K.L.N. COLLEGE OF ENGINEERING, POTTAPALAYAM

List of Current Undergraduate Projects - 2015-2016

Subject Code & Name: EE2452- PROJECT WORK (R - 2008)
Department : EEE **Year/Semester: IV/ VIII**

l.no	Project title	Students name	Guide name
1	PLC based control system for compressors of ash handling system	B.DEEPAK PRASANA 910612105013	Dr.S.M.kannan Prof.& HOD/EEE
		P.DINESH BABU 910612105017	
		A.KANAGAVEL 910612105028	
2	Intelligent Energy Consumption, Monitoring Through Internet Using ARDUINO And GPRS Module	J.PRAVIN TANKARAJ 910612105058	
		T.S.KESAVA PRASAD 910612105036	
3	Systematic Cooperative Control for Driver Assistance System	G.DAVID 910612105012	Dr.S.Venkatesan Prof./EEE
		T.K.BOOSUN 910612105009	
		R.ALAGURAJA 910612105003	
		S.R.AKSHAYSRINIVAS 910612105002	
4	Design and Implementation of Humanoid ARM in Tunnel Robot	J.JEYADHEEP VIGNESH 910612105026	
		S.DHARUN BASKAR 910612105016	
		V.KARTHICK KESAVAN 910612105029	
5	Design of Variable Frequency Drive for Industrial Application	K.CHANDRA 910612105011	
		S.DEEPTHI HASHINI 910612105014	
		M.DEIVAKANI 910612105015	
		M.GOKILA 910612105019	
6	Optimal Power Flow for Smart Grid Using PSO Algorithm	SEVUGA KUMAR.K 910612105071	Dr.K. Gnanambal Prof./EEE
		SRINIVASAN.V	

		910612105073	
		THAZHAI SELVAN.K 910612105077	
7	A Real Time Comparative Evaluation of Harmonics for AC Motor Drive System	SUDHARSAN @ CHLLAMANI.S 910612105335	Dr.S.Partha Sarathy Prof./EEE
		SATHISH KUMAR.G 910612105330	
		SARATHY.C 910612105329	
		SENTHIL.J 910612105331	
8	Optimal Placement and Sizing of DG in radial distribution system using Particle Swarm Optimization	AKSHATHA G.GANESAN 910612105001	Mr.A.Marimuthu ASP/EEE
		S.BHARANI 910612105008	
		R.BRINDHA 910612105010	
		K.KAJANA DEVI 910612105027	
9	Optimal Location and Sizing of DG Units in Distribution System Using Particle Swarm Optimization With Time Varying Acceleration Coefficients	T.PAVITHRA 910612105053	
		R.POOJA ESWARI 910612105054	
10	Energy Efficient Operation of Three Phase Induction Motor Using Binary Logic	R.MATHANA ATHISHRI 910612105041	Mr.P.Loganthurai ASP/EEE
		BHAGA SOWNDHARYA 910612105046	
		R.PREETHI 910612105059	
11	A Novel Technique for Maximization of Solar Power Generation	P.DINESH 910612105304	Mr.M.Jegadeesan ASP/EEE
		P.EZHILARASAN 910612105018	
		T.S.GOWTHAM 910612105022	
		J.MUHILAN 910612105314	
12	Embedded Controller for Detection of Obstacle in-front of vehicle and Cabin Safety Alert System	P.KASIPANDI 910612105032	
		M.PARAMESWARAN 910612105049	
		G.KATHIRAVAN 910612105033	
13	Reduction of Harmonic distortion for three phase non linear load Using PI with Fuzzy logic controller	P.GOWSALYA 910612105021	Mr.A.S.S.Murugan ASP/EEE
		N.HEMALATHA 910612105023	

		R.KARTHIGA 910612105030	
14	A Novel Differential Protection for Power Transformer Using Radial Basis Function Neural Network	R.JEYA PRAKASH 910612105308	
		B.KARTHICK RAJA 910612105309	
		K.KARTHICK RAJA 910612105310	
		S.KATHIRESAPANDI AZHAGU 910612105311	
15	Energy Conversion Using Proton Exchange Membrane Fuel Cell With SEPIC Converter Control	J.LAVANYA 910612105038	Dr.S.Venkatanarayanan ASP/EEE
		M.T.KEERTHIGA 910612105034	
		P.E.LAKSHMI 910612105037	
		R.KEERTHIGA 910612105035	
16	Design and Control of Bipolar Couagulator In Ophthalmic Surgery Using Single Ended Primary Inductor Converter	YOGESHWARAN.C.M 910612105089	
		SUNDAR.M 910612105336	
		VINOTH KUMAR.C 910612105341	
17	High Speed Wireless Connectivity Using LI-FI Technology	M.MUTHUMANIKANDAN 910612105044	Mr.S.Manoharan AP(Sr.Gr)/EEE
		D.KARTHIKEYAN 910612105031	
		N.MAHESWARAN 910612105040	
18	Unnoticed power reduction scheme using hierarchical power detection method	T.HEMANAND SINGH 910612105024	Ms.C.Muthamilselvi AP(Sr.Gr)/EEE
		S.JAWAHAR 910612105025	
		S.AROCKIYA JONY NISHANTH 910612105301	
		G.G.GOPINATH 910612105306	
		R.LAKSHMANAN 910612105312	
19	An Firmed versatile Smart Accessing and Monitoring of electrical Energy Through GSM	P.ANDREW 910612105004	
		M.GOPINATH 910612105307	
		R.MOHAMED ARABATH 910612105313	

20	Timer Operated Oil Dispensing System	SANTHOSHKUMAR.K.R 910612105065	Mr.M.Jeya Murugan AP(Sr.Gr)/EEE
		SHANAWAJ ANWAR.N 910612105072	
		SYED MOHAMMED KAMARDEEN.G 910612105076	
		VIGNESH.L.R 910612105084	
21	Transformer protection using Digital Relay in Thermal Power Station	SANTHOSH KUMAR.P 910612105066	Mr.M.Jeya Murugan AP(Sr.Gr)/EEE
		SETHUARUNKUMAR.S.M 910612105332	
		VIJAYA KUMAR.G 910612105339	
		VIJAYA KUMAR.S 910612105340	
22	Optimal Power Flow using Fire Fly Algorithm	RASHMI.B 910612105062	Mrs.K. Jeya Velumani AP/EEE
		SELVAPRIYA.S 910612105069	
		YOGALAKSHMI.A 910612105088	
23	Auto Transmission on petroleum vehicles and control the violation of rules in traffic signals	RAJA.K 910612105061	Mr.M.Bala Murugan AP/EEE
		VENKATESH.R.B 910612105083	
		SIVANADARAJAN.N.M 910612105334	
		VENGATESHAN.T.C 910612105337	
24	Mobile Controlled Robot Using WIFI	SANKAR.R.G 910612105064	
		SATHYAMOORTHY.T 910612105067	
		VISHWANATHAN.R.J 910612105087	
		YOGESWARAN.E 910612105090	
25	Power Quality improvement in gravity powered light using Dynamic Voltage Restorer	VIGNESH.N 910612105085	Mr.P.K.ARUN KUMAR AP/EEE
		VIJAYARAVINDH.A 910612105086	
26	Automatic Printed Circuit Board Design Machine	R.R.PRAVIN 910612105057	
		R.M.PRASANNA 910612105056	
		C.PANDIARAJAN	

		910612105048	
27	Design and Implementation of Various Controller For Solar MPPT System	R.PRABHU 910612105320	Mr.R.Jeyapandiprathap AP/EEE
		S.SAKTHISIVAN 910612105327	
		D.PANDIARAJAN 910612105318	
		A.SANKAR GANESH 910612105328	
28	GSM Based Remote Controlled Versatile Robotic Vehicle	R.PAULPANDI 910612105319	
		M.PRASANTH 910612105322	
		R.RAJAVIGNESH 910612105323	
		S.NANDHAKUMAR 910612105501	
29	Smart Power Source Selector Using ARDUINO for Home Applications	M.GOKULNATH 910612105020	Mr.S.Rajalingam AP/EEE
		R.DINESH 910612105305	
		S.ARUNPRASHATH 910612105302	
30	Harmonic Reduction using Multilevel Inverters	VAISHNAVINE 910612105080	
		VALLIAMMAI.S 910612105081	
		VIJAYA.S 910612105338	
31	Microcontroller (ARDUINO) Based Industrial Automation	M.RAGU NANDHAN 910612105060	Mr.N.Vimal Radha Vignesh AP/EEE
		K.S.PRADEEPAN 910612105055	
		R.NAVEEN RAJ 910612105047	
32	Microcontroller (ARDUINO) based advanced security system	S.MUTHU VEERA PANDI 910612105316	
		P.MUTHU MANICKAM 910612105315	
		R.NAGA ARJUN 910612105045	
		J.RAKKESH KUMAR 910612105324	
33	Smart Feeding Control Using PLC	SEENIVASAN.J.S 910612105068	Mr.A.Manoj AP/EEE
		SENTHIL BABU.B.A 910612105070	

		SIVA GOWTHAM.T.R 910612105333	
		PRAKASH.G 910612105321	
34	Programming and Customizing the ARDUINO for Smart Irrigating Crops	SUMAIYA.A 910612105074	
		SWATHI.T.R 910612105075	
		THENMOZHI.K 910612105078	
35	PLC based automatic welding oscillation control and tube feeding in butt welding machine	S.S.BALAJI 910612105007	Mr.S.P.Rajaram AP/EEE
		S.D.BALAJI 910612105006	
		J.J.BALAJI 910612105303	
		G.J.BALAJI 910612105005	
36	Autonomous Domestic Load Switching based on Frequency Trend Study	S.MEENATCHI 910612105042	
		S.MOHANA 910612105043	
		S.MAHALAKSHMI 910612105039	
37	Analysis of Harmonics In Non-Linear Devices Connected to Solar Photo Voltaic System	SAKTHI MAI.B.D 910612105063	Ms.E. Jeyasri AP/EEE
		VAISHALI.G 910612105079	
		VANITHA.T 910612105082	
38	Voice Interactive System for Students Data Automation	N.MUTHUVEL 910612105317	Mrs.A.P.S.Ramalakshmi ASP/EEE
		K.RANJITH KUMAR 910612105325	
		G.SABARI RAJAN 910612105326	
39	Optimal Fuel Control of Non-Linear MIMO System Using Evolutionary Algorithm	R.PARAMESWARI 910612105050	
		M.PARVATHAVARTHINI 910612105051	
		V.PAVITHRA DEVI 910612105053	

HOD/EEE

TITLE OF THE PROJECT

PLC BASED CONTROL SYSTEM FOR COMPRESSORS OF ASH HANDLINGSYSTEM

PROJECT MEMBERS

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GUIDED BY

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

ABSTRACT

In thermal power plant, compressors are employed to transport fly ash from electrostatic precipitator to ash silos tanks. In this power plant, five numbers of reciprocating compressors driven by induction motors of 132 kw capacity are used. The loading and unloading operations of compressors are controlled by air circuit breakers in turn controlled by local control panels. Electro mechanical contactors, timers and other components are employed in the control panels. As the local control panels are installed in dusty area, failure of control circuit is very frequent hence our project proposes introduction of programmable logic controllers in the control panel. Our project uses omron plc with twelve inputs and eight outputs for effective functioning of compressor control.

TITLE OF THE PROJECT

INTELLIGENT ENERGY CONSUMPTION MONITORING THROUGH INTERNET USING ARDUINO AND GPRS MODULE

PROJECT MEMBERS

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

ABSTRACT

The main objective of the project is to develop an IoT (internet of things) based energy meter reading displayed for units consumed by each device in a home and cost that each device has caused. Also the total reading of the home can be taken into account so that the difference in cost gives the losses. It may also be implemented by the EB dept. so that they can calculate the difference between the total power consumed by a particular area and the power consumed by each house in that area which gives the power lost or power theft. The main advantage of this project is that these readings are available at any time over the internet and is being lively updated. For this innovative work we have built a circuit similar to a digital energy meter that has a blinking LED for each revolution of the disc. It is so small and cheap that each device is connected via this device. This forms the basic of IoT. These signals are interfaced to an Arduino Uno via an opto coupler. The blinking LED flashes 3200 times for 1 unit. The optocoupler gives an interrupt each time the meter LED flashes to the programmed Arduino. The Arduino takes this reading and displays it on an LCD duly interfaced to it. The readings are also sent to a GPRS modem being fed from the Arduino via level shifter IC and RS232 link. The sim used in the modem being internet enabled transmits the data directly to a dedicated static IP (webpage) for display anywhere in the world in minutes.

TITLE OF THE PROJECT

SYSTEMATIC COOPERATIVE CONTROL FOR DRIVER ASSISTANCE SYSTEM

PROJECT MEMBERS

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GUIDED BY

Dr. S. VENKATESAN, PROFESSOR/EEE

ABSTRACT

This Project describes an innovative alternative to manual procedures for the application of traffic instructor, lane guider, obstacle avoider of collision control, auto pilot and ride lots. Vision and controllers are integrated into the tool to assure precise control of motion. In industries, movement of raw parts and finished products without damage is a very big challenge which can be overcome by this work. In the future, it will become more frequent to use Artificial Intelligence to fulfill the needs of user, especially for physically challenged, disqualified drivers. This project is motivated by the increasing accidents of drunk and driving, accidents at blind spots and industrial human error that cause financial outbreak. This work intimates the presence of the obstacles to the user. It is essentially a mobile robot used in the industrial arena to move materials from point-to- point. This trend towards the developing robot that possess a greater degree of autonomy. So that, they can more effectively perform tasks in an unstructured environment without continuous human guidance or intervention also extends to automated guided vehicles.

TITLE OF THE PROJECT

DESIGN AND IMPLEMENTATION OF HUMANOID ARM IN TUNNEL ROBOT

PROJECT MEMBERS

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Dr. S. VENKATESAN, PROFESSOR/EEE

ABSTRACT

In the modern world robots can cause unemployment by substituting human workers but robots also create jobs for Engineers, Programmers, and Supervisors or as a robot technician. The general aim of our project is to build up a "Humanoid Robotic Arm" for repairing and inspecting tunnels which can support people in their daily life and also in industry. The design of our Robotic Arm is based on the observation of the motion range of a human arm. We have tried to depict simple mechanical knowledge to build this arm. The designed manipulator able to perform various industrial tasks as per requirement and it has large industrially application on material handling and positioning any object or job. If we can utilize properly, industrial robots can enhance the perfection of life by releasing workers from scruffy, tiring, risky and heavy labor. In the era of Industrial revolution in our country the uses of this kind of technology is increasing day-by-day. This work was motivated by the accidents happened in recent years that were caused by falling parts of the inner wall of concrete tunnels.

TITLE OF THE PROJECT

DESIGN OF VARIABLE FREQUENCY DRIVE FOR INDUSTRIAL APPLICATION

PROJECT MEMBERS

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GUIDED BY

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ABSTRACT

Variable Frequency Drive is the most effective controller in the emerging industries. Modern VFDs are affordable and reliable, flexible and other significant electrical energy savings through greatly reduced electric bills. The purpose of this project is to prepare the design of VFD based on industrial applications. To prepare the guidelines, the knowledge of motor fundamental and different types of load is essential. Sufficient technical details gathered from different sources on motors and other semiconducting devices such as Insulated Gate Bipolar Transistor suitable for VFD application and the different types of loads. VFDs are used in a wide variety of applications for various reasons. They are the most effective energy savers in pump and fan applications. They enhance process operations, particularly where flow control is involved. VFDs provide soft-start capabilities which decrease electrical stresses and line voltage sags associated with full voltage motor start-ups, especially when driving high inertia loads.

TITLE OF THE PROJECT

OPTIMAL POWER FLOW FOR SMART GRID USING PSO ALGORITHM

PROJECT MEMBERS

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GUIDED BY

Dr. K. GNANAMBAL, PROFESSOR/EEE

ABSTRACT

This project work deals the solution of the optimal power flow (OPF) problem including wind energy. In this work, the optimal power flow is formulated to minimize the total generation fuel cost in the power system, while satisfying the system design and operating requirements. Practical optimal power flow problems are nonlinear and non-convex. Hence the conventional optimization methods are not able to solve such problems. Practical swarm optimization algorithm is used in this project to solve this type of problems. To formulate the objective function, renewable sources like wind and solar are included. This project utilizes PSO combined for determining minimization of fuel cost. The test system of IEEE 30 bus system is used to analyze the application of the algorithm.

TITLE OF THE PROJECT

A REAL TIME COMPARATIVE EVALUATION OF HARMONICS FOR AC MOTOR DRIVE SYSTEM

PROJECT MEMBERS

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ABSTRACT

In the recent years, much attention has focused on simplifying the frequently used solutions concerning harmonic contamination associated with speed control drives in loads. Different solution has been proposed to improve the practical utilization of harmonics filters. Selection of an adequate solution requires some knowledge of the different topologies to ensure that it is the appropriate solution for the specified goal, both technically and economically. The proposed work is designed and analyzed the harmonic profile of the AC motor drive system. The harmonic profile has been analyzed and compared between the conventional SCR based drive system and proposed Transistor based drive system. The control circuitry of the proposed work has been stimulated with the help of PROTEUS software and the experimental set up has been verified in terms of power and harmonics profile by using FLUKE power quality analyzer.

TITLE OF THE PROJECT

OPTIMAL PLACEMENT AND SIZING OF DG IN RADIAL DISTRIBUTION SYSTEM USING PARTICLE SWARM OPTIMIZATION

PROJECT MEMBERS

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ABSTRACT

This project is about the optimal placement of DGs, in the presence of load growth, the impact of DG placement at combined load power factor, impact of DG on voltage stability margin improvement. Voltage profile, the real and reactive power intake by the grid, real and reactive power flow patterns, cost of energy losses, savings in cost of energy loss and cost of power obtained from DGs are determined.

The distributed generation (DG) as generating plant serving a customer on-site or providing support to a distribution network, connected to the grid at distributed level voltages. Renewable energy based on DG is developing fast all over the world in recent years due to its promising potential to reduce the portion of fossil energy consumption in electric power generation and mitigate power losses and harmful carbon emissions. A new combined algorithm based on GA & PSO is presented to evaluate the DG site and size in distribution network. PSO is a computational method that optimizes a problem by iteratively trying to improve a candidate solution with regard to a given measure of quality.

PSO optimizes a problem by having a population of candidate solutions, here dubbed particles, and moving these particles around in the search space according to simple mathematical formulae over the particle's position and velocity. Each particle's movement is influenced by its local best known position but, is also guided toward the best known positions in the search-space, which are updated as better positions are found by other particles. This is expected to move the swarm toward the best solutions. In this the DG is placed at the most sensitive bus.

A methodology for the integration of dispatchable and non-dispatchable renewable DG units for minimizing annual energy losses is presented using analytical expressions.

TITLE OF THE PROJECT

OPTIMAL LOCATION AND SIZING OF DG UNITS IN DISTRIBUTION SYSTEM USING PARTICLE SWARM OPTIMIZATION WITH TIME VARYING ACCELERATION COEFFICIENTS

PROJECT MEMBERS

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A.MARIMUTHU, ASSOCIATE PROFESSOR/EEE

ABSTRACT

Power generated in generating station is transmitted through transmission lines and fed to the consumers through distribution substation. The power distributed into the network has losses, which is greater in distribution system compared to transmission system. This problem could be addressed by placing Distributed generation at strategic location due to which the losses can be minimized and the net savings can be maximized. Power loss indices are engaged to explore the initial placement of DG installation. This work adopts using Particle Swarm Optimization – Time Varying Acceleration Coefficients is proposed as an optimization technique. A detailed performance analysis is carried out on IEEE 69 Radial bus distribution system to express the effectiveness of the proposed method. Computational outcomes obtained showed that the proposed method is capable of generation optimal solutions.

TITLE OF THE PROJECT

ENERGY EFFICIENT OPERATION OF THREE PHASE INDUCTION MOTOR USING BINARY LOGIC

PROJECT MEMBERS

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ABSTRACT

The efficiency is more important nowadays because electrical motors are major consumers of electricity in the modern industrial society. The three phase induction motors are commonly used in the industry in large ranges from several kilowatts to thousands kilowatts. These motors have been preferred due to its self starting capability, rugged construction, less maintenance, low cost etc. In some industries, these three phase induction motors are operated in light load condition and even in no load condition. Energy consumption of induction motors are more than the total energy consumption of any other electrical motors. More energy is dissipated in induction motor with the rating below 55kW. When these motors are operating at 90% load condition, its efficiency is maximum. The efficiency is very low, when it is operating less than 30% of load and no load condition. Hence there is the necessity to increase the efficiency in order to minimize the cost of consuming electricity. The purpose of this work is to increase the efficiency by changing the connection of induction motor's winding either double star or delta connection depending on load condition.

TITLE OF THE PROJECT

A NOVEL TECHNIQUE FOR MAXIMIZATION OF SOLAR POWER GENERATION

PROJECT MEMBERS

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Mr.M.JEGADEESAN, ASSOCIATE PROFESSOR/EEE

ABSTRACT

The recent upsurge in the demand of PV (Photovoltaic) systems is due to the fact that they produce electric power without hampering the environment by directly converting the solar radiation into electric power. So the irradiance of sun should be utilized properly. Solar energy is completely natural; it is considered a clean energy source. So the study on improving the efficiency of solar panel is very necessary. In this project we increase the power output, efficiency and life time of solar panel. Temperature is the major factor that to be considered in solar panel because it reduces the power output and life time of the solar panel. As panel temperature increases output power of solar panel decreases so cooling of panel is necessary for improvement of efficiency. The effect of temperature in solar panel is the serious problem that should be solved. The nominal operating temperature is 28 degree Celsius in solar panel so for every increase from 28 degree there is a voltage drop. Other method is anti-reflecting coating for solar panel, which improve efficiency of panel.

TITLE OF THE PROJECT

EMBEDDED CONTROLLER FOR DETECTION OF OBSTACLE INFRONT OF VEHICLE AND CABIN SAFETY ALERT SYSTEM

PROJECT MEMBERS

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ABSTRACT

In today's world safety and security plays an important role, hence we tend to provide a good safety and security system while travelling. Vehicles are important in today's fast-paced society. Hence, acquiring vehicle nowadays is considered a necessity compared to past where it was considered luxury. In this thriving society, more and more vehicles are produced to meet the increasing demands of people. Hence this project aims to design the embedded system for vehicle cabin safety and security by modifying and integrating the existing modules. An obstacle detection system typically computes the position of obstacles by using ultrasonic sensor. Day-by-day, the concern regarding the level of toxic gases is also arising due to such increase in industrial growth. Such problems cannot be overlooked nowadays. There are many sensors developed and used for sensing the level of toxic gases. In our project we have been working with such sensor which is the MQ-7 Gas sensor.

TITLE OF THE PROJECT

REDUCTION OF HARMONIC DISTORTION FOR THREE PHASE NON LINEAR LOAD USING PI WITH FUZZY LOGIC CONTROLLER

PROJECT MEMBERS

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N.HEMALATHA (Reg.No.910612105023)

R.KARTHIGA (Reg.No.910612105030)

GUIDED BY

Mr.A.S.S.MURUGAN, ASSOCIATE PROFESSOR/EEE

ABSTRACT

Power quality problem is the most sensitive problem in the power system. The objective of the project is to reduce one of the power quality issue called "harmonics" using compensation technique. Shunt Active Power Filter (SAPF) is used to eliminate harmonic current and also it compensates reactive power. In this work, PI controller and Fuzzy Logic Controller based three-phase shunt active filter is employed for a three-phase systems. The advantage of fuzzy control is that it provides linguistic values such as low, medium, high that are useful in case where the probability of the event to occur is needed. It does not require an accurate mathematical model of the system. A MATLAB/SIMULINK has been used to perform the simulation. Simulink model is developed for three phase system under balanced source condition and three phase system for unbalanced source condition. The performance of both balanced source and unbalanced source is done using Fuzzy Logic Controller and PI controller. The Simulation results shows that the FLC with PI controller gives better performance.

TITLE OF THE PROJECT

A NOVEL DIFFERENTIAL PROTECTION FOR POWER TRANSFORMER USING RADIAL BASIS FUNCTION NEURAL NETWORK

PROJECT MEMBERS

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ABSTRACT

In a power system, transformers and other electrical equipment need to be protected not only from short circuit, but also from abnormal operating conditions, such as over loading and differential fault protection. The power transformer protective relay should avoid the tripping of circuit breaker during magnetizing inrush and rapidly initiate the tripping during internal faults. In this work, the concept of differential protection the magnetizing inrush current and over- excitation phenomena as they belong to the causes of the protection from mal-operation. In this work, the Radial Basis Function Neural Network (RBFNN) is proposed. The algorithm is evaluated using simulation performed with MATLAB platform. The results confirm that the RBFNN is faster, stable and more reliable recognition of transformer inrush and internal fault condition.

TITLE OF THE PROJECT

ENERGY CONVERSION USING PROTON EXCHANGE MEMBRANE FUEL CELL USING SEPIC CONVERTER CONTROL

PROJECT MEMBERS

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ABSTRACT

The Objective of our project is Voltage profile improvement, high reliable utility power, Lower distortion, fast dynamic regulating speed and insensitivity to load variation. It will also helps to improve the system efficiency. We have used Proton Exchange Membrane Fuel Cell as the source which uses a water-based, acidic polymer membrane as its electrolyte, with platinum-based electrodes. Due to their light weight, PEMFCs are most suited for transportation applications and Portable communication like Portable computer. PEMFCs for buses, which use compressed hydrogen for fuel, can operate at up to 40% efficiency. It is also used in Stationary application such as Stationary power system, UPS system in mobile phone. PEMFC is selected because of its low operating temperature, Fast start-ups and suitability for discontinuous operation. SEPIC converter is used to boost up the voltage and it is preferred because of its unique features like Non- inverted output, low Equivalent Series Resistance(ESR) of coupling capacitor minimize ripple, prevent heat built up which make it reliable for wide range of operation and low noise operation. Moreover PI controller and Fuzzy controller are used as pulse generator for producing gate signals to MOSFET.PI Controller is preferred because fast response of the system is not required. Fuzzy Controller have features like Very robust, Easily modified, uses multiple inputs and outputs sources, much simpler than its predecessors(linear algebraic equations), very quick and cheaper to implement.

TITLE OF THE PROJECT

DESIGN AND CONTROL OF BIPOLAR COUAGULATOR IN OPHTHALMIC SURGERY USING SINGLE ENDED PRIMARY INDUCTOR CONVERTER

PROJECT MEMBERS

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ABSTRACT

The objective of project is proposed to develop a Bipolar Coagulator design using SEPIC converter. Design and control of bipolar coagulator for ophthalmic surgery using Single Ended Primary Inductor (DC-DC) converter. Cautery is paramount and an absolutely essential item to have in the majority of ophthalmic procedures. Homeostasis remains the most important role of cautery. Without homeostasis, we run the risk of bleeds leading to the worst case scenario of a retro bulbar hematoma and blindness. It is a low power Electro Surgical Unit and is used to arrest bleeding from the blood vessels during ophthalmic surgery. This is specially designed to ensure smooth coagulation and controlled performance. Bipolar coagulation generally involves a surgical procedure in which an instrument with two electrical poles that cauterizes and removes tissue is used. Surgeons commonly use this method of tissue destruction and removal when performing laparoscopic female sterilization. Physicians may also employ this complex process for tumor or other types of tissue removal. Bipolar coagulation has benefits for both the patient and the surgeon. In electrosurgical procedures, the tissue is heated by an electric current. Although electrical devices that create a heated probe may be used for the cauterization of tissue in some applications.

TITLE OF THE PROJECT

HIGH SPEED WIRELESS CONNECTIVITY USING LI-FI TECHNOLOGY

PROJECT MEMBERS

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ABSTRACT

LI-FI represents Light Fidelity. Light Emitting Diodes are set to penetrate many areas of everyday life. An interesting property of these devices in addition to their lightening capabilities is that they can also be utilized for data transmissions as well. The project aims to build a system which carries out communication using visible light that are employed for indoor illuminations. This work is designed as a prototype LI-FI system to transfer data's as well as Files. The idea is to send data's and file as serial data using UART serial communication from one PC to another PC. So the visible light communication is used at the transmitting ends and also for reception photodiodes are used at the receiving PC.LI-FI is the future upcoming technology and this can transmit the information through light at high speed as compared to the present wireless technologies.

TITLE OF THE PROJECT

UNNOTICED POWER REDUCTION SCHEME USING HIERARCHICAL POWER DETECTION METHOD

PROJECT MEMBERS

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JAWAHAR S	**(Reg. No. 910612105025)**
AROCKIA JONY NISHANTH S	**(Reg. No. 910612105301)**
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ABSTRACT

Energy Conservation has attracted great attention as a global issue because of recent environmental problems. An energy Unnoticed power is electrical power that a device consumes when not in present use, but plugged in to a source of power and ready to be use. The proposed project system is to controls the power based on the two levels architecture hierarchical relationship among home appliances, behavioral model along with the relationship between user activity and home appliances for standby reduction Conservation system refers a system that saves the energy consumed in a building or home, by cutting off the wasted electric power such as Unnoticed power. To implement stand by control this project uses a micro controller along with a current sensor to find out hierarchy of the power flow, as the master devices is been turned off , this system automatically identifies the Unnoticed power of the hierarchy devices and switches off . Behavioral is identified by the means of manual inputs and controlled once the process is completed by implementing the Unnoticed power the energy wasted Unnoticed power can be reduced to a minimal level that reduces the energy waste and cost without any manual interpretation. The existing systems have a disadvantage, lacking in identifying and reducing Unnoticed power. The biggest problem of existing systems is their low extensibility and usability, because they are operated in a fixed form., they operate as a stand-alone system, according to predefined functions, or operate as a centralized system which could not perform intelligent controls, therefore, we propose an intelligent energy Conservation system to solve these problems.

TITLE OF THE PROJECT

AN FIRMED VERSATILE SMART ACCESSING AND MONITORING OF ELECTRICAL ENERGY THROUGH GSM

PROJECT MEMBERS

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ABSTRACT

An electrical energy meter measures and records electrical power consumed over time by electrical appliance. Thus, they occur social and management problems in the power supply & billing that leads to the inefficient (or) inadequate & tantamount to aiding & abetting diversion of revenue to unauthorized people. Some of the problems are low voltage, high voltage, power failure, tampering of the energy meter, misplaced paper bill, human errors while uploading to online, controversial billing, illegal reconnection of the power line.

These above problems can be overcome by deploying an electronic energy meter in domestic or industrial environment. However, electromechanical meters have been with us for a very long time, it is of late that electronic meters start to appear in electrical metering scene. This project presents a simple automatic smart device which has three complaint buttons for registering the complaints & to automate the process of power theft, auto disconnect & reconnect of the power supply, billing, power cut intimation. Meter reading using GSM technology which is directly communicated with the consumer to eradicate corruption & manpower, this can be functioned with the help micro controller which is been programmed to do its work.

TITLE OF THE PROJECT

TIMER OPERATED OIL DISPENSING SYSTEM

PROJECT MEMBERS

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ABSTRACT

Liquid dispenser machine is commonly found in our daily life in different places like offices, bus stands, railway stations, petrol pumps. In this project, we are going to present a timer operated liquid dispenser machine, which can be controlled via Arduino ATmega 2560 and GSM Module. Using a touch screen interface and GSM Module, we can effectively increase operator accuracy, reduce training time and improve overall efficiencies, thus keeping cost down by a properly designed touch screen interface which can improve overall accuracy. Present liquid dispenser machine available in industries are costly, complex and hard in design and fabrication. Main requirement from this machine is its metering or measuring quality. Accuracy of measuring is very less in various machines. Hence, the basic theme behind this is to improve these disadvantages of liquid dispenser machine. The design of model will be so simple that it can be adopted easily by small industries

TITLE OF THE PROJECT

TRANSFORMER PROTECTION USING DIGITAL RELAY IN THERMAL POWER STATION

PROJECT MEMBERS

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ABSTRACT

This work develops a Digital Relay for the protection of Generator Transformer in Mettur Thermal Power Plant. The Digital Relay, also called a numeric relay, refer to a protective relay uses an advanced microcontroller to analyze power system voltages and currents for the purpose of detecting the faults in an electric power system. The main objective of this work is to give Digital Relay protection for Generator Transformer against over current of three phases, negative sequence (or) unbalanced currents of three phases and earth fault current.

The present system with electromagnetic relay existing there makes use of individual relays and monitoring equipments for identification and isolation of each fault. Thus the monitoring and control of the faults becomes very difficult and apart it is costlier as it involves lot of relays and control equipment's. In addition the accurate values of monitored parameters cannot be obtained in these types of relays. These electromagnetic relays are replaced with a digital relay to give various advantages which includes advanced programmable functionality providing high performance level, flexibility as well as additional monitoring capabilities and they are able to communicate with other digital equipment whilst these functions are not quite possible in electromagnetic relays.

TITLE OF THE PROJECT

OPTIMAL POWER FLOW USING FIREFLY ALGORITHM

PROJECT MEMBERS

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ABSTRACT

The flow of electric power in an interconnection system is known as power flow. Optimal power flow (OPF) refers to load flow that gives maximum system security by minimizing the fuel cost and OPF considers the impact of the transmission system. The algorithm is applied to solve IEEE 30 bus system. The maximum allowable loads at different buses are also determined by using firefly algorithm. The firefly algorithm is one of the latest artificial intelligence algorithms developed. Inspired by the flashing of fireflies, it gets its inspiration from nature, like many of the other metaheuristic algorithms. The social aspect of fireflies provides an efficient means of traversing a search space, and avoiding any local optima. It is the most powerful algorithm for optimization. Significantly firefly algorithm is very efficient in dealing with multimodal global optimization problems. The proposed algorithm is validated and compared with existing results.

TITLE OF THE PROJECT

AUTO TRANSMISSION ON PETROLEUM VEHICLES AND CONTROL THE VIOLATION OF RULES IN TRAFFIC SIGNALS

PROJECT MEMBERS

RAJA K	**(Reg. No. 910612105061)**
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ABSTRACT

Environmental problems, such as pollution, become more serious year after year. One of the major causes is high fossil fuel consumption with CO_2 emission. In 2009, 23 percent of CO_2 emission globally came from land transportation systems, which is equal to 7000 million tons of CO_2. This large amount of gas pollution should be reduced to slow down global environmental problems. Reduction of fuel consumption and CO_2 emission in land transportation systems, which will have immediate positive economical and environmental impact, has become an important part of green technologies to alleviate global warming due to human activity. Intelligent transportation systems, which aim to use information and communication technology in the transportation systems, are considered to be a major enabler for the future green ITS. This article aims to provide a survey of the latest published applications based on vehicular communications as well as the envisaged technical challenges in the project area.

TITLE OF THE PROJECT

MOBILE CONTROLLED ROBOT USING WIFI

PROJECT MEMBERS

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ABSTRACT

Robots are very useful in any kind of industries. Mobile controlled robots are used to take the materials from one place to another in any industries and can used in the places where human cannot go. In this project the robot is controlled by a mobile phone that makes a connection using wifi with the mobile attached with robot. Due to the wifi connection , if any button is pressed, a tone corresponding to the button pressed is heard at the other end of the mobile. This tone is called “dual tone multiple-frequency”(DTMF) tone. Ultrasonic sensors are used to measure the distance of any obstacles and stop the functions of robot incase of wifi failure. Robotic arm attached to the robot are used to pick and place any materials and also used as rescue purpose. The whole process is controlled by mobile phone. Camera in the mobile attached to the robot act as a monitoring purpose and also it shows the path in the PC by using a IP camera app installed in the Mobile. Wifi analyzer app is installed in the mobile at the user end which acts a wireless speaker hence the button pressed tone at the remote mobile will heared by the mobile connected with head phone jack at the user end.

TITLE OF THE PROJECT

POWER QUALITY IMPROVEMENT IN GRAVITY POWERED LIGHT USING DYNAMIC VOLTAGE RESTORER

PROJECT MEMBERS

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Mr. P.K.ARUN KUMAR, ASSISTANT PROFESSOR/EEE

ABSTRACT

The purpose of the project is to design a hardware model of power generation by using gravitational force and to mitigate the power quality problems by using Dynamic Voltage Restorer (DVR). The main reason for developing this project is to generate instant power to illuminate Light Emitting Diode (LED) lamp. The Power generation using the renewable energy sources like solar, wind, hydel etc., also needs the high initial cost. So that we have proposed a new pollution free and low cost method of instant power generation by simply rotating the rotor by using gravitational force. In this project we are developed a model which can generate the power required to glow the Light LED. The power produced by the gravity light is also maintained free from the power quality issues using DVR, which was equipped with adaptive and self organization capacity. And at the intermittent time of manual loading of gravity light, the DVR supplies power to the LED.

TITLE OF THE PROJECT

AUTOMATIC PRINTED CIRCUIT BOARD DESIGN MACHINE

PROJECT MEMBERS

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ABSTRACT

The main aim of the project is to create a PCB board with fine accuracy at low cost and low production time. Nowadays the printed circuit boards used on the products are getting more complex and with thinner tracks. There are many ways to produce these boards and one of them is through electrochemical corrosion, but it does not produce good results. A better process is milling with a CNC machine. Even though it's a good choice for mass production, the PCB milling for domestic users is not a good economical option. There is a lack of CNC machines for this purpose. In the proposed system a CNC machine for milling and drilling a printed circuit boards with low manufacturing costs is developed. The proposed approach improves the accuracy of PCB board, it reduces the time consumption and manual labor. In the proposed system the design process such as PCB layout creation and G-Code creation is done with the help of EAGLE CAD software and the created G-code contains the instruction for stepper motors. These instructions are sent via a G-code sender software known as "Grbl controller". The Arduino micro controller is used as interface between the Grbl controller and stepper motors. The hardware prototype proposed system is developed.

TITLE OF THE PROJECT

DESIGN AND IMPLEMENTATION OF VARIOUS CONTROLLER FOR SOLAR MPPT SYSTEM

PROJECT MEMBERS

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ABSTRACT

The main aim of this project is a Neural Network controller as a maximum power point tracker employing DC-DC boost converter. The new controller improves Fuzzy logic search method with rules to Neural Network and eliminate its drawbacks. The performance of the proposed maximum power point tracker is demonstrated in both simulations at different operating conditions. This paper presents a NNC based DC-DC boost converter for MPPT operation of a photovoltaic (PV) system. The NNC proposed presents that the convergent distribution of the membership function offers faster response than the symmetrically distributed membership functions. The proposed scheme ensures optimal use of PV array and proves its efficacy in variable load conditions, unity, and lagging power factor at the inverter output (load) side. The performance of the converter is tested in simulation at different operating conditions. The performance of the proposed a NNC-based MPPT operation of DC-DC boost converter is compared to that of the conventional proportional–integral (PI)-based DC-DC boost converter converter. The results show that the proposed a NNC based MPPT scheme for DC-DC boost converter can accurately track the reference signal.

TITLE OF THE PROJECT

GSM BASED REMOTE CONTROLLED VERSATILE ROBOTIC VEHICLE

PROJECT MEMBERS

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ABSTRACT

The project is designed to control a robotic vehicle with a touch screen display unit for remote operation. The touch screen remote control is used at the transmitting side to transmit GSM control signals. At the receiving end, robotic vehicle is used to respond to those signals and perform the task. An 8051 series of microcontroller is used for the desired operation.

At the transmitting end using a touch screen control unit, commands are sent to the receiver to control the movement of the robot either to move forward, backward and left or right etc. At the receiving end four motors are interfaced to the microcontroller where two for them are used for arm and gripper movement of the robot while the other two are for the body movement. The GSM transmitter acts as a GSM remote control that has the advantage of adequate range with proper antenna, while the receiver decodes before feeding it to another microcontroller to drive DC motors via motor driver IC for necessary work. The main advantage of this robot is its soft catching arm that is designed to avoid extra pressure to be applied on the object.

TITLE OF THE PROJECT

SMART POWER SOURCE SELECTOR USING ARDUINO FOR HOME APPLICATIONS

PROJECT MEMBERS

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ABSTRACT

This project is to implement the 'Controller for uninterrupted power supply'.This controller is implemented by using 4-Channel 5V Relay Module relays that are controlled by the controller (ATmega328P).The 4-Channel 5V Relay Module select from the various available sources like solar, EB, inverter etc., for supplying continuous power, automatically. This operates as verifying the available sources and selects the optimum power source and gives control to relay through ATmega328P IC.

The operation of on-line ups and off-line ups is applied. The off-line ups take a major role. The controller (ATmega328P) is used to give the trip signal to the relays and also monitor the battery capacity. Current Sensor (WCS 2702) is used to measure the current capacity of the loads and gives details to the ATmega328P IC and based on the threshold limit the relays will be switchover to the other available source and maintain the continuity of power supply to the load.

TITLE OF THE PROJECT

HARMONICS REDUCTION USING MULTI-LEVEL INVERTERS

PROJECT MEMBERS

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ABSTRACT

This project is to explain the effects of Harmonics in the Power System and steps to reduce the effects of Harmonics. It will also explain how Harmonic distortion is one of the most important problems associated with power quality and creates several disturbances to the Power System. It includes the Harmonic reduction techniques to improve the power quality and it also includes the simulation for the same. Multilevel inverters are effective means of reducing harmonic distortion and dv/dt of the output voltages, which makes this technology applicable to utility interface and drives. In an inverter DC voltage is converted into an AC output. During this transformation from DC to AC, harmonics affect the power quality a lot. How harmonic reduction will improve the power quality is explained in detail. The voltage balancing at the terminal is achieved through proper selection of switching states. The switching scheme is defined by Pulse Width Modulation. It gives three phase output voltage of 27Levels with single DC source and a buck boost converter. A buck boost converter is used to regulate the dc source. The level shift multicarrier PWM allows obtaining the desired number of voltage and frequency. The model can be used for the applications like drives, inverter etc. The proposed idea is implemented in simulation to evaluate the validity of the concept in MATLAB.

TITLE OF THE PROJECT

MICROCONTROLLER (ARDUINO) BASED INDUSTRIAL AUTOMATION

PROJECT MEMBERS

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PRADEEPAN K S (Reg. No. 910612105055)

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ABSTRACT

Today the usage of automation control products globally increases in various industries like printing, packaging, food processing, oil and gas refineries, water treatments and power generation plants. Safety continues to be and ever important aspect of industry's drive towards further automating. No matter how automated a factory system is, all production grinds to a halt when faults occur on the plant floor. This project is mainly focusing on the design and visualization aspects with minimum cost by introducing the SCADA and PLC-Arduino interfacing. This work deals with interfacing industry process parameters like tank level, density, flow rate etc., with PLC through Arduino controller. In this work chemical industries are considered as case study system to design and implement the project work. In case of increasing the number of process parameters, the expansion of PLC with analog modules is more costly and difficult. This complex situation is effectively handled in the project by Arduino controller. Arduino is more reliable, cost effective and provides easy expansion at the industry level compared to conventional analog module. The primary objective of the proposed scheme is to provide reliable, efficient and cost effective interfacing of PLC and Arduino for process control in small scale industries.

TITLE OF THE PROJECT

MICROCONTROLLER(ARDUINO) BASED ADVANCED SECURITY SYSTEM

PROJECT MEMBERS

MUTHU VEERA PANDI.S	**(Reg.910612105316)**
MUTHU MANICKAM .P	**(Reg.910612105315)**
NAGA ARJUN .R	**(Reg.910612105045)**
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GUIDED BY

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ABSTRACT

The aim of our project is to develop a security system which is economical, reliable & user friendly (Two way communication). As recently available security system were costly, requires much components (thus reliability is degraded) others requires much human power. Our system avoids these drawbacks by using minimum number of components which are utilized completely and power consumption is reduced, efficiency of each component is maintained. In most of theavailable security systems one way communication is available i.e., it only indicate anomalies to the user and user has no control over it. The proposed system provides two way communication where user has complete control over the system and the user can take necessary action. This system consists of Passive Infra-Red (PIR) sensor to detect the presence of human in the protected area. Microcontroller Arduino Uno is used to process signal from sensor. The microcontroller can communicate with user through mobile network(GSM). GSM also receives commands from user and share this information with microcontroller which performs security action desired by the user through motor control, door control etc.

TITLE OF THE PROJECT

SMART FEEDING CONTROL USING PLC

PROJECT MEMBERS

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ABSTRACT

Nowadays, automation is used in many small scale and large scale industries. In Industries 37% of the electric supply is utilized for automating any devices or process. Printing industry has crossed a serious structural change in the past ten years. Consolidation has started and some overcapacity has been closed down. Generally printing houses can be placed in two categories. Small and medium-sized companies have the advantage of being more agile and they respond more swiftly to market needs. Large companies are primarily struggling with how to resolve the issue of overcapacity, which has resulted in a huge price war across the industry. These companies require different types of strategies for the future. While the issue of overcapacity and price competition impacts the sector as a whole, technology offers both a threat and an opportunity. In printing industries, there is a possibility of error in the paper feeding system such as double sheets, incorrect positioning of paper etc., during overcapacity printing. This error causes more time consumption for machine operators and also creates inconvenience in operating the machine. Presently, manual operation is being carried out by the industries. This project aims at reducing manual labour and Time consumption .The project aims at reducing the cost by 70% of the original machine manufacturer cost. The primary objective of the project is to reduce the cost and manual operation by providing auto feeding system.

TITLE OF THE PROJECT

PROGRAMMING AND CUSTOMIZING THE ARDUINO FOR SMART IRRIGATING CROPS

PROJECT MEMBERS

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ABSTRACT

This project is all about modern way of irrigating the crops for highest yield. Unlike conventional irrigation, the modern smart-irrigation system ensures many quality concerns such as: water quality monitoring, automatic time scheduling, maintaining soil moisture level, wireless mode of control, raising labor-independent farms etc. This project is worthwhile for today's famers as it creates a care-free situation for them to stay away from their farm lands and thereby encouraging them to actively participate in the supply chain of their own commodities.This project utilizes the most efficient drip irrigation system alongside with distributed wireless network of soil and temperature sensors placed in the root zone of the plants. A three stage approach is followed: water quality monitoring – field monitoring – irrigation control. These three stages are fully automatic and ensure effortless farming with accurate feeding of water and fertilizers to the crops. Here it mainly focuses on the improvement of rural and agricultural development through advanced information and communication processes.

TITLE OF THE PROJECT

PLC BASED AUTOMATIC WELDING OSCILLATION CONTROL AND TUBE FEEDING IN BUTT WELDING MACHINE

PROJECT MEMBERS

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BALAJI S D (Reg. No. 910612105006)

BALAJI J J (Reg. No. 910612105303)

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ABSTRACT

For various purposes of boiler assembling, tubular products such as super heater, economizer are needed .for these tubular products, the Tubes are welded in a machine called as STBW machine. STBW is nothing but straight tube butt welding machine where the tubes are joined together and long tubes are formed for manufacturing of tubular products. The tubes are welded in three steps in STBW.

1. Root pass welding
2. layer 1 welding
3. layer 2 welding.

Before the welding process, the tubes should be preheated for quality of welding. In this STBW machine, preheating is done manually. Because of this manual work, the time consumption and rejection ratio of the tubes are high.in this project, the preheating is done automatically using HOTSTART method. HOTSTART is otherwise called as HOTPASS method which is a technique in which excessive amount of current is given during ROOTPASS welding. Due to this HOTSTART, the tubes are preheated automatically. it results in less time consumption and less rejection ratio. Simply the HOTPASS is used instead ROOTPASS welding in this project. the quality of the welding is also improved using this project.

TITLE OF THE PROJECT

AUTONOMOUS DOMESTIC LOAD SWITCHING BASED ON FREQUENCY TREND STUDY

PROJECT MEMBERS

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ABSTRACT

Our work is based on the load-frequency control system widely used for grid power flow management. In the wake of concepts of smart grid gaining popularity throughout the world, it is now possible to program loads at the consumer end to automatically connect loads when the grid power capacity is favorable. This will ensure that the grid capacity is not exceeded at any time. This proposal is now feasible as the society has accepted that there exists a demand-supply gap and it is likely to remain so for ever. Society also recognizes that if they do not voluntarily reduce loading the lines, then the substation nearest to them will disconnect the power supply to the entire distribution line. This will put off all the loads in the home and all homes in that line. This is the worst that can happen. Instead, if an intelligent system anticipates the grid overload based on the grid frequency measured over a thirty minutes interval, then it can act to connect selectively some loads in the home. Since this intelligent assessment takes place in every home on the same distribution line, the cumulative effect will be a dramatic recovery of the grid frequency to sustain its operation without disconnecting the entire distribution line. Advantage of our system is that these instruments are localized and are widely distributed.

TITLE OF THE PROJECT

ANALYSIS OF HARMONICS IN NON-LINEAR DEVICES CONNECTED TO SOLAR PHOTOVOLTAIC SYSTEM

PROJECT MEMBERS

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ABSTRACT

Growing apprehension on environment protection has prompted the Photovoltaic (PV) system as one of the potential renewable energy source in power system generation. The Photovoltaic generation is a kind of DC electrical energy that is tied with utility grid through power electronic devices such as DC-DC converter and inverter. The incorporation of Power Electronic devices leads to the Power Quality issues such as Harmonic Distortion which has become major concern in PV panel integration. The impact of Harmonics on utility grid is analyzed through the Total Harmonic current Distortion (THDI) factor and it can be reduced by implementation of Passive Harmonic Filter at the point of common coupling (PCC). The proposed work deals with the mathematical modeling of Photovoltaic System and Harmonic mitigation by proper Passive Harmonic filter implementation. A Proto type model of a PV panel is designed and results are validated through MATLAB Simulink.

TITLE OF THE PROJECT

VOICE INTERACTIVE SYSTEM FOR STUDENT'S DATA AUTOMATION

PROJECT MEMBERS

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ABSTRACT

The objective of this project is to design PC based student mark announcement system through telephone line. This project is designed to help a student/parent by announcing the mark by voice through the telephone line hence, it replaces a man in that work. The **Interactive Voice Response System** (IVRS) serves as a bridge between people and computer databases by connecting the network with the database. The telephone user can access the information from anywhere at any time simply by dialing a specified number and following an on-line instruction when a connection has been established. Nowadays every institution needs automation. As a part of college automation, we have decided to do a project **"Voice Interactive System for Student's Data Automation"**. Our project allows the user to know the students attendance and marks quickly through the telephone line without the intention of the college authority. In this project embedded system has been used. The Microcontroller controls the whole hardware. Telephone line is used for communication purpose. Visual basic has been used for software programming. Through this project, student's attendance in the class and outcome of student's university results are made reachable to the parents. It will be very obliging to the parents to be acquainted with their son's/daughter's recital in the college.

TITLE OF THE PROJECT

OPTIMAL FUEL CONTROL OF NONLINEAR MIMO SYSTEM USING EVOLUTIONARY ALGORITHM

PROJECT MEMBERS

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ABSTRACT

This paper deals with a new approach that utilizes evolutionary computation and proportional-integral differential (PID) control to a Multi-Input Multi-Output (MIMO) nonlinear system. Evolutionary algorithm is one of the promising algorithms for optimizing real world complex problems. This approach is demonstrated through a laboratory helicopter called the Twin Rotor MIMO System (TRMS). The goals of control are to stabilize the TRMS in significant cross-couplings, reach a desired position and track a trajectory efficiently. The proposed control scheme includes four PID controllers with independent input. In order to reduce the total error and control energy, all parameters of controller are obtained by Particle Swarm Optimization (PSO) algorithm with a system performance index as the fitness function. PSO is a robust stochastic optimization technique based on the movement and intelligence of swarms. It applies the concept of social interaction for problem solving. The objective is to control the aerodynamic force of 2-DOF helicopter by varying the speed of the pitch and yaw motor and thus tracking their reference position so as to minimize its fuel consumption. Resulting model was designed in MATLAB/Simulink environment and can serve for control design.