

## **ABSTRACT**

### *(IMPLEMENTATION OF CHARGING AND BALANCING POWER SYSTEM ON BATTERY CELL IN ELECTRIC VEHICLE)*

*Multicell battery is very important for electric vehicle in last decade to keeping the power longer so the electric vehicle can be operated longer. Beside to keeping power longer, battery needs to charge faster which can decrease charging time.*

*Multicell battery is a battery which packed with more than one cell with series topology which can increasing the voltage. Because of battery is packed more than one cell, so it needs balancing power circuit in charging process to avoid overcharging one of the cells which has a higher voltage than other. Charging system is using Constant Voltage / Constant Current method which is to control current and voltage in charging cycle. Beside charging power system, there is method for balancing power system which is Flyback Topology. These systems use calculation State of Charge which is to identify the value of current, voltage, and measure capacity.*

*In the charging system, Constant current operates for approximately 400 seconds while the Constant voltage operates for almost an hour. In the test to determine the battery internal resistance, the value of battery internal resistance decreases with the following values of current and voltage. In balancing system implementation, the balancing system output voltage is 4.52 Volt with current 6.6 mA, frequency 50.000 Hz, 50% duty cycle, balancing circuit power equal to 0.03 Watt.*

**Keywords:** *Multicell, Lithium polymer, state of charge, ballancing, charging.*