**ABSTRACT**

NICOLAUS ALLU. *Control of Direct Current Motor Speed ​​Controlled Anchor With tuned PID Controller Based Value Calculation Root Mean Square* (supervised by Rhiza S. Sadjad and Faizal Arya Samman).

The aim of this research is to disseminate and implement the tuned PID controller based on square root average value for the control of the direct current motor speed controlled anchor to obtain better performance.

The research procedure was performed manually using trial and error method where the results have not yet been justified. An alternative approach was used to resolve the problem to obtain relatively better and faster results to perform analysis. The alternative method used in this regard was Ziegler Nichols method with the verification of the results based on average square value calculation error.

The result of simulation showed RMSE with tuned control of 57,9 RPM (2,8950%), RMS\_Ea = 6,361 Volt (2,8914%), while the results are automatically tuned PID controller to Gain k = 2,663 obtained Kp = 9,587, Ki = 7,608 and Kd = 3,019. With the value of Kp, Ki and Kd, the system can work well with maintaining the motor rotation speed approaching the setpoint.