

SMART COFFEE ROASTED PROTOTYPE DESIGN BASED ON MICROCONTROLLER AND ANDROID APPLICATIONS

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ABSTRACT

Technological developments in the industrial era 4.0 have a significant impact in the industrial world, the development of technological advances moves in tandem with changes in technology style from manual to automation, this is evidenced by the number of large industries that are starting to switch to using sophisticated machines based on automation with control. a minimum that is only carried out by 1 or 2 operators, which makes the production process easier and faster. Not only large industries, the same thing can also be seen in medium and small industries which have begun to explore the use of technology to cut production time. Based on these conditions, an idea emerged to design and build a prototype prototype of smart coffee roasting based on a microcontroller and an android application where this technology will facilitate the roasting process with an android application monitoring and control system that can be controlled by an operator, choosing the maximum temperature, temperature monitoring, roast and roast status. Thus, with the convenience and efficiency offered, faster, more efficient, efficient and consistent production results will be obtained, with the results of the system testing being able to work according to the expected functions, including regulating motor rotation speed (PWM), heating on/off. , adjust the CW/CCW rotation, the roasting timer and temperature monitoring The Ntc sensor can be implemented in the system to read the system heating temperature with an accuracy value of 86.8% and a precision value of 92.0% The system can also be directly implemented to perform the roasting process on coffee beans with 3 levels of maturity, namely light, medium and dark roast. The test was carried out with the same temperature in the range of 50-60 C, and the same time for 30 minutes, but at different speeds, the results were 150 PWM light, 100 PWM medium and 60 PWM dark roast.

Keywords: *Coffee roasted , nodeMCU ESP8266, Blynk*