

## ***ABSTRACT***

Nowadays, the development of robot is so rapid in helping human's work. Industrial sector is one of the areas that takes many advantages of the robot functions. The example of robot that is used in industrial sector is wheeled line follower robot which has several components, such as line sensor, DC motor driver, power supply and so on. On the application, the robot uses battery as power supply. However, its use is very inefficient because it can drain quickly.

The construction of this final project covers "Design and Implementation of Automatic Power Supply System on Robot". The power supply system was designed by using solar cell as an alternative power supply source to overcome problems that occurred on the robot in which the battery drained quickly. In addition, this power supply system uses voltage-lowering circuit Buck Converter module. It is used to lower the output voltage in the solar cell. The voltage is lowered by Buck Converter module in order to make it more stable, then it will charge the battery to be used as a source of power supply to the robot. The method in the power supply system uses charging method with constant voltage and current.

The testing of this final project was done by managing the power supply with two batteries. After testing the robot, using an automatic power supply system made robot had a longer duration in working. The duration of robot working was 450 minutes outdoors with scorching intensity of sunlight. Whereas the robot worked duration was 180 minutes indoors.

**Keywords:** *Solar Cell, Buck Converter, Relay, Mikrokontroler*