STELLA MARY'S COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai, Accredited by NAAC & NBA (Mech& CSE))
Aruthenganvilai, Kallukatti Junction Azhikal Post, Kanyakumari District-629202, Tamil Nadu.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Academic Year – 2023-2024/EVEN

Year &Sem : IV / 08
Subject Code : EE8811
Subject Name : Project Work

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ABSTRACT

The management of municipal waste in urban areas is a critical challenge that demands innovative solutions to ensure environmental sustainability, public health, and efficient resource utilization. Traditional waste management practices often fall short in addressing the complexities of modern urban environments, leading to issues such as overflowing bins, irregular collection schedules, and inefficient disposal methods. In response to these challenges, this paper proposes a Smart Waste Management (SWM) system that harnesses the power of Internet of Things (IoT) technology to revolutionize garbage monitoring and disposal processes. The SWM system outlined in this paper integrates IoT sensors, communication networks, data analytics, and smart devices to create a comprehensive and proactive waste management framework. At its core, the system relies on IoT sensors installed within garbage bins to monitor fill-levels in real-time. These sensors utilize various technologies such as ultrasonic, infrared, or weight-based measurements to accurately gauge the amount of waste present. The collected data is then transmitted wirelessly through communication networks, such as Wi-Fi, cellular, or LPWAN (Low Power Wide Area Network), to a centralized data analytics platform. The data analytics platform serves as the brain of the SWM system, where sophisticated algorithms process incoming data to derive meaningful insights and actionable intelligence. By analyzing historical data patterns and current trends, the platform can predict future garbage accumulation rates, optimize collection routes, and dynamically allocate resources based on demand. Additionally, the platform enables stakeholders to visualize real-time data through intuitive dashboards and reports, empowering decision-makers with the information needed to make informed choices.

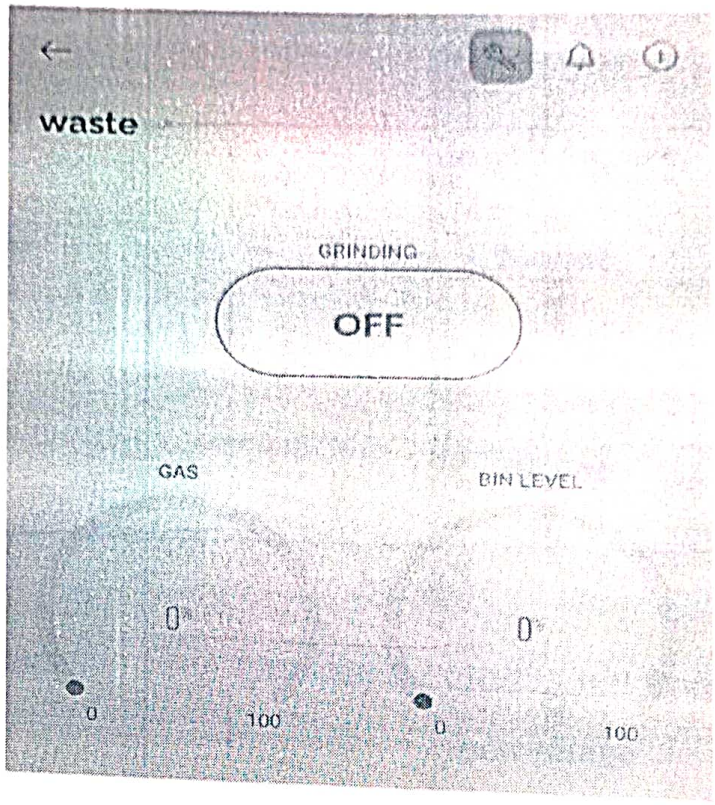

Figure7.1 Controland Measurements of Gas, Bin Level and Grinding

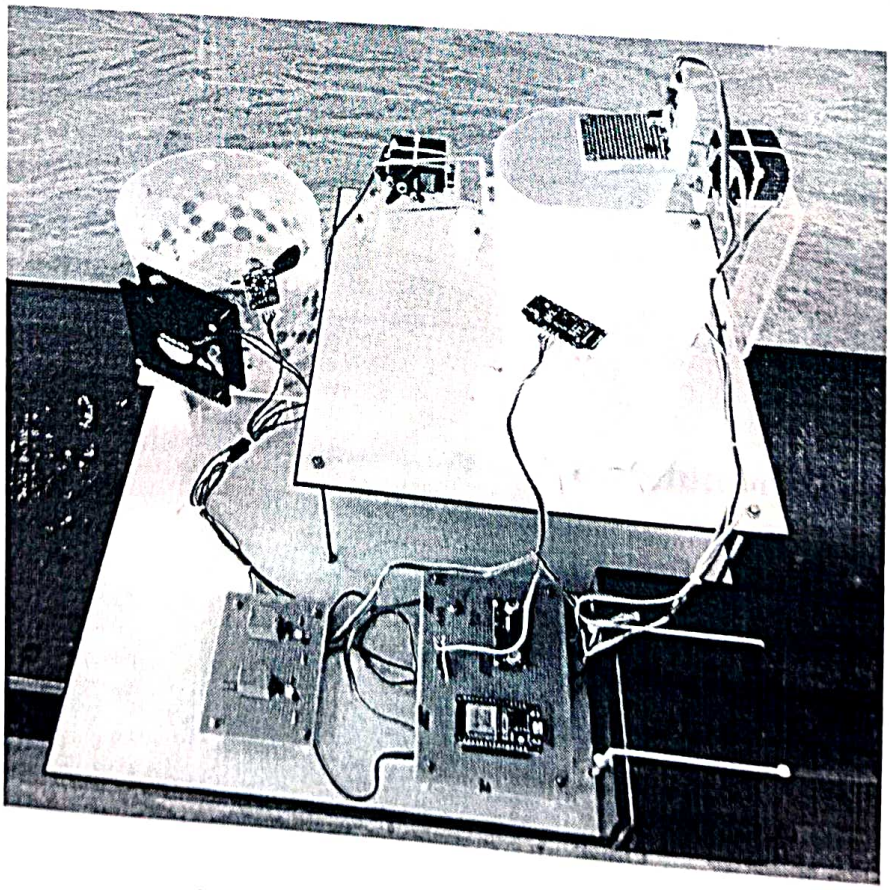

Figure 7.2 Hardware Image

ABSTRACT

Plastic waste has become a global environmental crisis, especially in our oceans. The alarming accumulation of plastic debris poses a significant threat to marine life, ecosystems, and human health. In response to this urgent challenge, effective plastic waste collection methods have been developed to tackle the issue at its source. These innovative approaches aim to retrieve and remove plastic waste from the oceans, employing a combination of advanced technologies, international collaborations, and community engagement. This project proposes effective plastic waste collection from the oceans. The system utilizes an ultrasonic sensor to detect the presence of waste plastics in the water. Once detected, the sensor sends signals to the Arduino microcontroller. The Arduino processes the received data and sends commands to the servo motors and relays. The servo motors are responsible for controlling the movement of a specially designed collection mechanism. This mechanism consists of a net, which is deployed into the water to capture the waste plastics. The servo motors precisely position the collection mechanism, ensuring efficient and accurate retrieval of the plastics. Upon successful collection, the waste plastics are transferred to a processing unit. The processing unit utilizes the power supply to drive a DC motor, which performs the necessary actions to transform the waste plastics into a manageable form. It is compressing the plastics to reduce their size and facilitate further processing. The processed waste plastics are then utilized for various purposes, such as recycling, energy generation, or manufacturing new products. This system not only helps in removing waste plastics from the ocean but also contributes to the circular economy by promoting the reuse and recycling of these materials.

CHAPTER 5
RESULTS AND DISCUSSIONS

5.1 RESULTS

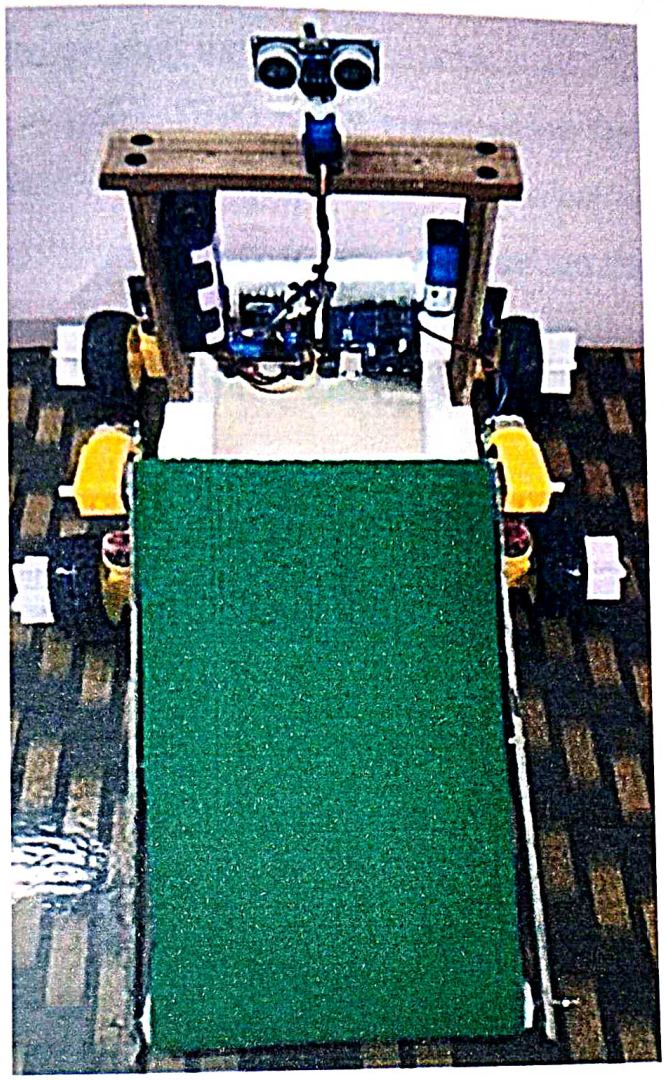

Figure 5.1: Hardware Image

The final output image is shown in figure 5.1. The deployment of specialized hardware with mechanisms for collecting, sorting, and processing is necessary for the efficient collection of plastic trash from oceans. The definition of the image output process includes the employment of cameras and sensors to keep an eye on the data gathering procedure, help with sorting tasks, and analyze data for reporting and decision-making. Firstly, the system utilizes multiple ultrasonic sensors strategically positioned to detect the presence and levels of plastic waste in the ocean. These sensors serve as the primary input devices, continuously monitoring the water surface for debris. When the ultrasonic sensors detect plastic waste, they transmit corresponding signals to the Arduino UNO board for processing. Upon receiving signals from the ultrasonic sensors, the

The process to extract, transport and refine oil and gas is complex and wrought with danger to workers and to assets. One of the most dangerous is the risk of fire or explosion due to the presence of flammable gases and liquids. Toxic gases and chemicals encountered throughout the processes add the risk of asphyxiation, burns, cancer and system corrosion.

To reduce the risks to life, property or the environment, oil and gas companies follow mandatory safety practices. Portable and fixed gas detection systems, and flame detection systems play a critical role in monitoring the environment for hazards. Respiratory or other safety gear can then be provided to workers to keep them safe.

The good news is that the oil and gas industry, as a result of understanding and addressing hazards through mandatory regulations, has fewer safety incidents today than in the past.

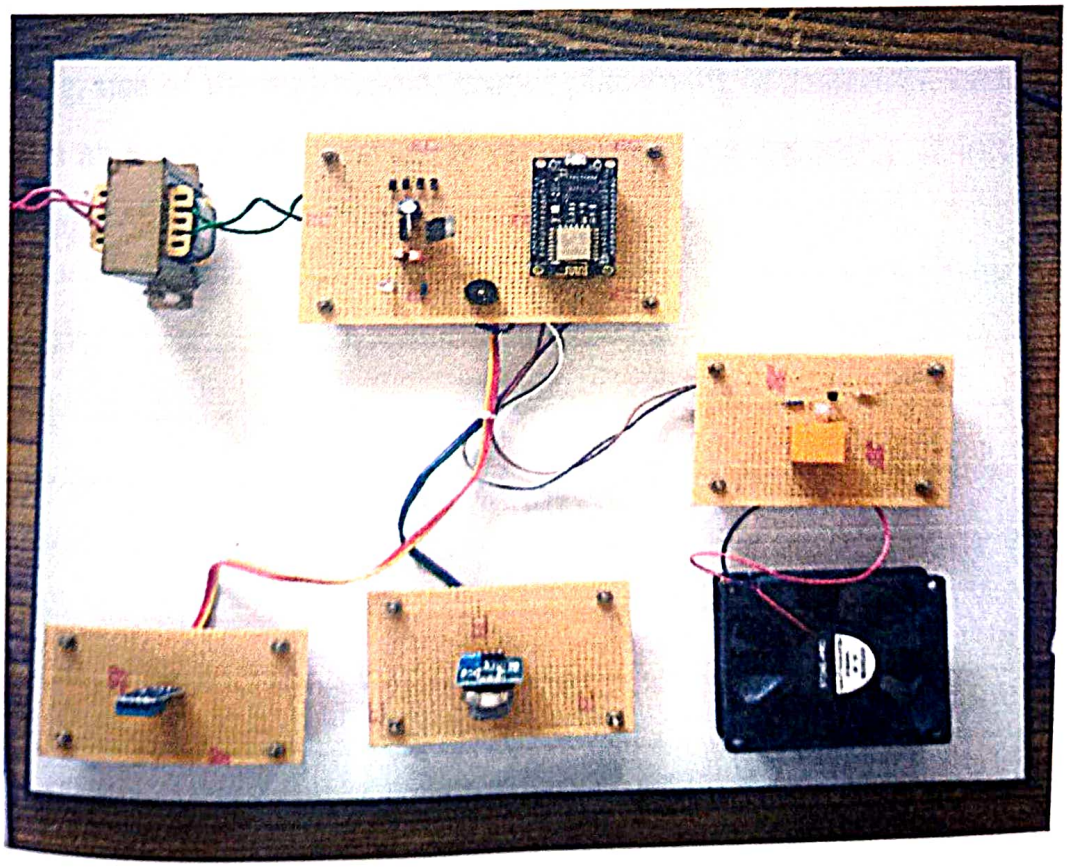

Figure 7.2 Hardware image

ABSTRACT

The oil and gas industry faces significant challenges in ensuring the safety of personnel and facilities due to the inherent risks associated with extraction, processing, and transportation operations. In response, this paper proposes an IoT-enabled explosion risk detection system designed to mitigate these risks by providing real-time monitoring and early warning capabilities. The system employs a network of IoT sensors strategically deployed throughout the facility to detect hazardous gases, vapors, and environmental conditions. These sensors transmit data to a centralized platform, where advanced algorithms analyze the information for anomalies indicative of potential explosion risks. Machine learning techniques are utilized to continuously refine the system's predictive capabilities based on historical data and industry standards.Upon detecting a potential risk, the system triggers alerts through visual, auditory, and mobile notifications, enabling swift response by personnel. Furthermore, integration with control systems allows for automated mitigation measures, such as shutdown procedures or safety mechanism activation.Remote monitoring and management capabilities ensure continuous oversight, while regular maintenance and calibration activities uphold sensor accuracy and system reliability over time.By implementing this IoT-enabled explosion risk detection system, oil and gas companies can enhance safety protocols, reduce the likelihood of accidents, and safeguard both personnel and assets from potential harm.

ABSTRACT

In remote communities worldwide, access to reliable electricity is often a challenge due to the absence of traditional grid connections. Off-grid renewable energy solutions offer a promising avenue to address this issue sustainably. This abstract provides a comprehensive overview of various off-grid renewable energy options tailored to the needs of remote communities. Solar power stands out as a prominent solution, leveraging photovoltaic (PV) systems to harness sunlight and convert it into electricity. With advancements in solar technology and decreasing costs, solar panels have become increasingly viable for off-grid applications. Furthermore, battery storage systems complement solar power by storing excess energy for use during periods of low sunlight. Wind power presents another compelling option, utilizing wind turbines to capture the kinetic energy of the wind and generate electricity. Particularly suitable for areas with consistent wind patterns, wind power can provide a reliable source of energy when integrated with storage systems and other renewable sources. Micro-hydro systems harness the power of flowing water from streams or rivers, offering a renewable energy solution for communities located near water sources. Even small-scale hydroelectric systems can provide a steady supply of electricity, contributing to energy independence and sustainability. In addition to these primary renewable energy sources, biomass energy derived from organic matter such as wood or agricultural waste holds potential for off- grid applications. Biomass can be burned to produce heat or electricity, offering a reliable energy source in regions with abundant biomass resources. Hybrid systems, combining multiple renewable energy sources with energy storage, provide enhanced reliability and resilience, ensuring a continuous power supply even in challenging conditions.

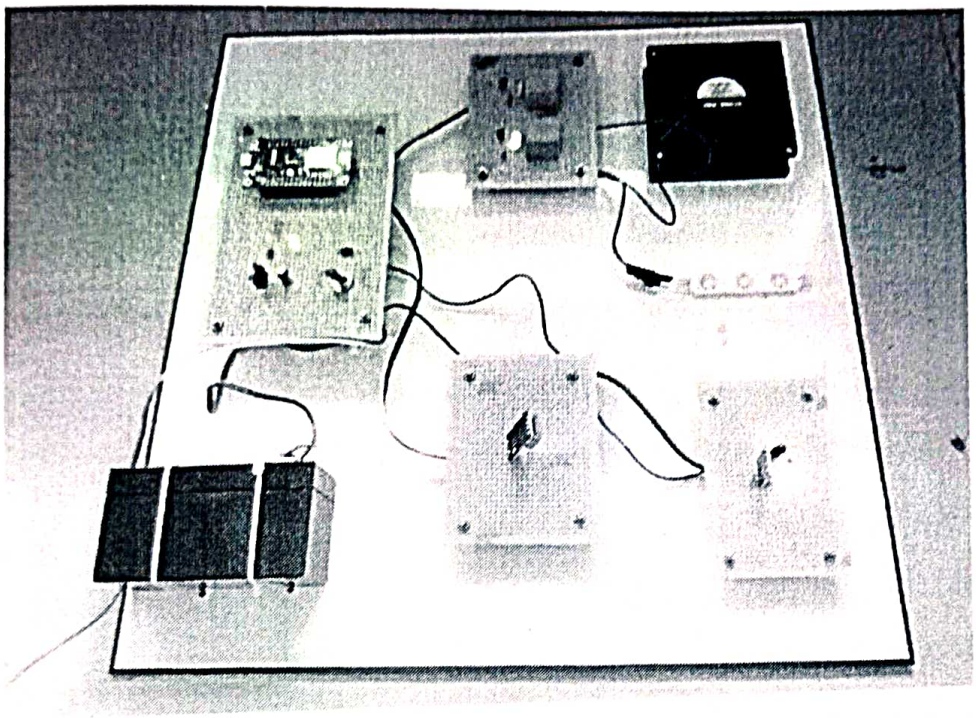

Figure 7.6: Hardware View of Fan on Status

ABSTRACT

The adoption of solar energy as a primary source of electricity generation is contingent upon maximizing the energy conversion efficiency of photovoltaic systems. Through a synthesis of recent research and development efforts, this study explores various strategies for improving solar panel performance. Key areas of innovation include the integration of bifacial solar panels with dynamic tracking systems to optimize sunlight capture, the application of smart reflective coatings and micro- optical/nanostructural enhancements to increase light absorption, and the utilization of tandem solar cell configurations combining perovskite and silicon technologies to broaden the spectrum of captured light. Moreover, the paper discusses the role of integrated energy storage solutions, such as advanced batteries and hydrogen fuel cells, in mitigating intermittency challenges associated with solar power generation. It also highlights the significance of artificial intelligence (AI) optimization algorithms for real- time performance monitoring and operational adjustments. Additionally, the study emphasizes the importance of establishing robust recycling infrastructure for end-of-life solar panels to promote environmental sustainability and resource conservation. Furthermore, it advocates for community solar initiatives to foster widespread access to solar energy and promote social equity. By integrating these diverse approaches, the advancement of solar panel efficiency can be accelerated, driving down costs and increasing the competitiveness of solar energy in the global energy landscape. This holistic approach underscores the pivotal role of innovation in realizing the full potential of solar power as a clean and renewable energy source.

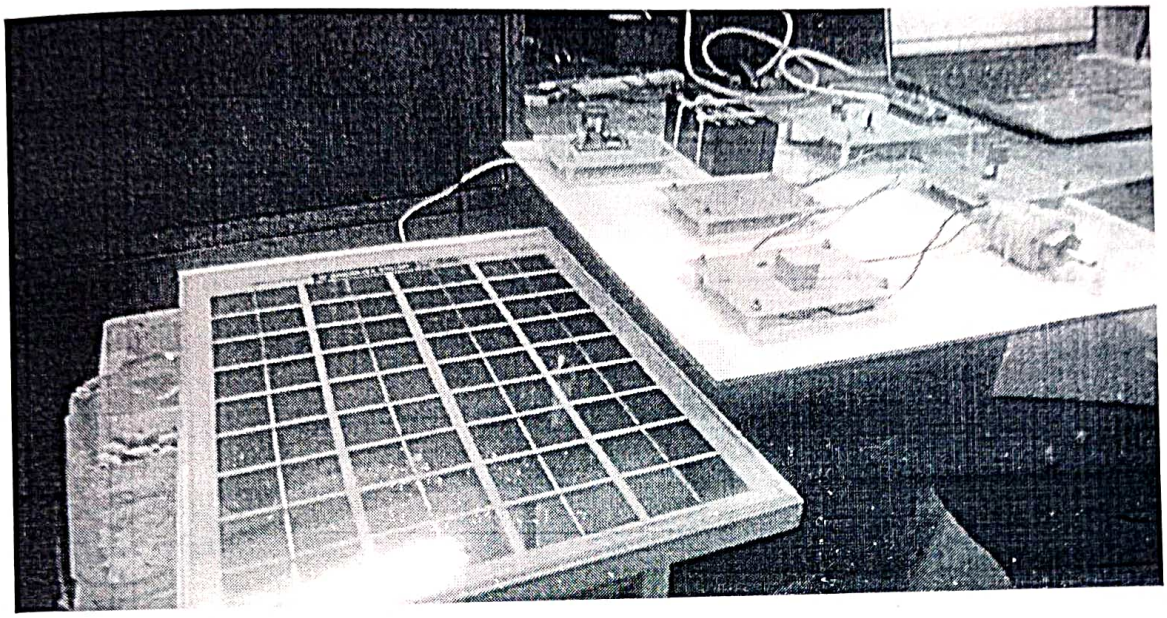

Figure 6.1 Hardware Image

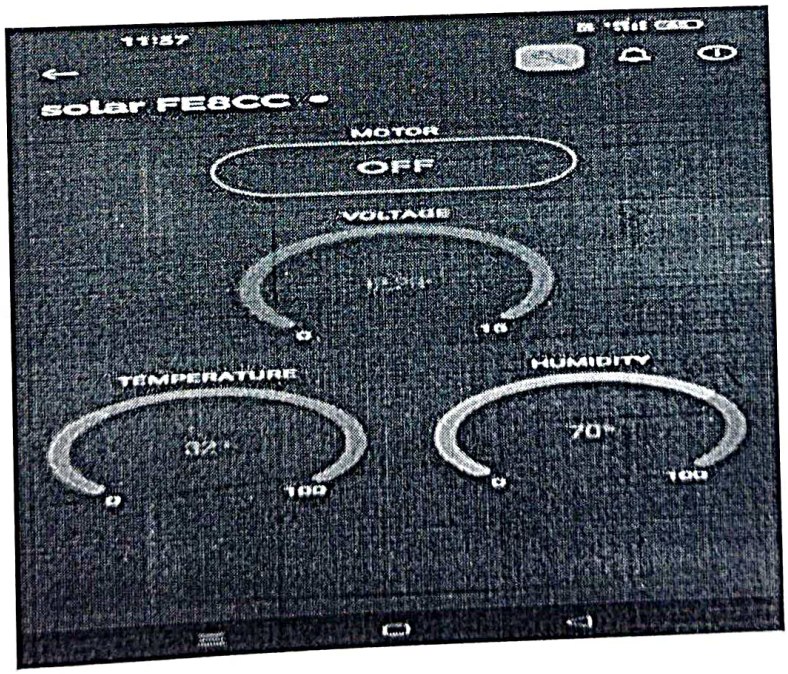

Figure 6.2 Software Image

ABSTRACT

The growing emphasis on sustainable transportation solutions has led to an increased interest in electric bicycles (E-cycles) as viable alternatives to conventional modes of transportation. In this project, we present the development of an innovative E-cycle system incorporating advanced technologies to enhance performance, usability, and cost-effectiveness. Our system features a Permanent Magnet DC (PMDC) motor as the primary propulsion mechanism, controlled by a sophisticated controller for precise speed and torque regulation. Additionally, we integrate regenerative braking technology to maximize energy efficiency and extend battery autonomy. A key innovation of our project is the implementation of a dual-battery system, enabling seamless battery swapping to ensure continuous operation and extended range. When one battery depletes, the system automatically switches to the backup battery, providing uninterrupted power supply for the rider. This novel approach enhances user convenience and addresses common limitations associated with single-battery E-cycles. Furthermore, our system incorporates LCD display provides essential information such as battery percentage, enhancing the user experience. Additionally, sensor modules, including current and voltage sensors, as well as Light Dependent Resistors (LDR), contribute to intelligent system management and automated control functionalities. The integration of relay modules facilitates seamless battery swapping and enables the implementation of additional features, such as automatic light control. Our project aims to deliver a cost-effective E-cycle solution that leverages cutting-edge technologies to provide a sustainable and user-friendly mode of transportation. By combining performance, innovation, and affordability , our E-cycle system represents a promising step towards promoting eco-friendly mobility and reducing reliance on fossil fuels.

Fig 8.1 Performance Analysis: Observations and Insights

2 Performance Evaluation:

- **Speed and Acceleration:** Our tests reveal that the electric bicycle achieves a maximum speed of 26 kilometers per hour, with smooth acceleration characteristics. Acceleration from 0 to 20 kilometers per hour is achieved in approximately 6 seconds, demonstrating efficient power delivery and responsiveness.
- **Range and Efficiency:** Analysis of the range and efficiency metrics indicates that the electric bicycle can travel up to 47.04 kilometers on a single battery charge. The average energy consumption is measured at 6 watt-hours per kilometer, showcasing the system's energy efficiency and sustainability.

.3 User Experience Assessment:

- **LCD Display Interface:** Feedback from test riders highlights the clarity and readability of the LCD display, particularly the battery percentage indicator. Riders appreciate the intuitive user interface design, which allows for easy monitoring of battery status and adjustment of riding behavior.

CHAPTER-6

RESULTS AND DISCUSSION

6.1 DISCUSSION

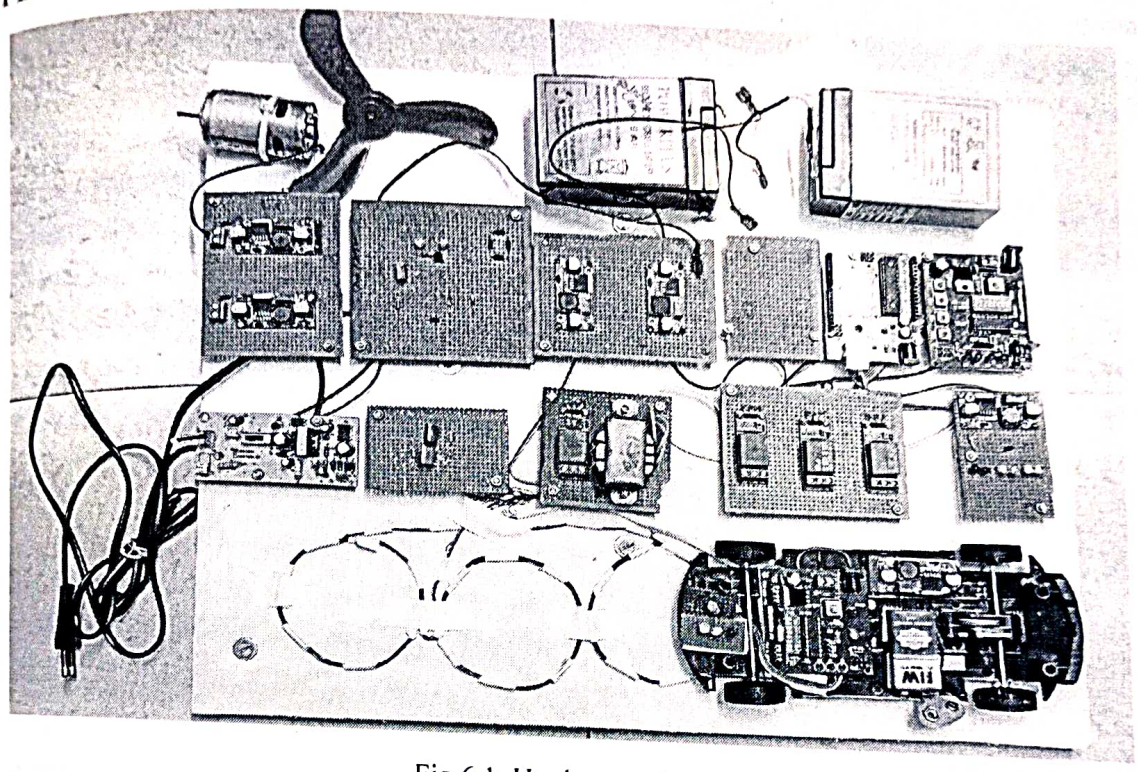

Fig 6.1: Hardware View

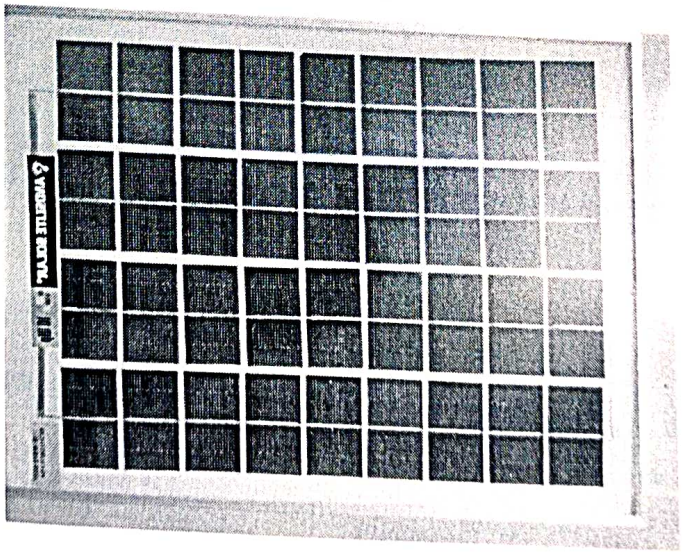

Fig 6.2: Solar Panel 12v 10w

The convergence of wireless charging for moving electric vehicles with a hybrid charger powered by solar and windmill energy, coupled with the integration of road signals displayed inside the car using radio signal transmitters and receivers, presents a transformative paradigm in transportation and technology. The utilization of renewable energy sources like solar and windmill power in the hybrid charger underscores a commitment to sustainable mobility. By harnessing clean energy, this system reduces

ABSTRACT

The integration of wireless charging technology with renewable energy sources like solar and wind power has sparked a revolution in the realm of electric vehicle (EV) infrastructure. This paper delves into the concept of wireless charging for moving EVs through a hybrid charger system that harnesses solar and windmill energy, reshaping the landscape of sustainable transportation. Traditional EV charging methods often require vehicles to be stationary at charging stations, limiting their usability and convenience, especially for long journeys or commercial fleets. The hybrid charger system breaks this barrier by enabling continuous charging while EVs are in motion, thanks to renewable energy sources.

At the heart of this system are solar panels and windmill generators strategically placed along roadways or integrated into charging stations. These components capture sunlight and harness wind energy, respectively, converting them into electrical power. The hybrid charger then utilizes wireless charging technology, such as inductive power transfer (IPT) or magnetic resonance coupling, to transfer this energy to EVs equipped with receiving coils

Road signal information directly into vehicles through radio signal transmitters, enhancing the driver's situational awareness and promoting safer driving practices. Unlike traditional road signal indicators that rely on visual cues, this approach leverages technology to transmit real-time road signal data directly to in-car displays, revolutionizing the driving experience.

The integration of radio signal transmitters into road signal infrastructure enables the broadcasting of signal information, including traffic lights, speed limits, and road conditions, to nearby vehicles equipped with compatible receivers. This data transmission occurs in real time, providing drivers with up-to-date information to make informed decisions while on the road

ABSTRACT

Efficient management of battery temperature is critical for the performance and longevity of electric vehicle (EV) batteries. In this Project, we propose a predictive model utilizing temperature monitoring and machine learning algorithms, specifically Random Forest, to forecast battery temperature in EVs. By leveraging real-time data from temperature sensors embedded in the battery system, our model aims to provide accurate predictions, enabling proactive thermal management strategies to optimize battery health and performance. we focus on collecting comprehensive data on battery temperature, voltage, current, and motor speed.The data is then transmitted to the cloud platform ThingSpeak for storage and analysis. ThingSpeak's versatile features facilitate efficient data management and visualization, enabling us to monitor and track the dynamic behaviour of the EV's battery system in real time. Next, we employ the Random Forest algorithm, known for its robustness and ability to handle complex datasets, to develop the predictive model for battery temperature. By training the model on historical data and incorporating features such as ambient temperature, vehicle speed, and charging patterns, we aim to capture the multifaceted factors influencing battery temperature dynamics.In conclusion, Project presents a comprehensive framework for efficient battery temperature management in electric vehicles (EVs) through the integration of temperature monitoring, machine learning algorithms, and cloud-based analytics by using machine learning. Leveraging real-time data from embedded sensors, we have developed a predictive model using the Random Forest algorithm to forecast battery temperature accurately

ABSTRACT

This paper introduces a comprehensive women's safety system leveraging IoT technology, featuring an ESP32 Cam for live video capture, heartbeat sensors for health monitoring, and an emergency button for instant assistance. In the event of violence, the system autonomously triggers a pepper spray deployment mechanism, enhancing women's safety in precarious situations. The ESP32 Cam enables real-time video monitoring, facilitating remote assistance and evidence collection. Heartbeat sensors continuously monitor vital signs, providing early detection of health emergencies. The emergency button serves as a direct communication channel, activating immediate response protocols when pressed. Upon detecting a violent encounter, the system activates the pepper spray mechanism, dispersing a non-lethal deterrent to deter attackers and create a window for escape. This multifaceted approach integrates surveillance, health monitoring, and self-defence functionalities into a single, user-friendly device. The system prioritizes user safety, privacy, and autonomy, offering women a reliable means of protection in various contexts. Future research aims to evaluate the system's efficacy in real-world scenarios, assess user feedback, and refine its design for widespread adoption. Overall, this women's safety system represents a significant advancement in leveraging IoT technology to address gender-based violence and promote women's empowerment and security.

The predicted battery temperatures are relayed to the EV's onboard display unit or telematics system, providing drivers with insights into current and projected battery conditions. Alerts and recommendations can be generated based on predefined thresholds or predictive analytics, enabling proactive measures to mitigate thermal stress and prevent overheating or degradation.

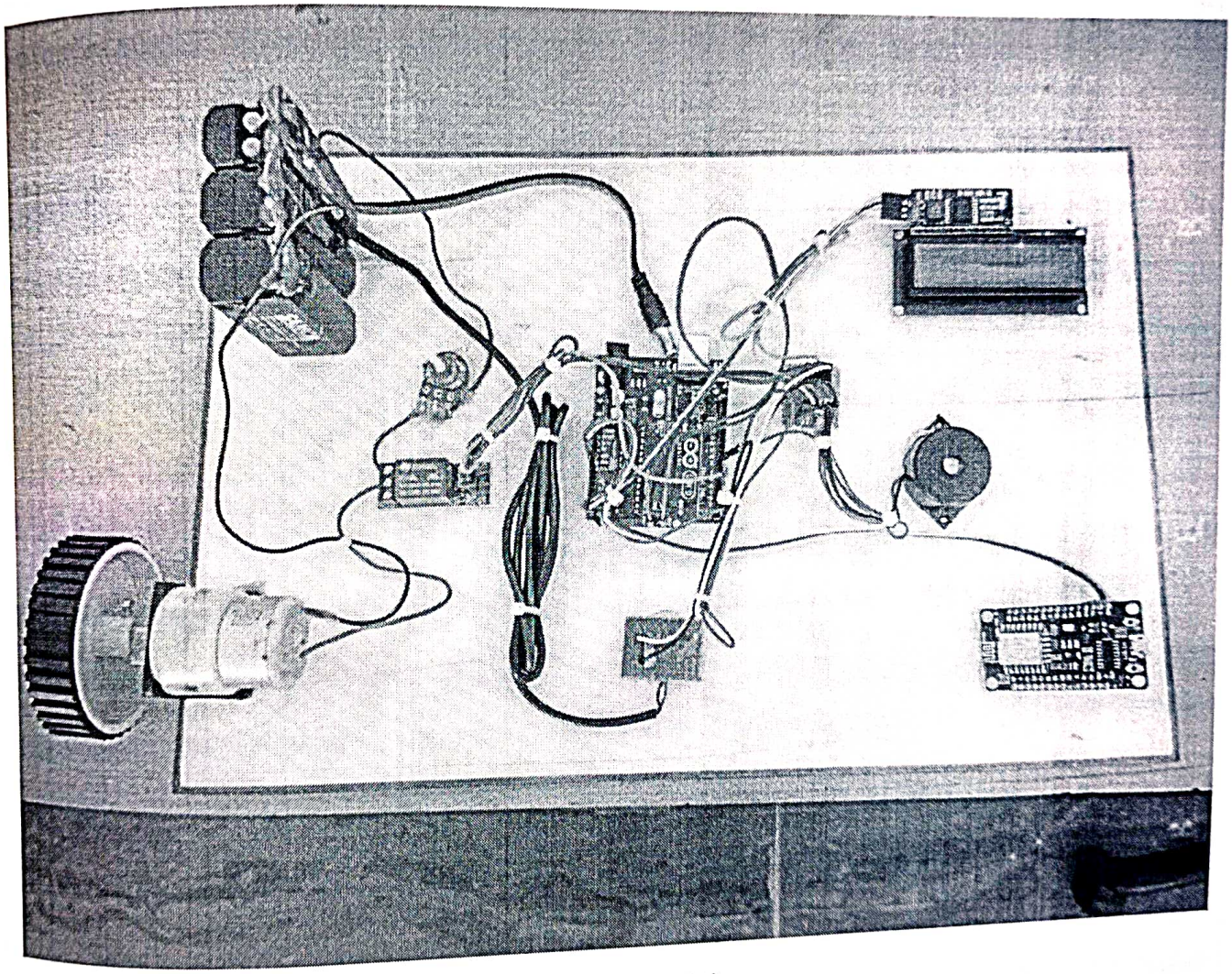

Fig 7.1 Hardware View

Overall, this hardware-based solution for battery temperature prediction enhances EV performance, safety, and reliability by providing actionable insights for optimal battery management. By leveraging advanced sensing, processing, and predictive capabilities, it enables efficient utilization of battery resources, extends battery lifespan, and contributes to the widespread adoption of electric vehicles in the automotive industry

CHAPTER 7

HARDWARE REVIEW

7.1 HARDWARE VIEW

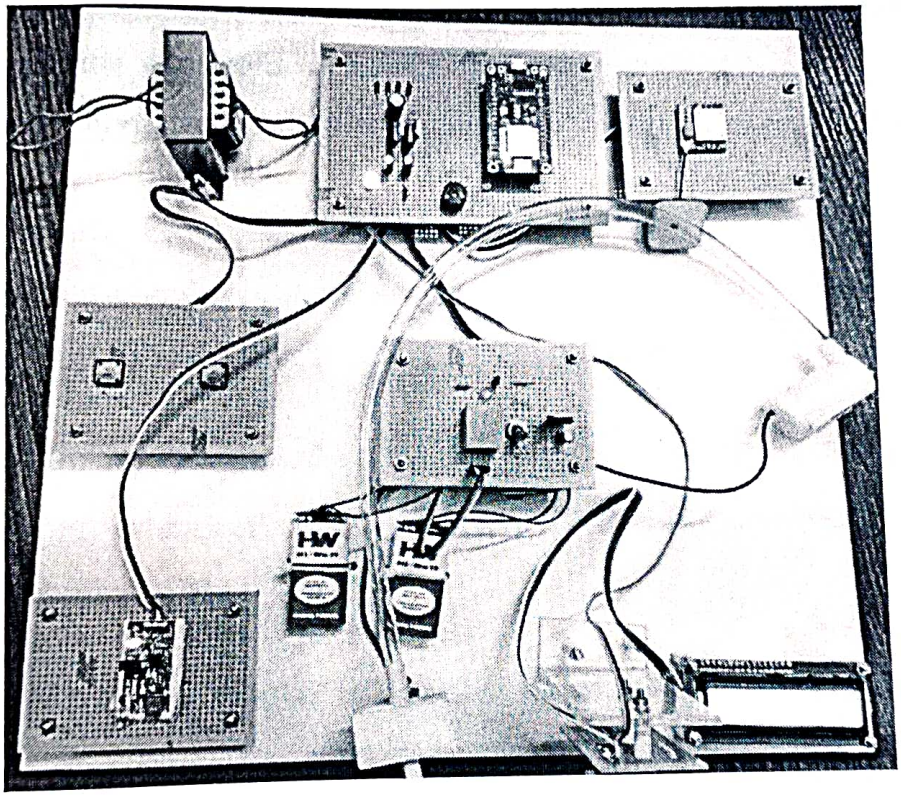

Fig.7.1 Hardware View

The hardware view represents the physical embodiment of the women's safety gadget, where various components seamlessly integrate to create a comprehensive safety solution. Each hardware component plays a crucial role in enhancing safety and security for women facing potential threats.

- **ESP32 Cam:** This device serves as the central hub, capturing live video footage and streaming it in real-time via Wi-Fi. It provides crucial visual evidence during emergencies, enabling remote monitoring and intervention.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

INTERNSHIP DETAILS (Academic Year 2023 -2024/EVEN)

Date:20/08/2024

Batch No.	Organization offered Training	Year	Sem	Title of the Training	Name of the Student	Total No. of Students	Duration
1	ASVA 3D WORLD, Nattalam	II	04	Implant Training	1. Sujin Mon P 2. Vishnu R	2	
2.	Sub-Station Chemponvilai	III	06	Implant Training	1. Suvatha M 2. Renuka K 3. Rebisha R 4. Epsibha S	4	22-07-2024 to 26-07-2024
3.	WIPRO INFRASTRUCTURE, Chennai	IV	08	Trainee	1. Alexpandian S	1	29-01-2024 Onwards
4.	Ashok Leyland, Ennore, Chennai -57	IV	08	Apprentice	1. Abinesh A 2. Ramprakash M R 3. Sivasankar K 4. Siva S 5. Winclin Rijo J 6. Minish D 7. Prabin S 8. Aswin S 9. Rexon Leso J 10. Julius Niwin.L 11. Sahaya Lismen Rai.S 12. Kamesh. S 13. Naseem. A	13	January 2024 Onwards

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

INTERNSHIP DETAILS (Academic Year 2023 -2024/ODD)

Date:13/03/2024

Batch No.	Organization offered Training	Year	Sem	Title of the Training	Name of the Student	Total No. of Students	Duration
1	SARK SOLAR POWER SYSTEM, Nagercoil	III	05	Renewable Energy Trainee	1.Babu Hussain.S 2.Rijo.A 3.Asha.R 4.Epsibha.S 5.Manji.N 6.Rebisha.R 7.Renuka.K 8.Suvatha.M	8	13-01-2024 to 07-02-2024
2	SARK SOLAR POWER SYSTEM, Nagercoil	III	05	Renewable Energy Trainee	1.Anbu Meshach P 2.Jaison S 3.Akash M 4.Aswin C 5.Manikandan A 6.Sutheesh S 7.Abithran M 8.Pravin S 9.Anand M P	9	22-01-2024 to 03-03-2024
3	R J CONSULTANT & ENGINEERS, Palakad	III	05	Manufacturing and Installation of Electrical Machineries	1.Poovarasan E	1	10-07-2023 To 14-07-2023
4.	DALMIA WIND FARM, Aralvaimozhi	II	03	Internship	1. Joselin Jenifer J 2. R. Prakash 3. S.Dharshini 4. M S Shibiya	7	26-02-2024 To 02-03-2024

					5. A S Arshya 6. A Mahesh Kumar 7. S Micheal Raj		
5.	WIPRO INFRASTRUCTURE, Chennai	IV	07	Trainee	1. Alexpandian S 2. Bijo Johnson 3. Abishek K 4. Jettison Aksno J	4	3 Months [August 2023 to October 2023]

HoD

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CERTIFICATE

This is to certify that Selvi Suvatha M, III Year B.E., (Electrical and Electronics Engineering) of Stella Mary's College of Engineering, Azhickal, has successfully completed the Inplant training in Sub - Station Chemponvilai from 22.07.2024 to 26.07.2024 (5 days).

Nagercoil

9 AUG 2024

SUPERINTENDING ENGINEER
K.K.E.D.C./NAGERCOIL.

TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION LIMITED

CERTIFICATE

This is to certify that Selvi Renuka K, III Year B.E., (Electrical and Electronics Engineering) of Stella Mary's College of Engineering, Azhickal, has successfully completed the Inplant training in Sub - Station /Chemponvilai from 22.07.2024 to 26.07.2024 (5 days).

Nagercoil

- 9 AUG 2024

SUPERINTENDING ENGINEER
K.K.E.D.C./NAGERCOIL.

TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION LIMITED

CERTIFICATE

This is to certify that Selvi Rebisha R, III Year B.E., (Electrical and Electronics Engineering) of Stella Mary's College of Engineering, Azhickal, has successfully completed the Inplant training in Sub - Station /Chemponvilai from 22.07.2024 to 26.07.2024 (5 days).

Nagercoil

9 AUG 2024

SUPERINTENDING ENGINEER
K.K.E.D.C./NAGERCOIL.

TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION LIMITED

CERTIFICATE

This is to certify that Selvi Epsibha S, III Year B.E., (Electrical and Electronics Engineering) of Stella Mary's College of Engineering, Azhickal, has successfully completed the Inplant training in Sub - Station /Chemponvilai from 22.07.2024 to 26.07.2024 (5 days).

Nagercoil

9 AUG 2024

SUPERINTENDING ENGINEER
K.K.E.D.C./NAGERCOIL.

R J CONSULTANT & ENGINEERS

Door No: 14/619 Opp Pudussery Panchayath,Kanjikode, Palakkad,678621

Email Id: rjcepkd@gmail.com **GSTN:32AAQFR7361H1ZW**

Date:14/07/2023
Place: Palakkad

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. E Poovarasan of B.E Electrical and Electronics Engineering of Stella Mary's College of Engineering has successfully completed an internship training in the field of Manufacturing and installation of electrical machineries from 10th July to 14th July under the guidance of M/s R J Consultant &Engineers.

During the period of his internship program with us he had been exposed to different process was found punctual, hardworking, and inquisitive.

We wish him every success in his future life and career.

For
R J Consultant & Engineers

678 621
Kanjikode

CERTIFICATE OF INTERNSHIP

Mr. Babu Hussain

For his outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 13-Jan-2024 to 07-Feb-2024.

He is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27. Jul - 2024

SARK SOLAR

Ref: SSPS/INT/SMCE/2024/B02/007

CERTIFICATE OF INTERNSHIP

Mr. Rijo A

For his outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 13-Jan-2024 to 07-Feb-2024.

He is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27-Jul-2024

SARK SOLAR

Ref: SSPS/INT/SMCE/2024/B02/008

CERTIFICATE OF INTERNSHIP

Mr. Aswin C

For his outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 22-Jan-2024 to 03-Mar-2024.

He is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27. Jul. 2024

SARK SOLAR

Ref: SSPS/INT/SMCE/2024/B03/001

CERTIFICATE OF INTERNSHIP

Mr. Manikandan A

For his outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 22-Jan-2024 to 03-Mar-2024.

He is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27-Jul-2024

SARK SOLAR

Ref: SSPS/INT/SMCE/2024/B03/002

CERTIFICATE OF INTERNSHIP

Mr. Akash M

For his outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 22-Jan-2024 to 03-Mar-2024.

He is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27. Jul. 2024

SARK SOLAR

Ref: SSPS/INT/SMCE/2024/B03/003

CERTIFICATE OF INTERNSHIP

Mr. Abithran M

For his outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 22-Jan-2024 to 03-Mar-2024.

He is found to be hardworking, sincere and diligent. We wish him all the best for future.

SARK SOLAR

Ramadoss PK

Date 27-Jul-2024

Ref: SSPS/INT/SMCE/2024/B03/004

CERTIFICATE OF INTERNSHIP

Mr. Anand M P

For his outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 22-Jan-2024 to 03-Mar-2024.

He is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27- Jul- 2024

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Ref: SSPS/INT/SMCE/2024/B03/005

CERTIFICATE OF INTERNSHIP

Mr. Pravin S

For his outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 22-Jan-2024 to 03-Mar-2024.

He is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27- Jul- 2024

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CERTIFICATE OF INTERNSHIP

Mr. Sutheesh S

For his outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 22-Jan-2024 to 03-Mar-2024.

He is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27-Jul-2024

SARK SOLAR

Ref: SSPS/INT/SMCE/2024/B03/007

CERTIFICATE OF INTERNSHIP

Mr. Anbu Meshach P

For his outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 22-Jan-2024 to 03-Mar-2024.

He is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27-Jul-2024

SARK SOLAR

Ref: SSPS/INT/SMCE/2024/B03/008

CERTIFICATE OF INTERNSHIP

Mr. Jaison S

For his outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 22-Jan-2024 to 03-Mar-2024.

He is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27-Jul-2024

SARK SOLAR

Ref: SSPS/INT/SMCE/2024/B03/009

CERTIFICATE OF INTERNSHIP

Miss. Suvatha.M

For her outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 13-Jan-2024 to 07-Feb-2024.

She is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27-Jul-2024

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Ref: SSPS/INT/SMCE/2024/B02/001

CERTIFICATE OF INTERNSHIP

Miss. Renuka K

For her outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 13-Jan-2024 to 07-Feb-2024.

She is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

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CERTIFICATE OF INTERNSHIP

Miss. Epsibha S

For her outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 13-Jan-2024 to 07-Feb-2024.

She is found to be hardworking, sincere and diligent. We wish him all the best for future.

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Miss. Rebisha R

For her outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 13-Jan-2024 to 07-Feb-2024.

She is found to be hardworking, sincere and diligent. We wish him all the best for future.

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Miss. Asha R

For her outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 13-Jan-2024 to 07-Feb-2024.

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CERTIFICATE OF INTERNSHIP

Miss. Manju N

For her outstanding completion of the internship program at M/S Sark Solar Power Systems for the role of "Renewable Energy Trainee" under the guidance of Mr. Ramadoss PK from date 13-Jan-2024 to 07-Feb-2024.

She is found to be hardworking, sincere and diligent. We wish him all the best for future.

Ramadoss PK

Date 27-Jul-2024

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Prop : DALMIA CEMENT (BHARAT) LIMITED
✆ : 04652-263149

DWF/INTERN/ 059 /2023-24

Muppandal

02.03.2024

CERTIFICATE

This is to certify that **Ms.JOSELIN JENIFFER J** having **Reg.No : 963522105028**, II nd Year **B.E. ELECTRICAL AND ELECTRONICS ENGINEERING** of **STELLA MARY'S COLLEGE OF ENGINEERING , AZHIKKAL POST, KANYAKUMARI DISTRICT – 629202** has successfully completed her Internship programme from **26.02.2024 to 02.03.2024**. Her performance and attendance during the training period have been very good. Her character and conduct have been good to the best of my knowledge.

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2/3/24

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✆ : 04652-263149

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CERTIFICATE

This is to certify that **Mr.PRAKASH R** having **Reg.No : 963522105036,** II nd Year **B.E. ELECTRICAL AND ELECTRONICS ENGINEERING of STELLA MARY'S COLLEGE OF ENGINEERING , AZHIKKAL POST, KANYAKUMARI DISTRICT – 629202** has successfully completed his Internship programme from **26.02.2024 to 02.03.2024.** His performance and attendance during the training period have been very good. His character and conduct have been good to the best of my knowledge.

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This is to certify that **Ms.DHARSHINI S** having **Reg.No : 963522105019,** II nd Year **B.E. ELECTRICAL AND ELECTRONICS ENGINEERING** of **STELLA MARY'S COLLEGE OF ENGINEERING , AZHIKKAL POST, KANYAKUMARI DISTRICT – 629202** has successfully completed her Internship programme from **26.02.2024 to 02.03.2024.** Her performance and attendance during the training period have been very good. Her character and conduct have been good to the best of my knowledge.

For DALMIA WIND FARM

2/3/24

W . BALAN

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02.03.2024

CERTIFICATE

This is to certify that **Ms.SHIBIYA M S** having **Reg.No : 963522105047,** II nd Year **B.E. ELECTRICAL AND ELECTRONICS ENGINEERING** of **STELLA MARY'S COLLEGE OF ENGINEERING , AZHIKKAL POST, KANYAKUMARI DISTRICT – 629202** has successfully completed her Internship programme from **26.02.2024 to 02.03.2024**. Her performance and attendance during the training period have been very good. Her character and conduct have been good to the best of my knowledge.

For DALMIA WIND FARM

2/3/24

W . BALAN

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Dalmia Wind Farm

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02.03.2024

CERTIFICATE

This is to certify that **Ms.ARSHYA A S** having **Reg.No : 963522105014,** II nd Year **B.E. ELECTRICAL AND ELECTRONICS ENGINEERING of STELLA MARY'S COLLEGE OF ENGINEERING , AZHIKKAL POST, KANYAKUMARI DISTRICT – 629202** has successfully completed her Internship programme from **26.02.2024 to 02.03.2024**. Her performance and attendance during the training period have been very good. Her character and conduct have been good to the best of my knowledge.

For DALMIA WIND FARM

2/3/24

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Dalmia Wind Farm
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Dist : KANYAKUMARI, TAMILNADU.

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✆ : 04652-263149

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02.03.2024

CERTIFICATE

This is to certify that **Mr.MAHESH KUMAR A** having **Reg.No : 963522105033**, II nd Year **B.E. ELECTRICAL AND ELECTRONICS ENGINEERING of STELLA MARY'S COLLEGE OF ENGINEERING , AZHIKKAL POST, KANYAKUMARI DISTRICT – 629202** has successfully completed his Internship programme from **26.02.2024 to 02.03.2024**. His performance and attendance during the training period have been very good. His character and conduct have been good to the best of my knowledge.

For DALMIA WIND FARM

2/3/24

W . BALAN

HEAD - WINDFARM

Dalmia Wind Farm
MUPPANDAL, ARALVAIMOZHY - 629 301.
Dist : KANYAKUMARI, TAMILNADU.

Prop : DALMIA CEMENT (BHARAT) LIMITED

✆ : 04652-263149

DWF/INTERN/ 062 /2023-24

Muppandal

02.03.2024

CERTIFICATE

This is to certify that **Mr.MICHEAL RAJ S** having **Reg.No : 963522105035,** II nd Year **B.E. ELECTRICAL AND ELECTRONICS ENGINEERING of STELLA MARY'S COLLEGE OF ENGINEERING , AZHIKKAL POST, KANYAKUMARI DISTRICT – 629202** has successfully completed his Internship programme from **26.02.2024 to 02.03.2024.** His performance and attendance during the training period have been very good. His character and conduct have been good to the best of my knowledge.

For DALMIA WIND FARM

2/3/24

W . BALAN

HEAD - WINDFARM

ASHOK LEYLAND

Ennore : Chennai - 57

APPRENTICE ID CARD

RAM PRAKSH M R

Emp No : 576373

Category : NAPS

Valid Upto : 14.02.2026

Ram Prakash

Apprentice Signature

Authorised Signatory

ASHOK LEYLAND

Ennore : Chennai - 57

APPRENTICE ID CARD

SIVASANKAR K

Emp No : 576363

Category : NAPS

Valid Upto : 14.02.2026

Apprentice Signature

Authorised Signatory

ASHOK LEYLAND

Ennore : Chennai - 57

APPRENTICE ID CARD

SIVA S

Emp No : 576372

Category : NAPS

Valid Upto : 14.02.2026

Apprentice Signature

Authorised Signatory

BSA

BSA CORPORATION LTD

IDENTITY CARD - NAPS

Name : ALEXPANDIAN. S

Department : TRAINEE

Trainee ID No : BA0837

Date of Joining : 29-JAN-2024

Training S/No : WIPRO INFRASTRUCTURE

ASHOK LEYLAND

Ennore : Chennai - 57

APPRENTICE ID CARD

ABINESH A

Emp No : 576360

Category : NAPS

Valid Upto : 14.02.2026

Apprentice Signature

Authorised Signatory

ASHOK LEYLAND

Ennore : Chennai - 57

APPRENTICE ID CARD

WINCLIN RIJO J

Emp No : 576361

Category : NAPS

Valid Upto : 14.02.2026

winclin Rijo

Apprentice Signature

Authorised Signatory

ASHOK LEYLAND

Ennore : Chennai - 57

APPRENTICE ID CARD

MINISH D

Emp No : 576370

Category : NAPS

Valid Upto : 14.02.2026

Apprentice Signature

Authorised Signatory

ASHOK LEYLAND

Ennore : Chennai - 57

APPRENTICE ID CARD

S ASWIN

Emp No : 576359

Category : NAPS

Valid Upto : 14.02.2026

Apprentice Signature

Authorised Signatory

ASHOK LEYLAND

Ennore : Chennai - 57

APPRENTICE ID CARD

REXON LISO J

Emp No : 576395

Category : NAPS

Valid Upto : 15.02.2026

Apprentice Signature

Authorised Signatory