

ABSTRACT

Solar Powered E-Vehicle Battery Monitoring and Fault-finding System Using IoT is designed to enhance the efficiency, reliability, and sustainability of electric vehicles by integrating microcontroller-based control, IoT connectivity, and sensor-based monitoring. This system employs a solar panel to charge the EV battery, thereby reducing dependence on external power sources and promoting the use of renewable energy. Real-time monitoring of key parameters including battery voltage, current consumption, and motor speed is achieved through the use of voltage and current sensors. Additionally, the system incorporates an advanced fault detection mechanism that identifies potential failures or abnormalities within the battery and motor systems. Upon detecting a fault, it triggers instant alerts via IoT, enabling prompt maintenance and preventing further damage. IoT integration enables remote access to live vehicle diagnostics, offering users real-time insights into battery health, energy efficiency, and fault status. This innovative solution aims to improve the performance, safety, and longevity of solar-powered EV's while advancing the adoption of sustainable transportation.