

***Design of Automatic Control System for Microcontroller-Based Chicken
Feather Plucking Machine***

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ABSTRACT

This research aims to design an automatic control system for a chicken feather plucking machine based on the Arduino Nano microcontroller to overcome the over running issue commonly found in conventional systems. The feather plucking machine is equipped with a control panel consisting of Start, Stop, and three timer options (Timer 1, Timer 2, Timer 3) based on the number of chickens processed. The system is managed by the Arduino Nano, which processes button inputs, controls a relay module for AC motor operation, and displays information via a 16x2 LCD. Test results indicate that the system operates effectively, with automatic timing set to 47 seconds for 1–2 and 5 chickens, 30 seconds for 3 chickens, and 36 seconds for 4 chickens. This system successfully improves process efficiency, minimizes operational errors, and reduces the risk of chicken meat damage caused by excessive operation time.

Keywords: *automatic control system, Arduino Nano, feather plucking machine, digital timer, production efficiency.*