

ABSTRACT

The battery exchange station is the place where the depleted battery is exchanged for the charged and ready-to-use battery. The battery swapping station was created to replace the manual battery charging process, in which manual battery charging takes a long time. Battery exchange stations are usually intended for electric vehicles that have small battery dimensions.

The author will design and implement an IoT-based battery management system for drone battery exchange stations in this study. This system uses electrical energy from PLN. This system consists of two systems: the battery management system and the IoT system. The battery management system functions as a counterweight to the battery cells when the battery is being charged, while the IoT system allows the battery exchange station to provide information on battery availability to the drone, and the battery condition can be monitored via a mobile phone or PC. The test results show that the time required to balance 4 cells reaches 4 hours with the difference between the highest and lowest cell voltages being 0.006V to 0.010V.

Key Word: *Battery swapping station, Drone, BMS (Battery Management System), IoT (Internet of Things).*