



M.I.E.T. ENGINEERING COLLEGE

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1.3.3. Number of students undertaking project work/field work/internship during last year (2021-2022)

Dept: B.E. Electrical and Electronics Engineering

Academic Year-2023-2024

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PRINCIPAL
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GUNDUR, TIRUCHIRAPALLI - 620 007.

**AI ENABLED DRONE TO TRACK THE HUMAN
MOVEMENTS DURING DISASTER**

A PROJECT REPORT

Submitted by

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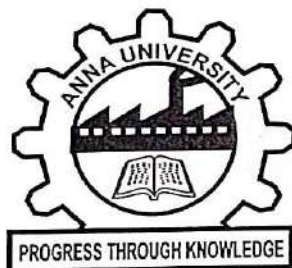
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of

BACHELOR OF ENGINEERING

IN

ELECTRICAL AND ELECTRONICS ENGINEERING



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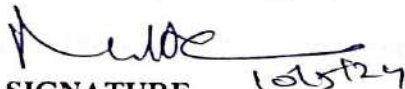
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SUBMITTED FOR THE VIVA-VOCE EXAMINATION HELD ON 13.05.2024


INTERNAL EXAMINER


EXTERNAL EXAMINER

ABSTRACT

The main aim of this project is to design the AI enabled drones. In the face of natural disasters and humanitarian crises, swift and effective response is critical to saving lives and mitigating damage.

AI-enabled drones offer a promising solution for tracking human movements during such disasters, providing real-time surveillance, object detection, and mapping capabilities. This project presents a conceptual framework for the deployment of AI drones in disaster response scenarios. The drones are equipped with advanced AI algorithms for object detection and recognition, enabling them to identify and locate individuals amidst disaster debris.

Additionally, they create detailed maps of the affected area, aiding rescuers in navigation and resource allocation. The data collected by the drones are analyzed to gain insights into the extent of damage and the distribution of survivors, facilitating more efficient rescue operations.

Overall, AI-enabled drones have the potential to significantly enhance disaster response efforts by providing invaluable situational awareness and support to rescue teams on the ground.

CONCLUSION

The integration of AI-enabled drones for tracking human movements during disasters presents a transformative approach to disaster response and management. By leveraging advanced algorithms and sensor technologies, these drones offer real-time surveillance, object detection, and mapping capabilities that significantly enhance the effectiveness and efficiency of rescue operations.

Through the deployment of AI drones, responders gain invaluable situational awareness, allowing them to identify and locate survivors amidst challenging conditions quickly. The creation of detailed maps aids in navigation through hazardous terrain and facilitates the allocation of resources to the area's most in need. Furthermore, the analysis of data collected by drones provides insights into the extent of damage and the distribution of survivors, enabling responders to prioritize their efforts effectively.

The AI-enabled drones have the potential to revolutionize disaster response efforts, offering a powerful tool for saving lives, mitigating damage, and restoring communities in the aftermath of disasters. With continued research, development, and collaboration, the integration of AI drones into disaster response protocols can contribute to building more resilient and responsive systems for the future.

**DESIGN AND DEVELOPMENT OF WRITING ROBOT USING
SPEECH PROCESS**

A PROJECT REPORT

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ABSTRACT

India is liable to give education to disabled people as they have been facing many issues in writing examinations with the help of scribe which increases the gap between education and disabled students. Nowadays education is mandatory for each human in the world, but physically challenged people have not been able to get into the common Education platform that others get.

The aim of our project is to create a writing robot utilizing speech processing technology to assist students with writing disabilities without any physical support. The robotic system integrates with a voice recognition system, enabling users to dictate text via a microphone while the robot autonomously performs writing tasks. Already available digital pens write recorded documents, but they are not capable of writing content lively. But this writing robot is a wholesome approach where the pen assures flawless and accurate writing according to the voice recognition and few extra features for blind and deaf peoples.

In this System, the input voice will be given to the System using Bluetooth module via the Bluetooth Voice Controller Mobile Application. The writing mechanism fully comprises servo motor and stepper motor for the Movement of pen. The mechanism is programmed with a speech recognition system and allows the user to write what she/he speaks. The robotic system is programmed to write down the words that the individual pronounces to the microphone. To perform the writing operations, the robotic system will be fitted with a pen. Finally, the output as pen writes according to the voice received by Bluetooth. Proposed prototype can be a good thing for the physically challenged people like deaf, blind and handless to write their exams.

CONCLUSION

The writing robot was developed which can greatly benefit to physically challenged person. This technology can provide a more accessible and convenient way for people with disabilities or those who prefer to use speech as their primary mode of communication to write and express themselves.

With advancements in speech recognition and natural language processing, writing robots can accurately transcribe speech into text and perform tasks such as proofreading and formatting. This technology has the potential to enhance the independence and productivity of individuals and can be applied in various fields such as education, healthcare, and business. This project helps handicapped people, medical doctors, and blind people.

Blind people and handicapped people to write the exams on their own. By following this process, we can avoid a lack of scribes due to heavy paperwork and also maintain their independence. And it also allows blind people to assist them during their exams without any third-party support. Thus, this project helps blind people write the exams on their own.

VORTEX TYPE BLADELESS WINDMILL

A PROJECT REPORT

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INTERNAL EXAMINER



EXTERNAL EXAMINER

ABSTRACT

Generation of power using Vortex bladeless wind turbine which gives high efficiency and minimal maintenance cost. The bladeless windmill works on the phenomenon of vortex shedding to capture the energy produced. Structures are designed to minimize mechanical failures and to convert vortex induced vibration into electricity. A wind turbine is a machine that converts the kinetic energy in wind into mechanical energy. If the mechanical energy is used directly by machinery, such as a pump or grinding stones, the machine is usually called a windmill. They can be made many different ways with buckets, paddles, sails, and oil drums. The Savonius rotor is designed by S-shaped rotor, which is to turn relatively slowly and provide high torque. They can be useful for grinding grain, pumping water, and many other tasks. Today India have fifth largest installed wind power capacity in the world and installation of conventional windmill is limited.

CONCLUSION

Our project is used to increase percentage of renewable energy for electrical power generation and provides electrically as well as economically efficient power to the consumers. Hence, we have to spread this concept because only renewable energy can survive the world in coming future and in that wind, energy is efficient option. The project carried out by us made an impressing task in the field of electricity department. It is used for to produce the current in windmill unit. The country like India which having more rural population and condition suitable for wind generation through bladeless wind turbine is the best solution.

HAND GESTURE CONTROL WHEELCHAIR WITH OBSTACLE AND FALL DETECTION

A PROJECT REPORT

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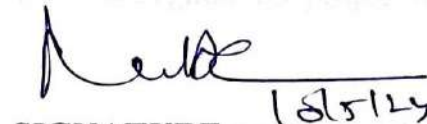
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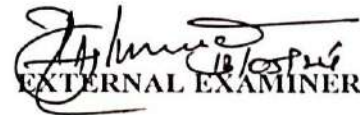
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ABSTRACT

This project approaches to enhance the mobility and safety of individuals with limited mobility by introducing a hand gesture controlled wheelchair system integrated with obstacle detection and fall prevention mechanisms. The proposed system utilizes machine learning algorithms to interpret hand gestures, allowing users to navigate the wheelchair with intuitive gestures. Additionally, the wheelchair is equipped with sensors to detect obstacles in the path and autonomously navigate around them.

Moreover, a fall detection system is implemented using accelerometer and gyroscope sensors to detect sudden changes in orientation indicative of a fall, triggering immediate assistance or preventive actions. Experimental results demonstrate the effectiveness and reliability of the proposed system in providing enhanced mobility and safety for wheelchair users, offering a promising solution for improving their quality of life.

CHAPTER 9

CONCLUSION

The problem for a hand-gesture controlled wheelchair is to provide a more natural and intuitive way for people with disabilities to control their wheelchairs, Traditional wheelchairs are controlled by joysticks or other manual input devices, which can be difficult and tiring to use for people with limited mobility. Hand gesture control offers a more efficient and user-friendly alternative, allowing users to control their wheelchairs simply by moving their hands.

There are several challenges that need to be addressed in order to develop a successful hand- gesture controlled wheelchair. One challenge is to develop a sensor system that can accurately and reliably detect hand gestures.

Another challenge is to develop a control algorithm that can translate hand gestures into wheelchair movements. Finally, the wheelchair must be designed in a way that is safe and easy to use for people with disabilities. Despite these challenges, hand-gesture controlled wheelchairs have the potential to revolutionize the way that people with disabilities move around.

By providing a more natural and intuitive way to control their wheelchairs, hand gesture control can help people with disabilities to live more independent and active lives.

**POWER GENERATION USING SPEED BREAKER AND CHARGING
THE EV's THROUGH NON TOUCH MODE**

A PROJECT REPORT

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ABSTRACT

The combined project aims to revolutionize transportation infrastructure by integrating two innovative technologies namely Wireless Power Transmission for Electric Vehicles (WPT-EV) and Electrical Power Generation from Speed Breakers.

With the rising global concern for environmental sustainability and the transition towards greener energy solutions, this project proposes a holistic approach to address key challenges in the transportation sector.

By leveraging wireless power transmission, the project seeks to enhance the accessibility and efficiency of electric vehicle charging, while also harnessing renewable energy from speed breakers to contribute to the power grid.

This integrated system not only promotes sustainable transportation practices but also offers a practical solution to reduce carbon emissions and foster energy conservation.

Through this project, we aim to demonstrate the potential of innovative technologies to transform transportation infrastructure and pave the way towards a cleaner and more sustainable future

CONCLUSION

This project is made with pre planning, that it provides flexibility in operation. This project "ELECTRICAL POWER GENERATION FROM SPEED BREAKER AND WIRELESS TRANSMISSION OF POWER" is designed with the hope that it is very much economical and help full to many industries and workshops.

This project helped us to know the periodic steps in completing a project work.

This project has also reduced the cost involved in the concern. Project has been designed to perform the entire requirement task which has also been provided. Thus we have completed the project successfully.

**DIGITAL TWIN BASED REAL TIME VISION
SYSTEM FOR TRANSFORMER MONITORING AND
RECTIFICATION**

A PROJECT REPORT

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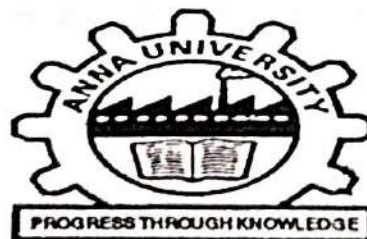
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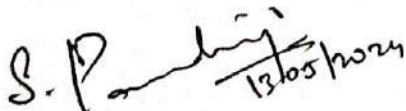

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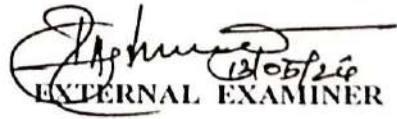
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ABSTRACT

A Digital Twin (DT) is a virtual representation of a physical object which plays an important role in the digital transformation of industry, where an important requirement for intelligent manufacturing is cyber-physical integration. One of the objectives is to improve the performance of the real system using the information generated in the virtual part. This project shows the development of a low-cost DT (Digital Twin) used for monitoring the state of the process and the product development. The increasing digitalization and advancement in information communication technologies has greatly changed how humans interact with digital information. The Project proposes real-time thermal power plant transformer data monitoring, and Digital Twin Tool Monitoring used as screening tool to help identify Fault present in the thermal power plant transformer. In this project, Remote monitoring system is proposed to help operators with low knowledge and experience level comprehend digital twin data of a device and interact with the device.

CHAPTER- 7

CONCLUSION

The proposed technique with results has shown that the protection scheme works properly with accuracy, sensitivity of this scheme very high for the abnormal and faulty conditions. Transformer Health Monitoring will help to identify or recognize unexpected situations before any serious failure which leads to greater reliability and significant cost savings. If transformer is in abnormal condition we can know from anywhere. No human power need to monitor the transformer. Details about the transformer are automatically updated in webpage when the transformer is in abnormal condition.

**AN ENHANCED MODEL FOR DETECTING
OVERHEAD TRANSMISSION LINE FAULTS**

A PROJECT REPORT

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ABSTRACT

Transmission lines are vital lifelines of modern society, delivering electricity to homes, businesses, and essential infrastructure. However, failures in these lines can lead to power outages, equipment damage, and even safety hazards. Timely detection and response to transmission line faults are crucial to minimize their impact. Yet, traditional methods often rely on manual inspections or reactive measures, leading to delays and potential consequences.

This project presents a cost-effective and reliable system for detecting and notifying personnel of faults in transmission lines. The system employs intelligent monitoring to identify four critical events: line shorts, line disconnection, line-to-ground faults, and fire hazards. Upon detecting any of these events, the system promptly sends an SMS notification to predetermined recipients, alerting them to the issue and its location.

By continuously monitoring key electrical, the system accurately detects line shorts and disconnections. Additionally, it utilizes ground fault detection techniques to identify line-to-ground faults, which can be particularly damaging. Furthermore, the system incorporates fire sensors to proactively detect fire hazards near the transmission line, preventing potential equipment damage and safety risks. The SMS notification feature utilizes GSM technology to ensure timely and reliable communication, regardless of geographical limitations.

By integrating intelligent monitoring, fire detection, and SMS notification, the system promotes improved reliability, safety, and efficiency in power transmission operations.

CONCLUSION

From this Project, A GSM-based Transmission Line Monitoring And Indication System That Transmits Information To the control room via SMS. It aids with the early detection of a defect and thereby prevents the improper usage of electricity. The project includes a continuous monitoring system that combines GSM communication and microcontroller technologies. The system is effective in the sense that a complete online monitoring of the distribution transformer is achieved through this system. The use of GSM modem helps in effective message signaling to the receiver. It also depicts the software flow and the hardware architecture. As a result of this Project it will save a significant amount of electricity and making electricity available to a larger number of users in a densely populated country.

**FUZZY LOGIC CONTROLLED BOOST INVERTER
WITH STATCOM TO IMPROVE POWER QUALITY
IN GRID**

A PROJECT REPORT

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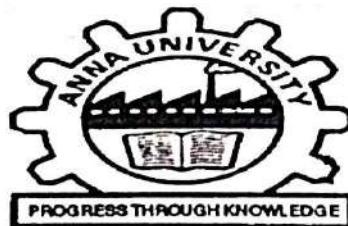
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13/05/2024

INTERNAL EXAMINER


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ABSTRACT

The increasing integration of renewable energy sources and the evolving grid infrastructure have led to a growing need for advanced control strategies to enhance the performance and stability of power electronic converters. This project proposes a novel approach by combining a Boost Inverter (BI) with a Static Synchronous Compensator (STATCOM) employing Fuzzy Logic Control (FLC) for applications in unbalanced grid scenarios.

The Boost Inverter is known for its ability to efficiently generate single-phase AC output from a DC source, making it suitable for renewable energy systems. The presence of grid voltage imbalances, the performance of such inverters can be compromised. To address this issue, a STATCOM is integrated into the system to mitigate voltage sags, swells, and unbalance in the grid.

Simulations and experimental results demonstrate the effectiveness of the proposed Fuzzy Logic Controlled Boost Inverter with STATCOM in maintaining a stable and balanced output voltage, even in the presence of grid asymmetry. The system exhibits improved performance in terms of power quality and enhanced grid integration for renewable energy sources.

CHAPTER 9

CONCLUSION

The integration of a Fuzzy Logic Controlled Boost Inverter with STATCOM presents a promising approach to enhance power quality in electrical grids. The Boost Inverter, controlled by the FLC, offers efficient power conversion and voltage boosting capabilities. Additionally, the STATCOM provides fast and precise reactive power compensation, further enhancing voltage stability in the grid.

By combining these technologies, the system can effectively address power quality issues such as voltage fluctuations and reactive power imbalance. This leads to improved reliability, reduced downtime, and enhanced performance of electrical grids, ultimately benefiting consumers, utilities, and the environment.

**TRANSMISSION OF VIDEO OVER VISIBLE
LIGHT USING LI-FI
A PROJECT REPORT**

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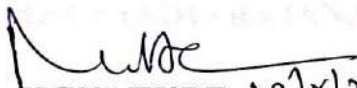
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ABSTRACT

Light Fidelity (Li-Fi) is a wireless technology that utilizes the light to transmit the data, unlike Wired or Wi-Fi. Li-Fi works by modulating the intensity of light emitted by LED bulbs to transmit data.

The main aim of this project is to transmit the video over visible light using Li-Fi technology. It uses light instead of radio frequencies, which has higher data rates and reduced electromagnetic interference. It utilizes the visible light portion in the electromagnetic spectrum (range of 380 nm to 780 nm).

It overcome the issues of Wire and Wi-Fi technology, such as to transmit the data for high speed and secure , the transmission of video using Li-Fi is done.

CHAPTER 9

CONCLUSION

Li-Fi is developing technology, it overcome all the demerits of Wi-Fi. Li-Fi is free from radiation which can be used in the wide range of applications like Hospitals, Industries, Aeroplanes, Radiation restricted area, etc.

In our project We transmitted the video in the range of 110 KB and the duration is 50 seconds - 60 seconds in the distance of 1metre. Time taken to receive the video at the receiver side is 1minute and 30seconds.

Li-Fi uses light waves, So it does not penetrate through walls like Wi-Fi, which can enhance security by confining the signal to specific areas.

Li-Fi networks can implement encryption techniques and advanced security features to protect video data from interception and unauthorized access

**DISTRIBUTION SYSTEM RECONFIGURATION
USING PSO BASED SIMULATION ON PYTHON**

A PROJECT REPORT ON

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INTERNAL EXAMINER

INTERNAL EXAMINER


EXTERNAL EXAMINER

ii


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ABSTRACT

The power loss in a distribution system is substantially larger than in a high voltage transmission system because to lower voltage, higher reactive current, and radial construction. One of the most common solutions to reduce power loss in the distribution system and improve the voltage profile is grid reconfiguration. The main purpose of this project is to develop a methodology for efficient network reconfiguration in radial distribution systems in order to reduce real power losses and increase bus bar voltages.

In a distribution system, network reconfiguration is a common approach to reduce power loss and improve the voltage profile. Reconfiguration of radial distribution system is a significant way of altering the power flow through the lines. This project presents a novel method to interpret the network reconfiguration problem with an objective of minimizing real power loss and simultaneously, improving the voltage profile in radial distribution. A Particle swarm optimization (PSO) is used to reconfigure and recognize the optimal tie switches for reduction of real power loss in a radial distribution system. Different scenarios of reconfiguration of distributed network are precise to study the performance of the proposed technique. The constraints of voltage and branch current carrying capacity are incorporated in the assessment of the objective function. The proposed method has been tested on IEEE 69-bus systems at different load patterns to demonstrate the performance and effectiveness of the predictable method. The outcomes attained, illustrates that improvement in voltages and a reduction in the real power loss.

CHAPTER 10

CONCLUSION

IEEE 69 bus Power distribution networks play a vital role in ensuring the seamless delivery of electricity from generation sources to end-users. However, these networks often encounter challenges related to power loss, which not only affect operational efficiency but also contribute to increased costs and environmental concerns. In light of these challenges, the present study delves into the efficacy of reconfiguration techniques, specifically leveraging Particle Swarm Optimization (PSO), to mitigate power loss and enhance the performance of power distribution networks.

- 1. Pre-Reconfiguration Analysis:** Prior to reconfiguration, the distribution network exhibits significant power loss, adversely impacting operational efficiency and cost-effectiveness. The average voltage profile reflects suboptimal network performance, with deviations observed across various nodes.
- 2. Post-Reconfiguration Analysis:** Following the implementation of PSO-based reconfiguration, a notable reduction in total power loss is observed, indicative of the efficacy of the optimization process. The average voltage profile post-reconfiguration demonstrates improved stability and efficiency, with fewer deviations and enhanced uniformity across the network.

In conclusion, the study highlights the significant potential of reconfiguration techniques, particularly those leveraging optimization algorithms such as PSO, in addressing power loss and enhancing the performance of power distribution networks. The findings underscore the importance of proactive measures aimed at optimizing network efficiency and reliability to meet the evolving demands of modern energy system.

**AN AUTOMATED SOLAR TRACKING FOR
IRRIGATION SYSTEM**

A PROJECT REPORT

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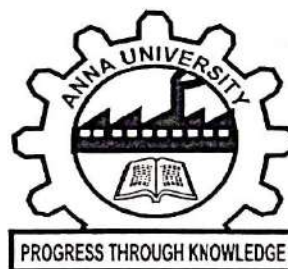
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INTERNAL EXAMINER


EXTERNAL EXAMINER

ABSTRACT

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An automated solar tracking for irrigation system, coupled with a solar photovoltaic (PV) system featuring Maximum Power Point Tracking (MPPT), represents a significant advancement in renewable energy utilization for home grid applications. This innovative system dynamically adjusts the orientation of solar panels to maximize exposure to light intensity, ensuring optimal solar energy harnessing throughout the day. By tracking the sun's position, the system can continuously adapt the panels' angle to capture the maximum amount of sunlight, even as the sun moves across the sky. This capability enhances energy generation and promotes greater efficiency in powering the irrigation system. Integration of MPPT technology further enhances the system's efficiency by continually optimizing the electrical operating point of the solar panels. MPPT ensures that the panels operate at their peak power output, regardless of variations in sunlight intensity or temperature. This results in increased energy production from the solar panels, maximizing the system's overall performance.

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CONCLUSION

In conclusion, the automated solar tracking for irrigation system, equipped with Maximum Power Point Tracking (MPPT) technology, stands as a significant breakthrough in renewable energy utilization for home grid applications. By dynamically optimizing both solar panel orientation and electrical operating points, the system ensures maximum energy efficiency. This innovative integration not only enhances energy generation but also seamlessly integrates irrigation control, offering a comprehensive solution for sustainable energy and water management in residential settings. The real-time monitoring features of the system play a crucial role in enhancing user engagement and promoting sustainable energy practices. With access to instant feedback on system performance, users can make informed decisions to optimize energy usage and irrigation practices. This user-friendly approach fosters greater awareness and participation in sustainable energy practices, contributing to a more environmentally conscious lifestyle. This integrated approach holds promise for enhancing energy sustainability in residential settings. By leveraging advanced technologies like MPPT and automated irrigation control, the system paves the way for further advancements in renewable energy technologies. It not only reduces dependency on conventional energy sources but also demonstrates the potential for renewable energy to power essential functions like irrigation, offering a glimpse into a more sustainable future for homeowners.

DESIGN OF RAILWAY PLATFORM FOR ACCIDENT PREVENTION

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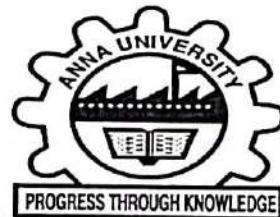
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CONCLUSION

In conclusion, the design of railway platforms with a primary focus on accident prevention is fundamental for ensuring the safety of passengers, staff, and visitors. Throughout this exploration, we've underscored the significance of incorporating proactive safety measures into every aspect of platform design.

By integrating features such as clear signage, proper lighting, non-slip surfaces, and accessible infrastructure, railway platforms can significantly reduce the risk of accidents such as slips, trips, and falls. Moreover, the implementation of advanced technologies like sensors, automation systems, and real-time monitoring adds another layer of safety by enabling swift responses to potential hazards.

Additionally, the deployment of safety mechanisms such as platform barriers, escalator and lift controls, and emergency stop systems acts as crucial safeguards against accidents related to passenger movement and platform equipment.

**DESIGN OF SOLAR CAR WITH BATTERY AND
REAL TIME ACCESS**

A PROJECT REPORT ON

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ABSTRACT

Due to the scarcity of fossil fuels in the future and their negative impact on the environment, an alternative energy source must be discovered. Wind power is a clean and sustainable natural resource that has yet to be fully utilized in the automotive industry. Also, the sun is probably the most important renewable source of energy available today. The electric model system is a renewable energy system, which helps conserve energy by reducing the use of fuel in vehicles. The need for electric vehicles is increasing day by day with the increasing problems of pollution. There are many hybrid vehicles that still require fuel for their primary running functions. So, this system is about to complete electricity of the vehicle using conventional energy such as solar and regenerating energy with a negligible use of fuel. The energy obtained from the solar panel is stored in the lead-acid (primary) battery, which is used for ignition and running purposes. Regenerate energy collected from moving the vehicle wheels is stored for the secondary battery, and when the primary battery energy is low, the secondary battery energy will be on, and the temperature sensor can be used to monitor the battery's temperature level. If the temperature value is abnormal, the buzzer will be on, and the battery's energy level and temperature level will be displayed through the LCD display and DC motors used on the vehicle wheels.

CONCLUSION

In conclusion, the hybridization system presented in this project represents a pioneering solution to the impending scarcity of fossil fuels and their detrimental environmental impact. By focusing on achieving complete electric operation while minimizing reliance on traditional fuels, the system offers a sustainable transportation option that aligns with the escalating concerns surrounding pollution and the increasing demand for electric vehicles. Through technological innovation and a commitment to environmental conservation, this eco-friendly solution not only mitigates pollution issues but also contributes to the global effort towards sustainability. Continues addressing of transportation challenges in an era of dwindling fossil fuel reserves and climate change, the implementation of such innovative hybridization systems will play a crucial role in shaping a cleaner, greener, and more sustainable future for generations to come.

**DETACHABLE CONVERSION KIT FOR MANUAL
WHEELCHAIR TO ELECTRICAL TRIKE**

A PROJECT REPORT ON

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ABSTRACT

Mobility of the physically challenged people is a great concern of the society. In most cases, the movement of wheelchairs is controlled with the help of a joystick or by a companion. In most of the developing country, most of the physically disabled people of middle class and lower middle-class families can't afford to buy electric wheel chair as the cost is pretty high.

This Project focuses on designing a detachable kit that convert manual wheelchair into an electrical trike for the physically challenged people to travel from one place to another. In our project we present the implementation of a wheelchair attachment based on a power wheelchair controlled by Hub Motor.

Our project also focuses on the minimization of cost for the conversion of an electric wheelchair with well-structured design. Our project has been designed for the all-possible direction of movements like left, right, straight and back. Moreover, the hub motors are used for the movement of the wheels for the purpose of lower speed movement of chair which will be convenient for the physically challenged.

This project utilizes the power from the lead acid batteries which are rechargeable, harmless, and weightless compared to others available. This work also concentrates on detachable design for use of wheelchair conveniently and efficiently.

CONCLUSION

The detachable conversion kit for manual wheelchairs offers a transformative solution, enhancing mobility and independence for users. Its adaptability and ease of attachment make it a practical choice for those seeking to convert their manual wheelchair into an electrical one without need for purchasing an entirely new chair. By providing motorized assistance, the kit addresses the challenges faced by individuals with limited strength or mobility, allowing them to navigate various terrains with greater ease and comfort.

Its detachable design ensures flexibility, enabling users to switch between manual and electric modes based on their needs and preferences. The detachable design not only enhances the trike's functionality but also promotes sustainability by encouraging multimodal transportation and reducing reliance on single-use vehicles.

Additionally, the integration of electric propulsion contributes to eco-friendly mobility solutions, minimizing carbon emissions and promoting cleaner air in urban environments.

SMART CITY ENERGY MANAGEMENT SYSTEM

A PROJECT REPORT

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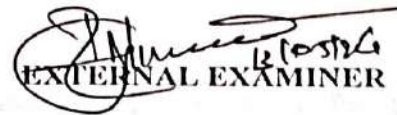
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ABSTRACT

In the smart city, advanced monitoring systems are implemented to optimize various aspects of urban life. These systems include sensors that detect sunlight levels to adjust street lighting accordingly, ensuring efficient energy usage and safety. Parking alert systems utilize real-time data to guide drivers to available parking spaces, reducing congestion and emissions. Vehicle monitoring technology linked to signal lights, traffic flow and enhancing safety Information updates are displayed on LCD screen across the city, providing residents with timely updates on traffic conditions and other relevant news. The city leverages solar energy sources to power these systems, demonstrating a commitment to sustainability and environmental.

CONCLUSION

In our project, the street light and smart parking can be controlled automatically using Arduino and a timer delay is set to control the glow of alternate loads. The installation cost, operational cost are very less and the output efficiency are high. When compared to other topologies, Arduino plays a vital role in automatic control. Continuous working and accurate output efficiency Further we have attached a solar supply with battery to overcome power interruption and energy management. the smart parking can be controlled automatically using Arduino and LCD display is used to the determine the output The installation cost, operational cost are very less When compared to other topologies, Arduino plays a vital role in automatic control. A solar panel with battery used as a source of power supply vital role energy management.