ANNA UNIVERSITY : CHENNAI 600 025
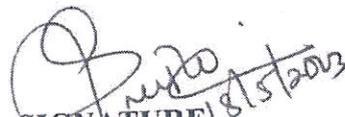
BONAFIDE CERTIFICATE

Certified that this project **"E-BOAT USING SOLAR WITH DUAL AXIAL SOLAR TRACKER"** is the bonafide work of **BALAJI. S (411517105003), PONNARASI.K (411517105008) , PRAKASH.V (411519105303)** and who carried out the project work under my supervision.

SIGNATURE 18/5/2023

MRS.S.L.SREEDEVI M.E.
HEAD OF THE DEPARTMENT

Department of Electrical
and Electronic Engineering

Peri Institute of Technology
Mannivakkam, Chennai-48

SIGNATURE 18/5/2023
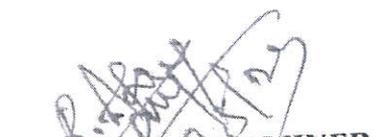
MRS.S.L.SREEDEVI M.E.
SUPERVISOR

Assistant Professor

Department of Electrical
and Electronics engineering

Peri Institute of Technology
Mannivakkam, Chennai-48

Submitted for the **VIVA-VOCE** Examination held on 19.05.2023

INTERNAL EXAMINER

EXTERNAL EXAMINER

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ABSTRACT

In this project, we are going to build Electrical boat using solar panel and we are going to change the solar panel angle based upon Sunlight direction with the help of solar tracker, we are going to combine both solar tracker and solar panel and we are also going to change the position of the solar panel using dual axis solar tracker. It has been shown that these sun tracking systems can be broadly classified as single axis and dual axis, depending on their mode of rotation. Further it can be classified as active and passive tracker depending on the actuator. The sub division and their basic principles of each method have been reviewed. Overall, the results presented in this review confirm that the azimuth and altitude dual axis tracking system is more efficient compared to other tracking systems . In future the present paper details will be useful in selecting an accurate and particular tracker with respect to region, available space and estimated cost. The another benefit of project is that the reduction of pollution,so that the ozone layer can be prevented from pollution and global warming can also be avoided.

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project **"HIGH EFFICIENT MULTIPLE ENERGY STORAGE SMART CYCLE"** is the bonafide work of **IYAPPAN.P (411519105007) , SURYA.P (411519105010) , VINOTH KUMAR.M (411517105011)** and who carried out the project work under my supervision.

SIGNATURE

MRS.S.L.SREEDEVI,M.E,(Ph.D)

HEAD OF THE DEPARTMENT

Department of Electrical
and Electronic Engineering

Peri Institute of Technology
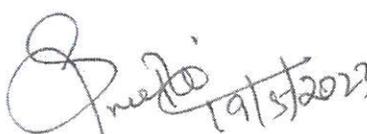Mannivakkam , Chennai-48

SIGNATURE
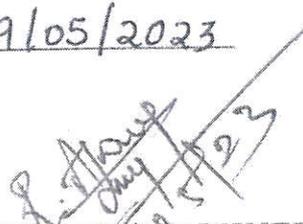
Mr.R.TAMILAMUTHAN,M.E

SUPERVISOR

Assistant Professor

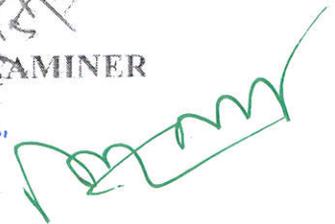Department of Electrical
and Electronics Engineering

Peri Institute of Technology
Mannivakkam,Chennai-48

Submitted for the **VIVA-VOCE** Examination held on 19/05/2023

INTERNAL EXAMINER

EXTERNAL EXAMINER

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ABSTRACT

In this project, we are going to build high-efficient multiple energy storage smart cycle. The frequent news about the extinction of fossil fuels has increased the importance of usage of electricity in the future. Electric Vehicles will be utilized to a greater extent. Office going people and people who travel moderate distances will be benefited from the electric bicycle. The electric bi-cycle contains motor to help the vehicle move forward and various power sources are being used. The batteries provide power to the motor and the motor drives the vehicle. When the battery is fully discharged the battery is recharged again by using a dynamo, solar panel and plug-in charging (Three-way charging). In this project, we have used a DC motor/generator attached to the rear wheel of the bicycle. Two sets of batteries are connected to the setup such as A and B. When one of the batteries gets discharged another battery will provide the power required. During that time, the rotation of the front wheel rotates the dynamo which produces an output of voltage and then at stopping time solar panel or plug-in charging is used. The system has a mobile controllable switch that facilitates smooth transitions between charge and discharge operations of two battery, ensuring uninterrupted power supply. Additionally, the cycle features a key safe anti-theft system, providing an extra layer of security that allows users to locate the bike in case of theft.

IV

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project **"QUASI SWITCHING BUCK BOOST CONVERTER FOR DC TRANSMISSION LINE"** is the bonafide work of **ABIMANYU. S (411519105001), DINESH KUMAR.V (411519105301), HARIHARAN.R (411519105006)** and who carried out the project work under my supervision.

SIGNATURE

Mrs.S.L.SREEDEVI M.E.
HEAD OF THE DEPARTMENT

Department of Electrical
and Electronic Engineering

Peri Institute of Technology
Mannivakkam, Chennai-48

SIGNATURE

Dr.P.YAMUNAA M.E,Ph.D.,
SUPERVISOR

Assistant Professor

Department of Electrical
and Electronics Engineering

Peri Institute of Technology
Mannivakkam , Chennai-48

Submitted for the **VIVA-VOCE** Examination held on ___19 | 05 | 2023___

INTERNAL EXAMINER

EXTERNAL EXAMINER

ABSTRACT

This paper presents the design and implementation of a quasi-switching buck-boost converter for voltage regulation in power transmission lines. The converter is designed to step up or step down the voltage of the power being transmitted along the line to maintain a stable voltage at the load end. The quasi-switching circuitry allows the switching device to turn off naturally when the current through it reaches zero, reducing switching losses and EMI, and improving overallefficiency. The paper describes the methodology for designing the converter, including selection of components, control circuitry, and testing and optimization. Simulation and experimental results demonstrate the effectiveness of the converter for voltage regulation in power transmission lines, showing stable output voltage, high efficiency, and low output ripple. The proposed converter can be a useful tool for voltage regulation in power transmission lines, helping to maintain a stable voltage at the load end and improve overall efficiency.

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project "**OPTIMAL RNN CONTROL OF STATCOM FOR EFFICIENT HYBRID RENEWABLE POWER SYSTEM WITH BATTERY**" is the bonafide work of **C. ARCHANA JENIFER (411517105002), M. DURAIRAJ (411517105005)** and **R. SAVITHA (411517105009)** who carried out the project work under my supervision.
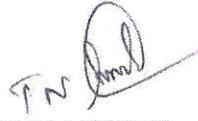
SIGNATURE

MRS.S.L. SREEDEVI,M.E.

HEAD OF THE DEPARTMENT

Department of Electrical
and Electronics Engineering

Peri Institute of Technology
Mannivakkam, Chennai-48
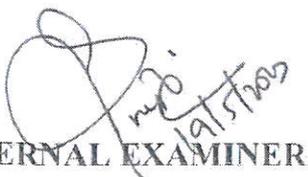
SIGNATURE

Dr.T.N.SURESH,M.Tech,Ph.D.

Assistant Professor

SUPERVISOR

Department of Electrical
and Electronics Engineering

Peri Institute of Technology
Mannivakkam, Chennai-48

Submitted for the **VIVA-VOCE** Examination held on ___19/05/2023___

NTERNAL EXAMINER

EXTERNAL EXAMINER

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
akkam, Chennai - 600 048.

ABSTRACT

This project proposes a various converters integrated with renewable sources to the utility grid along with its control strategies are proposed. The solar system provides voltage to the inverter through Self-lift Luo converter. The WECS with DFIG, AC-DC conversion takes place with the aid of PWM rectifier and the control of rectifier is carried out with a PI controller. To achieve energy management for the proposed system using Bidirectional Battery converter along with battery system. In this project to achieve the grid synchronization with DSTATCOM devices controlled by RNN controller with D-Q theory transformation. Under this work, DSTATCOM has been used to improve the quality of power under different conditions. The LC filter is employed to enhance the output of the inverter. The control outputs are the output power of the PV/FC input power sources as well as AC power injected into the power grid. The obtained results indicate that the proposed approach delivers better performance with enhanced efficiency and minimal harmonics. The entire project is validated through a MATLAB simulation 2021a.

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project **"ANIMAL TRAIN ACCIDENT DETECTION IN RAILWAY SIGNAL USNIG ULTROSONIC SENSORS"** is the bonafide work of **JANARTHANAN. K (411520105004), SARAVANAN.E (411520105014), SIVARAMAKRISHNAN. R(411520105015), VENKATESH. M (411520105335)** and who carried out the project work under my supervision.

SIGNATURE   SIGNATURE

Ms.S.L. SREEDEVI.M. E   Dr.P. YAMUNAA M.E,Ph.D

HEAD OF THE DEPARTMENT   **SUPERVISOR**

                                              Associate Professor

Department of Electrical   Department of Electrical

and Electronic Engineering   and Electronics Engineering

Peri Institute of Technology   Peri Institute of Technology

Mannivakkam, Chennai-48   Mannivakkam, Chennai-48

Submitted for the **VIVA-VOCE** Examination held on ___01 / 06 / 2023___

INTERNAL EXAMINER   **EXTERNAL EXAMINER**

ii

ABSTRACT

The Indian railways are suffering from the collision of animal – rail in forest areas. Today, India has fourth largest railway network management in the world comes from United states, Russia and China. Considering an India as an example, in the past five years numerous laws has been passed by the government of India for the protection of wildlife sanctuaries and jungle animals nearby railway track. To overcome this problem, we analyzing the detection of crack and collision of animal – rail in the proximity area. If these deficiencies may result in increasing an Indian railway budget and loss life and property. In this paper proposing cost effectiveness solution to managing this problem of preventing the collision of rail – animal accidents. From this project we'll know how to implement the automation in railway Signal control using Arduino. Application of this project is the direct implementation in real world. Some components will be required more but the main working principle will be same. Now, other alerting systems can also be developed by using Arduino. The main aim of this project is to reduce train accidents at railway level crossings to the minimum.

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ANNA UNIVERSITY: CHENNAI 600025

BONAFIDE CERTIFICATE

Certified that this project "INTELLIGENT WATER LEVEL MONITORING SYSTEM" is the Bonafede work of "S.RAMYA (411520105013), P.HARISH (411520105309), P.JANCY REENA (411520105311) and P.VELU (411520105334)" who carried out the project work under my supervision.
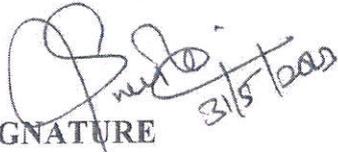
SIGNATURE

MRS.S.L. SREEDEVI, M.E, (Ph.D.)

HEAD OF THE DEPARTMENT

Department of Electrical
and Electronics Engineering

Peri Institute of Technology
Mannivakkam, Chennai-48

SIGNATURE

Dr.J.RAJI

SUPERVISOR

Assistant Professor

Department of Electrical
and Electronics Engineering

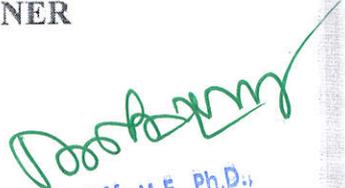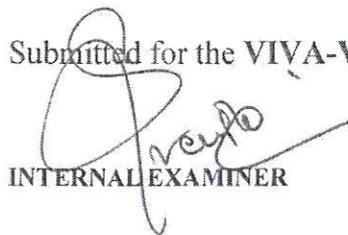Peri Institute of Technology
Mannivakkam, Chennai-48

Submitted for the **VIVA-VOCE** Examination held on _01.06.2023_

INTERNAL EXAMINER

EXTERNAL EXAMINER

ii
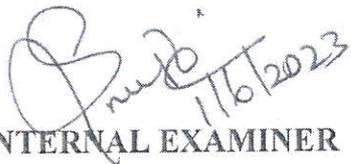
Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ABSTRACT

Water level indicator is widely used in many industries and houses. People generally worry about the wastage of water, when the switch ON the motor and forget to OFF them. An Water Level Indicator may be defined as a system by which we can get the information of any water reservoir. Water level indicator system are quite useful to reduce the wastage of water from any reservoir, while filling such reservoir. But for domestic purpose we cannot go for the instruments which use radar or ultrasonic principle that costs high. Water tank overflow is a common problem which leads to the wastage of water. In this project we are using the metal sensor water level indicator circuit is very useful to indicate the water levels in a tank. Whenever tank gets filled, we get alerts on particular levels. The LEDs is generally used for indicate the water levels. If the water level is full, then the circuit beeps through the buzzer notifying that the water level is full.

iv

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam Chennai - 600 048.

BONAFIDE CERTIFICATE

Certified that this project **"IMPLEMENTATION OF ENERGY EFFICIENT SMART STREET LIGHT MANAGEMENT SYSTEM FOR SMART CITY"** is the bonafide work of **KRISHNAKUMAR.R (411520105007), HARISH.R (411520105310), KINGSLIN.A (411520105314), SURESH.M (411520105330)** and who carried out the project work under my supervision.

SIGNATURE

MRS.S.L. SREEDEVI.M. E

HEAD OF THE DEPARTMENT

Department of Electrical
and Electronic Engineering
Peri Institute of Technology
Mannivakkam, Chennai-48

SIGNATURE

Dr.T.N.SURESH

SUPERVISOR

Associate Professor
Department of Electrical
and Electronics Engineering
Peri Institute of Technology
Mannivakkam, Chennai-48

Submitted for the **VIVA-VOCE** Examination held on ___01-06-2022___

INTERNAL EXAMINER

EXTERNAL EXAMINER

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
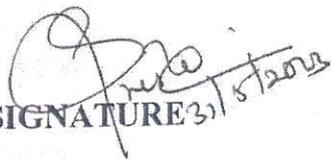Mannivakkam, Chennai - 600 048.

ii

ABSTRACT

Automatic Street Light Control System is a simple yet powerful concept, which uses transistor as a switch. By using this system manual works are 100% removed. It automatically switches ON lights when the sunlight goes below the visible region of our eyes. This is done by a sensor called Light Dependant Resistor (LDR) which senses the light actually like our eyes. It automatically switches OFF lights whenever the sunlight comes, visible to our eyes. By using this system energy consumption is also reduced because nowadays the manually operated street lights are not switched off even the sunlight comes and also switched on earlier before sunset. In this project, no need of manual operation like ON time and OFF time setting. This project clearly demonstrates the working of transistor in saturation region and cut-off region. The working of relay is also known.

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

iv

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report **SOLAR PANEL CLEANING USING WIPER WITH DIGITAL TIMER** is the bonafide work of **ARUNACHALAM. R.L (4115201053001), CHANDRU. S (411520105003), JAYANTHAN. S (411520105312), SARVESH. S (411520105324)** and who carried out the project work under my supervision.

SIGNATURE 31/5/2023

Mrs. S.L. SREEDEVI M.E

HEAD OF THE DEPARTMENT

Department of Electrical
and Electronics Engineering

Peri Institute of Technology
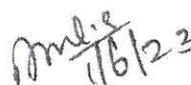Mannivakkam, Chennai-48

SIGNATURE 31/5/2023

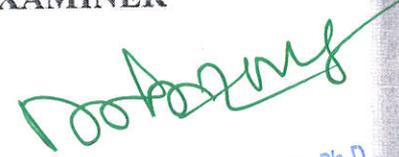Mrs. S.L. SREEDEVI M.E

SUPERVISOR
Assistant Professor

Department of Electrical
and Electronics Engineering

Peri Institute of Technology
Mannivakkam, Chennai-48

Submitted for the **VIVA-VOCE** Examination held on ___01. 06. 2023___
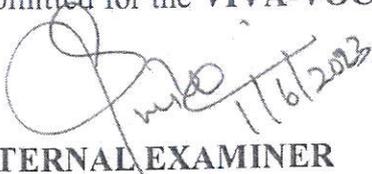
INTERNAL EXAMINER

EXTERNAL EXAMINER

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Chennai - 600 048.

ABSTRACT

In this project we are going to build a solar panel cleaner using a wiper and we are going to set the digital timer in the automatic mode to control the wiper automatically by turning on and off for the programmed time. It has been shown that these timer systems can be broadly classified into digital and Arduino based timer system. The sub divisions and their basic principles of each method have been reviewed. The Arduino based timer system costs more than the digital timer and so the digital timer is used here, but the Arduino timer system gives more efficiency than the digital timer. In future the present paper details will be used for selecting an accurate cleaning of solar panel for any kind of dusts, dirt's and other contaminants which reduces the efficiency of the solar panel. Another benefit of this project is that it shows the battery can easily be charged only through the solar panel and the brightness of the light can also increase.

iv

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project " **SWB-POWERED EMERGENCY MOBILE CHARGER**" is the bonafide work of "**C.PAVITHRA (411520105009) R.RAJKUMAR (411520105012)** and **P.SRIDHARAN (411520105327)**" who carried out the project work under my supervision.
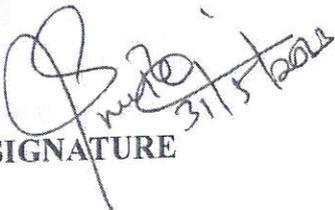
SIGNATURE

MRS.S.L.SREEDEVI M.E.

HEAD OF THE DEPARTMENT

Department of Electrical
and Electronics Engineering
Peri Institute of Technology
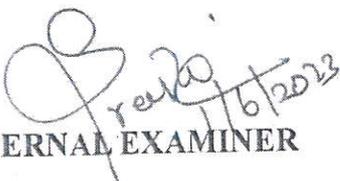Mannivakkam, Chennai-48

SIGNATURE

Mr.R.TAMILAMUTHAN M.E.
SUPERVISOR
Assistant Professor

Department of Electrical
and Electronics Engineering
Peri Institute of Technology
Mannivakkam, Chennai-48

Submitted for the **VIVA-VOCE** Examination held on___01 | 06 | 2023

INTERNAL EXAMINER

EXTERNAL EXAMINER

ii

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
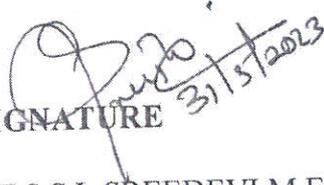Mannivakkam, Chennai - 600 048.

ABSTRACT

This paper is about framework structures, in which cell phones go about as either dynamic or aloof gadgets relying upon accessible correspondence between advanced cells and their sun powered chargers. In recent days power generation using renewable energy sources gained more attraction. The most commonly available and used energy resources are solar and wind. The objective presented here is charging of low power electronic gadgets using the wind energy available during travelling. A DC generator with a Sepic converter provides voltage required for charging the gadgets when the vehicle speed exceeds 40km/hr. Even though the speed fall is observed, the gadgets will get continuously charged by the external battery source which is connected to the proposed circuit. This could be used as emergency source for charging electronic gadgets while travelling in a vehicle. The outcomes from the recreation and the trial show the plan's adequate achievability for down to earth usage. Coming 21st century, we have gained some astounding ground in making sun-based cells which are the devices energizing our future, changing over sun's imperativeness into power. This work is connected to using non-conventional imperativeness that is sun-arranged essentialness for adaptable battery charging. Sun controlled chargers are direct, helpful and arranged to utilize gadgets which can be utilized by anybody particularly in faraway locales.

iv

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ANNA UNIVERSITY CHENNAI-600 025

BONAFIDE CERTIFICATE

Certified that this project report " **SMART FOOT STEP POWER GENERATION**" is the bonafide work **D. JAYANTH (411520105005),**

A.PRAVEENKUMAR   (411520105011)   and   **M.YUVASHREE**

(411520105018) who project work under my supervision.

SIGNATURE   31/5/2023

SIGNATURE

MRS.S.L.SREEDEVI M.E.,

MRS.S.L.SREEDEVI M.E.,

HEAD OF THE DEPARTMENT

SUPERVISOR

ASSISTANT PROFESSOR

Department of Electrical and
Electronics Engineering

Department of Electrical and
Electronics Engineering

Peri Institute of Technology
Mannivakkam, Chennai-48.

Peri Institute of Technology
Mannivakkam, Chennai 600048.

The project report submitted for the viva voce held on 01/06/2023

INTERNAL EXAMINER

EXTERNAL EXAMINER

ii
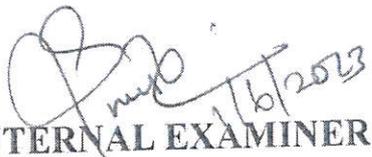
ABSTRACT

Electrical energy is important and had been demand increasingly. A lot of energy resources have been wasted and exhausted. An alternative way to generate electricity by using a population of human had been discovered When walking, the vibration that generates between the surface and the footstep is wasted. By utilizing this wasted energy, the electrical energy can be generated and fulfill the demand. The transducer that uses to detect the vibration is a piezoelectric transducer. This transducer converts the mechanical energy into electrical energy. When the pressure from the footstep is applied to the piezoelectric transducer, it will convert the pressure or the force into the electrical energy. The piezoelectric transducer is connected in series-parallel connection. Then, it is placed on the tile that been made from wood as a model for footstep tile to give pressure to the piezoelectric transducers. This tile can be placed in the crowded area, walking pavement or exercise instruments. The electric energy that generates from this piezoelectric tile can be power up low power appliances.

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project **"MOBILE PHONE DETECTOR USING LM358"** is the bonafide work of **"NITHEESH A (411520105008), SRIKANTH G (411520105016), MOHAN R (411520105316), and THOMAS RICHARD M (411520105332)"** who carried out the project work under my supervision.
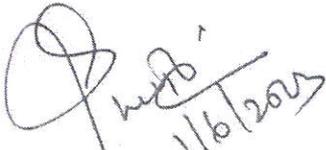
SIGNATURE

MRS.S.L. SREEDEVI.M.E, M.B.A
HEAD OF THE DEPARTMENT

Department of Electrical
and Electronic Engineering
Peri Institute of Technology
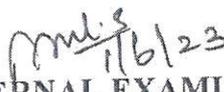Mannivakkam, Chennai-48
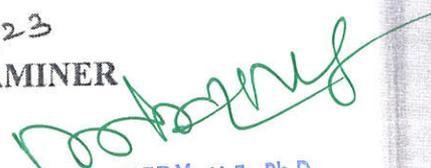
SIGNATURE

Dr.P. YAMUNAA M.E.Ph.D.
SUPERVISOR
Assistant Professor
Department of Electrical
and Electronics Engineering
Peri Institute of Technology
Mannivakkam, Chennai-48

Submitted for the **VIVA-VOCE** Examination held on ___1 / 6 / 23___
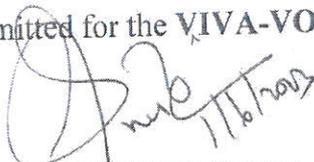
INTERNAL EXAMINER

EXTERNAL EXAMINER

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ii

ABSTRACT

Now a days as the technology is improved, people are addicted to mobiles. They are at that stage where they are using and at what situation they are. There are some restricted places like hospitals, examination halls etc. To avoid that situation, we have designed a mobile detector circuit. This detector can sense the presence of and activated mobile phone from a distance of one and a half meter. So, it can be used to prevent use of mobile phone in examination halls, confidential rooms etc. It is also useful for detecting the use of mobile phone for spying and un authorized video transmission. The circuit can detect the incoming and outgoing calls, SMS and video transmission even if the mobile is kept in silent mode. It is built around CA3130 (IC1) and NPN transistor BC548 (T1). When a mobile phone is active, it radiates RF signal that passes through nearby space. The signal contains electromagnetic RF radiation from the phone. Capacitor C1 is used in the circuit to detect the RF signal from the mobile phone Carefully solder the capacitor in standing position with equal spacing of the leads. The response can be optimized by trimming the lead length of C3 for the desired frequency. You may use a short telescopic type antenna. Use the miniature 12V battery of a remote control and a small buzzer to make the gadget pocket-size. The unit will give the warning indication if someone uses Mobile phone within a radius of 1.5-2 meters.

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project **"TRANSFORMER MONITORING USING ARDUINO"** is the bonafide work of **"KAVIKUMAR.M (411520105313), NIVETHA.S (411520105319), THIRSHA.M (411520105331),** and **VARSHINI. R (411520105333)** "and who carried out the project work under my supervision.

SIGNATURE 1/6/2023

MRS.S.L. SREEDEVI M.E
HEAD OF THE DEPARTMENT

Department of Electrical
and Electronic Engineering

Peri Institute of Technology
Mannivakkam, Chennai-48

SIGNATURE

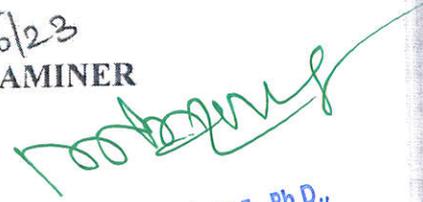Ms.A.VIJAYALAKSHMI M.E
SUPERVISOR

Assistant Professor
Department of Electrical
and Electronics Engineering

Peri Institute of Technology
Mannivakkam, Chennai-48

Submitted for the **VIVA-VOCE** Examination held on ___01-06-2023___

INTERNAL EXAMINER

EXTERNAL EXAMINER

ii
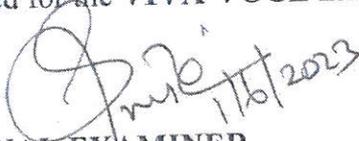
Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ABSTRACT

To maintain the reliability in grid operation it is important to monitor real time transformer health. We know the importance of transformers in electricity distribution and transmission. They are the main components and constitute the sizable portion of capital investment of the distribution grid. Transformers are used for electricity distribution and transmission which decreases/increases the primary voltage to the utilization voltage for customer use. As distribution transformers are very costlier in electrical industry. Real time transformer health monitoring systems help to replace the equipment before failure and continuity of the power will not be disturbed. This project proposes a system for IOT remote monitoring of transformer. The information regarding transformer output voltage, current, power and available temperature will be transmitted wireless to a webserver through Internet. Here microcontroller IC ATMEGA 328p (Arduino) is used in this IC programming is done which continuously monitors the transformer operation parameters. It sends the acquired data to the user using NodeMCU 12E Wi-Fi module and also can receive command from the user for performing load shedding.

iv

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report titled **"PV PANNEL BASED INTERLEAVED CONVERTER FOR ELECTRIC VEHICLE"** is the bonafide work of **VIGNESHWARAN.G (411520105017) ABISHEKSAMUEL.B (411520105301), GOKUL.S (411520105307), and RAJESH.S (411520105323)** who carried out the project work under my supervision.
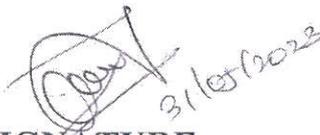
SIGNATURE

MRS.S.L. SREEDEVI, M.E

HEAD OF THE DEPARTMENT

Department of Electrical and
Electronics Engineering

Peri Institute of Technology,
Mannivakkam, Chennai-48 .
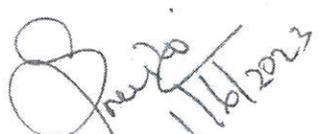
SIGNATURE

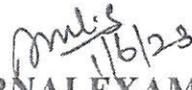**MR.R. TAMILAMUTHAN, M.E**

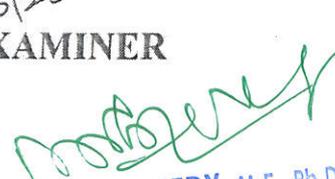**SUPERVISOR**

Assistant Professor

Department of Electrical and
Electronics Engineering

Peri Institute of Technology,
Mannivakkam, Chennai-48.

The project report submitted for the viva voce held on 1/6/2023

**INTERNAL EXAMINER**

EXTERNAL EXAMINER

2

ABSTRACT

In this project, an examination of PV board based Interleaved converter for Electric vehicle charging is implemented. This framework comprises of sun powered cell battery, bidirectional dc -dc converter. A Battery is accommodated supply capacity to dc engine during no daylight condition. The bidirectional dc-dc converter is working in both charging and releasing the battery and can deal with the progression of force in both the bearing and henceforth overabundance energy from the PV board can be put away in battery. Affected by fluctuating irradiance and differing load conditions, the MPPT regulator extricates full power from the PV module. This proposed project is implemented using. This paper proposes a novel approach to improve the performance and efficiency of electric vehicle (EV) power conversion systems through the integration of a photovoltaic (PV) panel based interleaved converter. The aim is to utilize the available solar energy to supplement the battery power and increase the driving range of the EV. The proposed converter architecture consists of multiple interleaved DC-DC converters connected to a PV panel array. Each DC-DC converter operates at a high switching frequency, enabling efficient power transfer from the PV panel to the EV battery. The interleaved structure ensures reduced current ripple and enhanced power processing capability, resulting in improved overall system performance

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

4

# ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project **"STREAMLINED SMART HOME AUTOMATION USING INTERNET OF THINGS"** is the bonafide work of KEERTHANA.V (411520105006), POOVARASAN.A (411520105010), ANURAMABARATHI.S (411520105302), MARIYAKALAI.P (411520105315), and who carried out the project work under my supervision.
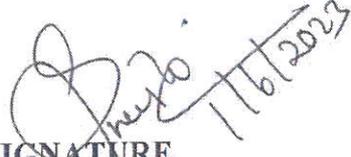
SIGNATURE

MRS.S.L. SREEDEVI M.E.
HEAD OF THE DEPARTMENT

Department of Electrical
and Electronic Engineering

Peri Institute of Technology
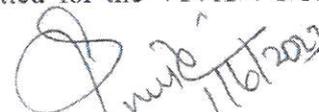
Mannivakkam, Chennai-48
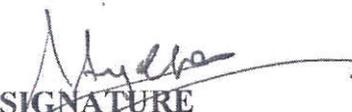
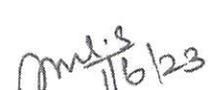SIGNATURE

MR. ANTONYCHARLES ME.
SUPERVISOR

Assistant Professor

Department of Electrical
and Electronics engineering

Peri Institute of Technology

Mannivakkam, Chennai-48

Submitted for the **VIVA-VOCE** Examination held on ___01|06|23___

INTERNAL EXAMINER

EXTERNAL EXAMINER

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.

ABSTRACT

Analog switches are mounted on the walls. Operating them is a tedious task as they need to be physically pressed each time an appliance has to be powered on or off. This hassle is replaced by a smart technique that involves operating the switches through a Web Browser of a Mobile phone or a PC. The present smart switches available in the market are very expensive and also require additional devices like hubs for their working. This paper uses the Cloud and a Web Browser to control the manually operated switches. A cloud server is created for the environment where the switches are mounted. The switches are interfaced with NodeMCU which has an inbuilt Wi-Fi. It can use this to enable or disable the switches. The user communicates with the processor through the Web Browser. The processor then controls the switches based on the commands received from the user and also updates the user about the status of the switches after the control operation is performed to the cloud. The intensity of light, the speed of the fan and other devices can be controlled using the Web Browser.

Dr. R. PALSON KENNEDY, M.E., Ph.D.,
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.