Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY

(An Autonomous Institute Affiliated to Visvesvaraya Technological University, Belagavi,Accredited by NAAC, with 'A+' Grade)

Near Jnana Bharathi Campus, Bangalore-560056

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

(Accredited by National Board of Accreditation)

Dissertation Report

On

Dynamic Wireless Charging System for Electric Vehicles

Submitted in partial fulfilment of the requirement for the award of the Degree of

Master of Computer Applications

By

Lingananda T N
[1DA21MC027]

For the academic year 2022-23

Under the Guidance of

Dr. Indumathi S K

Associate Professor, Dept. of MCA, Dr. AIT, Bangalore.

Visvesvaraya Technological University

JnanaSangama, Belagavi, Karnataka 590018

Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY

(An Autonomous Institute Affiliated to Visvesvaraya Technological University, Belagavi, Accredited by NAAC, with 'A+' Grade)
Near Jnana Bharathi Campus, Bengaluru 560056.

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

Accredited by National Board of Accreditation

CERTIFICATE

Certified that the project work titled **" Dynamic Wireless Charging System for Electric Vehicles"** carried out by **Lingananda T N (1DA21MC027)** , a bonafide student of Dr Ambedkar Institute of Technology, Bangalore, in partial fulfilment for the award of Degree in Master of Computer Applications of **Dr Ambedkar Institute of Technology** during the year 2023. It is certified that all corrections/suggestions indicated during Internal Assessment have been incorporated in the report deposited in the department. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

29/8/23

Signature the Guide	Signature of the HOD	Signature of the Principal
DR. INDUMATHI S K	Dr. Chandrakanth G Pujari	Dr. M Meenakshi
Associate Professor	Professor and Head	Principal
Dept. of MCA, Dr.AIT	Dept. of MCA, Dr.AIT	Dr.AIT

Dr. Chandrakanth G. Pujari, MCA, MTech, Ph.D
Professor and Head, MCA Program
Dr. Ambedkar Institute of Technology
Bengaluru-560 056

Viva-voce Examination

Name of the Examiners

1.

2. **Signature with Date**

CIN : U72900KA2021PTC153188

DWORD CORE

Ref NO: DW/PRG/882

DATE: 23 AUG 2023

Project Completion Certificate

This is to certify that **Mr. Lingananda T N** (USN: **1DA21MC027**) from "**Dr. Ambedkar Institute Of Technology**", Bangalore, has successfully completed his project in our company from **May, 2023** to **August, 2023**.

Title: "**DYNAMIC WIRELESS CHARGING SYSTEM FOR ELECTRIC VEHICLE**".

Mr. Lingananda T N displayed professional traits during the project period and managed to complete all assigned tasks as requested.

We wish **Mr. Lingananda T N**, the very best for the career and future endeavors.

Regards,

For DWORD CORE PVT. LTD.

Mahanatesh N Director

Phone. 7022516574

Email. info@dwordcore@gmail.com

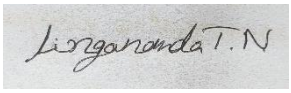
Address. Papareddypalya, Bangalore

DECLARATION

I, **Lingananda T N**, student of 4TH MCA, Dr**. AMBEDKAR INSTITUTE OF TECHNOLOGY**, bearing USN **(1DA21MC027)** hereby declare that the project entitled **"Dynamic Wireless Charging System for Electric Vehicles"** has been carried out by me under the supervision of Guide **Dr. Indumathi S K** Associate Professor, and **Dr. Chandrakanth G Pujari** Professor and HOD submitted in partial fulfilment of the requirements for the award of Degree of Master of Computer Applications by the Visvesvaraya Technological University during the academic year 2022-23, This reporthas not been submitted to any other organization/University for any award of degree or certificate.

Place: Bangalore **Name: Lingananda T N**

Date **signature**



ACKNOWLEDGEMENT

The sense of jubilation that accompanies the successfully completion of this project would be incomplete without mentioning and thanking all the people who played a vital role in the completion of this project by providing endless encouragement and support.

I would like to thank **Dr. M Meenakshi**, Principal, Dr. AIT, who has always been a great source of inspiration and for permitting me to carry out the project work

I am extremely grateful to **Dr. Chandrakanth G Pujari**, Professor and HOD, Dept of MCA. for providing us constant encouragement and permitting us to utilize the required laboratory facilities and a congenial working environment for the successful completion of this project

I am highly indebted to, **Dr. Indumathi S K**, Associate Professor, Dept of MCA. for constant guidanceand support, as well as for providing necessary information regarding the project.

I extend my special thanks to **Manoj H Gowda** project manager for his guidance, support and encouragement that has enabled to do this project.

Lastly, I would like to thank our parents and friends whose constant encouragement and support was crucial in execution and completion of this work.

Lingananda T N
(1DA21MC027)

Abstract

This paper presents the advancement of a microcontroller-based charging system Dynamically for electric automobiles. In the contemporary landscape, electric transportation plays a crucial role in mitigating carbon emissions, curbing local air pollution, and reducing dependency on fossil fuels. The European Commission has set a target of achieving a 70% reduction in road transportation emissions by 2050. The adoption to charging wirelessly is gaining prominence due to its ability to facilitate power transfer between the vehicle and the road while the vehicle is in motion.

The trajectory of electric vehicles indicates a transformative innovation for the future. The combination of pollution reduction and decreased reliance on fossil fuels contributes to the growing popularity of EVs. Nevertheless, challenges such as battery size, frequent recharging, and unfavorable weather conditions have impeded the wide range adopt to this technology. This project seeks to support the progress of electric automobiles by proposing an innovative approach to power delivery. The proposed system operates on the principle of wireless magnetic resonance coupling, involving specially designed roads embedded with energized winding. These roads interact with secondary windings on the vehicle, maximizing flux linkage for seamless and consistent power transfer.

The secondary circuit employs an ultracapacitor to drive the vehicle's motors. This study introduces a charging system Dynamically with broad applicability. The outcomes demonstrate that integrating ultracapacitors into the freestanding charging system can facilitate rapid charging and discharging, effectively meeting the energy needs of electric vehicles. This advancement paves the way for stable and commercial utilization of electric vehicles, consequently contributing to the reduction of fossil fuel usage in transportation systems.

CONTENTS