DEVELOPMENT OF A CHARGE-DISCHARGE MONITORING SYSTEM PROTOTYPE FOR BATTERY MANAGEMENT SYSTEMS FOR SOLAR PANEL ELECTRIC ENERGY STORAGE

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ABSTRACT

This research is development research in the field of third year electrical systems for learning at the D4 Electrical Engineering and Installation Laboratory, UNY Wates Campus. As time goes by and advances in technology, especially in the electricity sector, there are many demands to be able to meet existing load needs. Batteries as electrical energy storage are capable of being a backup to the main energy source if conditions occur that result in a lack of power in the main energy source. In this research, developing from the previous 2 years, the Lithium Ion type electric vehicle battery was used. Apart from that, of course there needs to be pack to cell monitoring on the battery so that it can work as optimally as possible to supply electrical energy as a source of energy reserves. The objectives of this research include: (1) To determine which used electric vehicle batteries are suitable for use. (2) Can create and design the Prototype Development of the Charge-Discharge Monitoring System for the Battery Management System (BMS) on Solar Panel Electrical Energy Storage. (3) Can find out the performance and functional tests of the Prototype Development of the Charge-Discharge Monitoring System for the Battery Management System for Solar Panel Electric Energy Storage. This research uses the Research and Development (R&D) method, by developing from the previous year's product. Trials or Experimentals are carried out at the development stage and product testing stage. There are two stages of testing at the development stage, namely black box testing and feasibility testing by experts. This research method involves making the initial design stages of the initial design of the battery pack, then creating web monitoring on the AJAX WebServer, to determine the voltage condition on each battery cell, and then continuing with the implementation of making a monitoring control tool for the battery pack, with a capacity of 75 Ah, namely 3 in Series and 25 in parallel. The research was carried out at the UNY Electrical Installation and Machinery laboratory, Wates Campus.

Kata Kunci: *AJAX WebServer, Battery Management System, Lithium-Ion Battery, Monitoring System,*