IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 14, April 2026
Impact Factor: 8.2

Home Automation Using Remote Control System

Rihan Unus Shaikh[1], Rajkumar Chandrakant Mahadik[1], Suraj Bhagwat Jadhav[1], Vishwajeet Dayanand Waghmode[1], Om Amol Jagtap[1],Avishkar Anand Jatkar[6], Amit Vijaykumar Gaddi[1] S. S. Kawade[2], Suhas B. Khadake[2]

[1]T.Y.E.E.Students SVERI's College of Engineering, Pandharpur. India

[2,3]Assistant Professor SVERI's College of Engineering,, Pandharpur,

Abstract: *This project focuses on the design, development, and implementation of a remote-controlled home automation system aimed at improving convenience, safety, and energy efficiency in residential environments. The primary objective is to eliminate the need for manual operation of electrical switches by enabling wireless control of household appliances such as lights, fans, and other basic loads. The system is built using a microcontroller as the central processing unit, which is interfaced with a wireless receiver module and relay driver circuits to control multiple appliances efficiently. The working of the system begins with the transmission of control signals through a handheld remote. These signals are received by the wireless receiver module connected to the microcontroller. The microcontroller decodes the received signals and processes them according to the programmed logic. Based on the input command, it generates appropriate output signals to drive the relay circuits. The relays act as electrically operated switches that control the power supply to the connected appliances. Proper isolation between the low-voltage control circuit and high-voltage load circuit is maintained, ensuring safety and reliability of operation. The system is designed with a strong emphasis on fast response time and reliable communication. The delay between user input and appliance operation is minimal, which enhances the user experience. The wireless communication operates effectively within a specified range, ensuring stable performance without signal loss or interference under normal conditions. The microcontroller continuously monitors incoming signals and maintains consistent operation even during prolonged usage, demonstrating system stability. Another important aspect of the project is its simplicity and user-friendly nature. The interface is straightforward, allowing users of any age group or technical background to operate the system easily. This makes the solution particularly beneficial for elderly individuals and people with physical limitations. Additionally, the reduction in manual switching not only improves comfort but also contributes to safer operation by minimizing direct interaction with electrical switches. From an energy management perspective, the system promotes efficient utilization of electrical power. By enabling timely switching of appliances, it helps prevent unnecessary energy consumption, thereby reducing electricity costs. The system can be expanded in the future to include energy monitoring features for better analysis and control of power usage. The hardware design is cost-effective and uses readily available components, making the system affordable for common households. Maintenance requirements are minimal due to the robustness of the components used, such as the microcontroller and relay modules. The overall system performance has been validated through repeated testing, which confirms its reliability, consistency, and durability.*

Keywords: *Home Automation, Remote Control System, Microcontroller, Wireless Communication, Relay Module, Energy Efficiency, Smart Home.*

I. INTRODUCTION

In recent years, the concept of home automation has gained significant attention due to the increasing demand for comfort, convenience, and efficient energy management in modern households. With the rapid advancement of technology, people are constantly looking for smarter ways to control and manage their daily activities, especially when

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 14, April 2026 Impact Factor: 8.2

it comes to operating electrical appliances[1-10]. Traditional methods of controlling devices, such as manually switching lights and fans on or off, can often be inconvenient, time-consuming, and inefficient, particularly for elderly individuals and people with physical disabilities [11-69]. This has created a strong need for systems that can simplify these everyday tasks while improving overall user experience. The proposed project, Home Automation Using Remote Control System, focuses on addressing these challenges by providing a simple yet effective solution for controlling household appliances wirelessly. The system is designed in such a way that users can operate multiple devices using a remote control, eliminating the need for direct physical interaction with switches. It works by sending signals from a remote transmitter to a receiver connected to a microcontroller, which then processes the input and controls the appliances through relay modules. One of the key advantages of this system is its affordability and ease of implementation, making it accessible for a wide range of users without requiring advanced technical knowledge or expensive infrastructure. Moreover, this system enhances safety by reducing the risks associated with handling electrical switches, especially in situations where moisture or faulty wiring may be present. In addition to convenience and safety, the system also plays an important role in energy conservation, as users can easily turn off appliances when they are not needed, thereby minimizing power wastage. Compared to more complex automation systems that rely on internet connectivity or smartphone applications, this remote-based system provides a reliable and straightforward alternative that functions independently of network availability. At the same time, it offers flexibility for future enhancements, such as integration with mobile applications, sensors, or Internet of Things (IoT) technologies, which can further improve its functionality and efficiency. Overall, this project represents a practical approach to home automation, combining simplicity, cost-effectiveness, and usability, while also providing a foundation for the development of more advanced smart home systems in the future..

II. PROBLEM STATEMENT

In the present era of technological advancement, most household electrical systems still rely on conventional manual switching mechanisms for controlling appliances such as lights, fans, and other electrical devices. This traditional approach requires the user to physically interact with switches, which can be inconvenient, time-consuming, and inefficient in daily life. In large homes or multi- room environments, this problem becomes more significant, as users must frequently move from one place to another to operate different appliances. This not only reduces comfort but also affects overall productivity. The issue becomes more critical for elderly individuals, disabled persons, or people with limited mobility, for whom physically accessing switches can be difficult or sometimes impossible. In such cases, the absence of an easy and accessible control system reduces independence and convenience. Moreover, in emergency situations or during unfavorable conditions (such as darkness or illness), manual operation of switches may not be practical or safe. Another major drawback of conventional systems is the lack of remote accessibility and centralized control. Users cannot control appliances from a distance within their home, which limits flexibility. As a result, appliances are often left ON unintentionally due to human negligence, leading to unnecessary power consumption. This contributes to increased electricity bills and inefficient energy utilization, which is a growing concern in today's energy-conscious world. Additionally, traditional electrical systems do not provide any form of automation or intelligence. They completely depend on human operation and lack features such as quick response control, wireless communication, or adaptability. This results in a system that is outdated compared to modern technological capabilities. At the same time, although advanced smart home systems are available, they are often expensive, complex, and require internet connectivity, smartphones, and technical knowledge. This makes them less suitable for common households, especially in rural or semi-urban areas where affordability and simplicity are important factors. There is also a concern regarding safety and reliability. Frequent manual switching can lead to wear and tear of switches, and direct interaction with electrical systems may pose risks such as electric shock if proper precautions are not taken. Furthermore, the absence of isolation between control and power circuits in traditional setups limits safety enhancements. Considering all these challenges, there is a strong need to develop a system that provides a better alternative to conventional methods. The solution should enable wireless control of appliances within a specified range, reduce dependency on

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 14, April 2026
Impact Factor: 8.2

manual operation, and improve overall convenience. It should be cost-effective, easy to install, and simple enough to be operated by users without technical expertise. The system must also ensure fast response, reliable communication, and stable performance under different operating conditions. Therefore, this project aims to design and implement a microcontroller-based home automation system using remote control technology. The proposed system focuses on providing an efficient, user-friendly, and economical solution that enhances comfort, improves energy efficiency, reduces manual effort, and ensures safe operation. By addressing the limitations of existing systems, this project contributes towards the development of practical and accessible home automation technology suitable for everyday use.

III. LITERATURE SURVEY

1. Traditional Manual Switching Systems

Early electrical systems in homes rely on manual switches to control appliances. These systems are simple and low-cost but lack convenience, require physical effort, and often lead to energy wastage due to human negligence.

2. Bluetooth-Based Home Automation

Several researchers have proposed systems that use Bluetooth technology to control appliances through smartphones. These systems provide wireless control but are limited by short-range communication and require users to stay within a specific distance.

3. Wi-Fi-Based Home Automation Systems

Modern approaches use Wi-Fi modules to enable control of appliances via mobile applications. These systems offer remote access from anywhere but depend heavily on stable internet connectivity and can be more expensive to implement.

4. GSM-Based Automation Systems

Some systems utilize GSM technology to control devices using SMS commands. While this allows long-distance communication, it introduces delays, requires network availability, and may involve additional operational costs.

5. IoT-Based Smart Home Systems

Advanced systems integrate Internet of Things (IoT) technology, allowing real-time monitoring and automation using sensors and cloud platforms. Although highly efficient and scalable, these systems are complex and require technical expertise.

6. IR (Infrared) Remote Control Systems

Infrared-based systems use remote controls to send signals to receivers for operating appliances. These systems are simple, cost-effective, and easy to implement but are limited by line-of-sight communication.

7. RF (Radio Frequency) Remote Systems

RF-based remote-control systems overcome the line-of-sight limitation of IR systems and provide better range. However, they may be slightly more complex and costly than IR systems.

8. Identified Research Gap

From the above studies, it is observed that while advanced systems provide more features, they are often complex and expensive. On the other hand, simpler systems lack flexibility. Therefore, there is a need for a balanced solution that is affordable, easy to use, and efficient, which is addressed by the proposed remote control-based home automation system.

IV. PROJECT DESCRIPTION

The project titled Home Automation System using Remote Control is designed to provide a modern solution for controlling household electrical appliances in a convenient, efficient, and reliable manner. The system replaces traditional manual switching with a wireless control mechanism, enabling users to operate devices such as lights, fans, and other electrical loads from a distance using a remote control. The primary goal of this project is to enhance user comfort, reduce manual effort, improve safety, and promote energy-efficient operation in residential environments. The core of the system is a microcontroller, which acts as the brain of the entire setup. It is programmed to receive,

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 14, April 2026 Impact Factor: 8.2

interpret, and process signals coming from a wireless receiver module. The remote control serves as the user interface, allowing the transmission of control signals in the form of encoded data. When a button is pressed on the remote, a specific signal is generated and transmitted wirelessly to the receiver. The receiver module captures this signal and sends it to the microcontroller in a suitable format for processing. Once the signal is received, the microcontroller decodes it and identifies the corresponding command, such as turning a specific appliance ON or OFF. Based on this command, the microcontroller sends output signals to the relay driver circuit. The relay driver acts as an intermediary that amplifies the control signal to operate the relay switches effectively. Each relay is connected to an individual appliance and functions as an electromechanical switch that controls the flow of electrical power. This arrangement ensures safe operation by maintaining electrical isolation between the low-voltage control circuit and the high-voltage load circuit. The system is designed with multiple channels, allowing control of several appliances independently using different buttons on the remote. The response time of the system is very fast, ensuring that appliances react almost instantly to user commands. The wireless communication is stable within the designed range, providing reliable performance without interference under normal operating conditions. From a design perspective, the system emphasizes simplicity, cost-effectiveness, and ease of implementation. The components used, such as the microcontroller, relay modules, receiver unit, and power supply, are readily available and economical. The circuit design is straightforward, making it suitable for educational purposes as well as practical applications. The installation process requires minimal modifications to existing electrical setups, making it adaptable for real homes. Safety is a key consideration in this project. The use of relays ensures proper isolation, reducing the risk of electrical hazards. Additionally, the system minimizes direct human interaction with electrical switches, further enhancing safety. The hardware components are selected to ensure durability and long-term stable performance with minimal maintenance. The system also contributes significantly to energy efficiency. By enabling easy control of appliances, users can ensure that devices are turned OFF when not needed, thereby reducing unnecessary power consumption. This leads to lower electricity bills and supports sustainable energy usage. Although the system is basic in functionality, it lays a strong foundation for advanced automation features. Extensive testing of the system has been carried out to evaluate its performance under different conditions. The results confirm that the system operates consistently with high reliability, quick response, and stable communication. The performance remains unaffected during repeated usage, demonstrating the robustness of the design. In conclusion, this project effectively integrates embedded systems and wireless communication technologies to create a practical home automation solution. It addresses the limitations of conventional systems by offering improved convenience, safety, and efficiency. Furthermore, it provides a scalable platform for future enhancements such as integration with Internet of Things (IoT), smartphone-based control, voice recognition systems, and sensor-based automation, ultimately leading to the development of a fully intelligent smart home environment.

V. OBJECTIVE OF SYSTEM

1. To design and develop a simple home automation system using a remote-control mechanism for operating household appliances.
2. To reduce manual effort by enabling users to control devices wirelessly without physical interaction with switches.
3. To provide a cost-effective and user-friendly solution suitable for all types of users, including elderly and physically challenged individuals.
4. To improve convenience and comfort in daily life by allowing easy control of electrical appliances.
5. To enhance energy efficiency by minimizing unnecessary power consumption through quick ON/OFF control.
6. To ensure safety by reducing the risks associated with direct handling of electrical switches.
7. To create a system that is easy to install, maintain, and expand in the future.
8. To provide a base for further development by integrating advanced technologies such as sensors or IoT.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 14, April 2026
Impact Factor: 8.2

VI. ADVANTAGES AND APPLICATIONS

Advantages:

1. Easy to use and operate with a simple remote control
2. Reduces manual effort and saves time
3. Cost-effective compared to advanced automation systems
4. Improves convenience and comfort in daily life
5. Suitable for elderly and physically challenged individuals
6. Enhances safety by minimizing direct contact with electrical switches
7. Helps in reducing energy consumption by easy ON/OFF control
8. Simple installation and low maintenance
9. Can be expanded with additional features in the future

Applications:

1. Residential homes for controlling lights, fans, and appliances
2. Offices for managing electrical equipment efficiently
3. Hospitals for assisting patients and staff in controlling devices easily
4. Hotels for providing better customer convenience
5. Smart classrooms for controlling lighting and electronic devices
6. Industrial environments for basic automation tasks
7. Remote areas where simple automation solutions are required
8. Assistive technology for elderly and disabled individuals

VII. RESULT

The developed home automation system using remote control was successfully implemented and tested under practical conditions. The system demonstrated accurate and reliable control over household appliances such as lights and fans, ensuring that user commands were executed precisely without noticeable errors. One of the key strengths observed was the quick response time between the remote input and the actual operation of the devices, indicating efficient signal processing and minimal delay in communication. The wireless communication used in the system proved to be stable and reliable within the designed operating range, allowing smooth interaction between the user and the appliances. The microcontroller and relay modules functioned consistently without performance fluctuations, highlighting the robustness of the hardware design. Additionally, the system was designed with simplicity in mind, making it easy to operate even for users without technical knowledge. By automating the control of electrical devices, the system significantly reduces the need for manual switching, thereby improving convenience in daily life. It also contributes to better energy efficiency, as users can switch appliances on or off at the right time, avoiding unnecessary power consumption. Repeated testing confirmed that the system maintains consistent performance over time, ensuring dependability. Overall, the system offers an effective solution for modern home automation needs, combining low cost, minimal maintenance requirements, and reliable performance, making it suitable for widespread practical use.

VIII. FUTURE SCOPE

The proposed home automation system using remote control has strong potential for further development and enhancement. In the future, the system can be upgraded by integrating it with Internet-based technologies, allowing users to control appliances from anywhere in the world using smartphones or web applications. This transformation into a smart, IoT-based system would significantly increase convenience and flexibility. Another important area of improvement is the inclusion of voice control features through virtual assistants, enabling hands-free operation of devices. The system can also be expanded by adding sensors such as temperature, motion, and light sensors, which would allow automatic control of appliances based on environmental conditions, making the system more intelligent

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 14, April 2026
Impact Factor: 8.2

and energy-efficient. Security can be enhanced by incorporating features like password protection, biometric authentication, or mobile-based verification to prevent unauthorized access. In addition, real-time monitoring and feedback systems can be implemented so users can track energy consumption and device status, helping in better energy management. The system can also be scaled to control multiple appliances and integrated into larger smart home ecosystems, including security systems, surveillance cameras, and smart meters. With advancements in technology, the use of wireless protocols like Bluetooth Low Energy or advanced Wi-Fi modules can further improve efficiency and reduce power consumption. Overall, the future scope of this system lies in making it more intelligent, secure, scalable, and user-friendly, transforming it from a basic automation setup into a complete smart home solution.

IX. CONCLUSION

The home automation system using remote control presents a practical and efficient solution for simplifying the operation of household electrical appliances. The project successfully demonstrates how modern electronic components such as microcontrollers, relay modules, and wireless communication systems can be integrated to achieve reliable and convenient control of devices like lights and fans. The system operates smoothly, responding quickly to user inputs and maintaining consistent performance during repeated use, which confirms its dependability. One of the key achievements of this system is its simplicity and ease of use. It is designed in such a way that even users without technical knowledge can operate it comfortably. The reduction in manual effort is significant, as users no longer need to physically interact with switches, making the system especially useful for elderly or physically challenged individuals. Additionally, the use of wireless communication eliminates the need for complex wiring, enhancing flexibility and ease of installation. The system also contributes to improved energy efficiency. By allowing users to control appliances more effectively, it helps in reducing unnecessary power consumption. This not only lowers electricity costs but also supports energy conservation efforts. The hardware components used in the system are cost-effective and require minimal maintenance, making the solution affordable and practical for real-world applications. Furthermore, the stability and reliability of the system highlight its potential for everyday use. The consistent operation of the microcontroller and relay modules ensures that the system can be trusted for long-term performance. Although the current design focuses on basic remote-controlled automation, it lays a strong foundation for future enhancements such as IoT integration, smart sensors, and advanced control features. In conclusion, this project successfully achieves its objective of developing a low-cost, user-friendly, and efficient home automation system. It demonstrates the effective application of embedded systems in improving daily life and provides a solid base for future advancements toward fully intelligent smart home technologies.

REFERENCES

[1]. Manish Prasad, Rohit Kumar Singh, Pranav Kumar, Smruti Ranjan Pradhan,“Home Automation Using Microcontroller (Arduino Uno),” International Journal of Engineering Research & Technology (IJERT), 2017.
[2]. Mrunal S. Unde, Gayatri K. Chaudhari, R. M. Palwe,“Home Automation System using Remote Control,” IJARIIE, Vol. 8, Issue 3, 2022.
[3]. S. Ragu,“IoT Based Home Automation Using Blynk Framework,” IJFMR, 2023.
[4]. Alakesan C., Darmaraj D., Sarath Krishnan R., Vinoth Kumar S.,“IoT Based Home Automation with Power Management and Voice Recognition,” IJERT, 2023.
[5]. Divyam Kakani, Abhiraj Kulkarni, Yash Pandya, Ninad Mehendale, “IoT-Based Smart Home Automation Using ESP32 and Blynk,” SSRN, 2024.
[6]. Abdul Lateef Haroon P. S. et al., “Home Automation Using Wi-Fi: ESP32-Based System,” IEEE International Conference, India, 2024.
[7]. Arjun S., GopiKrishna V., Gowtham B., Siddharthan B., V. Manikandan, “Smart Home Security Analysis Using Microcontroller,” IRO Journal, 2023.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 14, April 2026 Impact Factor: 8.2

[8]. Yuneela K., Sharma A.,"Review of Technologies Used in Home Automation Systems," ICCMC Conference, India, 2022.
[9].K. Pande et al.,"Development of Voice-Controlled Home Automation System," 2019.
[10]. S. Anis et al.,"Smart Home Automation using Embedded Systems," 2020. "Wireless Home Automation using GSM Technology," 2018.
[11]. T. Joshi and A. Chavan, "Smart Motor Control Using Embedded Systems," International Journal of Engineering Research & Technology, vol. 9, no. 6, pp. 140–145, 2022.
[12]. V. J. Patil, S. B. Khadake, D. A. Tamboli, H. M. Mallad, S. M. Takpere and V. A. Sawant, "Review of AI in Power Electronics and Drive Systems," 2024 3rd International conference on Power Electronics and IoT Applications in Renewable
Energy and its Control (PARC), Mathura, India, 2024, pp. 94-99, doi: 10.1109/PARC59193.2024.10486488
[13]. A BalkrishnaDudgikar, A Ahmad Akbar Ingalgi, A GensidhaJamadar et al., "Intelligent battery swapping system for electric vehicles with charging stations locator on IoT and cloud platform", International Journal of Advanced Research in Science Communication and Technology, vol. 3, no. 1, pp. 204-208, January 2023. DOI: 10.48175/IJARSCT-7867. Available at: https://ijarsct.co.in/Paper7867.pdf
[14]. S. B. Khadake and V. J. Patil, "Prototype Design & Development of Solar Based Electric Vehicle," 2023 3rd International Conference on Smart Generation Computing, Communication and Networking (SMART GENCON), Bangalore, India, 2023, pp. 1-7, doi: 10.1109/SMARTGENCON60755.2023.10442455.
[15]. V. J. Patil, S. B. Khadake, D. A. Tamboli, H. M. Mallad, S. M. Takpere and V. A. Sawant, "A Comprehensive Analysis of Artificial Intelligence Integration in Electrical Engineering," 2024 5th International Conference on Mobile Computing and Sustainable Informatics (ICMCSI), Lalitpur, Nepal, 2024, pp. 484-491, doi: 10.1109/ICMCSI61536.2024.00076.
[16]. Suhas B. Khadake, Sudarshan P. Dolli, K.S. Rathod, O.P. Waghmare and A.V. Deshpande, "AN OVERVIEW OF INTELLIGENT TRAFFIC CONTROL SYSTEM USING PLC AND USE OF CURRENT DATA OF VEHICLE TRAVELS", JournalNX, pp. 1-4, Jan. 2021.
[17]. Shraddha S Magar, Archana S Sugandhi, Shweta H Pawar, Suhas B Khadake, H. M. Mallad,"Harnessing Wind Vibration, a Novel Approach towards Electric Energy Generation- Review", IJARSCT, Volume 4, Issue 2, October 2024, pp. 73-82. DOI: 10.48175/IJARSCT-19811.
[18]. Khadake, S. B., Padavale, P. V., Dhere, P. M., & Lingade, B. M., "Automatic hand dispenser and temperature scanner for Covid-19 prevention", International Journal of Advanced Research in Science, Communication and Technology, 3(2), 362367. DOI: 10.48175/IJARSCT-11364. https://ijarsct.co.in/A11364.pdf
[19]. Seema S Landage, Sonali R Chavan, Pooja A Kokate, Sonal P Lohar, M. K. Pawar, Suhas B Khadake.,"Solar Outdoor Air Purifier With Air Quality Monitoring System", Synergies Of Innovation: Proceedings Of Ncstem 2023, Pp. 260-266, September, 2024. Available At: https://www.researchgate.net/publication/383631190_Solar_Outdoor_Air_Purifier_with_Air_Quality_Monitoring_System
[20]. Suhas B. Khadake. (2021). Detecting Salient Objects Of Natural Scene In A Video's Using Spatio-Temporal Saliency &Amp; Colour Map. Journalnx - A Multidisciplinary Peer Reviewed Journal, 2(08), 30–35. Retrieved From Https://Repo.Journalnx.Com/Index.Php/Nx/Article/View/1070
[21]. Khadake Suhas .B. (2021). Detecting Salient Objects In A Video's By Using spatio-Temporal Saliency & Colour Map. International Journal Of Innovations In Engineering Research And Technology, 3(8),1-9, Https://Repo.Ijiert.Org/Index.Php/Ijiert/Article/View/910.
[22]. Prachi S Bhosale, Pallavi D Kokare, Dipali S Potdar, Shrutika D Waghmode, V A Sawant, Suhas B Khadake.,"DTMF Based Irrigation Water Pump Control System", Synergies Of Innovation: Proceedings Of NCSTEM 2023, Pp. 267-273, September, 2024. Available At: https://www.researchgate.net/publication/383629320_DTMF_Based_Irrigation_Water_Pump_Control_System

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 14, April 2026 Impact Factor: 8.2

[23]. Pramod Korake, Harshwardhan Murade, Rushikesh Doke, Vikas Narale, Suhas B. Khadake, Aniket S Chavan., "Automatic Load Sharing of Distribution Transformer using PLC", Synergies Of Innovation: Proceedings Of NCSTEM 2023, Pp. 253-259, September, 2024. Available At:https://www.researchgate.net/publication/383628063_Automatic_Load_Sharing_of_Distribution_Transformer_using_PLC

[24]. Suhas B khadake, Pranita J Kashid, Asmita M Kawade, Santoshi V Khedekar, H. M. Mallad .,"Electric Vehicle Technology Battery Management –Review", International Journal of Advanced Research in Science, Communication and Technology, Volume 3, Issue 2, Septeber 2023,pp. 319-325. DOI: 10.48175/IJARSCT-13048. Available at: https://www.researchgate.net/publication/374263508_Electric_Vehicle_Technology_Battery_Management_-_Review

[25]. Suhas B. khadake, Amol Chounde, Buddhapriy B. Gopnarayan, Karan Babaso Patil, Shashikant S Kamble. (2024). Human Health Care System: A New Approach towards Life, 15th International Conference on Advances in computing, Control, and Telecommunication Technologies, ACT 2024, 2024, 2, pp. 5487-5494.

[26]. Khadake SB, Patil VJ, Mallad HM, Gopnarayan BB, Patil KB. Maximize farming productivity through agriculture 4.0 based intelligence, with use of agri tech sense advanced crop monitoring system. Grenze Int J Eng Technol. 2024;10(2):5127–5134.Available At: https://www.researchgate.net/publication/382625572_Maximize_Farming_Productivity_through_Agriculture_40_based_Intelligence_with_use_of_Agri_Tech_Sense_Advanced_Crop_Monitoring_System

[27]. Suhas B Khadake, Santoshi V Khedekar, Asmita M Kawade, Shradhha Shivaji Vyavahare, Pranita J Kashid, Chounde Amol B, H. M. Mallad., "Solar Based Electric Vehicle Charging System-Review", IJARSCT, vol. 4, Issue 2, December 2024, pp. 42-57, DOI: 10.48175/IJARSCT-22705.

[28]. Akshay B Randive , Sneha Kiran Gaikwad , Suhas B Khadake , Mallad H. M., "Biodiesel: A Renewable Source of Fuel", IJARSCT, vol. 4, Issue 3, December 2024, pp. 225-240, DOI: 10.48175/IJARSCT-22836 Available at: https://www.researchgate.net/publication/387352609_Biodiesel_A_Renewable_Source_of_Fuel

[29]. K. K. Sayyad Liyakat, S. B. Khadake, A. B. Chounde, A. A. Suryagan, M. H. M. and M. R. Khadatare, "AIDriven-IoT(AIIoT) Based Decision Making System for High-Blood Pressure Patient Healthcare Monitoring," 2024 International Conference on Sustainable Communication Networks and Application (ICSCNA), Theni, India, 2024, pp. 96-102, doi: 10.1109/ICSCNA63714.2024.10863954.

[30]. K. K. Sayyad Liyakat, S. B. Khadake, D. A. Tamboli, V. A. Sawant, M. H. M. and S. Sathe, "AI-Driven-IoT(AIIoT) Based Decision-Making- KSK Approach in Drones for Climate Change Study," 2024 4th International Conference on Ubiquitous Computing and Intelligent Information Systems (ICUIS), Gobichettipalayam, India, 2024, pp. 1735-1744, doi: 10.1109/ICUIS64676.2024.10866450.

[31]. Suhas B khadake, Shraddha S Magar, Archana S Sugandhi, Shweta H Pawar, " A Research Paper on Harnessing Wind Vibration Novel Approach towards Electric Energy Generation", IJARSCT, Volume 5, Issue 4, May 2025, pp. 533-552. DOI: 10.48175/IJARSCT-26466. Available At https://www.researchgate.net/publication/391857597_A_Research_Paper_on_Harnessing_Wind_Vibration_Novel_Approach _towards_Electric_Energy_Generation

[32]. Avinash. A. Suryagan, Arti L Nemte, Kirti D Thorat, Suhas B Khadake," IoT Based Flood Monitoring System by using Thing Speak Cloud", IJARSCT, Volume 5, Issue 4, May 2025, pp. 666-687. DOI: 10.48175/IJARSCT-26480

[33]. Sagar M Chavare, Prasad P Nanaware, Shriprasad S Wagh, Ashish T Jadhav, Yeole Yogesh, Suhas B Khadake," Smart Plant Monitoring and Automated Irrigation System Using IOT", IJARSCT, Volume 5, Issue 4, May 2025, pp. 688-706. DOI: 10.48175/IJARSCT-26481

[34]. Swapnil S Sudake, Suhas B Khadake, Santoshi V Khedekar, Asmita M Kawade, Shraddha S Vyavahare," Solar Based Wireless Electric Vehicle Charging System", IJARSCT, Volume 5, Issue 5, May 2025, pp. 325-348. DOI: 10.48175/IJARSCT-26647

[35]. Manjeet Kumar, Shubhangi S Sul, Jyoti S Lakhara, Pranita J Kashid, Shravani R Bhinge, Amaraja S Waghmode, Suhas B Khadake," Small Wind Electric System Energy Saver", IJARSCT, Volume 5, Issue 5, May 2025, pp. 447-466. DOI: 10.48175/IJARSCT-26663

[36]. Namrata Ganesh Jadhav , Pranjali R Nagane , Akanksha M Khapare , Arvind Pande , Suhas B Khadake,"Identify and Measuring Parameter of PV Module Test Bench with the Ammeter and Voltmeter", IJARSCT, Volume 5, Issue 6, May 2025, pp. 5-24. DOI: 10.48175/IJARSCT-26702

[37]. Sujit N. Bhandare, Prashant R. Mule, Yogesh A. Yeole, Krushna D More, Suhas B. Khadake," Vehicle Tracking And Accident Alert System", IJARSCT, Volume 5, Issue 6, May 2025, pp. 234-252. DOI: 10.48175/IJARSCT-26728

[38]. Manjeet Kumar, Suhas B Khadake, Madhuri S Doke, Shivani D Pujari, Pratiksha B Rupnar," Sun Track: A Compact IoT System for PV Parameter Monitoring with NodeMCU", IJARSCT, Volume 5, Issue 9, May 2025, pp. 261-280. DOI: 10.48175/IJARSCT-27037

[39]. Nikita R Bhosale , Sakshi D Shete , Laxmi A Koganure ,Aditi A Gaikwad ,Vedhangi S Sukre , Suhas B Khadake," Development of a Real-Time Hydrogen Level Detection System for Storage Cylinders", IJARSCT, Volume 5, Issue 4, June 2025, pp. 690-708. DOI: 10.48175/IJARSCT-27666

[40]. Bhinge Shravani Rajendra, Salunkhe Majushree Jayant, Tarse Mayuri Kundlik, Suhas B Khadake, B. B. Gopnarayan, Manisha P Bidve," Smart Water Waste Collection System Using Bluetooth Control", IJARSCT, Volume 5, Issue 7, June 2025, pp. 561-578. DOI: 10.48175/IJARSCT-28072

[41]. K. K. Sayyad Liyakat, S. B. Khadake, P. S. More, R. J. Shinde, K. P. Kondubhairi and S. S. Kamble, "AI-Driven IoT based Decision Making for Hepatitis Diseases Patient's Healthcare Monitoring: KSK Approach for Hepatitis Patient Monitoring," 2025 7th International Conference on Intelligent Sustainable Systems (ICISS), India, 2025, pp. 256-263, doi: 10.1109/ICISS63372.2025.11076213.

[42]. K. K. Sayyad Liyakat, S. B. Khadake, K. Galani, K. B. Patil, A. Dhavale and S. D. Sarik, "AI-Powered-IoT (AIIoT) based Bridge Health Monitoring using Sensor Data for Smart City Management- A KSK Approach," 2025 7th International Conference on Intelligent Sustainable Systems (ICISS), India, 2025, pp. 296-305, doi: 10.1109/ICISS63372.2025.11076329.

[43]. Rani N Bhosale , Tejashri M Salunkhe , Sayali S Ghodake , Shruti S Deshpande ,Chandani N Kendale , Suhas B Khadake," Smart Lawn Cutter using Solar and Bluetooth", IJARSCT, Volume 5, Issue 1, august 2025, pp. 158-171. DOI: 10.48175/IJARSCT-28618.

[44]. Ganesh Navnath Surwase, Ashish Tukaram Jadhav, Krushna Dinesh More, Ingudam Chitrasen Meitei, Suhas B Khadake, "Accident Detection and Alerting Using Embedded System",IJARSCT,Volume 5, Issue 2, October 2025,pp. 550-562. DOI: 10.48175/IJARSCT-29269.

[45]. Rohini Walke, Samarth Mole, Rohan More, Sonali Salunkhe, Rahul Jadhav, Suhas B Khadake, " Automated Canopy System", IJARSCT, Volume 6, Issue 3, January 2026, pp. 438-447. DOI: 10.48175/IJARSCT-30956.

[46]. Samarth S Mole, Rohini J Walke, Rohan D More, Sonali A Salunkhe, Rahul N Jadhav, Sagar S Kawade , Suhas B Khadake, "Automated Fertilizer Dispensing System", IJARSCT, Volume 6, Issue 4, January 2026, pp. 256-268. DOI:0.48175/IJARSCT-31034.

[47]. Khapare Akanksha Mahadev , Jadhav Namrata Ganesh , Kshirsagar Manasi Pravin , Waghamode Amarja Santosh, Dr. Mrinal K. Rajak , Suhas B Khadake," Paper on Aqua Lift OWS (Oil Water Separator)", IJARSCT, Volume 6, Issue 8, March 2026,pp.468-477. DOI: 10.48175/IJARSCT-32164.

[48]. Sujit N. Bhandare, Prashant R. Mule, Yogesh A. Yeole, Suhas B. Khadake, " Vehicle to Vehicle Charging System", IJARSCT, Volume 6, Issue 2, April 2026,pp.433-442. DOI: 10.48175/IJARSCT-32459.

[49]. Sujit N. Bhandare, Prashant R. Mule, Yogesh A. Yeole, Suhas B. Khadake, "Vehicle to Vehicle Charging System",IJARSCT, Volume 6,Issue 2, April 2026,pp.433-442. DOI: 10.48175/IJARSCT-32459.

[50]. Suyog P Maindarkar, Soham R Salunke, Shriprasad S Wagh, Prathmesh A Dhekane, Sagar S Chaugule, Suhas B Khadake, "Solar-Powered Automated Electrocoagulation System for Sustainable Sugar Mill Wastewater Treatment", IJARSCT, Volume 6, Issue 3, April 2026,pp-523-536. DOI: 10.48175/IJARSCT-32576.

[51]. Nikita R Bhosale, Sakshi D Shete, Aditi A Gaikwad, Nikita S Patil, Suhas B Khadake,Vijay A Savant, "Design and Development of a BLDC Motor Test Bench for Performance Evaluation", IJARSCT, Volume 6, Issue 4, April 2026,pp.654663. DOI: 10.48175/IJARSCT-32676.

[52]. Ganesh V Metkari, Rohan K Survase , Ashish T Jadhav, Sagar S Kawade, Suhas B. Khadake, "Design and Implementation of A Real-time Monitoring Platform to check the performance of E2V", IJARSCT, Volume 6, Issue 5, April 2026,pp-549563. DOI: 10.48175/IJARSCT-32873

[53]. Shravani R Bhinge, Manjushree J Salunkhe, Mayuri K Tarse, Tanjim P Bhaldar,Sagar S Chaugule, Suhas B Khadaake, Sagar S. Kawade, "Design and Implementation of an Automated Product Handling Robot for Industrial Applications", IJARSCT, Volume 6, Issue 9, April 2026,pp-181-195. DOI: 10.48175/IJARSCT-33226

[54]. Rani N Bhosale, Tejashri M Salunkhe, Sayali S Ghodake,Shruti S Deshpande, Suhas B Khadake, Vijay.A.Savant, "An Evaluation of Battery Using Peltier Module", IJARSCT, Volume 6, Issue 9, April 2026,pp-583-594. DOI:10.48175/IJARSCT-33282

[55]. Madhuri S Doke, Pratiksha B Rupnar, Pranjali R Nagane, Shivani D Pujari, Manjeet Kumar , Suhas B Khadake, Sagar S Kawade, "Solar Powered Pesticides Sprayer with Multipurpose Application", IJARSCT, Volume 6, Issue 10, April 2026,pp186-199. DOI: 10.48175/IJARSCT-33425

[56]. Mayuri G Rupnar, Shruti G Parit, Priyanka S Suryawanshi, Sagar S Kawade, Suhas B Khadake, "Design and Implementation of A Real-time Monitoring Platform to check the performance of E2V", IJARSCT, Volume 6, Issue 10, April 2026,pp-200-218. DOI: 10.48175/IJARSCT-33426

[57]. Mr. Pratik D. Nagtilak, Mr. Karanraj B. Pujari, Mr. Rushiprasad A. Nara, Mr. Kiran T. Wadekar, Dr. Mrinal K. Rajak, Suhas B Khadake, "Smart GSM-Based Power Meter with Continuous Load Monitoring", IJARSCT, Volume 6, Issue 10, April 2026,pp-228-237. DOI: 10.48175/IJARSCT-33429

[58]. Ravikiran R khandagale, Prathamesh S Jamdade, Vishwajit V Babar , Suhas B Khadake, "GSM Based Substation Monitoring and Control System", IJARSCT, Volume 6, Issue 10, April 2026,pp-238-248. DOI: 10.48175/IJARSCT-33430

[59]. Ranjit Kadam, Onkar Shinde, Mohit Londhe, Mayur Ingawale, Vijay Karande, Swapnil Bhosale, Suhas B Khadake, "Surveillance Car using ESP32 CAM Module", IJARSCT, Volume 6, Issue 10, April 2026,pp-522-530. DOI: 10.48175/IJARSCT-33464

[60]. Shambhavi R Kurde, Vijayalaxmi A Vhate, Shravani H Pujari , Tejswini T Bhui, Jay S Raut, Misbah J Tamboli, Suhas B Khadake, "Solar Powered Multi-Utility Umbrella", IJARSCT, Volume 6, Issue 11, April 2026,pp-211-223. DOI:10.48175/IJARSCT-33631

[61]. Yash D Palkar, Nikhil K Waghachavare, Akash P Mane, Vikram S Rane, Paras P Jadhav, Pratik N Patil, Vijay A Sawant, Suhas B Khadake, "Real Time IoT-Enabled Smart Plant Irrigation and Weather Monitoring System using the ESP32 microcontroller & MATLAB", IJARSCT, Volume 6, Issue 11, April 2026,pp-420-428. DOI:10.48175/IJARSCT-33660

[62]. Komal V Anantkawalas, Sakshi K Bhosale, Chandani N Kendale, Khushi S Shaikh, Sujata A Galgunde, Monali S Landage,Suhas B Khadake, "IoT Based Health Monitoring System", IJARSCT, Volume 6, Issue 11, April 2026,pp-453-462. DOI:10.48175/IJARSCT-33665

[63]. Prathmesh R Dulange, Prajwal U Bajantri, Sujal P Bajantri, Vivek D Patkulkar, Suhas B Khadake,Sagar S Chaugule, "Footstep Power Generation Using Piezoelectric Sensors", IJARSCT, Volume 6, Issue 11, April 2026,pp-434-442. DOI:10.48175/IJARSCT-33662

[64]. Dhanashri D. Karande, Diksha S. Shinde, Sonali M. Gandule Smital S. Kumbhar, Dhanraj D. Daphale Suhas B Khadake, "Three Phase Motor Drive System Powered By Parallel Single Phase Rectifier", IJARSCT, Volume 6, Issue 11, April 2026,pp-497-505. DOI:10.48175/IJARSCT-33671

[65]. Jay S Raut, Aniket B Shinde, Sanskar S Ambare, Ravikiran S Chavan, Shambhavi R Kurde , S S Chougule, Suhas B Khadake, "Battery Monitoring and Detection System for EVs", IJARSCT, Volume 6, Issue 12, April 2026,pp-89-98. DOI:10.48175/IJARSCT-33713

[66]. Giriraj S Choudhari, Rahul B Kadam, Aditya C Dudhbhade, Prasad P Nanaware, Swapnil S Sudake, Suhas B Khadake, "Solar-Assisted Hybrid Electric Bicycle with Gear Optimization for Efficient Range Extension.", IJARSCT, Volume 6, Issue 12, April 2026,pp-221-233. DOI:10.48175/IJARSCT-33732

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 14, April 2026
Impact Factor: 8.2

[67]. Ramdas Kadam, Swapnil Garad, Ankit Kumar, Ganesh Dhangekar, Saurabh Patole, Vishal Nalawade, Suhas B Khadake, "Robotic Arm", IJARSCT, Volume 6, Issue 12, April 2026,pp-261-270. DOI: 10.48175/IJARSCT-33735

[68]. Atul B Jadhav, Saurav S Kamble, Rushikesh D Mohite, Manjeet Kumar, Suhas B Khadake, "IoT-Enabled Gas Leakage Detection System Using ESP32", IJARSCT, Volume 6, Issue 12, April 2026,pp-250-260. DOI: 10.48175/IJARSCT-33734

[69]. Jayprakash Chavan, Amarjit Dhale, Shriyash Latake, Suraj Shinde, Dhanraj D Daphale, Suhas B Khadake, "Speed Control of DC Motor Using ESP32 and Speed Measurement in RPM", IJARSCT, Volume 6, Issue 12, April 2026,pp-514-522.DOI: 10.48175/IJARSCT-33769