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Number of Electrical and Electronics Engineering Student Undertaking Main Projects during the Academic Year 2022-23

Programme Name & Code: Electrical and Electronics Engineering &105

SL. No	Register Number	Name of the Students	Project Title
1	912019105001	T.Babu	Automatic IOT Enabled Battery Health Analysis with Arduino Controller
2	912019105004	M.Kaviyarasu	
3	912019105006	K.Moorthy	
4	912019105010	R.Sivanesan	
5	912019105003	J.Godson	Design of Fuzzy Controlled Multi Output DC-DC Converter
6	912019105005	MP.Madhanagopalan	
7	912019105009	S.Sathishkumar	
8	912019105012	M.Srimalavika	
9	912019105007	M.Pantheeswaran	Charging Station for Electric Vehicle Using IOT
10	912019105008	A.Sanjeevkumar	
11	912019105013	M.Vallarasu	
12	912019105002	K.Dinesh	

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AUTOMATIC IOT ENABLED BATTERY HEALTH ANALYSIS WITH ARDUINO CONTROLLER

A PROJECT REPORT

Submitted by

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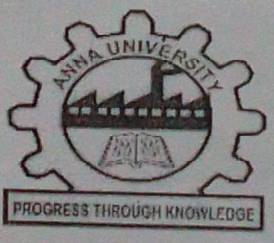

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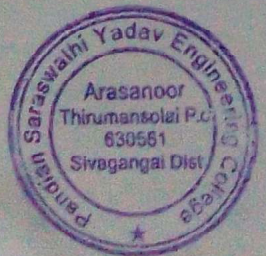
JUNE 2023



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We hereby declare that the work entitled "AUTOMATIC IOTENABLED BATTERY HEALTH ANALYSIS WITH ARDUINO CONTROLLER" is submitted in partial fulfillment of the requirement award of the degree in B.E., Anna University of technology Chennai, is a record of the my own work carried out by me during the academic year 2019-2023 under the supervision and guidance of Asst. Prof. J.GIRISHGOWTHAM, M.E., Department of ELECTRICAL AND ELECTRONICS ENGINEERING, PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE. The extent and source of information are derived from the existing literature and have been in dictated through the dissertation at the appropriated places. The matter embodied in this work is original and has not been submitted for the award of any other degree or diploma, either in this or any other university.

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ABSTRACT

Battery health monitoring is crucial for ensuring the reliability and performance of battery-powered systems. In this project, we propose a sensor-based battery health monitoring system that utilizes current, voltage, and temperature sensors to monitor the health of the battery. The system is integrated with the Internet of Things (IoT) technology, enabling remote access to the battery health status. The proposed system uses a machine learning algorithm to analyze the sensor data and predict the remaining useful life of the battery. The proposed system has several advantages over traditional battery health monitoring methods, including real-time monitoring, remote access, and predictive maintenance. The system can detect abnormal behavior of the battery, such as overcharging, undercharging, and high temperatures, which can lead to battery failure. By monitoring the battery health in real-time, the system can prevent premature battery failure and optimize the battery life. The proposed system can be implemented in various applications, including electric vehicles, renewable energy systems, and consumer electronics. The system can provide valuable insights into the battery health and enable proactive maintenance, reducing downtime and maintenance costs

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CHAPTER 6

CONCLUSION

In conclusion, the battery health monitoring system using current, voltage, and temperature sensors with IoT has shown great potential for improving the reliability and lifespan of batteries in various applications. The system allows for real-time monitoring and analysis of battery performance, enabling timely maintenance and replacement of batteries before they fail, resulting in reduced downtime, costs, and safety risks. The IOT connectivity provides remote access and control, enabling seamless integration with other systems and facilitating data analysis for optimization and predictive maintenance. However, the system's performance is highly dependent on the accuracy and reliability of the sensors and data transmission, and hence, further research and development are needed to enhance the system's capabilities and address its limitations. Overall, the battery health monitoring system with IoT is a promising technology for efficient and sustainable energy management.

A DESIGN OF FUZZY CONTROLLED MULTI OUTPUT DC-DC CONVERTER

A PROJECT REPORT

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DECLARATION

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ABSTRACT

In this work, a step-up fuzzy controlled DC-DC multi-output converter is introduced by integrating a super- lift Luo converter, flyback topology, and coupled inductor concept. The proposed multi-output converter has positive output super-lift structure while simultaneously generating step-up voltages in its outputs. The proposed step-up converter has two non-isolated and one isolated output with a simple structure using one switch and one magnetic core. There is no voltage spike by the leakage inductance of the coupled inductor across the switch in the proposed converter. Therefore, the switch has low-stress voltage. The energy in the leakage inductor is recycled leading to higher efficiency in comparison to similar converters with the coupled inductor. The operating principles and the characteristics of the proposed converter are analyzed and discussed.

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CHAPTER 8

CONCLUSION

In the current work, the proposed developed fuzzy controlled luo converter as been shown to be capable of providing a topology that reduces the output pple and parasitic effects. Using this method stable and ripple free output is tained. Simulation results verified the design and calculations. This developed -dc converters are suitable and convenient to be applied into electric vehicle plications with low ripples. The advanced dc-dc converter enhancement chnique such as luo converter is used. The main objective is to reach the high ficiency, low THD, high power density and simple structures.

CHARGING STATION FOR ELECTRIC VECHICLE USING IOT

A PROJECT REPORT

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ABSTRACT

Wireless power charging in EV stations with payment and IoT-based charging status indication is an innovative solution that combines wireless power transfer technology with payment and IoT-based systems to create a seamless and efficient EV charging experience. The wireless power transfer technology allows electric vehicles to charge without the need for a physical connection between the charging station and the vehicle. This technology utilizes electromagnetic induction or magnetic resonance to transfer power wirelessly from the charging station to the vehicle. To enable payment for the charging service, an payment system can be integrated into the wireless charging station. This payment system can be linked to the user's account, and payment can be made through a mobile app or website. The IoT-based charging status indication system can be used to provide real-time information on the status of the charging process. This system can monitor the charging progress, the amount of power consumed, and the estimated time remaining for the charging process to complete. The system can also alert users when the charging process is complete, enabling them to remove their vehicles and allowing other users to access the charging station. Overall, wireless power charging in EV stations with payment and IoT-based charging status indication is an advanced solution that provides a convenient, efficient, and seamless EV charging experience. It can help to increase the adoption of electric vehicles by making charging more accessible and user-friendly.

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CHAPTER 6

CONCLUSION

In conclusion, wireless power charging in EV stations with payment and IoT-based charging status indication is a promising solution that can enhance the EV charging experience. This technology combines wireless power transfer with an online payment system and IoT-based charging status indication to provide a seamless, efficient, and convenient charging experience for electric vehicle owners. This solution can also help to increase the adoption of electric vehicles by addressing some of the challenges associated with EV charging infrastructure. As the demand for electric vehicles continues to grow, innovative solutions such as wireless power charging with payment and IoT-based charging status indication can play a vital role in meeting the needs of EV owners and promoting sustainable transportation.

Hardware Setup of Overall Project: