VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

A PROJECT REPORT ON

"CHARGING STATION FOR E-VEHICLE USING SOLAR PANEL WITH IOT"

Submitted in partial fulfillment for the award of Degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE & ENGINEERING

By

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CERTIFICATE

This is to certify that the project entitled **"CHARGING STATION FOR E-VEHICLE USING SOLAR PANEL WITH IOT"** has been successfully completed by

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the bonafide students of **DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING, ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2023–24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

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ABSTRACT

A spring up number of EVs on the road necessitates a paradigm shift in charging infrastructure, and integrating solar power with a battery energy storage system (BEES) offers a promising solution. This approach not only fosters a pollution-free transportation landscape but also mitigates dependence on fossil fuels by harnessing the boundless potential of solar energy. To optimize this system, a dc-dc boost converter ensures the solar panel voltage aligns with the station battery voltage, whereas Most extreme Control Point Following (MPPT) maximizes sun-oriented board yield. Moreover, the Web of Things (IoT) plays a urgent part, empowering real-time observing of the charging station's status through a portable application. This application empowers users to initiate charging, view sensor data, and receive alerts. By leveraging cloud storage, user data remains secure, and an LCD display provides supplementary information. GSM modem integration ensures prompt notification of any power fluctuations. To cater to a wider audience, a web page displays charging status, battery vitals, and the location of nearby charging stations. This solar-powered solution with its IoT-based architecture presents a revolutionary step towards a sustainable future for electric vehicles.