WIRELESS CHARGING STATION FOR ELECTRIC VEHICLES BASED ON IOT

ABSTRACT

Wireless charging for electric vehicles (EVs) is a technology that allows EVs to be charged without being physically plugged into a charging station. Instead, the vehicle is equipped with a receiver coil that picks up electromagnetic fields generated by a transmitter coil embedded in a charging pad or road surface. As the world shifts towards sustainable transportation, the demand for efficient and autonomous EV charging solutions grows. This project addresses this need by providing a convenient, hands-free charging experience, making EV ownership more appealing to a wider audience. By streamlining the charging process, this technology has the potential to accelerate the adoption of electric vehicles, contributing to a cleaner, healthier environment.

The project titled "wireless charging station for electric vehicles" presents a pioneering wireless power transmission system designed to charge electric vehicles (EVs) autonomously, eliminating the need for human intervention. Leveraging cutting-edge technologies such as Arduino, IR sensors, and relays, this innovative system enables seamless energy transfer from the road to the vehicle. A key feature of this system is its ability to optimize coil power consumption when no vehicle is present, ensuring energy efficiency and reduced waste. A robotic car has been developed to demonstrate continuous power delivery to the battery, showcasing the system's capability to support uninterrupted EV operation. Furthermore, this technology aims to downsize the battery used in the vehicle, leading to reduced weight, increased fuel efficiency, and lower production costs.

The successful demonstration of this wireless power transmission system paves the way for future advancements in EV charging infrastructure, promising a transformative impact on the transportation sector. With its potential to enhance energy efficiency, reduce emissions, and support widespread EV adoption, this technology represents a significant step towards a more sustainable transportation future.

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