maps, Segmentation and dehazing the edges of the images are also properly recovered. This strategy builds on the multi scale fusion principle and does not require additional information than the single original image. The approach is to enhance a wide range of underwater image and it does not consider any special condition with high accuracy, being able to recover important faded features and edges.

Paper ID: NCIAES 1028

ARDUINO BASED PROTECTION AND MONITORING OF ELECTRICAL MACHINES

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Abstract:

Generally, In industries of various electrical machines, the lack of knowledge about the operation of the electrical machines such as (Series motor, Shunt motor, Induction motor, etc.) leads to the damage of equipments and mechanical damage of machines. Moreover it risks the safety of the humans. This concept is based on minimizing the damages occurred and safety of machines and humans are provided. It can be done by the proper monitoring and automation of the machines. The ideology used here is mainly ARDUINO for the monitoring and controlling of the machines and it provides the preventive measures for the mis-operation. Here, the ARDUINO is used to automate the system by operating as a controller and server to provide operation commands. The sensors are used to collect the data and intern provided to the ARDUINO These gives the data about the speed of the motor, temperature of the machine and the voltage and current drawn by the machines. In case of increase in values of these data above the predetermine level the preventive measures are taken. These data collected can be accessed through a Bluetooth module, hence the monitoring can be also done by using this system. Depending on the operation and the pre-defined limits that is feed into the ARDUINO the monitoring and protection system for the electrical machines can be provided.

Paper ID:NCIAES 1029

ARUDINO AND PROTEUS BASED PROTECTIVE RELAY APPLICATION IN POWER SYSTEM AGAINST OVER VOLTAGE AND UNDER VOLTAGE

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Dept. of EEE, Ramco Institute of Technology, Rajapalayam, India

Abstract:

In the power system over voltage, under voltage and fault current occurs due to the certain causes such as lightning, transient and switching surges. Due to this the equipment connected to the system gets damaged. This can be overcome by using relays. Relay act as a sensing element. It senses the fault, then determines its location and finally it commands to trip the circuit breaker. Hence by the design and development of an Arduino & Proteus based digitally controlled system to implement multifunctional relay for the purpose of fault detection and to protect the electrical equipment. The digital system keeps on comparing the reference values of over/under-voltage and over-current with that of the instantaneous current/voltage values and takes the decision of isolation in real-time by tripping off the relay immediately if any of the reference limits would cross. This system is highly responsive, rugged, economical, configurable and user friendly.

AUTOMATION IN GREENHOUSE MONITORING SYSTEM

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Abstract:

The **"AUTOMATION IN GREENHOUSE MONITORING SYSTEM"** can bring a green revolution in agriculture. Introducing this system can help in increasing the cultivation in a controlled environment. Greenhouse environment, used to grow plants under controlled climatic conditions for efficient production, forms an important part of the agriculture and horticulture sectors. This project presents an automatic green house farming system based on embedded employing soil moisture and humidity sensors, temp sensor, light intensity sensor and water level sensor. Temperature changes happen quickly and fluctuate broadly relying upon sun powered radiation levels, outside temperatures and moistness levels in the greenhouse. The function of soil moisture sensor is to identify the amount of water required for irrigation, PIC controller then controls the solenoid valve through a relay based on moisture content in the air. The temperature in the green house is controlled with the help of an exhaust fan. The float sensor is employed to automatically fill the water tank. The proposed system will also help the owner to know the status of the green house farming system and also has an security system. The main aim of this project is to minimize the human care needed for the plant by automating the greenhouse and monitor the in-house environment status.

INTELLIGENT TRAFFIC CONTROL SYSTEM USING IOT

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[*]*Professor, Dept. of EEE, KPR Institute of Engineering and Technology, Arasur, Coimbatore, India*
Dept. of EEE, KPR Institute of Engineering and Technology, Arasur, Coimbatore, India

Abstract:

In modern urban areas, road accidents are increased to a uncertain level. The loss of human life due to accident is to be avoided. Traffic congestion is the major fact that cause delay to ambulance. To overcome loss of human lives due to accidents we introduce a new scheme Intelligent Traffic Control System. The main idea behind this scheme is to provide smooth flow for emergency vehicles like ambulance to reach the hospitals in time and thus minimizing the delay caused by traffic congestion. When ambulance is approaching the junction, it will communicate with traffic controller to turn OFF all the red light signals and turn ON green light to provide a better way for emergency vehicles. This uses ZigBee module on CC2500 and PIC16F877A system-on-chip for a better wireless communication between ambulance and traffic controller and traffic status can be updated in IOT. The prototype was tested under different combinations of inputs and exact experimental results were found.

Paper ID:NCIAES 1032

MEMS SENSOR INTELLIGENCE DAMAGE DETECTION FOR WIND TURBINES

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Dept. of EEE, Angel college of engineering and technology, Tirupur, India

Abstract:

Maintenance and repair of wind turbine structures have become more challenging and at the same time essential as they evolve into larger dimensions or located in places with limited access. Even small structural damages may invoke catastrophic detriment to the integrity of the system. So, cost-effective, predictive, and reliable structural health monitoring (SHM) system has been always desirable for wind turbines. A real-time nondestructive SHM technique based on multi sensor data fusion is proposed in this paper. The objective is to critically analyze and evaluate the feasibility of the proposed technique to identify and localize damages in wind turbine blades. Based on the obtained result if there is any damage was detected in the turbine or blades, then the damage information was immediately send to the authority through the IOT system.

Paper ID: NCIAES 1033

HEALTH CARE MONITORING USING IOT

K.Sharmilasree, K.Usha Devi, E.Sharmila, G.Sharron Surubiyah, V.J.Vijayalakshmi[*]
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Abstract:

This paper presents a sensor network which is reconfigurable for health monitoring. In day to day life and periodic structural health monitoring can decrease the probability of collapse and the problems of potential life-threatening conditions. Communication systems and Internet plays a vital role. The patient's information completely fetch through advanced technology, automatically when doctor approaches the patient. The microcontroller along with the interfaced biosensors helps in monitoring the patient's vital health. If the preset threshold value exceeds beyond the limit, an SMS will be sent to doctor and the patient's caretaker. The system which is monitoring consists of web server or URL. The sensor nodes present in sensor network are equipped with various biometric sensors and sensed data will be continuously transferred to hospital database from which it is upload to hospital's web server regularly. From anywhere the doctor can monitor the patient.

PLC Based Smart Water Distribution and Management System

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Abstract:

The PLC BASED SMART WATER DISTRIBUTION AND MANAGEMENT SYSTEM deals with the distribution and management of water resources such as the optimization of water usage. Over exploitation is leading to water shortages with almost 65% of the Indian cities being water deficient. Ground water has also been observed to be contaminated by high concentration of nitrates, fluorides, chlorides, toxic metals, pesticides, sulphates, potassium etc. Water resource management is the activity of planning, developing, distributing and managing the optimum use of water resources. Our aim is to survey the water distribution systems and analyze the area of occurrence of fault and the cause of water losses. In order to minimize those problems, the proposed model will automate the city water distribution system using PLC, by minimizing the loss of water in water distribution systems to a great extent. This project can be implemented in smart city scheme.

MINIMIZING INDUSTRIAL PENALITY BY ENGAGING THYRISTOR SWITCHING CAPACITOR AND DATA LOGGING USING IOT

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Abstract:

The **"MINIMIZING INDUSTRIAL PENALITY BY ENGAGING THYRISTER SWITCHING CAPACITOR AND DATA LOGGING USING IOT"** can bring a revolution in Industrial power consumption. Introducing this system can help in increasing the power quality and controlling the reactive power under penaltized power factor. The electrical loads include induction motor driven equipments, which consume reactive power, increase the amount of apparent power in the industries, which is important because a low power factor can waste energy, and results in inefficient use of electrical power and often result in higher energy bills. This paper presents an analysis of implementation of Flexible AC Transmission System device (Thyrister Switching Capacitor) for maintaining Power Factor. The Power factor maintenance provides increase in system efficiency. The function of PIC microcontroller is to calculate the power factor and switching the appropriated opposite reactive power, display the power factor, RTC for time instant of the data and WIFI module to transmit the data. The proposed system will also help the data collection and processing the collected data for further use led to the development of Internet of Things (IOT) based Data Acquisition system. The system will be designed to collect data from controller for many usages like Energy Auditing. This system reduces the power factor lagging, improves efficiency in the power system and economical to the industries.

BABY INCUBATOR CONDITION MONITORING AND ALERT SYSTEM

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Abstract:

With the advancement in technology, medical industry has also evolved and reached sky-high in the current day world. The mortality rates of the premature newborn infants have been brought under control. Baby incubators play an important role in this. Even after the advancements in technology, there is a need for instrument- health caregiver (HC) interactions due to varied reasons. Unfortunately, due to the higher patient: HC ratio the workload on the HCs is very high. This paper discusses about the development of a wireless transmission of incubator indicator alarms to the neonatal nursing station for the early intervention of the HC. The developed technology will reduce the workload of the HCs.

VOICE AND DATA COMMUNICATION USING Li-Fi WITH HUMAN DETECTOR SENSOR UNDER OCEAN

P.Sridevi, R.Sathya, V.ShanmugaKiruba
Dept. of ECE, SVS College of Engineering, Arasampalayam, Coimbatore, India

Abstract:

This paper focuses on developing a light fidelity (Li-Fi) based system and analyzing its performance with respect to underwater applications. Wi-Fi is great for general wireless coverage within a building, where as Li-Fi ideal for high density wireless data coverage in confined area and for reliving radio frequency interference issues. Li-Fi provides better bandwidth, efficiency and security than Wi-Fi. By leveraging low –cost LEDs lightings units there are many opportunities to exploit this medium, for public internet access through street light to auto-piloted cars that communicate through their head lights. This technology envisions a future where data for laptops, smart phones, and tablets will be transmitted in an economic and eco-friendly medium of light.

MULTIPHASE MOTOR CONTROL USING SINGLE MICROCONTROLLER

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Abstract:

In general there are lot of control techniques and methods available for water pumping system. There are two types of motor based on the supply, so two individual controllers are required to operate it. Nowadays the automatic techniques are used commonly, so RTC (Real Time Clock) is used in this project for time based automatic operation process. With the help of user interface the operating time can be set. The manual mode of operation can be obtained through switches and also using mobile phones. In three phase motor if there is any problem in one of the phase sequence, the motor can operate in tow phase sequence with this controller. The LCD (Liquid Crystal Display) is used to display the operating voltage, current, and phases of the motors. The operating status can be monitored. The water level indicator is used to measure the water present in the well or bore wells to avoid unload operation. The main idea behind the proposed architecture is to design system, which would be used as a platform which provides the services needed to perform remote control of agricultural devices. The farmer should be able to on/off the motor, decide the pesticides proportion and monitor the farming activities remotely. This system should provide reminder to the user so that their farming activity will take place on time.

DIGITAL FUEL METER FOR AUTOMOBILES

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Abstract:

Petrol bunk frauds are very common in recent days. The pumps in petrol bunks are manipulated such that it displays the amount as entered, but in reality, the quantity of fuel filled in the customer's tank is less than the displayed value. The petrol bunk owners are making huge profits by cheating the customers. Majority of the two wheeler vehicles in India consist of analog meters which will not help to precisely know the amount of fuel currently in the vehicle and also it is not possible to cross check the quantity of fuel filled at the petrol bunk. In this paper, we proposed to display the fuel level in the tank in digital form, so that customers can verify the fuel level in the tank while filling the fuel. We have designed a fuel tank with strain gauge load cell, which will give weight of the fuel inside the tank at any point of time. Converting the weight into volume, we can calculate the amount of fuel inside the tank. The amount of fuel poured will be send as SMS to the registered mobiles. Fuel level of below the threshold level is indicated with alarm system and message. A unique design of fuel tank, load cell and microcontroller are the heart of the system.

GSM BASED SMART IRRIGATION SYSTEM

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Abstract:

This project proposes a simple and efficient for Solar Photovoltaic (SPV) array fed water pumping system. A zeta converter is proposed to extract the maximum available power from the SPV array. The GSM transmission system is used to transmit the information obtained from the moisture sensor and the soil humidity sensor to make the microcontroller to perform the pumping operation for the required irrigation land. The proposed water pumping system is designed and modeled such that the performance is not affected under dynamic conditions. The aim of this project is to provide an efficient solution for automatic control of irrigation motor for illiterates. Here the automation process is done through the micro controller based technology. The suitability of proposed system at practical operating conditions is demonstrated through simulation results using proteus simulation software followed by an experimental validation.

AN INTENSIVE FARMING TECHNIQUE IN MODERN CITIES USING IMAGE PROCESSING

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Abstract:

Intensive farming involves various types of agriculture with higher levels of input and output with traditional land area. This system makes the decisions involved in organizing and operating a farm for maximum production and profit. It draws on agricultural economics for information on prices, markets, agricultural products. Recent technological advances have paved the way for developing and offering advanced services for the stakeholders in the various sectors. A paradigm shift is underway from proprietary and monolithic tools to internet based open system and enable more effective for the stakeholders. Based on the set of domain independent software tools called ''**generic enablers**'' that have been developed in the context of the FI-WARE project. The implementation is used to validate a number of innovative concepts for the agricultural sector such as the notion of a services' market place and the system's adaptation to network failures. Many peoples have sophisticated services at affordable prices. A summary of this evaluation process is also presented in this project.

Paper ID: NCIAES 1042

REDUCING THE COST OF ELECTRICITY USING IOT

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Abstract:

The power demand has increased drastically over the last few years. One of the way by which we can solve this energy problems is by reducing usage of energy in households during peak demand. For this, demand response by real time pricing is implemented in the project. There is need for accurate and economic methods of power measurement. The main objective of this project is Power Measurement to reduce peak on generation by providing customers with their instantaneous power consumption. The aim of providing such data to the user is, to encourage them to shift their load during non-peak hour and reduce their power usage and electricity bill. Hardware, Software and the theory involved in the project is briefly described. The current and voltage signals from the load are stepped down and conditioned before they are given to the Atmega328. Load circuit, Signal conditioning circuit and their construction and functionality in the project are discussed.

Paper ID:NCIAES 1043

TOPOGRAPHIC TRACING BY BIONIC PERSONS

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Abstract:

Obstacle detection and navigation of dynamic environments is a challenge in mobile robotics. To address this challenge, this paper presents an efficient sensor fusion methodology to detect the obstacles and navigate the mobile robot with high accuracy. This is done by leveraging upon the unique advantages of accuracy in infrared sensor. Another feature of this idea is making a map based on the data received from the robot. The map making is done in Matlab. Human visionable mapping leads a serious problem like unaccuracy,time consumption is high.ATMEGA8 microcontroller controls the topographic features traced by Zigbee transceiver.Universal serial bus has serial connections which converts into computer languages .Mapping gatherd through personal computers.

IOT BASED HYBRID SOLAR/WIND RENEWABLE ENERGY RESOURCES FOR INDUSTRIAL APPLICATION

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Abstract:

In modern days lots of developments happen, hence increase the power demand. The proposed work represents a solar-wind hybrid energy system. In order to meet the future power demand, by combining the two most abundant renewable sources to make a hybrid system, it becomes most powerful, efficient, and dependable source. This system makes sure that to get a supply for the period of 24x7. Here, the various industrial parameters are taken up for control such as gas, fire, machine, and motor based on embedded control. The controller establishes the automatic mode of operation for load power changeover operations. In the proposed system, the fire and gas sensor set range variation will be analyzed by the controller. If its exceed its pre-defined values set in controller the immediate indication and alert is arrived for to take necessary safety precaution and control in real time application. In an industrial progress the motor is valuable sources for operating different load condition. Some mix-constrain load machine will be a failure. This effect will be rectified in this scheme through load analysis. The control circuit provides a constant source depend upon load changes. All the above parameters will be monitored and controlled by using IOT.

DEVELOPMENT OF ULTRA CLEAN PEM FUEL CELL BY USING SODIUM HYDROXIDE WITH SOLAR PANEL

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Abstract:

The issue of renewable energy is becoming major due to increasing power demand, instability of the rising oil prices and green problems. Among the various renewable energy sources, fuel cell is gaining more popularity due to their higher efficiency, purity and cost-effective supply of power demanded by the consumers. This project a comprehensive review of different fuel cell technologies with their working principle, advantages, disadvantages and suitability of applications for residential/grid-connected system, transportation, industries and commercial applications. Development of mathematical model of fuel cell required for simulation study is discussed. This our project also focuses on the necessity of a suitable power-conditioning unit required to interface the fuel cell system with standalone/grid applications.

Paper ID:NCIAES 1046

FUZZY CONTROL FOR PV ENERGY HARVESTING BASED ON CASCADED POWER OPTIMIZERS

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Abstract:

This Project presents a power electronic energy harvesting topology based on cascaded power optimizers that use distributed maximum power point tracking (MPPT) is believed to be one of the promising solutions to address these issues. Each PV module is interfaced to the energy system through a separate dc/dc converter with maximum power point tracking capability. The model predictive control technique to a distributed maximum power point tracking algorithm for maximizing the energy harvest performance of a cascaded power optimizer based system under dynamic weather conditions. This project presents a comparative study among maximum power point tracking methods for photovoltaic systems. The comparison takes into account steady state error, dynamic response and efficiency in a large power range. The voltage boost, inversion and energy storage are integrated in a single stage inverter by using Fuzzy Logic Controller (FLC). The proposed system can achieve the distributed maximum power point tracking for PV panels, balance the power between different modules and provide the preferred power to the grid with reduced harmonics. A detailed design method of controller parameters is included. The MATLAB simulation and hardware results have been validated. Computational simulations with fast changes in the solar irradiance have been done and the best maximum power point tracking technique is chosen.

Paper ID:NCIAES 1051

A SMART SYSTEM TO PREVENT CHILDREN FROM FALLING INTO BOREWELLS

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Abstract:

This article presents a smart system to prevent children from falling into bore wells and dying in tragic circumstances. The proposed system sense the child falling into bore wells through IR sensor and alerts the rescue team and surroundings through GSM for rescue operation. Experiment results illustrate that the proposed system outperforms than the others and saves the children life.