ABSTRACT

The need for electricity supply that is getting more and more time, making us increasingly dependent on electricity that already exists now, such as electricity from PLN. Thus the use of environmentally friendly energy must be utilized, one way to use environmentally friendly energy by using solar panels. By utilizing solar panel energy, it needs a power storage to distribute power to the desired load. Where supercapacitor is a device that serves as a buffer of energy from PV that involves large power. Then when the value of the power received by the supercapacitor and the battery are arranged in parallel, the Supercapacitor will work as a battery buffer distributed from PV. SOC estimation method used is Coulomb Counting (CC), the basic principle of CC is to calculate the incoming or outgoing electric charge. Batteries that are paralleled with supercapacitors will work as a buffer that will see the difference when in SOC (State of Charge) conditions. From the SOC value generated, monitoring is carried out with an emptying limit of 20% and a cut-off is carried out and a 100% filling limit is carried out.

Keyword: *Supercapacitor, Battery, State of Charge, Coulomb Counting*