

ABSTRACT

The use of electric vehicles is becoming increasingly widespread as an environmentally friendly alternative in mobility. However, the main challenge faced is compatibility limitations. In an effort to boost the acceptance of electric vehicles, the development of a Universal Electric Vehicle Battery Swap System (SPBKLU) holds promise as a solution. This research examines the concept of a universal SPBKLU, designed to enable users of electric vehicles to quickly and efficiently replace batteries.

The primary focus is on the development of battery exchange infrastructure that can be accessed by various types of electric vehicles, regardless of make or model. In this context, the research includes, integration of the Internet of Things (IoT) platform for efficient monitoring and management of battery packs, data analysis and understanding of battery behavior to maximize battery lifespan and performance, aspects of security and sustainability in the operation of SPBKLU, field testing, and feedback from electric vehicle users regarding their user experience with SPBKLU. The results of this research are expected to contribute to promoting sustainable mobility with electric vehicles, addressing range-related challenges, and supporting the transition to clean energy.

A universal SPBKLU has the potential to transform the urban transportation paradigm, provide environmentally friendly solutions, and assist in achieving sustainability goals in the transportation sector.

Keywords: Battery, Compatibility, Communication, SPBKLU, Universality