ABSTRACT

Batteries are a source of electrical energy that can be used as electronic devices, all electronic devices use batteries as a power source. Lithium-ion batteries have become a good energy storage device for portable electronic devices. Charging a battery that exceeds capacity will result in overcharge and prolonged use of power will cause the battery to run out (*over discharge*). This problem can be avoided by having a good battery management system (BMS) in monitoring system performance effectively and competently to avoid damage and failure of battery function.

In this study, a battery monitoring system will be designed with the process of charging and discharging. The battery used is a lithium-ion type with several indicators that will be displayed, namely battery voltage, battery current, capacity, and determining the *state of charge value. and state of health*. This study uses the Coulomb calculation method. The values are *state of charge* and *state of health* obtained by using an LED load with a 68-ohms resistor. In the process of emptying the maximum capacity value is 99% and the minimum is 25%. While in the process of charging the battery capacity value reaches 100% more.

Keywords: Battery, BMS, Coulomb, SOC, SOH