Dyanamic Wireless Charging Of EV

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Abstract- *Powerful wireless charging of electric vehicles becomes a popular method as it allows for the exchange of power between the car and the grid while the car is moving. Combining modern communication between automobiles and state-of-the-art technology in power transmission, cars can extend their travel time. Electrical transport will help reduce emissions. The recent shortage of fuel and the problems associated with global warming have caused a dramatic shift from burning engines to EVs.*

Keywords- Electric vehicle, Wired charging, static WPT, on-road WPT

I. INTRODUCTION

Rising oil prices and environmental issues have sparked growing interest in clean car technology such as EV.EV powered electric batteries, which need to be recharged with electricity from the grid. This method allows charging of battery storage equipment while the vehicle is moving. The car requires less battery storage capacity and the transport distance is increased .It allows us to charge EV regularly and thus may be better for battery life .EV charging systems are called roadway powered electric vehicles (RPEVs), which are supplied with real-time electricity. The advantage of RPEVs is that they are accurate, free from the charging time and speed limits, and gain extended miles with reduced battery capacity.

II. SYSTEM ARCHEITECTURE

The ESP32 is a cheap, low-power series series with a Wi-Fi chip controller integrated with dual Bluetooth mode.
ESP32 can work with other applications to provide Wi-Fi and Bluetooth functionality using its SPI / SDIO or its I2C / UART.

The L293D is a standard Motor Driver or Motor Driver IC that allows a DC car to drive anywhere. The L293D is a 16-pin IC that can control a set of two DC motors simultaneously in either direction. It means you can control four DC engines with one L293D IC.

III. METHODOLOGY

The schematic block diagram of the proposed system is shown in Fig.2. ESP32 Microcontroller is used in this system. The L293D motor driver gets signal from the ESP32 using which the motor driver drives the motors of the vehicle. DC Geared Motors of 12V 10RPM are used.

The wireless charging receiver circuit is connected directly to the battery while the transmitter circuit is connected throughout the road from a power source. When the robot car moves over the road the battery starts to charge. There is a extremely small gap between the transmitter and receiver coil. A voltage sensor is used to sense the battery voltage which is then displayed on the I2C LCD. The motor driver gets supply directly from the 12V battery while microcontroller and other circuits operating on 5V gets supply from 7805 Voltage regulator output.

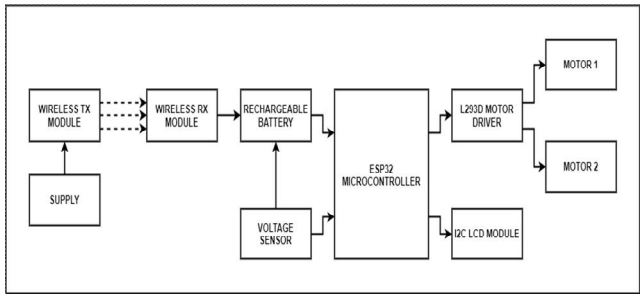

Fig1. Block Diagram of Proposed System

IV. FLOWCHART

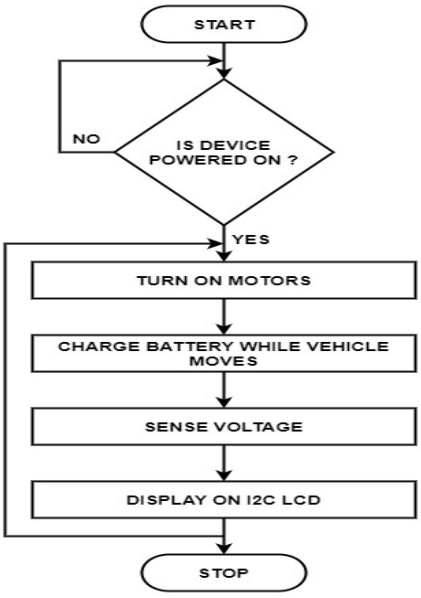

Fig.2.Flow Chart of Working Model

V. CONCLUSION

The project introduces the design and analysis of wireless power technology, which is a magnetic field, based on the immediate magnetic field. Magnetic fields interact extensively with living things, humans and animals and are scientifically considered safe. Wireless electrical products are designed to comply with applicable safety standards and regulations. So wireless electrical technology is safe.

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