

Wireless Charging for EV

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Abstract: *Wireless power transfer (WPS) is a practical solution for addressing electric vehicle range concerns and reducing the cost of onboard batteries. Wireless recharging, which enables charging while the vehicle is in motion, has been widely adopted in electric vehicles. However, analyzing this method can be challenging due to its complex operating philosophy and numerous variables and parameters involved. The vehicle's position, whether it is in motion or stationary, plays a significant role in determining parameters such as vehicle speed and the size of coil receivers. This paper proposes a novel method to enhance the performance of dynamic wireless recharge systems. The proposed system incorporates receiver coils to maximize charging power. A dynamic mathematical model is introduced to accurately describe and quantify the power transmission from the source to the vehicle. The model encompasses all relevant physical parameters and provides comprehensive discussions regarding their significance. The effectiveness of the proposed model was demonstrated through results obtained from simulations. Furthermore, experimental tests involving two coil receivers positioned beneath the vehicle validated the simulation results, affirming the model's reliability.*

Keywords: Wireless Charging Technology, IOT, Sensors, Automobile, WPT

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