ABSTRACT

Rechargeable batteries are a very important component for electric vehicles, as the name implies, electric bicycles make electrical energy obtained through batteries as one of the main energies to run the motor on these types of bicycles [1]. Charging the battery is one of the important points for rechargeable batteries. Because charging the battery can affect the life of the battery.

In this study, the constant current method is used which will cut off charging when the voltage on the battery is fully charged. The circuit made in this charging uses a buck converter which can limit the incoming current. The incoming current is limited according to the data listed on the lithium ion battery datasheet. Later, the supply of electrical energy has an AC voltage of 220V which will be lowered and converted into DC voltage.

In the test, the charging system is able to limit the incoming current when charging takes place, which is 2.1A according to the lithium ion battery datasheet. The battery used in the charging test has a maximum voltage of 27.4V and a minimum battery voltage of 22.8V. The battery capacity has decreased by 58.14% of the battery capacity stated in the battery specifications.

Keywords: Lithium Ion Battery, Constant Current, Buck Converter, Rectifier.