

## **ABSTRACT**

In the modern era of the all, as now, the need for rapid and dynamic information be increased. The need for it triggers the development of smartphone technology. Smartphone requires a long-lasting battery and can be recharged under any circumstances. Therefore we need a tool to do a battery recharging smartphones using one-way power source (DC) as the power source.

In this final project will be made a means of charging a battery that comes from the power source in one direction (DC). The voltage of the source in the form of 12 Volt batteries will go into the DC chopper circuit. In the DC chopper circuit contained in the form of a MOSFET switch that is connected to the microcontroller, microcontroller and MOSFETs arranged to control the PWM signal, so that the voltage level at the output of the DC chopper circuit can be set according to the needs of the load.

This mobile phone battery charging tool has been implemented and tested. From the test results of this series of dc buck chopper showed the efficiency of the circuit by 85%. Voltage drop occurs from the source to the output of the system which is affected by the components that are not working optimally, when the PWM signal is generated maximum input voltage of 12 volts initially dropped to 10 volts. System can be said to have worked well and are in accordance with the expected results.

*Key words : DC Chopper, microcontroller, MOSFET*