

PID-IOT BASED AUTOMATIC EGG HATCHESTER CONTROL AND MONITORING SYSTEM

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ABSTRACT

Egg incubator machine is a tool that helps the process of hatching eggs. The way this tool works is through a parentless incubation process using an incandescent lamp. In the process of hatching eggs there are two important factors, namely temperature and humidity, because of these two important factors a good PID control is needed. With egg incubators that are integrated with IoT, breeders can monitor temperature and humidity conditions anywhere as long as they have an internet connection. For this reason, this research has created a simple egg incubator prototype with NodeMCU as a microcontroller, DHT11 as a temperature and humidity sensor, Mist Maker as an increase in humidity, incandescent lamp as a temperature riser, and MQTT Dash as an IoT monitoring facility. This research has produced an egg incubator that can maintain temperature stability at 38°C with a steady state error of +0.1°C - +0.5°C and maintain humidity stability at 55% with an error of ±1-2%. The monitoring system that uses the MQTT Dash application can work properly without any delay.

Keywords: *egg incubator, PID, IoT, MQTT*