Studi tentang strategi smart charging dan state of charge estimation pada lead acid baterai = Studies on smart charging strategies and state of charge estimation for a lead-acid battery

Faiz Husnayain, author

Abstrak

A proper charging and an accurate battery State of Charge (SOC) method are essential for having optimum utilization of a battery. The proper way of charging is compulsory to extend battery life and prevent it from being damaged. Three-step charge, which consist of two constant current and a constant voltage, is a charging method that speed up charging time of 10 units lead acid batteries with total capacity of 4.94Ah that connected in series up to 6.97% compare with two-step charge and prevents them being overcharged. Constant voltage discharge also provided by the half-bridge in this thesis.
The SOC estimation in this thesis use Neural Network method, then compare with Open Circuit Voltage (OCV) prediction method and coulometric counting method. Experiment results show that the system could implement three-step method without any problem and the SOC estimation shows accurate measurements with maximum average percentage error no more than 0.893%.