

## **ABSTRACT**

*Broiler chicken farming is a livestock business sector with very good prospects. The optimal temperature for broiler chickens in the brooding period (14 days old) ranges from 30-35°C. The relative humidity of growth in chickens is between 60% and 70%. However, broiler farming is inseparable from increasing temperature and humidity caused by genetic factors for broiler chickens and environmental factors. It is from this that affects the productivity level of broiler chickens, decreased yields because there are stressed or dead chickens. Based on this, it is the aim of making a temperature control system using a prototype in a chicken coop with a PID controller system using the Ziegler Nichols tuning method. Using the DHT22 temperature sensor which is connected to the ESP32 microcontroller to obtain data, the temperature reduction is carried out by using an AC fan that works based on the PWM value control of the AC light dimmer module which is then processed by data. Tests using PID control seem to have a very specific effect on the steady state error, namely reducing the magnitude of the steady state error, using a control system in the Ziegler Nichols test it drops to 0.6%, for test 3 it maintains a good value at 0.3%. Testing the PID control system when given a disturbance is able to work according to the setpoint and can reach its steady state, getting better results, namely a steady state error of 0.6%.*

*Keywords: Broiler Chicken Cage, PID Control, DHT22 Sensor, Modul AC light Dimmer*