ABSTRACT

In the development of industrial technology at this time, many industrial products has its own level of voltage requirements. This means that each instrument will be damaged if the output voltage exceeds or is less than the required voltage range. It is very influential to the performance of the tool do its job.

At the end of the assignment is designed *DC-DC converter* that is focused on how the outcome of an output voltage derived from the input voltage. *DC-DC converter* that is used is the kind of *buck converter* 12V with PID control based microcontroller ATMega8535 that produce Pulse Width Modulation (PWM) and IRFP640 as switching components.

In testing, the resulting output voltage of this device with a 24 Volt DC motor of 10.412 Volt and the resulting efficiency of 69.30%. while the 33K ohm resistor load output of 11 138 Volt and the resulting efficiency of 65.49%.

Keywords: *DC-DC converter, PWM, Buck Converter, Mikrokontoler ATMega8535, PID*