

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

**NCIAES'23**



Organized by

**DEPARTMENT OF  
ELECTRICAL AND ELECTRONICS ENGINEERING**



Learn Beyond

**KPR Institute of  
Engineering and  
Technology**

(Autonomous, NAAC "A")

## **PREFACE**

The Eighth National Conference on Innovations and Advancements in Electrical Sciences (NCIAES'23) was organised by Department of EEE, KPR Institute of Engineering and Technology (KPRIET). The KPRIET promoted by KPR groups, is a renowned autonomous institution that focuses to offer quality education to the younger generation to strengthen our nation in the field of Engineering and Technology.

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

We would like to thank all participants for their contributions to the conference and for their contribution to these proceedings. It is appropriate that we record our thanks to our fellow members of the organizing committee for their support to make the conference highly successful. We would also like to bestow our appreciation to all the faculty members in making excellent logistical arrangements. The efforts set has made a great contribution to the success. The continuing success of conference like this will lead for fruitful upliftment in a continuous series.

**Dr. K. MOHANA SUNDARAM, HoD/EEE**

## **MESSAGE FROM ORGANIZING SECRETARIES**

On behalf of the Organizing Committee, it is our pride and privilege to invite you for Eighth National Conference on Innovations and Advancements in Electrical Sciences (NCIAES'23) to be held in KPR Institute of Engineering and Technology, Coimbatore. All the faculty members of our department are eagerly looking forward to welcome delegates from various part of the country. Our college has sprawling lush green lawns and is spacious with buildings of architectural excellence. Coimbatore, Manchester of South India is known for its textile, motor industry, auto component industry, medical tourism and hospitality. Apart from this, the city has more than 50 colleges and five universities and has become an education hub of Tamilnadu.

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

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

**Dr.I.BARANILINGESAN**  
**Mr.G.SARAVANAN**  
Organizing Secretaries

## ORGANIZING COMMITTEE

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## **ABOUT THE INSTITUTION**

KPR Institute of Engineering and Technology, one of India's premier institutes in Engineering and Technology was established in the year 2009. Since its inception, the Institute has been the catalyst for innovative teaching techniques, significant research, and industry interaction and has emerged as a prolific institution with international standards in the region. As a proactive research institution, the students and faculty members experience world-class education and develop sustainable solutions for real-world problems. KPRIET is best known as a leading centre for innovation, entrepreneurship and industrial consultancy. Realizing the dream of inclusive development, the institute contributes towards knowledge mobilization and social welfare activities like Corporate Social Responsibilities and Green Energy Initiatives. KPRIET is well-represented in rankings (NIRF band 100-150) and surveys that identify its leadership in academic performance, affordability, and student satisfaction. KPRIET is a top-notch institute with a strength of 260 eminent faculty members, 4000+ students, and 280 administrative and support staff. A self-contained campus, located in a lush green environment of about 66 acres, lies in the suburbs of Coimbatore, a metropolitan city of Tamil Nadu, a southern Indian state. The Institute has 12 academic departments with cutting-edge research centres in a variety of engineering and pure science disciplines, encompassing nearly 65 laboratories. Centres of excellence at KPRIET focus on providing transformative learning-edge knowledge through training programmes in a wide arena turning out industry-ready graduates. The training programmes offered would ensure that the students are trained in accordance to the diversified needs and latest technologies for upgrading their technical skill. Academic alliance and Memoranda of Understanding with various International and National Universities, and industries facilitate global education amidst the learners of KPRIET. The alliances promote the exchange of students, faculty and industrial experts and encourage joint research projects for mutual benefits. Students pursuing their research projects in Universities and industries have brought remarkable laurels to the Institution. The academic courses at KPRIET are integrated with emerging trends and developments in the relevant sectors and industries meeting the societal needs at national and international horizon. With the emergence of new-age technologies, the future holds places for enterprising and resourceful professionals with a vision to offer innovative solutions and learn beyond. KPRIET trains the young minds to work towards such a vision and marches ahead pacing the rapidly changing world to make even the impossible, possible.

## **Vision of the Institute**

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

## **Mission of the Institute**

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

## **Quality Policy**

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

## **VISION OF THE DEPARTMENT**

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

## **MISSION OF THE DEPARTMENT**

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

**Department of Electrical and Electronics Engineering**

**PROGRAM OUTLINE**

**30<sup>th</sup> June, 2023**

09.00 am – 9.05 am	Prayer Song
09.06 am – 09.10 am	Welcome Address
09.11 am – 09.20 am	Presidential Address
09.21 am – 09.25 am	Briefing about the Conference
09.26 am – 11.20 am	Sessions-I
11.21 am – 11.30 am	Networking Tea/ Break
11.31 am – 01.00 pm	Sessions-II
01.01 pm – 02.00 pm	Lunch
02.01 pm – 03.30 pm	Sessions-III
03.31 pm – 03.45 pm	Networking Tea/ Break
03.46 pm – 03.50 pm	Valediction
3.59 pm- 4.00 pm	National Anthem

### SESSION DETAILS

Paper ID	Title
1001	Fitness Care Inspect Technique Using IoT
1002	Hyperband Boost: Revolutionizing Hybrid Soft Computing Through Hyper parameter Optimization
1003	Smart Body Posture Improver
1004	Design And Implementation Of A Buck-Boost Converter For Consistent 48V Output Voltage Under Variable Input Voltage Conditions
1005	Automatic Door Closing in Transportation System
1006	Quadratic Buck-Boost Converter
1007	Affordable Power Inverter
1008	Remote Control RC Plane
1009	Electronic Control Unit Development for Car Doors
1010	Intelligent Grinder System
1011	EV Braking System With a Switching Mechanism for Energy Storage
1012	Development of IoT Based Electric Blower System by Using Renewable Resources
1013	Design And Implementation of Autonomous governing Control System for Electric Vehicles
1014	Design and Implementation of Autonomous Standing and Ceiling Fan
1015	Online Fraud Detection Using Integrating Machine Learning Algorithms
1016	Intuitive Electric Vehicle Utility Grid Aggregator Business Models Based on The G2V And V2G Technologies
1017	IoT Based Motor Monitoring
1018	Intelligent Control of Hybrid Converter for Electric Vehicles Charging Station
1019	Smart Street Light Monitoring and Control System
1020	Li-Ion Battery Protection System
1021	Enhanced Battery Monitoring and Protection System For EV
1022	Coil Winder Using Arduino
1023	Safe Distance Maintaining Car Using Arduino
1024	OCR Based Printer
1025	Smart Blind Stick



**Paper ID:NCIAES 1001**

### **Fitness Care Inspect Technique Using IoT**

<sup>1</sup>B.M.Abinandhana, <sup>2</sup>D.Arthi, <sup>3</sup>A.Abishek, <sup>4</sup>K.Abishek, <sup>5</sup>R.Revathi

<sup>1,2,3,4</sup>UG Scholar, Dept. of EEE, KPR Institute of Engineering and Technology, Coimbatore.

<sup>5</sup>Assistant Professor, Dept. of EEE, KPR Institute of Engineering and Technology, Coimbatore.

#### **Abstract:**

The fitness care industry has seen significant advancements with the integration of Internet of Things (IoT) technology. The use of IoT devices and sensors allows for real-time monitoring and analysis of various fitness parameters such as heart rate, blood pressure, and body temperature. This data can be used to optimize training programs and prevent injury. The fitness care inspect technique using IoT provides a comprehensive and personalized approach to fitness and health management, enabling individuals to track their progress and make informed decisions about their wellness. The implementation of this technology also leads to increased efficiency and cost-effectiveness in the delivery of fitness care services

**Paper ID:NCIAES 1002**

### **Hyperband Boost: Revolutionizing Hybrid Soft Computing through Hyper Parameter Optimization**

<sup>1</sup>Anantraj, <sup>2</sup>B.Umarani, <sup>3</sup>S.Balakrishnan

<sup>1,3</sup>Dept. of CSBS, Sri Krishna College of Engineering and Technology, Coimbatore.

<sup>2</sup>Department of ECE, Kongunadu College of Engineering and Technology, Thottiyam.

#### **Abstract:**

The field of hybrid soft computing has witnessed remarkable advancements in recent years, leveraging the integration of different computational intelligence techniques to enhance the performance of machine learning models. However, optimizing the hyperparameters of these hybrid models remains a challenging task. The Hyperband algorithm has emerged as a powerful optimization method for hyperparameter tuning, offering significant improvements in efficiency and effectiveness. In this paper, we explore the application of the Hyperband algorithm to optimize the hyperparameters of hybrid soft computing approaches. We present a comprehensive study that showcases the capabilities of Hyperband in revolutionizing hybrid soft computing

through efficient hyper parameter optimization. We discuss the advantages of the Hyperband algorithm, including its resource-awareness and adaptive sampling strategy, which enables accelerated convergence to optimal hyper parameter configurations. Furthermore, we highlight the impact of Hyperband on enhancing the performance, robustness, and generalization of hybrid soft computing models. Through extensive experiments and comparative analysis, we demonstrate the superiority of Hyperband over traditional optimization methods in terms of convergence speed, sample efficiency, and overall model performance. This paper sheds light on the potential of Hyperband to revolutionize hybrid soft computing by unlocking new possibilities in model optimization and advancing the state-of-the-art in various domains, including image processing, pattern recognition, and predictive analytics.

**Paper ID:NCIAES 1003**

### **Smart Body Posture Improver**

*<sup>1</sup>D.Sathish Kumar, <sup>2</sup>U.Karthick, <sup>3</sup>A.Kandeepan, <sup>4</sup>S.Gokulnath, <sup>5</sup>S.Hemanth Kumar*

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*<sup>2,3,4,5</sup>UG Scholar, Dept. of EEE, KPR Institute of Engineering and Technology, Coimbatore.*

#### **Abstract:**

A body posture improver is a device designed to help individuals maintain proper posture while sitting or standing. Poor posture can lead to a variety of health problems, including neck and back pain, headaches, and even digestive issues. The posture improver works by gently pulling the shoulders back and aligning the spine into its natural position. This helps to alleviate pressure on the joints and muscles, promoting better circulation and reducing the risk of injury. With regular use, a body posture corrector can help to improve overall posture, reduce pain, and increase mobility. It is important to note, however, that the posture corrector should not be relied upon as a permanent solution and that regular exercise and stretching are still necessary to maintain good posture and overall health. Others are designed to be worn like a brace, with a firm material that supports the back and encourages proper posture. Still, others are designed to be worn underneath clothing, providing a discreet solution for those who wish to improve their

posture without drawing attention to themselves. When using a body posture corrector, it is important to ensure that it is properly fitted and adjusted to your body. A poorly fitted posture corrector can actually do more harm than good, causing discomfort or even exacerbating existing issues. It is also important to start slowly when first using a posture corrector, gradually increasing the amount of time you wear it each day to allow your body to adjust to the new position.

**Paper ID:NCIAES 1004**

### **Design and Implementation of a Buck-Boost Converter for Consistent 48V Output Voltage under Variable Input Voltage Conditions**

*<sup>1</sup>Evita Christy Edward , <sup>1</sup>N. Gokulsri, <sup>1</sup>S. Kaviya , <sup>1</sup>A. Kamatchi , <sup>2</sup>Dinesh Chellappan*

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#### **Abstract:**

This article presents a comprehensive study on the design and implementation of a buck-boost converter project aimed at providing a constant 48V output voltage despite fluctuations in the input voltage. The objective of the project is to address the challenge of maintaining a stable power supply to connected devices in applications where the input voltage varies unpredictably. The proposed buck-boost converter utilizes advanced control techniques and circuitry to regulate the output voltage, ensuring a reliable 48V power source for a wide range of electrical systems. The article begins by introducing the importance of a stable power supply in various industries, such as telecommunications, industrial automation, and renewable energy systems. The limitations of traditional power supply approaches are discussed, highlighting the need for a robust buck-boost converter capable of maintaining a constant 48V output voltage under variable input voltage conditions. A detailed analysis of the theoretical foundations of buck-boost converters is presented, including their operating principles and control mechanisms. The operation of the buck-boost converter is explained, emphasizing its ability to step up or step down the input voltage to maintain the desired output voltage. Various control techniques, such as pulse width modulation (PWM) and feedback loops, are discussed in depth, highlighting their role in regulating the output voltage and compensating for input voltage variations.

**Paper ID:NCIAES 1005**

### **Automatic Door Closing in Transportation System**

<sup>1</sup>I.Baranilingesan, <sup>2B</sup>Sudeep B, <sup>3</sup>Surya V, <sup>4</sup>Thangaraj R, <sup>5</sup>Vigneshwaran P

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#### **Abstract:**

Opening and closing of doors in the bus have always been a tedious and boring job for the driver, especially in places routes where the stops are very nearer where the driver is always required to open and close the door for passengers. This involvement of driver can be avoided by automating the process using different sensors like infrared, pressure, ultrasonic, laser etc. In this project, automatic door control system using Arduino microcontroller was designed. The system combines IR sensor, servo, and Arduino to achieve the desired goal. The IR sensor installed at the wheel of the bus detects the speed of the bus within the range of the sensor, a signal is sent to the Arduino microcontroller which controls the servo motor to automatically open the door. The door remains open until the speed of the vehicle remains 0 kmph and in turn closes the door automatically when the speed of the vehicle exceeds 10 kmph. By detecting any person or object in between the door using another IR sensor placed at the door. The results clearly show that the system is cheap, effective, and a reliable means of opening and closing doors in the buses.

**Paper ID:NCIAES 1006**

### **Quadratic Buck-Boost Converter**

<sup>1</sup>C.J.Vignesh, <sup>2</sup>R.Anbu ram, <sup>3</sup>M.Dhanabal, <sup>4</sup>S.Gowtham, <sup>5</sup>R.Mahesh

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<sup>2,3,4,5</sup>UG Scholar, Dept. of EEE, KPR Institute of Engineering and Technology, Coimbatore..

#### **Abstract:**

Design and analysis of quadratic boost dc-dc converter with a voltage multiplier are presented. An additional inductor-capacitor-diode circuit is implemented as a voltage multiplier in the designed converter. In comparison with conventional boost converter, the designed quadratic boost converter based on additional multiplier circuit provides high gain voltage conversion with high efficiency. These properties make the designed converter practicable for

sustainable energy implementations. The proposed converter is used to obtain higher output voltages employing equal input voltages in comparison with traditional boost converter, two-level cascade boost converter and traditional quadratic boost dc-dc converter. In the current study, operational principles of quadratic boost dc-dc converter with voltage multiplier circuit are clarified in detail. The relationship between input voltage and output voltage is formulized analytically and mathematical analysis of quadratic boost converter with voltage multiplier circuit is comprehensively given for smooth dc-dc converter operation. Subsequently, a controller scheme based on proportional-integral (PI) is presented for quadratic boost converter integrated with multiplier circuit. In the performance results, the operational waveforms of the designed converter are performed by using Simulink simulation program. Voltage gain analysis of designed converter versus conventional boost converters is compared to show the voltage conversion rates for different duty cycle values. In the designed converter, the input voltage is selected as a 24 V dc voltage source. At load side, the resistive load in the rating of 80  $\Omega$  consumes 720 W active power. In addition, input/output voltages, power waveforms and current waveforms are introduced.

**Paper ID:NCIAES 1007**

#### **Affordable Power Inverter**

<sup>1</sup>Dr.V.Parimala, <sup>2</sup>J.Devadharshini, <sup>3</sup>S.M.Divyalakshmi, <sup>4</sup>P.Jones Barnabs, <sup>5</sup>C.Lalit

<sup>1</sup>Assistant professor, Dept. of EEE, KPR Institute of Engineering and Technology, Coimbatore.

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#### **Abstract:**

The inverter is designed to convert DC power from solar panels or wind turbines into AC power suitable for use in homes and businesses. The primary objective of this project was to develop an inverter that is both affordable and reliable, making renewable energy more accessible to a wider range of consumers. The design of the inverter utilizes a low-cost component, allowing for efficient production and low manufacturing costs. Extensive testing has been conducted to ensure the reliability and performance of the inverter, including testing under various load conditions and temperature ranges. The final product has been optimized for ease of

use, with a simple interface and compact size for easy installation in a variety of settings. The low cost and high performance of the inverter make it an attractive option for those looking to transition to renewable energy sources. Overall, the development of this low-cost inverter has the potential to greatly impact the renewable energy industry by making clean energy more accessible and affordable to a wider range of consumers

**Paper ID:NCIAES 1008**

### **Remote Control RC Plane**

<sup>1</sup>A.Nallathambi, <sup>2</sup>M.Pandidurai, <sup>3</sup>M.Sakthi, <sup>4</sup>R.Vivin, <sup>5</sup>Dr.V.Parimala

<sup>1,2,3,4</sup>UG Scholar, Dept. of EEE, KPR Institute of Engineering and Technology, Coimbatore.

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#### **Abstract:**

Nowadays, the application areas of aerodynamics are widespread in transportation and travelling. Along with it, it also explores surveillance of the nation. Many researchers and engineers are working to improve the efficacy and performance of the aircraft used in the surveillance and supply of necessary material things. The paper overviews the state-of-art aircraft used for the above applications. The development and design status of the aircraft is further reviewed considering the various design parameters like aspect ratio, wing loading, dihedral angle, Lift coefficient and Drag coefficient, Wing's Lift Coefficient, Wing's Drag Coefficient, and Air foil. These are the basic parameters that are responsible for the performance and function of radio-controlled aircraft. A Radio-controlled (model) aircraft (often called RC aircraft or RC plane) is controlled remotely by a hand-held transmitter and a receiver within the craft. Flying RC aircraft as a hobby has been growing worldwide with more efficient motors (both electric and miniature internal combustion and jet engines) lighter and more powerful batteries and less expensive radio systems. After designing the aircraft wing, fabrication is one of the important factors to be considered. Fabrication mainly depends on the type of material employed in manufacturing the aircraft by considering the availability, cost, durability, strength and how easily it can be made into the required shape. This Report is based on designing a lightweight, electronically controlled glider with an operating frequency of 2.4 GHz. This report

did not concentrate on electronic components as the components used are readily available in markets and need not be programmed by the users. The aircraft wing considered in this report was designed to have optimum lift and drag characteristics.

**Paper ID:NCIAES 1009**

### **Electronic Control Unit Development for Car Doors**

*<sup>1</sup>R.Sachithraa*

*<sup>1</sup>Assistant Prof.(Sr.G), Dept. of EEE, KSR Institute of Engineering and Technology, Nammakal.*

***Abstract:***

A modern automotive system depends heavily on Electronic Control Units (ECUs) to efficiently manage various functionalities and ensure optimal performance. This abstract presents the design and implementation of an ECU in car doors using the STM32 microcontroller, a widely-used and adaptable microcontroller platform. The objective of this project is to enhance the functionality and security of car doors through the integration of an ECU system. The ECU is responsible for controlling various aspects related to door operations such as centralized locking/unlocking, window control, mirror adjustment and sensor-based safety features. By implementing an ECU in car doors, it becomes possible to achieve a higher level of automation, convenience and safety. The abstract for an Electronic Control Unit (ECU) in car doors using STM32 would provide an overview of the project, outlining the key features and benefits of the system. The abstract would describe the main purpose of the ECU and how it functions within the context of a car door. It would also highlight the use of the STM32 microcontroller in the design, discussing its advantages and capabilities. The abstract would further detail the various components and subsystems that make up the ECU, such as the sensors, actuators and communication interfaces.

**Paper ID: NCIAES 1010**

### **Intelligent Grinder System**

<sup>1</sup>K.Boopathiraj, <sup>2</sup>R.Swathi, <sup>3</sup>S.Vaanmathi, <sup>4</sup>P.Vignesh, <sup>5</sup>Dr.C.Santhakumar

<sup>1,2,3,4</sup>UG Scholar, Dept. of EEE, KSR Institute of Engineering and Technology, Nammakal.

<sup>5</sup>Assistant Prof.(Sl.G), Dept. of EEE, KSR Institute of Engineering and Technology, Nammakal.

#### **Abstract:**

Wet grinder is a household appliance used for preparing batter, out of which some materials are prepared. Rice and dhal are the main raw materials used in the preparation of the batter. Before the invention of the mechanical wet grinders, hand operated grinding stones were used for making this batter. After the invention of mechanical wet grinders, the preparation of batter is in quick manner than the traditional grinding. But the energy consumption of these mechanical wet grinders is high and requires manual checking of flour every time for the grinding time and speed for rice and dhal are not same so manual checking is needed. A number of conventional methods have been proposed till date, but the proposed model creeps in a new set of innovative notions for wet grinders incorporating technical stuff into existence. The proposed model quenches the intension to digitalize the hand operated traditional methods available for wet grinders. Grinding is a labor intensive and manpower-oriented work. This is a real time consumer problem. The proposed model is designed with smart facilities like to check the quality of batter, speed controller, time setting, Motor temperature monitoring and controlling, various selection mode, weight indicators, tilting operation. This model helps to reduce the work burden of the user and any unskilled user can make use of this technology easily. The main goal of this smart wet grinder control is to improve the efficiency of grinding with continuous monitoring and extend it to the field of commercial purposes.



**Paper ID:NCIAES 1011**

### **EV Braking system with a switching mechanism for Energy Storage**

<sup>1</sup>Dr.A.Murugesan, <sup>2</sup>Mrs.K.Meenatchi, <sup>3</sup>P.Ragul, <sup>4</sup>M.Vikraman, <sup>5</sup>C.Bharanidharan

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<sup>1,2</sup>Assistant Prof.(Sl.G), Dept. of EEE, KSR Institute of Engineering and Technology, Nammakal.

#### **Abstract:**

In the world of modern technology, Electric vehicles (EVs) are getting much attention than internal combustion engine (ICE) vehicles. Recent developments in electric vehicle system propose an energy recovery through the vehicles regenerative braking system (RBS). The proposed energy control management system consists a mechanical setup to attain regenerative braking system and also monitor and restoring the energy in the battery. The system consists of a regenerative brake, a rectifier, a DC-DC converter, and a battery pack. The regenerative brake converts the kinetic energy of the vehicle into electrical energy, which is rectified and converted to the required voltage using the DC-DC converter. The battery pack stores the harvested energy for future use. The proposed system provides a sustainable and eco-friendly solution for electric vehicles, as it reduces the reliance on external power sources and helps to extend the driving range of the vehicle. The performance of the proposed system is evaluated through simulation and experimental results, which demonstrate its effectiveness in harvesting energy during the braking process. It is capable of converting the kinetic energy of the vehicle into electrical energy, which is then conditioned by the power conditioning unit to match the requirements of the battery storage system. The proposed system provides an efficient way of utilizing the energy that would otherwise be lost during braking and can significantly increase the driving range of electric vehicles. The system is cost-effective, easy to install, and has the potential to make electric vehicles more practical and sustainable.

**Paper ID:NCIAES 1012**

### **Development of Iot Based Electric Blower System by Using Renewable Resources**

<sup>1</sup>Mr.M.A.Stephenraj, <sup>2</sup>P.Logeshwaran, <sup>3</sup>M.Praveena, <sup>4</sup>B.Rajachandran, <sup>5</sup>R.Savitha  
<sup>2,3,4,5</sup>UG Scholar, Dept. of EEE, KSR Institute of Engineering and Technology, Coimbatore.  
<sup>1</sup>Asst.Prof(Sl.G), Dept. of EEE, KSR Institute of Engineering and Technology, Coimbatore.

#### **Abstract:**

The design and governance of an electric blower system in a wooden stove for efficient use of renewable resources involves several key considerations. The system must be designed to be energy-efficient, using the blower. It must be designed to work seamlessly with the wooden stove, that the blower is providing optimal airflow for maximum combustion efficiency. Governance of the system involves developing guidelines for usage, maintenance, and safety. Users must be educated on how to use the blower system safely and effectively, including how to maintain it and troubleshoot any issues that arise. The governance plan should also include guidelines for disposing of the blower system at the end of its life cycle, ensuring that it is recycled or disposed of in an environmentally friendly manner. This would eliminate the need for reduce the air pollution of the environment. The system could be designed with sensors to automatically regulate the airflow based on the temperature inside the stove, ensuring that the combustion is optimized for efficiency. The design and governance of an electric blower system in a wooden stove for efficient use of renewable resources requires careful consideration of energy efficiency, seamless integration with the stove, user education, and proper disposal or recycling at the end of the product and life cycle.

**Paper ID:NCIAES 1013**

### **Gesture Controlled Contactless Switch**

<sup>1</sup>T.Arvind, <sup>2</sup>S.Durga, <sup>3</sup>Jeevanantham Singaravel, <sup>4</sup>V.Muthukumar, <sup>5</sup>P.Vaishnavi

<sup>2,3,4,5</sup>UG Scholar, Dept. of EEE, K S R Institute for Engineering and Technology, Namakkal.

<sup>1</sup>Associate Professor, Dept. of EEE, K S R Institute for Engineering and Technology, Namakkal.

#### **Abstract :**

The Era of the eco friendly technologies is emerging rapidly; Electric bikes are the most dependent modes of transportation. To 'Design and implementation of effective cruise control in E bikes' The electric bike is provided with ease to switch between the speed of the bike .The monitored values of battery state of charge and the speed are displayed so that the rider gets the information about the status of the battery and the speed. Each circuit is designed separately and assembled to form an electric bike which can make the long distance driving easier with many user friendly feature. Cruise control is a technology that has been widely used in automobiles, and its implementation in e bikes has become increasingly popular. The system will allow riders to maintain a constant speed without the need to constantly adjust the throttle, making long rides more comfortable and reducing rider fatigue. Here we are going to use the ultra sonic sensor to sense the object on the road. We are going to sense the object and reduce the speed of the vehicle. First we indicate with the buzzer sound while the object in the certain distance then we reduce the speed of the bike. Overall, the implementation of an effective cruise control system in e-bikes will enhance the riding experience.

**Paper ID:NCIAES 1014**

**Design And Implementation of Autonomous Standing And Ceiling Fan**

<sup>1</sup> V.Kiruthigadevi, <sup>2</sup>P.Arun kumar, <sup>3</sup>S.P.Karthikeyan, <sup>4</sup>M.Manisha, <sup>5</sup>M.Nandhini

<sup>2,3,4,5</sup>UG Scholar, Dept. of EEE, KSR Institute of Engineering and Technology, Nammakal.

<sup>1</sup>Asst.Prof(Sr.G), Dept. of EEE, KSR Institute of Engineering and Technology, Nammakal.

**Abstract:**

In today's world, each and everything is powered by electricity. For meet out the demand renewable energy generation solar, wind involved. The electrical power consumption is increasing day by day and also wastage of electricity power is increasing by forgetting to switch off the appliances while people get out of the room. This abruptly increases daily power consumption. For each house 2 to 8 unit of electrical energy is wasted daily by leaving the fans with approximately ON. As technology is the solution to every issue in the modern world, the problem can be sorted in an effective way. Taking this as a challenge, to develop a device, the project comes with autonomous standing and ceiling fan. The proposed system can be operated both automatically and manually. In automatic mode, the human activity is involved only for triggering the fan to switch ON and OFF and also fan will operate according to the room temperature. In manual mode it can be executed with full human operations. The system comes with two different types of sensors. One of the sensors is used to detect whether the people is available in the room or not and another one used to find the temperature of the room. The sensor separates the temperature into three different ranges to adapt the speed of the fan with room temperature. The proposed design and implementation of Autonomous Standing and Ceiling fan is an effective way to reduce the loss of electricity and strive towards a better society.

**Paper ID:NCIAES 1015**

### **Online Fraud Detection Using Integrating Machine Learning Algorithm**

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#### **Abstract:**

The rapid participation in online based transactional activities raises the fraudulent cases all over the world and causes tremendous losses to the individuals and financial industry. Credit card fraud events take place frequently and then result in huge financial losses. This project proposes a credit card fraud analysis using predictive modeling with machine learning technique. Initially, Data preparation is carried out to manipulate the raw data into a form that can readily and accurately be analyzed. In the exploration stage, the initial patterns, characteristics, and points of interest are uncovered from the data. The accuracy and quality of source data before training a new model version is checked by data validation. Further, to correlate the data train and to get the model's accuracy Cat boost Classifier and CNN classifier is used. However, the above method has limitations then, for analyzing performance of the proposed work, it is implemented in Python platform.

**Paper ID:NCIAES 1016**

## **Intuitive Electric Vehicle Utility Grid Aggregator Business Models Based on the G2V and V2G Technologies**

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### ***Abstract:***

Due to the exponential growth of the worldwide convoy of electric vehicles (EVs) in the utility grid, the vehicle-to-grid model is gaining more attention to lighten the pressure on the grid. Therefore, an EV aggregator acts as a flexible load to enhance the power deficiency in the electrical grid. This paper proposes the imperative progress of a central aggregator to optimize the hierarchical bi-directional technique throughout the vehicle-to-grid (V2G) and grid-to-vehicle (G2V) technologies. This study was implemented using three different types of EVs that are assumed to go through the utility grid throughout the day in an organized model. The aggregator determines the number of EVs that would participate in the electric power employment during the day and sets the charging/discharging capacity level for each EV. In addition, the proposed model minimized the battery degradation cost while maximizing the revenue of the EV owner using the V2G technology and ensuring a adequate grid peak load demand shaving based on the genetic algorithm (GA). However, the revenue of the EV owner increased when the battery degradation cost was unnoticed. The implemented methodology ensured an effectual grid stabilization service by shaving the load demand to identify the average required power throughout the day. The efficiency of the proposed methodology is ensured since output findings were in excellent concord.

**Paper ID:NCIAES 1017**

### **IoT Based Motor Monitoring**

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#### **Abstract:**

The Condition monitoring of rotating machines for critical applications plays an important role in reducing down time. With Industry 4.0, the role of IOT in online condition monitoring of electrical machines has gained considerable significance. The main aim of the paper is the use of IOT for online monitoring of motor parameters like Current, Temperature, Voltage and Humidity and observing their values .The result can be displayed in an LED Display. The advanatage of this project is the realtime monitoring of the motor from any remote area in case of any abnormality operating personel can take necessary steps for preventing complete breakdown

**Paper ID:NCIAES 1018**

### **Intelligent Control of Hybrid Converter for Electric Vehicle Charging Station**

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#### **Abstract:**

The future in electric field will be Electric Vehicles. This needs lots of electric power which should be received from Renewable and Non-Renewable sources. My work proposes a charging station for electric vehicles from hybrid renewable source. The Existing system is done with solar source based Renewable energy system. During seasonal changes the power for charging station for electric vehicles will be from the hybrid source and excess of energy will be sent to the Power Grid. When there is no energy from the hybrid source, energy will be fed from Power Grid. Thus Energy source will be saved and utilized in an efficient way and nnumber of electric vehicles can be charged. The control will enable Maximum Power Point Tracking (MPPT) and voltage control regulation for Electric Vehicles charging station. For this we are designing a hybrid Converter for charging process.

**Paper ID:NCIAES 1019**

### **Smart Street Light Monitoring and Control System**

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#### **Abstract:**

The proposed system is easy to setup and implement and it doesn't require extra maintenance compared to the already existing system. This system can be further enhanced by writing logic into the code and that can be able to retrieve information of the time of sunset and sunrise from a reliable weather reporting source and automate the process completely by turn ON the street light at the time of sunset and turn it OFF by sunrise. This further eliminates human intervention and a manual visit to the location of the street lights will be required only in case of a malfunction. The efficiency of automated systems is more than the manual systems. We can also reprogram these devices with respect to our needs. Smart street lighting solutions enable control, monitoring and automatic fault detection, transforming these systems into intelligent and energy efficient networks, resulting in huge savings in power bills. This paper presents an overall analysis of the solutions for street lighting and techniques to control through internet of things. In future by using the API key, the generated data is stored in Thing speak database which we can use for future

**Paper ID:NCIAES 1020**

### **Li-ion Battery Protection System**

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#### **Abstract:**

This paper presents a comprehensive study on the design and implementation of a battery protection system for lithium-ion (Li-ion) batteries comprising three cells. Li-ion batteries are widely used in applications such as electric vehicles, portable electronic devices, and renewable energy systems. However, ensuring the safety and optimal performance of these batteries is of paramount importance. The primary objective of this research is to develop a robust battery management system (BMS) that effectively monitors and manages the performance and safety of the Li-ion battery pack. By employing a combination of hardware and



software components, the BMS continuously monitors key parameters such as cell voltages, state of charge (SoC), and temperature. These parameters are critical in detecting and preventing potential safety risks and performance degradation. The proposed battery protection system includes mechanisms to mitigate risks associated with overcharging, overvoltage, undercharging, under voltage, and overheating. By actively monitoring and regulating these factors, the BMS ensures that the Li-ion battery pack operates within safe limits, optimizing its charging and discharging processes. The effectiveness of the developed protection system is extensively evaluated through comprehensive testing and analysis. Performance metrics such as cell balancing, charge efficiency, and overall battery health are assessed to validate the system's efficiency. The results demonstrate that the implemented battery protection system successfully safeguards the Li-ion battery pack, enhancing its longevity, efficiency, and ensuring safe operation under diverse conditions.

**Paper ID:NCIAES 1021**

### **Enhanced Battery Monitoring and Protection Systems For EV**

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#### **Abstract:**

Electric vehicles surely are the future of transportation, but EV technology has not been fully developed with respect to efficiency and safety as of 2022. We come across electric vehicle battery fire and similar incidents as the EV market expands. Most electric vehicle fire incidents occur due to battery blast or fire. So here we attempt to solve the problem by using some sensors and battery packbased system powered by an ARDUINO UNO controller. The system is designed to protect batteries from various parameters that may incite a fire. The system is designed to constantly monitor battery voltage current temperature and instantly cut off the input or output from battery as soon as any unusual behavior is detected.

**Paper ID:NCIAES 1022**

### **Coil Winder Using Arduino**

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#### **Abstract:**

The coil winder using Arduino is a project that aims to automate the process of winding coils for various applications such as inductors, transformers, and electromagnets. Traditional coil winding methods are time-consuming and labor-intensive, and automation through Arduino provides an efficient and precise alternative. The system consists of an Arduino microcontroller, a stepper motor, a wire tensioning mechanism, and a user interface. The Arduino serves as the brain of the system, controlling the motor's rotation and wire feeding, while the wire tensioning mechanism ensures the proper tension of the wire during winding. The user interface allows the operator to input the desired specifications of the coil, such as the number of turns, wire gauge, and coil diameter. To wind a coil, the operator sets the parameters through the user interface, and the Arduino translates the input into motor rotations and wire feeding increments. The stepper motor rotates the winding spindle, while the wire tensioning mechanism keeps the wire taut. As the motor rotates, the Arduino monitors the number of rotations and wire length, ensuring accurate and consistent winding. The Arduino coil winder offers several advantages over manual winding. Firstly, it significantly reduces the time required to wind coils, increasing productivity. Secondly, it improves the precision and consistency of the winding process, resulting in coils with higher quality and performance. Additionally, the user interface simplifies the setup and configuration, making it accessible to operators with minimal technical expertise. In conclusion, the coil winder using Arduino provides an automated and efficient solution for coil winding applications. By combining the control capabilities of the Arduino with stepper motor and wire tensioning mechanisms, it offers precise and consistent winding, saving time and enhancing the quality of coils. This project demonstrates the potential of Arduino-based automation in simplifying complex tasks and improving productivity in various industries.

**Paper ID:NCIAES 1023**

### **Safe Distance Maintaining Car Using Arduino**

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**Abstract:**

Experience the future of road safety with the "Safe Distance Maintaining Car using Arduino" project. This groundbreaking innovation combines the power of Arduino microcontroller technology and advanced distance measurement sensors to create an intelligent car system that ensures a safe distance between vehicles on the road. By harnessing cutting-edge algorithms and control mechanisms, the car autonomously monitors and calculates the distance from the vehicle ahead in real-time. With precision and accuracy, it adjusts its speed dynamically, mitigating the risks of inadequate following distances and minimizing the chance of accidents. Through extensive testing and validation, the system has proven its robustness and reliability in various real-world scenarios. This project sets a new standard in automotive safety, showcasing the potential of intelligent transportation systems to revolutionize road safety and protect lives. Experience the power of innovation, as this project ushers in a new era of road safety, where technology and intelligence combine to create a safer and more efficient road environment. Embrace the future and be part of the journey towards a safer tomorrow.

**Paper ID:NCIAES 1024**

### **OCR Based Printer**

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**Abstract:**

The development of OCR (Optical Character Recognition) technology has revolutionized the printing industry by enabling the conversion of printed text into digital form. One of the most widely used OCR engines is Tesseract, which is an open-source software developed by Google. This technology has made it possible to extract and process text from images, which is useful in several applications such as document scanning and data entry. With the increasing demand for efficient and accurate document processing, the integration of OCR technology with printers has become a popular trend. This has led to the development of OCR-based printers, which can scan and convert printed text into digital form. This technology has significantly reduced the time and effort required for data entry, document processing, and archiving. PyTesseract is a Python wrapper for the Tesseract OCR engine, which enables developers to easily integrate OCR functionality into their Python-based applications. PyTesseract is widely used in various industries, including healthcare, finance, and legal, to automate document processing and data entry.

**Paper ID:NCIAES 1025**

### **Smart Blind Stick**

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**Abstract:**

Visual impairment poses significant challenges to individuals in their daily lives, hindering their mobility and independence. Traditional white canes have been widely used as a tool for assisting the visually impaired in navigation. However, advancements in technology have led to the development of the smart blind stick, a novel and innovative solution aimed at addressing the limitations of conventional canes. This paper presents an abstract of the smart blind stick,

highlighting its key features and the benefits it offers to individuals with visual impairments. The smart blind stick integrates various cutting-edge technologies to enhance the mobility and safety of the visually impaired. It utilizes ultrasonic sensors, global positioning system (GPS) modules, and an array of advanced microcontrollers to provide real-time feedback to the user. The ultrasonic sensors help detect obstacles in the path of the user, providing haptic or auditory feedback to ensure safe navigation. The GPS module enables accurate tracking of the user's location, allowing for better orientation and navigation assistance. One of the notable features of the smart blind stick is its connectivity with a companion mobile application. The application serves as a user-friendly interface that provides additional functionalities and customization options. Users can configure the sensitivity of obstacle detection, set preferred routes, and receive audio cues or voice instructions through headphones or earbuds. Furthermore, the mobile application can connect with emergency services or trusted contacts, ensuring prompt assistance in case of emergencies or unexpected situations. The smart blind stick is designed to be lightweight, ergonomic, and user-friendly. It is equipped with rechargeable batteries to ensure extended usage without frequent replacements. The stick's ergonomic design and adjustable height provide comfort and flexibility for users of different heights. Additionally, the smart blind stick is equipped with audio output capabilities, allowing users to receive feedback through voice prompts or headphones. In conclusion, the smart blind stick is a technological advancement that significantly improves the mobility and safety of individuals with visual impairments. The integration of advanced technologies empowers visually impaired individuals, enabling them to navigate their surroundings independently and with confidence. The smart blind stick represents a promising solution in the field of assistive technology and has the potential to transform the lives of the visually impaired, fostering inclusivity and accessibility in society.

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