Proceedings of the Fourth National Conference
on
Innovations and Advancements in Electrical Sciences

NCIAES'19

22nd March , 2019

Organized by

Celebrating Knowledge

Department of Electrical and Electronics Engineering
KPR Institute of Engineering and Technology

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PREFACE

The Fourth National Conference on Innovations and Advancements in Electrical Sciences (NCIAES'19) 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 thirty 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 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 has 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

MESSAGE FROM CHAIRMAN

I am pleased to invite you for the upcoming Fourth National Conference on Innovations and Advancements in Electrical Sciences (NCIAES'19) with the theme "Greener Energy for future Generation" on 22nd March 2019. 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 Fourth National Conference on Innovations and Advancements in Electrical Sciences (NCIAES'19). 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 power generation, 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 Fourth National Conference on Innovations and Advancements in Electrical Sciences (NCIAES'19) 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
Prof.A.GOWRISHANKAR
Organizing Secretaries

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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, is dedicated for an unparalleled learning experience.

KPRIET offers seven undergraduate programmes (4 years) in Bachelor of Engineering namely

- Biomedical Engineering
- Chemical Engineering
- Civil Engineering
- Computer Science and Engineering
- Electronics and Communication Engineering
- Electrical and Electronics Engineering and
- Mechanical Engineering

And four post graduate programmes (2 years) in Masters of Engineering namely

- Structural Engineering
- VLSIDesign
- CADD / CAM
- Computer Science and Engineering.

Ever since the inception, KPRIEnT is committed to holistic education and making the teaching – learning process more meaningful. The zeal and dedication with which KPRIEnT 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.

Department of Electrical and Electronics Engineering

PROGRAM OUTLINE   **22nd March, 2019**

9.00 am-10.00 am	Registration
10.00 am – 10.45 am	Inauguration
10.46 am – 11.00 am	Networking Tea/Coffee Break
11.01 am-01.00 pm	Parallel Sessions
01.01 pm – 02.00 pm	Lunch
02.01 pm – 3.30 pm	Parallel Sessions
03.31 pm – 03.45 pm	Networking Tea/Coffee Break
03.46 pm – 4.30 pm	Valediction

SESSION DETAILS

Paper ID	Title
1001	Auto Synchronization of 210 MW Turbo Generator in 230 kV Transmission Line
1011	Smart Attendance Monitoring System
1012	Load Frequency Control of Single and Two Area Power System
1016	A New Diagonal Rearrangement for One-Time PV Array Reconfiguration to Maximize PV Power Under Shade Condition
1018	A Hybrid CQI Feedback Scheme for Wireless Technologies
1019	Solar Trackers in Agriculture
1020	Optimal Integration of Renewable Sources to Form an Autonomous Microgrid
1023	Implementation of Energy Conservation Module for Wood Fired Boiler
1025	Four Switch Inverter Based Speed Control of BLDC Motor for Ceiling Fan Application
1026	Energy Audit in College Campus
1027	Design and Implementation of Transformer Based Multilevel Inverter Topology with Reduced Components
1028	Four Switch Inverter Fed Control of Three Phase IM Drive by Fuzzy Logic Controller
1029	Design And Simulation of Multipurpose Colour Mixing System for a Planetary Machine Using PLC
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1034	Smart Laboratory Data Processing and Recording System in The Big Data / Industry 4.0 Era Using Visual Studio
1035	Automatic Phase Shifter Using for Three Phase Induction Motor
1037	Solar PV Based Intelligent Street Light System for Smart Cities Using IoT
1038	Solar PV Array Fed BLDC Motor Driven Water Pumping System Employing Zeta Converter
1039	Industrial Production Monitoring and Shift Report Generation of Conveyor Motors By Using PLC and SCADA
1042	Android Based Document Sharing System
1044	Smart Scheduling of Distinct PHEV Integrated in a Distributed System Using Optimization Approach
1045	A DC Photovoltaic Generation System for HVAC Grid Connection
1046	Smart Automated Accident Zone Identification System
1048	IoT Based Solar Irrigation Management Using Raspberry Pi
1049	System for Real Time Alerting and Monitoring of the Driver
1050	Fabrication of Electric Car Using PVC Pipe for Physically Challenged People
1051	A Blended Approach for Solar in Dust Cleaning Process and an Automatic Tilting Mechanism to Maximize Power in Photovoltaics

Paper ID:NCIAES 1001

Auto Synchronization of 210 MW Turbo Generator in 230 kV Transmission Line

Arun Kumar C. Deepan Raj R. Keerthivasan M. Kumaresh R.
UG Scholar, Department of Electrical and Electronics and Engineering
Salem College of Engineering and Technology, Selem.

Abstract:

Manual synchronization will take more time to take load, which leads to energy loss. Various circuit breaker statuses have to be monitored before synchronization. In order to reduce energy loss during synchronization process, the plant needs an alternative method. In this study, an automatic synchronization unit has been developed for the parallel connection of turbo generators. Turbo generators are also connected in parallel with the line. The voltages, frequencies, phase sequences and synchronism time data have been monitored and evaluated by PLC. Parallel operation of generators are realized automatically when all parallel connection conditions are occur. The system doesn't require additional measuring tools for monitoring and control processes. The developed automatic synchronization unit is fast, cost effective, reliable and precise to be used for monitoring, measurement and parallel operation of the generators. The objective includes the programming sequence for this PLC unit for the varying parameters and ladder diagrams for various synchronous conditions. Logical continuity is essential for PLC, like electrical continuity for relay logic.

Paper ID:NCIAES 1011

Smart Attendance Monitoring System

Deepika M [1]. Mercy Ramya A[1]. Dr. Malarvizhi K [2].
UG Scholar[1], Asst.Professor[2], Department of Electrical and Electronics and Engineering
Kumaraguru College of Technology, Coimbatore.

Abstract:

In recent years, there have been a rise in the number of applications based on Radio Frequency Identification (RFID) systems and have been successfully functional to different areas as diverse as transportation, health-care, agriculture, and hospitality industry to name a few. IoT technology facilitates automatic wireless identification using electronic passive and active tags with suitable readers. This paper develops smart attendance monitoring of students, which confirms their presence in the classroom using RFID technology and is capable of eliminating time waste during manual collection of attendance. Also, it gives an opportunity for the educational administrators to capture face-to-face classroom data for allocation of proper attendance scores and for further managerial decisions.

Paper ID:NCIAES 1012

Load Frequency Control of Single and Two Area Power System

Subharna shri N [1]. Kesavan R[1]. Sudhakar S[1]. Sophia Jasmine G[2].
UG Scholar[1], Asst.Professor[2], Department of Electrical and Electronics and Engineering
Dr.Mahalingam College of Engineering and Technology, Pollachi.

Abstract:

Power system is a large interconnected and complex network with several sources and loads. Load Frequency Control (LFC) is inevitable for reliable operation of power system. Its ultimate function is to regulate the output power of the generator in an area with respect to changes in system frequency and tie-line power such as to maintain the system frequency and power flow in other areas within prescribed limit. In this paper frequency control for single and two area system is performed with Proportional Integral (PI) controller, Proportional Integral Derivative (PID) controller. The results of the conventional controllers are also compared with fuzzy controller. Simulation studies are done using SIMULINK.

Paper ID:NCIAES 1016

A New Diagonal Rearrangement for One-Time PV Array Reconfiguration to Maximize PV Power Under Shade Condition

Vyshali B[1]. Priyanga S[1]. Vidhyaprabha P[1]. Dr.Prasanth Ram J[2].
UG Scholar[1], Asst.Professor[2], Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:

Solar power plant has gained great impact in recent years due to demand in the production of electrical energy. The much needed scarcity is fulfilled by solar energy hence by not polluting the environment. Since the efficiency of Solar PV is less, it is intelligent to make better use of available energy. The inaccurate I-V curve generation in solar PV modelling leads for less efficient usage. Hence, array reconfiguration scheme have become extremely popular to minimize the power loss under shade occurrences. In this paper, a new diagonal method based on one time physical relocation scheme is proposed and tested with 5×5 PV array. The proposed method possesses the advantage of having simple rewiring arrangement. This method reduces various mismatch condition and power loss occurs in the solar PV. To test the validity of the proposed scheme, seven shade patterns are critically evaluated. Response for every shade pattern is analyzed with the help of I-V and P-V characteristic and their corresponding losses are evaluated. Also to strengthen the analysis, very recent Dominance Square (DS) method is also critically analyzed and compared.

Paper ID:NCIAES 1018

A Hybrid CQI Feedback Scheme for Wireless Technologies

Ramadevi T[1]. Sangeetha V[1]. Saranya G[1]. Vanitha K[1]. Eswaramurthy [2].
UG Scholar[1], Asst.Professor [2], Department of Electrical and Electronics and Engineering
Pollachi Institute of Engineering and Technology, Pollachi.

Abstract:

Advanced wireless technologies such as multiple- input– multiple-output (MIMO) require each mobile station (MS) to send a lot of feedback to the base station. This periodic feedback consumes much of the uplink bandwidth. This expensive bandwidth is very often viewed as a major obstacle to the deployment of MIMO and other advanced closed-loop wireless technologies. This paper is the first to propose a framework for efficient allocation of periodic feedback channels to the nodes of a wireless network. Several relevant optimization problems are defined and efficient algorithms for solving them are presented. A scheme for deciding when the base station (BS) should invoke each algorithm is also proposed and shown through simulations to perform very well.

Paper ID:NCIAES 1019

Solar Trackers in Agriculture

Raj Kumar R[1]. Vijayabarath G[1]. Madhanmohan V[1]. Kathiresan R[1]. Rajasekar M[2].
UG Scholar[1], Asst.Professor[2], Department of Electrical and Electronics Engineering
Knowledge Institute of Technology, Salem.

Abstract:

Solar tracking system is the most appropriate technology to enhance the efficiency of the solar cells by tracking the sun. A Solar tracker is a device used for orienting a solar photovoltaic panel or lens towards the sun by using the solar or light sensors connected with the machine (Stepper Motor). Solar trackers are necessary in order to increase solar panel output, to get maximum efficiency from the panel, to maximize Power per unit Area and can able to grab the energy throughout the day. A microcontroller based design methodology of an automatic solar tracker I presented in this paper. Light dependent resistors (LDR) are used as the sensors of the solar tracker. Solar trackers can also used in the field of agriculture, for the purpose of drip irrigation and for operating the water pumps. Solar trackers are Eco-Friendly, We can monitor directly using PC, Tracking accuracy is more, and the efficiency of solar panel is increased, simple in construction. The solar trackers can create a modern revolution in Agriculture.

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Paper ID:NCIAES 1020

Optimal Integration of Renewable Sources to Form an Autonomous Microgrid

Gopinathan S. Gnanasampanthar R. Balaji S.

UG Scholar, Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:

Due to the continuous increase in international energy consumption and therefore the decreasing of fossil fuels, the client demand for brand new generation capacities and economical energy production, delivery and utilization keeps rising so that we are moving for microgrid concept. Microgrids consists of localized group of electricity sources , loads , storage devices that can be operated in two modes either it can operated in grid connected mode or isolated mode from the main distribution grid with the help of Point of Common Coupling(PCC). Nowadays distribution network has been transformed into a micro grid that contains varying loads, renewable generating sources such as PV and Wind and the controllable generating sources such as diesel generator and battery source, so microgrid is also called as locally controlled system. The system can disconnect from the utility throughout massive events but may also intentionally disconnect when the quality of power from the grid falls below certain standards. The extended distribution network into account is assumed to work in autonomous mode of a small grid thanks to surplus renewable energy sources connected to the network. The objectives thought-about for reduction square measure the network energy loss, cost and the voltage deviation. Thus, this paper presents an economic planning and operation of an independent micro grid using ETAP and HOMER software .This paper deals with power flow optimization with security constraints which deals with the solution of an optimal power flow problem by the interior point method.

Paper ID:NCIAES 1023

Implementation of Energy Conservation Module for Wood Fired Boiler

Pragathe M [1]. Ragapriya A [1]. Yogesuwari R [1]. Vijayalakshmi V.J [2].

UG Scholar[1], Asst.Professor[2], Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:

This paper manages the ecological effect and remedies against the burning of wood in the wood-terminated boiler. The prerequisite for basic research on burning of wood mash fills has been created since 2000.The decline of CO and NO_2 from normal strategy of emanation decrease is performed with need for a few mechanical makers and as often as possible incorporates costly terminal pipe tainting decline courses of action. The epic technique which is talked about in this paper has a different emanation control module which implants oxygen into boiler for better ignition. The module focuses on the emanation decrease of wood terminated boiler utilizing a control circuit planned at reasonable expense in industry perspective.

Four Switch Inverter Based Speed Control of BLDC Motor for Ceiling Fan Application

Akilaash A. Cibi M.R. Elangovan E.R.S.
UG Scholar, Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:

A Brushless DC (BLDC) motor is a synchronous motor powered by direct current (DC) electricity having an electronics commutation system, instead of a mechanical commutator and brushes. In BLDC motors, current to force and voltage to revolutions per minute have linear relationship. This dimensionality provides a wonderful chance to use the BLDC motor in standard ceiling fans. The BLDC motor will act as another for ancient motors like Brushed DC motor, induction motor, switched reluctance motors etc. it's been found that goodly quantity of power may be saved by substitution the BLDC motor whereas within the place of Induction motor used for the ceiling fans that ends up in the saving of the price of energy generation. In this paper, we design a four switch inverter drive for the BLDC ceiling fan. Then we look at the working of BLDC fans in four switch inverter drives along with how the speed control is achieved in the motor. Then we discuss the features along with its advantage and disadvantage, and end with some suggestions for bringing about an improvement in BLDC ceiling fans.

Energy Audit in College Campus

Akshaya H[1]. Deepika M [1]. Gayathri A[1]. Martina Hingish G[1]. Pazhanimuthu C[2].
UG Scholar[1], Asst.Professor [2], Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:

Energy demand is an existing problem for the developing country like India. The energy generation plays a vital role in the economic growth of the country. India is the third largest power generator and the third largest power consumer in the world, energy demand and scarcity rules the country. Energy audit and conservation can be the best solution for the raising energy demand. This project describes the energy audit methodology for the organization. Nowadays in the new trends of power market, it is a very difficult task to satisfy the power balance concepts even though the consumers are able to pay their costly demands. So the energy conservation and energy management concepts are necessary for the flexible utilities. The energy audit is a process to identify the facilities from different areas. An energy auditing system inspects and analyses the flow of energy to cut back energy consumption while not affecting the number and quality of productions undesirably. Energy monitoring is one of the important applications arising from research in Internet of Things. Suggesting the methods which reduce the energy consumption and cost of utilization. Methods such as type of lamps and fans can be used to reduce the consumption of energy.

Design and Implementation of Transformer Based Multilevel Inverter Topology with Reduced Components

Satheesh C[1]. Thiagarajan S.M [1]. Thirunaukkuarasu R[1]. Veerapandi P [1]. Peaveena P [2].
UG Scholar [1], Asst.Professor [2], Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:
This project deals with the operation can be using inverter topology is made up on the varying switching functions also used. Here is will connected to MOSFET switches operation also applicable for the inverter topology. There arein this project an advanced configuration for multilevel inverter is proposed, which is designed in order to provide the maximum voltage levels in output terminals using reduced number of circuit devices. For a circuit with reduced number of devices, the control scheme will be simpler and reliability will be enhanced. It is shown that the suggested inverter has reduced number of filter circuit equipment, which in its turn reduces the total cost. There are will be control to the function of switching level operation is obtained.

Four Switch Inverter Fed Control of Three Phase IM Drive by Fuzzy Logic Controller

Logeshwaran M. Manikandan B. Mohammad Yasar Arafat H.
UG Scholar, Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:
This project presents a speed controller using a fuzzy logic controller (FLC) for indirect field oriented control (IFOC) of induction motor (IM) drives fed by a four-switch three-phase (FSTP) inverter. In the proposed approach, the IM drive system is fed by FSTP inverter instead of the traditional six-switch three phase (SSTP) inverter for cost-effective low power applications. The two capacitor bank is used for achieving the four switch operation. The two phase of the Induction motor is fed by the four switch inverter and the third phase of the IM is charged by the discharging of capacitor used. These capacitors are charged directly from the inverter output. Four MOSFET are used for the switching operation of the FSTP inverter. The Fuzzy Logic Controller generates the firing pulses for the inverter switches. The required input values for the Fuzzy logic algorithm are taken from the MATLAB simulation.

Paper ID:NCIAES 1029

Design and Simulation of Multipurpose Colour Mixing System for A Planetary Machine using PLC

Anandan A[1]. Gowtham P[1]. Balaji S[1]. Dr. Uthirasamy R[2].

UG Scholar[1], Associate Professor[2], Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract :

The objective of the project is to develop an automation system for industrial multipurpose colour mixing product manufacturing and to achieve high throughput with improved quality and consistency. The proposed system is designed for variable logical operation using ladder diagram to obtain more colour accuracy. The demand for high quality, greater accuracy and quantity has increased in globally with various colours. Several electronic devices usually been controlled by the Programmable Logic Controller (PLC). By mixing three different colour in different ratio to obtain the multi colour. Three pumps will suck the three standard colours from their tank to planetary tank. To produce different colour, the mixer is operates and colours in planetary tanks is mixed. When the mixing process is completed, valve is opened to fill the bottle at certain quantity with the help of ultra sonic sensor. Conveyor is operated to move filled bottle and place the empty bottle. The multipurpose colour mixing planetary machine is used for chemical mixing, paint mixing, colour mixing and other liquid mixing.

Paper ID:NCIAES 1031

Digital Production Monitoring System in Industry

Malarvili S[1]. Dr. Uthirasamy R[2].

UG Scholar[1], Associate Professor[2], Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:

In the current industrial scenario, monitoring and sharing the working conditions of machines under normal and fault conditions are one of the complex tasks for industrial workforce. The project is mainly focused towards the communication of faults arising in the machines to the relevant team members. In order to enhance the features of the communication systems, the proposed software application is developed for Android mobiles. Using MIT inventor, a program is directly fetched and executed through USB by scanning the QR code of the program. This project helps to share the micro level details pertaining to the fault by means of an Android application. When there is a fault arising in a particular machine the detailed information will be sent using the Android application in daily, weekly and monthly basis directly to their team members/concerned authorities. The necessary preventive maintenance work and budgeting can be planned accordingly. The investigation and recognition of these faults are necessary to ensure that the system's reliability, stability in continuous production and supply chain management.

Paper ID:NCIAES 1034

Smart Laboratory Data Processing and Recording System in the Big Data / Industry 4.0 Era Using Visual Studio

Saranyaa M.   Rajashree Lakshmi S.

UG Scholar, Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:

Digitalization is moving forward with the new ideas and invention. in colleges the usage of note books is comparatively high and such notes are made up of papers from trees. So, reducing the paper usage ultimately increases the natural environment. Students are facing a major issue for time management in college laboratories. By means of filling components required form, drawing tabulation for experiment, etc., to utilize the student's precious time we had created a web application which includes components required, tabulation of the experiment, and reasons for error occurred in the experiment, etc., also to simplify the work of staffs. The staff login is being provided which consists of attendance sheet, screen for correction of tabulated readings. Thus, in future it is used for analyzing the data by means of storing data's in the access database. Digitalization does not achieve without coding and hence here C-SHARP is the coding language for the backend process.

Paper ID:NCIAES 1035

Automatic Phase Shifter Using for Three Phase Induction Motor

Elavarasu V [1]. Mahendra Kumar T [1]. Arul selvan A [1]. Elavarasu P [1]. Ravikumar P[2].

[1]UG Scholar, [2]Assistant Professor, Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:

In the most companies, Industrial, commercial and even domestic are dependent on public power supply which have erratic supply such as phase failure, phase imbalances or total power failure due to one or more technical problem in the power generation, and the transmission or distribution. Hence, there is need for automation of phase shifter during phase failure or total power failure in order to safe guard consumer appliances from epileptic power supply.

Paper ID:NCIAES 1037

Solar PV Based Intelligent Street Light System for Smart Cities Using IOT

Anuraaghavi M. N.   Aruthra G.   Nathiyadevi N.

UG Scholar, Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:

Resource augmentation and growth in energy supply has not kept pace with increasing demand and, therefore it continues to face serious energy shortages. Streetlights are an integral part of any developing locality. They are present on all major roadways and in the suburbs too. Every day, streetlights are powered from sunset to sunrise at full strength, even when there is no one around. On a global scale, millions of dollars are spent each day on these street lights to provide the required electrical energy. The maintenance and replacement costs of conventional incandescent bulbs are immense. They consume a lot of electric power to function and their heat emissions are also quite high.

Paper ID:NCIAES 1038

Solar PV Array Fed BLDC Motor Driven Water Pumping System Employing Zeta Converter

Naveen M [1]. Padmanaban U [1]. Subash K[1]. Uma Shankar S [1]. Gowrishankar A [2].

UG Scholar[1], Asst.Professor(Sr.G) [2], Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract:

There is an enormous growth in usage of solar energy and solar powered equipment's which increases the demand of solar products with enriched working characteristics. This project deals with usage of a solar based BLDC motor drive for various industrial applications. It consists of a solar photovoltaic array, zeta converter, voltage source inverter and a motor-pump assembly. In spite of atmospheric variation, maximum power point tracking based upon Perturb and Observe algorithm tracks maximum power from solar PV array. The proposed system uses the dc- dc zeta converter and its operation along with the BLDC motor drive is simulated in MATLAB/Simulink platform.

Paper ID:NCIAES 1039

Industrial Production Monitoring and Shift Report Generation of Conveyor Motors By Using PLC and SCADA

Prabhushankar M [1]. Rajarajan K [1]. Santhosh P [1]. Selwin Paullove C [1]. Lalitha B [2].

UG Scholar [1], Asst.Professor(Sr.G) [2],Department of Electrical and Electronics and Engineering
KPR Institute of Engineering and Technology, Coimbatore.

Abstract

 The modern era needs automation in every single innovation. The electrical industries require the same in all the devices and equipment that is involved in manufacturing, testing and commercialization. Many machines are made to stop and start adequately in regards to the method of production of a product. The machine life has to be considered as an essential part to make the production cost effective. An industrial SCADA and PLC system is used for the development of the controls of machinery. It describes their architecture and interface to the process hardware. PLC is a real time system since output results must be produced in response to input conditions within a bounded time. SCADA systems have made substantial progress over the recent years in terms of functionality, scalability, performance and openness. Spontaneous shifts in state of power for the machine may deprive the lifetime of the machine.

Paper ID:NCIAES 1042

Android Based Document Sharing System

Kalaiselvi S[1].   Kayalvizhi M [1].   Ramya V [1].   Tamilvanan M [1].   Sathish Kumar M [2].

UG Scholar[1], Asst.Professor, [2] Department of Computer Science and Engineering
Pollachi Institute of Engineering and Technology, Pollachi.

Abstract:

The project is to share the data between the college faculty and the students. The system consists of individual login to faculty and students. The faculty can upload the notifications, e-notes, syllabus, timetable and any other important information through the faculty login. This project will work on android operating system and will be a great system for sharing the information between the documents. Student Faculty Document Sharing Android Project is based upon java technology. This project is designed for the sake of reducing efforts between both the students and the faculty.

Paper ID:NCIAES 1044

Smart Scheduling of Distinct PHEV Integrated in A Distributed System Using Optimization Approach

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Abstract:

Due to the increasing fuel prices of the fossil fuels, the global warming and green house gas effect has become the main threats in recent years. In order to reduce the increasing fuel prices , it is clear that Plug-in Hybrid Electric Vehicle (PHEV) has increasing electric grid reliability and improving battery health and life and it also has an environmental friendly solution to global researches. When compared to others PHEV has become an alternative solution to tackle the increase in peak load and power loss issues is done using the smart scheduling strategy. The aim of this paper is to minimize the total operating cost of the system and its performance is tested with IEEE 69 bus distribution system. In order to examine this work closer to real time operation, different types of PHEV's with different All Electric Ranges (AER) and battery capacities is analysed. Finally, the tested results are compared with Binary Particle Swarm Optimization (BPSO) algorithm it is tested using MATLAB simulation Software.

Paper ID:NCIAES 1045

A DC Photovoltaic Generation System for HVAC Grid Connection

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Abstract:

These days, photovoltaic age is growing progressively quick as a sustainable power source. A PV cell or Solar cell is an electrical device that converts energy of light directly into electricity by the Photovoltaic effect which is done by physical and chemical phenomenon. Initially, the PV generator is associated with the quadratic boost DC-DC converter which has the ability to increase the voltage gain and reduce the voltage drop. The control frameworks dependent on the Maximum power point Tracking with Perturb And Observe calculation that causes change in the calculation as there might be changes only in the cluster due to the network at various climatic conditions. The PV clusters are thereby suitable to operate at extreme capacity. The DC/AC inverter is dynamic and receptive for converting DC voltage to AC voltage. Thereby the output from the solar panel has been successfully connected to the AC grid system by using quadratic converter. Therefore at the end product we accomplish an efficient AC power generation as the quadratic convertor increases the power input. This paper presents demonstrating and reenactment of the network associated PV age framework under MATLAB/Simulink.

Paper ID:NCIAES 1048

IoT Based Solar Irrigation Management Using Raspberry Pi

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Abstract:

The aim of this project is to develop a smart irrigation monitoring system using raspberry pi. Focus area will be parameters such as temperature and soil moisture. This system will be a substitute to traditional farming method .We will develop such a system that will help a farmer to know his field status in his home or he may be residing in any part of the world. It proposes a automatic irrigation system for the agricultural lands. Currently the automation is one of the important role in the human life. It not only provide comfort but also reduce energy, efficiency and time saving. Now the industries use the automation on controlling the machine which is high in cost and not suitable for using in a farm field. So here it also design a smart irrigation technology in low cost which is usable by Indian farmers. Raspberry pi is the main heart of the whole system. An automated irrigation system was developed to optimize water use for agricultural crops. Automation allows us to control appliances automatically.

Paper ID:NCIAES 1049

System for Real Time Alerting and Monitoring of the Driver

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Abstract:

Transportation has become an important part of our day-to-day life. The increased performance in cars leads to some instability and poor safety of the automobile. Hence this project aims to increase the safety in automobiles. This project focuses mainly on alerting the driver in the event of him falling asleep while driving the automobile by means of a buzzer. In case the driver does not wake up under the influence of the buzzer, vibration is produced by the motor installed in the steering wheel in order to maximize the efficiency of the alerting system. This process continues till the driver is woken up. The project also concentrates on notifying the emergency contact in the event of an emergency. In addition, the driver is alerted if he drives in close proximity to an object by means of the buzzer in addition to the distance from any obstacle in vicinity. The system also comprises of gas sensor which detects the presence of abnormal gas activities in the automobile. By means of IOT (Internet of Things), it is also possible to monitor and track the automobile in real time with the help of cloud storage which enables us to view the details when required.

Paper ID:NCIAES 1050

Fabrication of Electric Car Using PVC Pipe for Physically Challenged People

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Abstract:

Transportation has become an important part of our day-to-day life. Its usage has increased enormously leading to an increase in consumption of fuels. However, due to the increased consumption of fuel and the depleting resources, there will be non-availability of fossil fuel in the future. The objective of this paper is to introduce the technology that helps to run an electric car by a physically challenged person. This car is planned to fabricate by Polyvinyl Chloride (PVC) pipe which is a cost efficient product. DC motor control is used to vary the acceleration of the car. It uses hand gesture recognition technique. The people who are using this car can use hand gesture techniques to run the car. This is the car used for the partially handicapped persons who are able to utilize their fingers to drive the car.

Paper ID:NCIAES 1051

A Blended Approach for Solar in Dust Cleaning Process and an Automatic Tilting Mechanism to Maximize Power in Photovoltaics

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Abstract:

Solar power in India is a fast developing industry. The country's solar installed capacity reached 26.025 GW as of 31 December 2018. The demand of electricity is increasing there is need to exploit renewable source of energy. The Indian government had an initial target of 20 GW capacity for 2022. In the current situation, the increase in the efficiency of solar energy could be beneficial to a great extent. The most efficient solar panels in today's market have efficiency ratings as high as 22.2%, whereas the majority of panels range from 15% to 17% efficiency rating. The enhancement of the efficiency of the panel is very essential. The proposed system ensures the increased efficiency of photovoltaic panels by advanced cleaning system with tracking mechanism. The system will assure the improved production of solar panel.

Paper ID:NCIAES 1052

PERFORMANCE MONITERING AND ENHANCEMENT OF SOLAR PV MODULE

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Abstract:

Nowadays due to the depletion of fossil fuels, there is a search of alternative fuels in the form of renewable energy, among all the renewable energy, solar PV energy place a vital role in the power production and also it is environmental friendly. In this work the performance of PV modules monitored and various parameters such as module voltage, current, and the surface radiation and horizontal surface, ambient temperature are measured. The electrical performance is improved by the thermal management system using the intelligent controller. On observation it is found that PV module electrical efficiency is improved by 10% and surface temperature is reduced up to 8 °.

Paper ID:NCIAES 1053

POWER QUALITY IMPROVEMENT IN AC-DC CONVERTER USING HARMONIC CURRENT INJECTION METHOD

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Abstract:

It is a well-known fact that during a transformer rectifier combination undesirable harmonic line currents may be generated. Moreover, the power quality is well improved using third harmonic current modulated front-end structure which is well appropriate for medium/higher power applications. The non-linear loads causes the severe current harmonics that cannot be tolerated. These harmonic currents can cause either a shutdown of the device or the unacceptable powering of the devices.

This includes the power quality issues and clears up the restorative assessments taken by strategies for front-end third symphonious current mixture rectifiers. The third symphonious current implantation contraption close by three-level lift converter at the yield stage will augment the DC-interface voltage. With less lift inductance, all things considered half of the ordinary lift converter inductance is sufficient to realize the proposed converter structure achieving reduced swell current and moreover the contraption rating is by half of the yield voltage. Likewise, the power quality is particularly upgraded using third symphonious current changed front-end structure which is well fitting for medium/higher power applications. The test model of cross breed front-end converter is created in the exploration focus to affirm the MATLAB proliferation results.

A profitable third consonant current mixture based power quality improvement at the front-end AC-DC converter has been proposed in this .The proposed structure and control framework for change and imbuement circuit gives execution upgrade in the system.