

Wireless EV Charging Parking System with Solar Energy Combination

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Abstract: *The increasing adoption of Electric Vehicles (EVs) demands innovative, efficient, and sustainable charging solutions. This paper presents a wireless EV charging parking system integrated with solar energy, offering a portable, cable-free alternative to conventional plug-in charging methods. The proposed system utilizes resonant inductive coupling for wireless power transfer, powered primarily by a solar energy source with a DC battery backup for grid outages. Additionally, it supports bidirectional charging technologies such as Vehicle-to-Grid (V2G) and Vehicle-to-Home (V2H), enabling EVs to function as energy storage units in future smart grids. This solution not only enhances user convenience but also promotes clean energy utilization and grid interactivity, marking a step forward in the development of intelligent, sustainable EV infrastructure.*

Keywords: Wireless power transfer, Electric vehicles, Solar energy, Vehicle-to-Grid (V2G), Smart charging system

