



WIRELESS ELECTRIC CHARGING VEHICLE



A PROJECT REPORT

Submitted by

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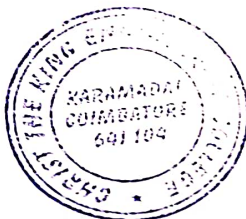
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BONAFIDE CERTIFICATE

Certified that this project report "WIRELESS ELECTRIC CHARGING VEHICLE" is the bonafide work of "CHANDRU R SARANRAJ S, VIGNESH R", carried out the project work under my supervision.

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INTERNAL EXAMINER

EXTERNAL EXAMINER



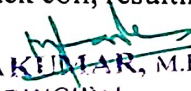

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ABSTRACT

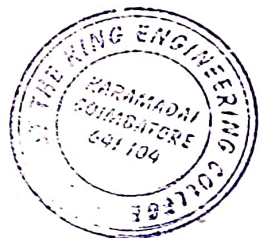
Dynamic Wireless Power Transmission (DWPT) uninterruptedly charges the moving Electric Vehicles (EVs) through the powered roadway, providing a potential solution to the battery bottleneck. EVs need to obtain energy as much as possible to guarantee proper functioning. Meanwhile, it is necessary to fully utilize the powered roadway in order to economize energy and reduce paving cost. Based on the selected sectional track and detuned series-series (SS) topology, a Constant Maximum Power Point Tracking (CMPPT) control method in the secondary side without the real-time communication between primary and secondary sides is proposed. This method uses the perturbation of rectified DC voltage and tracks the maximum power point. Thus the DWPT system transfers constant and maximum power regardless of the varied magnetic coupling coefficient. A scale-down DWPT demonstration platform based on sectional track is built.


The experimental results demonstrate the validity and feasibility of proposed control method for EVs where nearly constant and maximum power is received. The layout of primary coils is the key issue in the DWPT system, which has two general types: long track and sectional track. The long track maintains stable transmission power along driving direction because of constant coupling coefficient. However, the length of primary coil is much larger than the size of secondary receiving coil, and the secondary receiving coil covers only a small part of the transmitter track coil, resulting




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severely magnetic leakage and low system efficiency. In the layout of sectional track, many primary transmitter coils, whose sizes are similar to secondary receiving coils, are paved one by one to constitute the primary coils chain. Compared with the long track layout, the sectional track layout features with lower magnetic emission and less practice effort, which is an agreeable choice in DWPT system of EVs.




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CHAPTER 7

CONCLUSION & FUTURE SCOPE


7.1 CONCLUSION

The concept of wireless power transmission is presented. There recent technological applications that make the human life more beneficial in the present world have been discussed. Three new standard of wireless power technology that is already in competition with each other is also one of the talks of the topic in near future when other more standards are coming soon. Hence the selection of the technology is depends upon the number of parameters such required power, distance, medium, application, complexity and cost. This concept offers greater possibilities for transmitting power with negligible losses and ease of transmission than any invention or discovery. For the long range power transmission power can be sent from source toreceivers instantaneously without wires, reducing the cost.

7.2 FUTURE SCOPE

In the future, WPT is emerging as an important area of research. The existing wired communication of electricity could be replaced with wireless power. Soon, users need not carry charging devices. Also, Space solar energy harvesting has a better scope of deployment but its use is limited by the high-cost of systems. Further research can be done in this field.




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