

Advanced Wireless Charging Station for EV

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Abstract: *This paper presents an advanced wireless charging station for Electric Vehicles (EVs) powered by renewable energy, integrating solar energy with intelligent monitoring using an ESP32 microcontroller. The system features wireless power transfer via transmitter and receiver coils, efficient energy management with DC-to-DC conversion and battery storage, and real-time monitoring through voltage and temperature sensors. Safety is ensured with automated relays and cooling mechanisms, while user convenience is enhanced with wireless communication for remote monitoring and status updates. This innovative framework offers a sustainable, efficient, and scalable solution for the growing EV market..*

Keywords: Wireless charging, Electric Vehicles, ESP32 microcontroller, Renewable energy, Intelligent monitoring

