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ELECTRICAL PROJECT TITLES AND ABSTRACTS 2020-21

PROJECT TITLE	**Monitoring of highway wind power parameter through IOT and automatic controlling highway light.**
PROJECT ID	SHEEE001
DOMAIN	ELECTRICAL
ABSTRACT	The objective of the project is to design a wind turbine to recapture wind energy from vehicles on the highway. Wind energy is considered the fastest growing clean energy source however; it is limited by variable natural wind. Highways can provide a considerable amount of wind to drive a turbine due to high vehicle traffic. This energy is unused. Extensive research on wind patterns is required to determine the average velocity of the wind created by oncoming vehicles. The wind turbines will be placed on the medians therefore fluid flow from both sides of the highway will be considered in the design. Using all of the collected data, existing streetlights automatically control and monitoring the parameter through the IOT from the base station on the medians can be fitted with these wind turbines. Additionally, since the wind source will fluctuate, a storage system for the power generated will be designed to distribute and maintain a constant source of power. Ideally, the turbine can be used globally as an unlimited power source for streetlights and other public amenities.

PROJECT TITLE	An Approach for Monitoring and Smart Planning of Urban Solid Waste Management
PROJECT ID	SHEEE002
DOMAIN	ELECTRICAL
ABSTRACT	With increase in population, the scenario of cleanliness with respect to waste management is degrading tremendously. The overflow of garbage in public areas creates the unhygienic condition in the nearby surrounding. It may provoke several serious diseases amongst the nearby people. It also degrades the valuation of the area. To avoid this and to enhance the cleaning, 'smart waste management system' is proposed in this project. In the proposed system, the level of waste in the dustbins is detected with the help of Sensor systems, and communicated to the authorized control room through GSM system. Microcontroller is used to interface the sensor system with GSM system. An android application is developed to monitor the desired information related to the waste for different selected locations. This will help to manage the garbage collection efficiently.

PROJECT TITLE	Zig-Bee Based Irrigation System for Home Gardens
PROJECT ID	SHEEE003
DOMAIN	ELECTRICAL

ABSTRACT	Single-chip microcontrollers equipped with wireless transceivers are gaining popularity in smart home automation because of their built-in resources, low power consumption, size, afford ability and durability. Research and development professionals are seizing the opportunity to design and integrate more functions and services for smart home monitoring and control systems utilizing such microcontrollers. This project presents a wireless irrigation system for a smart home garden that can be integrated with existing smart home control systems. The system consists of slave nodes and a master station each of which is equipped with a wireless microcontroller. Each slave node is equipped with a temperature sensor, a soil-moister sensor, a water valve, a microcontroller and a Zigbee transceiver. The slave microcontroller reads and frames the surrounding temperature of the garden's grass and trees along with soil moisture. Then, the frame is forwarded to the master station via a Zigbee ad-hoc network. The master station has an embedded fuzzy logic irrigation algorithm to water the grass and trees based on a set of rules. A home web-server is interfaced with the master station for remote access monitoring and operation. The proposed system can be operated as a stand-alone unit or can be integrated with existing home automation systems.

PROJECT TITLE	**Unusual Event Detection in Low Resolution Video for enhancing ATM security**
PROJECT ID	SHEEE004
DOMAIN	ELECTRICAL
ABSTRACT	In real world applications, tracking target in low resolution video is a challenging task because there is loss of discriminative detail in the visual appearance of moving object. The existing methods are mostly based on the enhancement of LR (low resolution) video by super resolution techniques. But these methods require high computational cost. This cost further increases if we are dealing with events detection. In this paper we present an algorithm which is able to detect unusual events without such type of conversion and well suited for enhancement of security of ATMs where conventional low resolution cameras are generally used due to their low cost. Proposed algorithm only uses close morphological operation with disk like structuring element in the pre-processing steps to cope up with low resolution video. It further uses rolling average background subtraction technique to detect foreground object from dynamic background in a scene. Our proposed algorithm is able to recognize the occurrence of uncommon events such as overcrowding or fight in the low resolution video simply by using statistical property, standard deviation of moving objects. It is fast enough because it process low resolution frames and could be helpful in surveillance system for

	enhancing the security of ATMs where conventional camera of low resolution are still used. It does not use any classifier and avoids the requirement of training the system initially.

PROJECT TITLE	**Wireless speed control of single phase AC Induction motor**
PROJECT ID	SHEEE005
DOMAIN	ELECTRICAL
ABSTRACT	Single phase induction motors are widely used in home appliances and Industrial control because of their low cost and rugged construction. Many industrial processes require variable speed drives for various applications. Many applications need variable speed operation and one of them is a simple fan load. The RF generator which generates the analog output signal for the corresponding button pressed using PCB. This analogue output is fed to the RF Transmitter and sent through the antenna. At the other end, the RF Receiver picks up the signal and feeds it to the signal decoder, there the decoding takes place and this decoding data is given to the Micro controller RL78. The software in the Micro controller receives the signal and accordingly drives the TRIAC Circuit, which in turn is connected to load serially which is used to generate the PWM pulses for speed control of the single phase induction motor. The main aim of the this project is to design an real time electronic control system that can be used to control the speed of motors kept at remote locations using an embedded technology.

PROJECT TITLE	**Underground Cable Fault Detection and Alert with Voice Commands using FN-M16P.**
PROJECT ID	SHEEE006
DOMAIN	ELECTRICAL

ABSTRACT	The project is intended to detect the location of fault in underground cable lines from the base station in kilometres using a Renesas micro-controller. This project uses the standard concept of Ohms law i.e., when a low DC voltage is applied at the feeder end through a series resistor to the Cable lines, then current would vary depending upon the location of fault in the short circuited cable. In the urban areas, the electrical cables run in undergrounds instead of overhead lines. Whenever the fault occurs in underground cable it is difficult to detect the exact location of the fault for process of repairing that particular cable. The proposed system finds the exact location of the fault. This system uses a Renesas micro-controller and a rectified power supply. Here the current sensing circuits made with combination of resistors are interfaced to Renesas controller with help of the ADC device for providing digital data to the microcontroller representing the cable length in KM's. The fault creation is made by the set of switches. The relays are controlled by the relay driver IC which is used for switching the power sequentially to all the lines. A 16x2 LCD display connected to the microcontroller to display the information. In case of short circuit (Line to Ground), the voltage across series resistors changes accordingly, which is then fed to an ADC to develop precise digital data to a programmed Renesas board that further displays fault location in kilometres. The project future can be implemented by using capacitor in an ac circuit to measure the impedance which can even locate the open circuited cable.

PROJECT TITLE	**Fault Analysis and Electrical Protection of Distribution Transformer**
PROJECT ID	SHEEE007
DOMAIN	ELECTRICAL
ABSTRACT	In today's lifestyle, technology has become very dependable in many ways thereby simplifying day-to-day life. Home automation, utility meters, appliances, security systems, card readers, and building controls are some of the areas wherein plenty of research in the use of technology is widely taking place as we speak. Along with hardware the use of software has become very important thereby simplifying tasks, reducing size of equipment and hence cutting down on cost of the equipment.

PROJECT TITLE	**Industrial Monitoring using IoT**
PROJECT ID	SHEEE008
DOMAIN	ELECTRICAL
ABSTRACT	This paper presents the development of industrial monitoring system that monitors the environment conditions in an indoor space at remote location using the concept of IoT. In this system, sensors like temperature sensor, humidity sensor and gas sensor are used and data collected from the sensor will be available remotely through webpages and can view the data anywhere in the world and decisions will be taken based upon the measurement. SMS alert will be sent to the specific person in any emergency situation which contains collected values from the sensor. The communication between the system's components is performed using the existent wireless infrastructure based on the IEEE 802.11 b/g standards.

PROJECT TITLE	A New Single-Stage Transformer less Inverter for Photovoltaic Applications
PROJECT ID	SHEEE009
DOMAIN	ELECTRICAL
ABSTRACT	In this paper a new single-stage transformer less inverter for photovoltaic (PV) application is proposed. Typical PV systems have multi-stage topology in order to perform different functions. These multi-stage inverters suffer from low efficiency and high components count. The proposed inverter is a combination of boost converter and half bridge inverter which can handle voltage boosting as well as feeding ac current to the grid in one stage. The introduced converter is transformer less which increases the overall efficiency and decreases cost, size and weight of the system. This topology has several desirable features like low switching losses, low total harmonic distortion (THD) and simple control technique. In this paper, operation principle, theoretical analysis and design of the proposed topology are discussed. Also, simulation and experimental results of a lOOW inverter are presented to confirm the validity of theoretical analysis.

PROJECT TITLE	**FAULT DEDECTION & CORRECTION IN DC MOTOR**
PROJECT ID	SHEEE010
DOMAIN	ELECTRICAL
ABSTRACT	In the today's busy world, every person will be busy with his work. So now a day's lots of work are handled from remote places. In many industries, we need to control the ON and OFF of AC or DC motors. The switching ON/OFF of motor can be done using sensor such as temperature and voltage level monitoring. In this project, we are controlling the motor switching through monitoring the voltage levels & temperature levels of the motor. The main aim of this project is not only to ON or OFF the motor, but this module has a built in intelligence, were the module will consider the required condition to ON/OFF the motor. For every process, the module will send the acknowledgement.

PROJECT TITLE	**Design of an Arduino based Maximum Power Point Tracking (MPPT) Solar Charge Controller**
PROJECT ID	SHEEE011
DOMAIN	ELECTRICAL
ABSTRACT	Renewable sources such as the Photovoltaic Systems (PV) have been used over decades in order to focus on greener sources of power generation. Today it has become a matter of concern on how to reduce COST and improve EFFICIENCY in order to harness and use these natural resources in a much better way possible. Hence the idea of Maximum Power Point Tracking System (MPPT) has emerged, which is basically a system used by charge controllers for wind turbines and Photovoltaic Systems to employ and also provide a maximized power output. This Thesis is mainly concerned with the utilization of such a system in order to achieve a controlled photovoltaic power using MPPT mechanism. The main aim of this project was to track the maximum power point of the photovoltaic module so that the maximum possible power can be extracted from the photovoltaic systems by varying certain conditions in algorithm and set up mechanism. Finally the output data from this project was compared with the other MPPT algorithms in order to attain an improved performance hence a better MPPT system. Furthermore, the system was interfaced with GSM to get a better access of data from anywhere for analysis thus reducing the physical work of data collection.

PROJECT TITLE	**HOVERCRAFT RESCUE TUBE**
PROJECT ID	SHEEE012
DOMAIN	ELECTRICAL
ABSTRACT	In view of the great impact of urban flooding disasters on residents, traffic and urban Infrastructure in recent years, we aim at finding high-risk events and loopholes in emergency plan at low cost, and simulate the emergency rescue process. In this project we propose an emergency response, and a flood emergency response system is developed. He we proposed a system for providing an emergency needs for the people those whose stuck in flood or for the seafarers stuck in unreachable area in the sea. The system or the vehicle that can be controlled by android phone that carry medicine or the food or it can be used for taking the picture in the unreachable areas in the remote area consisting of river and also dealing with victims stuck in floods.

PROJECT TITLE	**Air Cooler**
PROJECT ID	SHEEE013
DOMAIN	ELECTRICAL
ABSTRACT	The present air cooling methods are evaporative coolers, air conditioning, fans and dehumidifiers. But running these products need a source called electricity. The producing of electricity is ultimately responsible for hot and humid conditions i.e. global warming. In hot and humid conditions the need to feel relaxed and comfortable has become one of few needs and for this purpose utilization of systems like air-conditioning and refrigeration has increased rapidly. These systems are most of the time not suitable for villages due to longer power cut durations and high cost of products. Solar power systems being considered as one of the path towards more sustainable energy systems, considering solar-cooling systems in villages would comprise of many attractive features. This technology can efficiently serve large latent loads and greatly improve indoor air quality by allowing more ventilation while tightly controlling humidity. Despite increasing performance and mandatory energy efficiency requirements, peak electricity demand is growing and there is currently no prevalent solar air cooling technology suited to residential application especially for villages, schools and offices.

PROJECT TITLE	**ARTIFICIAL LANE CLEARANCE SYSTEM FOR TRAFFIC MANAGEMENT**
PROJECT ID	SHEEE014
DOMAIN	ELECTRICAL
ABSTRACT	Traffic management is the severe problem of today's society because of growth of the urbanization. This cause the traffic jam at the traffic junctions which in turn causes delay to ambulance and it causes loss of life. In order to overcome this problem, this paper presents a simple ambulance controlled traffic system. The main objective of this system is that to control the traffic, allowing an ambulance to arrive at a particular location without it having to stop anywhere until the destination is reached. This system includes Sensor based technology. This device will be placed within a radius of the signal which will be interfaced with the signal approached by the ambulance in its desired destination. The signals will be turned green, at a particular time before the ambulance reaches the signal, thus making the route clear for the ambulance. By using this system, we can save lot of time for the ambulance which is usually wasted due to heavy traffic on signals in cities. In green wave system was discussed, which was used to provide clearance to any emergency.

PROJECT TITLE	**ANDROID SPEECH RECOGNITION BASED VOICE COMMAND NOTICE BOARD**
PROJECT ID	SHEEE015
DOMAIN	ELECTRICAL
ABSTRACT	Today notice board has become an important thing in institutes/organization or public places like railway stations, bus stands and hospitals. But to use the paper notices stacked on a notice board is a time taking and expensive process and there is wastage lot of time, paper and labour. The notice board is used to display the information in an effective way to the people, but to update the messages instantly is not easy on the notice board. This project, deals about an advanced Hi-Tech wireless Notice Board. This system is enhanced to display the latest information through an Android application of smart phones or tablet

PROJECT TITLE	**AUTOMATIC SPEED CONTROL OF VEHICLE USING ULTRASONIC SENSOR AND CAN PROTOCOL**
PROJECT ID	SHEEE016
DOMAIN	ELECTRICAL
ABSTRACT	The Objective of this project is to develop a system to keep the vehicle secure and protect it by the occupation of the intruders. The main aim of the project to develop a system automatic speed control of vehicle and accident avoidance using ultrasonic sensor and CAN controller. Whenever any obstacle is detected in running vehicle depends on distance automatically control the speed of vehicle. The ultrasonic sensor system continuously sends signals and monitors any car or other obstacles are in front of car. The distance up to which ultrasonic sensor can work may be up to 4 meter. When any obstacle or vehicle detected by ultrasonic sensor system it will send signal to the embedded board. After receiving this signal embedded board sends a signal to the motor to reduce the car speed automatically which can control car speed immediately. Vehicle is controlled automatically without any manual operation when the vehicle is at 4 meter distance away from the front vehicle. Also give alarm to alert to the driver. Many accidents at High-ways are taking place due to the close running of vehicles, all of sudden, if the in front vehicle driver reduces the speed or applied breaks, then it is quite difficult to the following vehicle driver to control his vehicle, resulting accident. To avoid this kind of accident, the warning system, which contains alarm and display system can arrange at rear side of each and every vehicle.

PROJECT TITLE	**KEY FORWARDING AND VEHICLE PARKING SYSTEM**
PROJECT ID	SHEEE017
DOMAIN	ELECTRICAL
ABSTRACT	In this article the authors describe the design of an automated car parking system using RFID technology. For the purpose of identification of radio waves are in form of electronic data transfer between the reader module and tag module which is attached to an object. RFID technology uses RFID tags, RFID readers and RFID antenna. The application can be used for managing and controlling various reports and operations of the parking system. By using this software the check-in and check-out will be in control of the RFID tags, readers and barriers. With this software and technology, the check-in and check-out can be done very quickly by avoiding the traffic jam problem near the gates of parking lots. Drivers will not have to wait for the identification of their vehicles as it will be

	done automatically by the tags that are provided to them. This will also ensure security as only the registered tags (users) are allowed to enter.

PROJECT TITLE	**Design of a Battery-Powered Induction Stove**
PROJECT ID	SHEEE018
DOMAIN	ELECTRICAL
ABSTRACT	Many people in the developing areas of the world struggle to cook with stoves that emit hazardous fumes and contribute to green house gas emissions. Electric stoves would alleviate many of these issues, but significant barriers to adoption, most notably lack of reliable electric power, make current commercial options infeasible. However, a stove with an input power of 24V DC elegantly solves the issue of intermittent power by allowing car batteries to be used instead of a grid connection, while also allowing seamless integration with small scale solar installations and solar-based micro-grids. However, no existing commercial stoves nor academic research have attempted to create an induction stove powered from a low voltage DC source. This paper presents the design of a low voltage current-fed, full-bridge parallel resonant converter stove. The dynamics of this new topology are discussed in detail and simulations are provided to analyze the behavior. Additionally, a practical implementation of a 500W – 1 Kw stove is described. This stove is the first of it's kind and represents a new contribution to both the field of induction cooking and the field of clean cooking solutions for the developing world.

PROJECT TITLE	**DESIGN OF ELECTRONIC FOOTWEAR FOR VISUALLY IMPAIRED**
PROJECT ID	SHEEE019
DOMAIN	ELECTRICAL
ABSTRACT	Visual perception is the ability to interpret the surrounding environment using light in the visible spectrum reflected by the objects in the environment. This perception is known as visual perception, eyesight, sight or vision. In simple words, it is the ability with which one can see the outside world and differentiate between various things using their images. Living even a single day without eyesight is unimaginable! But there are many people in the world who do not have proper vision. Some may be blind and some may have other visual disorders. Life becomes difficult for such people. They find it hard even to do their daily chores. For such people, working like any other ordinary person is nothing less than a dream.

PROJECT TITLE	**Development of a Three Phase Induction Motor Controller for Solar Powered Water Pump**
PROJECT ID	SHEEE020
DOMAIN	ELECTRICAL
ABSTRACT	This paper intends to develop a three phase induction motor controller for a solar powered water pump. In many areas, disrupted and inadequate power supply can cause significant damage in household or industrial activities which require water supply. Agricultural production is also hindered as most of the irrigation process is solely based on electricity. So far, DC motors have been used for solar application in Bangladesh due to the simplicity of their speed and torque control. But, DC motors are very expensive. Additionally, regular maintenance of the commutator and brushes is necessary. A three phase induction motor can perform robustly in this field with the help of an inverter. The paper focuses on the developments of a three phase inverter to drive aninduction motor through optimal control and design techniques, which can replace the DC motor. A three phase induction motor was successfully run with a prototype setup, established with 320Watt solar panel and a three phase inverter with appropriate and low cost gate drive circuit. The experimental results satisfied the demand as we effectively handled a water pump using three phase induction motor with optimal cost and efficiency.

PROJECT TITLE	**DISTRIBUTION NETWORK AUTOMATION FOR ELECTRIC POWER LINES FOR ELECTRICAL**
PROJECT ID	SHEEE021
DOMAIN	ELECTRICAL
ABSTRACT	The Electrical power lines is Distributed in the form of Network for proper power distribution. There will be Feeders in network between the power station and area where the power is transferring. If there is break down due to any problem in the power transmission line between the area and base station then there will be huge loss if it is Industrial area. So to avoid this loss in the industrial areas we should maintain the power all the time without any break down in power. And in present days in the main line we cannot detect power theft done by any intruder by which KEB is meeting with Huge loss. To solve this above problem we are going to develop this project. To main aims of this Project is to " Make Proper Power Distribution in the Electric Power lines without any long Delay in case of any problems by giving information to line man in time using GSM and at the same time System will give Test charge in the fault line and in case of power

	failure it automatically switches On Power from Other feeder by breaking up the fault feeder line. And to Detect Power Theft Done in Power Lines by calculating current consumed by Consumers."

PROJECT TITLE	**Implementation of Hybrid Solar and Wind Turbine using iot**
PROJECT ID	SHEEE022
DOMAIN	ELECTRICAL
ABSTRACT	Vertical Axis Wind Turbines (VAWT) contributes to the worldwide reliance on energy. The challenges faced with wind energy is the necessary amount of cleared area for placing the turbines. In highways, the wind turbine along with the solar panel mounted on it could be placed in the medians and with the natural wind flowing along the highway and radiation on the solar panel the power can be generated. Solar energy also the largest contributor in terms of power produced per KWH per person per day could also be utilised in this project which may help in producing some extra amount of power as compared to the wind turbines. In the Vertical axis wind turbine, the main components could be placed at the base for the easier maintenance and the blades will be best designed to catch the wind flowing across the highways and to harness the wind energy. The materials used to fabricate blades and other parts will be analysed for weight, cost and strength. The bearing will be designed to withstand low to high wind speeds and cost will also be analysed before fabrication. The solar panel will be mounted such that more amount of solar radiation could be absorbed and helps in producing relatively good power along with the wind turbine. This project aims in utilising both the wind and solar energy and producing useful power or green energy which can be utilised for further use. The output of solar and wind is goes to DC to DC converter which is working as a buck and boost converter then store the power in lead acid battery.

PROJECT TITLE	**Solar Based home automation and solar tracking system**
PROJECT ID	SHEEE023
DOMAIN	ELECTRICAL
ABSTRACT	Nowadays Technology keeps on upgrading. home security is essential for occupant's convenience and protection. Security systems are being preferred over manual system. With the rapid increase in the number of users of internet over the past decade has made Internet a part and parcel of life, home Appliances control of smart security system using IOTs uses computers or mobile devices to control basic home functions and features through internet from anywhere around the world. This security system differs from other system by allowing the user to operate the system from anywhere around the world through internet connection. With the help of Arduino microcontroller as an Embedded device, security system design was constructed with the help of many sensors like PIR sensor, Fire Sensor, Gas Sensors monitoring and control. Solar tracking system used for sophisticated power supply for home automation devices with solar tracking based on the sunlight beams.

PROJECT TITLE	**GSM CONTROLLED POWER MONITORING AND BILLING SYSTEM**
PROJECT ID	SHEEE024
DOMAIN	ELECTRICAL
ABSTRACT	The Existing domestic Energy meter reading systems universally exist many problems, such as difficulty in construction, too narrow bandwidth, too low rate, poor real time, not two way communication quickly etc. To solve above problems, this paper uses the wireless technology for Automatic Meter Reading system. A proposed method provides the communication between the Electricity Board section and the consumer section using GSM for transmitting the customer's electricity consumption and bill information that is calculated using Arduino. The information regarding the bill amount and payment are communicated to the consumer via Global System for Mobile communication.

PROJECT TITLE	**Intelligent Grain Storage Management System based on IoT**
PROJECT ID	SHEEE025
DOMAIN	ELECTRICAL
ABSTRACT	• India is an Agriculture country where 70% of the population depends on farming, the storage of grains plays a crucial role in national economy. • The traditional methods are limited to simply testing the temperature and humidity conditions which are relatively backward as the other factors have to be checked and monitored independently for contributing to their effective storage and maintenance. • The approach of monitoring grain storage system at real-time is designed by using DHT11, MQ2, MQ135 and PIR sensors based on IoT. Also the Blynk application will regularly update the system through notifications in continuous time stamps. • The experimental results shows that the intelligent grain storage management system proposed in this paper involves multiple features such as online detection, regular updation and easy system maintenance. • This improves the quality factor of stored grain and reduces the grain wastage during storage interval, man power and manual attention

PROJECT TITLE	**LEG MOTION TRACKER**
PROJECT ID	SHEEE026
DOMAIN	ELECTRICAL
ABSTRACT	The purpose of this project was to design and build a low cost device to emulater body motion in a virtual environment. Tracking human motion attracts significant attention from several areas such as animation production, ergonomics, sport medicine, and biomedical analysis. First, it was intended to detect human motion by using accelerometers. However, after conducting many research and experiments, it was concluded that accelerometers have limitations in detecting motion. In other words, one accelerometer alone cannot detect horizontal movements (on any horizontal ring on a sphere) when there is no dynamic acceleration. One of the proposed and tested solutions was to use compass sensors to compensate for the accelerometers limitations. Therefore, three accelerometers were used to detect the motion of arms, head, neck, and back and the horizontal movement of the back at various angles. The experiment was successfully done and satisfactory results were obtained. The other proposed method which was tested for one

	body segment and compared to the first solution was to use gyroscopes along with accelerometers. Even though using a gyroscope would improve the results significantly, due to the high cost of gyroscopes and time limitations this method was not implemented. However, using gyroscopes are highly recommended for future design. The 3- D virtual LSM used in this project to validate how well the system tracks.

PROJECT TITLE	**Monitoring Voltage ,Current, Temperature from the Substation to customers using Zigbee based wireless communication**
PROJECT ID	SHEEE027
DOMAIN	ELECTRICAL
ABSTRACT	In this paper, a scheme for fault detection and identification of SIGNLE PHASE overhead transmission lines is proposed. Fault detection techniques based on mean square value of the difference between incoming and outgoing single phase currents of each section. These differences are compared against threshold setting values. Faulty phase identification is based on the analysis of single phase currents at one end of transmission line. The transient currents are processed by Discrete Wavelet Transform multi-resolution analysis. It is used as input to a rule-base system to identify the fault type. Many case studies are provided to validate the proposed algorithm.

PROJECT TITLE	**MULTIPURPOSE AGRICULTURAL BOT USING REMOTE CONTROL**
PROJECT ID	SHEEE028
DOMAIN	ELECTRICAL
ABSTRACT	This robotic vehicle is an agricultural machine of a considerable power and great soil clearing capacity. This multipurpose system gives an advance method to sow, plow, water and cut the crops with minimum man power and labor making it an efficient vehicle. The machine will cultivate the farm by considering particular rows and specific column at fixed distance depending on crop. Moreover the vehicle can be controlled through IR relay control medium using a remote system. The whole process calculation, processing, monitoring are designed with motors & sensor interfaced with electromechanical relay switching.

PROJECT TITLE	**NATURE INSPIRED SOLAR POWER USING IOT**
PROJECT ID	SHEEE029
DOMAIN	ELECTRICAL
ABSTRACT	In our project conventional power source is generating power .because it is a non pollution system after Ac is applied to grid through the distribution system Electrical quantities such as Voltage, Current, Power, Power Factor, Energy, and Frequency in electrical power system tends to fluctuate, as a result of load changes, disturbances, or other abnormal states. The change-state in electrical quantities should be identify immediately, otherwise it can lead to serious problem for whole system. Therefore a necessity is required to determine the condition of electricity change-state quickly and appropriately in order to make effective decisions. For provide constant output buck and boost converter is used Online monitoring of power distribution system based on Internet of Things (IoT) technology was deploy and implemented using solar power.

PROJECT TITLE	**Automatic Power Factor Correction Unit using Arduino**
PROJECT ID	SHEEE030
DOMAIN	ELECTRICAL
ABSTRACT	We are in the need of energy which we have to make major corrections in which the energy is wasted inform of reactive power. So, the required energy is can be utilised in which the energy can have the major correction to form a power factor. The power factor can be developed with the required energy the utilised power is used in a proper way. The reactive power can be compensated using capacitor banks and this can be termed as power factor correction. The power factor correction is major problem in a industry to compensate a reactive power factor. The reactive power can be compensated with a reactive and it make into real power. Hence the according to the load the power factor can be compensated using Arduino microcontroller and switching operation is done with the regular power factor and his can be controlled with microcontroller. The microcontroller is programmed with to operate with the necessary coding.

PROJECT TITLE	**power harvesting**
PROJECT ID	SHEEE031
DOMAIN	ELECTRICAL
ABSTRACT	An RF powered receiver for RF energy harvesting is presented as wireless LED blinking. This includes an RF-to-DC energy converter specifically designed with a sensitivity of í18.8 dBm and an energy conversion efficiency of ~45% at 900 MHz with a transmitting power of 0.5 W in free space. Experimental results concerned with remotely battery charging using a complete prototype working in realistic scenarios will be shown.

PROJECT TITLE	**RFID BASED SMART RATION CARD**
PROJECT ID	SHEEE032
DOMAIN	ELECTRICAL
ABSTRACT	RFID based automatic ration system is an approach in public distribution system useful for more efficient, accurate and automated technique of ration distribution. The conventional ration distribution system has drawbacks like inaccurate quantity of goods, low processing speed, large waiting time and material theft in ration shop. In this paper, proposed an Automatic Ration Materials Distribution Based on GSM (Global System for Mobile) and RFID (Radio Frequency Identification) technology instead of ration cards. To get the materials in ration shops need to show the RFID tag into the RFID reader, then controller check the customer codes and details of amounts in the card. After verification, these systems show the amount details. Then customer need to enter they required materials by using keyboard, after receiving materials controller send the information to government office and customer through GSM technology.

PROJECT TITLE	**GREENCHARGE: MANAGING RENEWABLE ENERGY IN SMART BUILDINGS**
PROJECT ID	SHEEE033
DOMAIN	ELECTRICAL

ABSTRACT	Distributed generation (DG) uses many small onsite energy harvesting deployments at individual buildings to generate electricity. DG has the potential to make generation more efficient by reducing transmission and distribution losses, carbon emissions, and demand peaks. However, since renewable are intermittent and uncontrollable, buildings must still rely, in part, on the electric grid for power. While DG deployments today use net metering to offset costs and balance local supply and demand, scaling net metering for intermittent renewable to a large fraction of buildings is challenging. In this paper, we explore an alternative approach that combines market-based electricity pricing models with on-site renewable and modest energy storage (in the form of batteries) to incentivize DG. We propose a system architecture and optimization algorithm, called Green Charge, to efficiently manage the renewable energy and storage to reduce a building's electric bill. To determine when to charge and discharge the battery each day, the algorithm leverages prediction models for forecasting both.

PROJECT TITLE	**Design of an Arduino based Maximum Power Point Tracking (MPPT) Solar Charge Controller**
PROJECT ID	SHEEE034
DOMAIN	ELECTRICAL
ABSTRACT	Renewable sources such as the Photovoltaic Systems (PV) have been used over decades in order to focus on greener sources of power generation. Today it has become a matter of concern on how to reduce COST and improve EFFICIENCY in order to harness and use these natural resources in a much better way possible. Hence the idea of Maximum Power Point Tracking System (MPPT) has emerged, which is basically a system used by charge controllers for wind turbines and Photovoltaic Systems to employ and also provide a maximized power output. This Thesis is mainly concerned with the utilization of such a system in order to achieve a controlled photovoltaic power using MPPT mechanism. The main aim of this project was to track the maximum power point of the photovoltaic module so that the maximum possible power can be extracted from the photovoltaic systems by varying certain conditions in algorithm and set up mechanism. Finally the output data from this project was compared with the other MPPT algorithms in order to attain an improved performance hence a better MPPT system. Furthermore, the system was interfaced with GSM to get a better access of data from anywhere for analysis thus reducing the physical work of data collection.

PROJECT TITLE	**SOLAR POWERED ELECTRIC VEHICLE**
PROJECT ID	SHEEE035
DOMAIN	ELECTRICAL
ABSTRACT	The idea of this project is to design a solar car that aims to tackle the problems related to pollution and shortage of fuel. A Smart vehicle is the one that takes all our burdens on maintenance of the vehicle while ensuring safety and comfort for the driver and the passengers. Various parameters have to be taken into account while designing such a vehicle. In our design we have divided the whole system into two major divisions namely, • Vehicle monitoring system • Safety system Vehicle monitoring system includes various sensors that sense the various vital parameters such as Engine temperature, Fuel level and as we have developed it for a vehicle battery chamber temperature is also included. In addition to this accelerometers and speed sensors sense abnormal vibrations in vulnerable parts and over speeding. These data after being sensed is stored in the cloud. This enables monitoring of vehicle's performance and drivers actions remotely. Safety system includes sensing speed of vehicle approaching to perform safe cuts and lane change over. This also includes sensing objects in the proximity of the vehicle which helps in parking and driving in heavy traffic. An Emergency Shutdown System is designed to stop the vehicle at the flick of a switch when it is out of control.

PROJECT TITLE	**OPTIMIZATION OF SOLAR-WIND ENERGY SYSTEM POWER FOR BATTERY CHARGING USING MPPT**
PROJECT ID	SHEEE036
DOMAIN	ELECTRICAL
ABSTRACT	Power demand is ever increasing all over world. Non-renewable energy resources as coal, petroleum, natural gases and nuclear etc. are used for generation of electrical power. Electricity generation cost and investment become great issue. Renewable resources of energy as solar and wind are more popular and are natural resources available abundantly. Solar- Wind based hybrid electrical power generation system is used for power generation to overcome the above issues. The variation is always observed with solar and wind energy sources with reference to place, time and season. Solar energy and Wind energy are combined to form a solar-wind hybrid power generation system, using both of these in combination will reduce this problem mostly. It is required to get uniform and constant voltage with maximum power at output. This paper

	recommends optimization method of generation of power using solar-wind hybrid energy generation system used for battery charging based on MPPT (Maximum Power Point Tracking) algorithm for constant voltage method. The objective of designing this system is to increase the stability and efficiency.

PROJECT TITLE	**Smart Energy Metering and Power Theft Control using IOT**
PROJECT ID	SHEEE037
DOMAIN	ELECTRICAL
ABSTRACT	Smart grid is one of the features of smart city model. It is energy consumption monitoring and management system. Smart grids are based on communication between the provider and consumer. One of the main issues with today's outdated grid deal with efficiency. The grid become overloaded during peak times or seasons. It is also possible to hack the system, and basically, take free electricity. By using smart grid consumer and owner get daily electricity consumption reading and owner can cut electricity supply remotely through internet if bill is not paid. One more thing, the data collected from the smart meters should not be accessed by any unauthorised entities. In case meter tempering is happened then owner and consumer get message and then owner take the action accordingly. Fitting the circuit on customer's energy meter, from that energy consumption data can be acquired. After acquiring of data, that data can be updated on cloud service, so that consumer and provider can access that data through internet. The main part of project is smart grid meter. When LED in smart meter gives 3200 blinks this means one unit is consumed. Second feature of this project is one micro switch is fitted in meter. This is to prevent meter tempering. There is one hidden switching circuit in that, whenever any person try to open the meter switch will get popup and controller sends the message to owner and consumer. Third feature of project is control meter, if bill is not paid by customer then owner can cut the meter. Acquiring of data needs human resources, we can save this critical resource by using smart grid application.

PROJECT TITLE	**Intelligent Headlight Control System**
PROJECT ID	SHEEE038
DOMAIN	ELECTRICAL

ABSTRACT	According to road accident data, majority of the accidents occur at night. Visibility at night is major issue for safe driving. Therefore negligent drivers continue to use high beam even though oncoming vehicle is suspected. These high beams create glare for oncoming drivers and cause temporary blindness. To solve this problem, night time vehicle detection holds a great importance. This paper reviews various attempts made to solve the problem. The purpose of this paper is to discuss need of study, existing relevant systems and related work, different approaches to solve problem and various possible applications. The survey shows that consideration of all types of vehicles can make a system more robust. However, a simple and cost effective system needs to be developed so that, it can be implemented in each vehicle.

PROJECT TITLE	**Monitoring and Maintenance of Highway bridges Using Wireless Sensor Networks**
PROJECT ID	SHEEE039
DOMAIN	ELECTRICAL
ABSTRACT	Usage of wireless sensor network increasing and becoming cost effective now a days. Many real time applications using this network system. One of the example for such application is monitoring a highway or railway bridges which plays an important role in transportation. Many bridges in world collapse due to some internal and external factors, those factors must be monitored in order to avoid this collapse. This paper proposes automatic bridge monitoring system using wireless sensor networks. The proposed system consists of Four sensors to monitor the bridge condition continuously i.e. Accelerometer to detect the jerks in the bridge or in pillar, flex sensor to detect the bend or orientation in the bridge, load cell to detect the overload on the bridge, Temperature sensor is to monitor the heat, This data from the sensors will be processed by Arduino controller and is transferred to the receiver node at the management center using the transmitter node at the transmitter end whenever the fault occure. At the receiver side laptop is used to monitor the received data which can also take further action about bridges.

PROJECT TITLE	**FABRICATION OF AUTO TANK CLEANING MACHINE**
PROJECT ID	SHEEE040
DOMAIN	ELECTRICAL
ABSTRACT	Aim of this project is to develop a mechanical system for cleaning domestic cylindrical water tank. The mechanical system includes motor, shaft, battery and Arms with brushes. The arms are adjusted according to the dimensions of the tank, once adjusted the machine is switched ON , the motor draws power from the battery and rotates the shaft with low RPM and high torque ,the brushes mounted on the arms starts scrubbing the inner walls of the tank. Water is one of those natural resources, which is essential to each and every human being for many purposes, especially for drinking. We already know that earth is composed of water (three-fourth of the earth), but the entire three fourth isn't fresh water. Therefore, it is our duty to save water, keep the fresh water as fresher as possible, and also to keep it free from water pollutants. The water that's pumped to our home is undoubtedly clean, but is the place where it gets stored clean as well? Yes, we are talking about the overhead water tanks. The health of your water largely depends on how clean your water tank is. Hence, cleaning overhead water tank is very necessary. Our aim of this project is to develop a mechanical system for cleaning domestic cylindrical water tank. The mechanical system includes motor, shaft, battery and Arms with brushes. The arms are adjusted according to the dimensions of the tank, once adjusted the machine is switched ON, the motor draws power from the battery and rotates the shaft with low RPM and high torque, the brushes mounted on the arms starts scrubbing the inner walls of the tank.

PROJECT TITLE	**Truck Load**
PROJECT ID	SHEEE041
DOMAIN	ELECTRICAL
ABSTRACT	The main aim of this project is to make the system on the vehicle by which it will stop the overloading on vehicles automatically so that overloaded vehicle damaging the roads is reduced or avoided, and accidents avoided. Trucks exceeding the legal mass limits increase the risk of traffic accidents and damage to the infrastructure. They also result in unfair competition between transport modes and companies. It is therefore important to ensure truck compliance to weight regulation. New technologies are being developed for more efficient overload screening and enforcement. Weigh-in-Motion is the new technologies which allow trucks to be weighed in the traffic flow, without any disruption to operations. Much progress has been made recently to improve and

	implement intelligent overloading detection system which can contribute to safer and more efficient operation of trucks.

PROJECT TITLE	**UNAMNNED RAIL N WASTE MANAGEMENT**
PROJECT ID	SHEEE042
DOMAIN	ELECTRICAL
ABSTRACT	There has been an increase in the road traffic as well as the rail traffic, accidents at level crossing has increased and this has caused the concern for the Indian railways. The objective of this project is to provide an automatic railway gate at a level crossing replacing the gates operated by the gatekeepers. In this project we are proposing a simple solution for the level crossing in which we fix the IR sensor. The system reduces the time for which the gate remains closed. This type of gates can be employed in an unmanned level crossing where the chances of accidents are higher and reliable operation is required .The collision of trains running on same track is also prevented by employing IR Transmitter-Receiver system at each sections of the Station and passes the information to a master control room via GSMMODEM. A common tank for waste of water, toilet in train to avoid the waste in rail track, the sensor will sense and send to cloud computing through the Wi-Fi technology. The station master will monitor from his android phone.

PROJECT TITLE	**Underground Cable Fault Detection Using GSM,GPS and blue tooth controlled Robot**
PROJECT ID	SHEEE043
DOMAIN	ELECTRICAL
ABSTRACT	The basic principle of Electromagnetic theory is used to detect discontinuity in the cables laid below the ground. These underground cables are used for many applications. It may be telephone, cable service or may be for internet and data services. Companies prefer laying the cables underground because the climatic adversities don't affect this. With advantages come challenges. There are many difficulties in laying the cables and once laid in case of any complaints, it is difficult and costly to fix it. We have come up with a solution, where the robot that we design in this project is capable of finding where the complaint lies, so that the engineer can directly get the exact location of fault with the help of GPS and notification on respective mobile with the help of GSM technology. We also introduce Bluetooth controlled robotic for movement of the robotic

PROJECT TITLE	**Solar Based Variable Frequency Drive**
PROJECT ID	SHEEE044
DOMAIN	ELECTRICAL
ABSTRACT	Human beings are depending on agriculture for food. As irrigation process is totally depending on electricity therefore farmers are facing big problem because of power cut. Nowadays solar based pump systems are used to overcome this problem. Existing system uses open loop configuration and different techniques to control the speed of motor. In comparison to dependency of farmers on fossil fuel and electricity for existing pumping system the proposed system in the reviewed paper are finding out the best solution to help the farmers for irrigation. Comparison of different papers on existing solar pump system is provided to find out best method for pumping systems.

PROJECT TITLE	**Re use of water for power generator**
PROJECT ID	SHEEE045
DOMAIN	ELECTRICAL
ABSTRACT	The world's hydroelectric potential needs to be considered in the new energy mix, with planned projects taking into consideration social and environmental impacts, so that necessary mitigation and compensation measures can be taken. Hydro development should go hand in hand with further research and development in the other renewable options such as solar and wind power. In this paper, we are going to show the various opportunities in remote and isolated areas of North east India wherever the areas are not connected to national grid. The design of a prototype of a hydro turbine has been discussed in this work. The hydro turbine will be boon to such kind of areas where there are natural resources of falling water from some height particularly in the hilly areas and also the areas which are not connected to the national grid.

PROJECT TITLE	**IoT Based Automated Water Billing System**
PROJECT ID	SHEEE046
DOMAIN	ELECTRICAL
ABSTRACT	The purpose of this project is to present a product designed to assist with urban home water billing system in India. The project integrates a water flow rate sensor, designed to create a carefree solution to urban water metering and monitoring of the water usage using cloud, and mobile application. Node MCU, a rapid prototyping ESP8266 based microcontroller based platform is used to develop a prototype which measures the water flow rate through the household pipes and sends an Notification at the end of every month .In addition to that, detailed water usage can be obtained from a cloud platform called "Blynk" and also can be viewed in the LCD display. A mobile app (Blynk app) is also designed to serve as a user interface helping to access the cloud and monitor the water consumption and payment details in the Blynk mobile application.

PROJECT TITLE	**SMART WHEELCHAIR**
PROJECT ID	SHEEE047
DOMAIN	ELECTRICAL
ABSTRACT	Here we propose wheelchair with safety features. The system utilizes microcontroller along with Blynk server, and motorized circuit in order to achieve this system. Our proposed system consists of a controller circuit and a wheelchair circuit. The controller circuit allows the user to provide direction commands to the wheelchair through a directional push button. And also it has health monitoring system to monitor the health of the patient. The wheelchair circuit consists of a micro controller push button used to receive these commands and then operate the wheelchair motors in order to achieve desired movement. This allows the disabled person to operate the wheelchair easily as well as another person can operate the wheelchair. Also the system consists of emergency help features for the disabled. If the person is in trouble or needs help the person just needs to press a panic button so that notification will send to his/her loved ones through Blynk message.

PROJECT TITLE	**WIRELESS POWER TRANSMISSION**
PROJECT ID	SHEEE048
DOMAIN	ELECTRICAL
ABSTRACT	Wireless power transmission is nothing but wireless electricity. Transmission of electrical energy from one object to another without the use of wires is called as Wireless power transmission. One of the major issue in power system is the losses occurs during the transmission and distribution of electrical power. As the demand increases day by day, the power generation increases and the power loss is also increased. The major amount of power loss occurs during transmission and distribution. The percentage of loss of power during transmission and distribution is approximated as 26%. The main reason for power loss during transmission and distribution is the resistance of wires used for grid. The efficiency of power transmission can be improved to certain level by using high strength composite overhead conductors and underground cables that use a high temperature super conductor. But, The transmission is still inefficient. According to the World Resources Institute (WRI), India's electricity grid has the highest transmission and distribution losses in the world–a whopping 27%. Numbers published by various Indian government agencies put that number at 30%, 40% and greater than 40%. This is attributed to technical losses (grid's inefficiencies) and theft. Any problem can be solved by state–of-the-art technology. The above discussed problem can be solved by choose an alternative option for power transmission which could provide much higher efficiency, low transmission cost and avoid power theft. Microwave Power Transmission is one of the promising technologies and may be the righteous alternative for efficient power transmission.

PROJECT TITLE	**WSN BASED DATA ACQUISITION SYSTEM FOR MULTIPLE FAULTS MONITORING AND CONTROLLING SYSTEM**
PROJECT ID	SHEEE049
DOMAIN	ELECTRICAL
ABSTRACT	In this paper, a scheme for fault detection and identification process in industrial environment is developed. Fault detection techniques based on mean square value of the difference between incoming and outgoing sensors of each section. These differences are compared against threshold setting values. Fault identification is based on the analysis of sensor values and monitoring using pc. We are proposing a Zigbee wireless communication device to acquire sensor values and control the outputs.

	Detect faults in remote Industrial equipments : ♣ Immediately transmit any fault information to the PC. ♣ Monitor multiple parameters such as voltage, current; Vibrations, Gas and temperature simultaneously ♣ Transfer data through a wireless medium such as Zigbee.

PROJECT TITLE	**Remote Monitoring and Control of Smart Grid Power Network System**
PROJECT ID	SHEEE050
DOMAIN	ELECTRICAL
ABSTRACT	Smart grid technology is expected to revolutionize the ways that electric energy is produced and distributed through the power grid. It is much advanced in a sense that the consumers can choose the lowest electric fare from multiple power suppliers, and even sell back to the power company in the event of excess power (e.g., self-power generation). The power company is also not relying on the inaccurate power demand model, and instead, the exact amount of power can be calculated and distributed through two-way smart metering systems. Such technology is expected to save the energy consumption and bring about many benefits to the consumer market. Therefore, the aim of this study is to focus on the remote monitoring and control aspects of how electric power is demanded and consumed through the smart metering systems. A network of smart sensors will be constructed and necessary monitoring algorithms will be developed for that purpose. The outcome of this study will provide a venue for future development and practical ways of technology applications

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