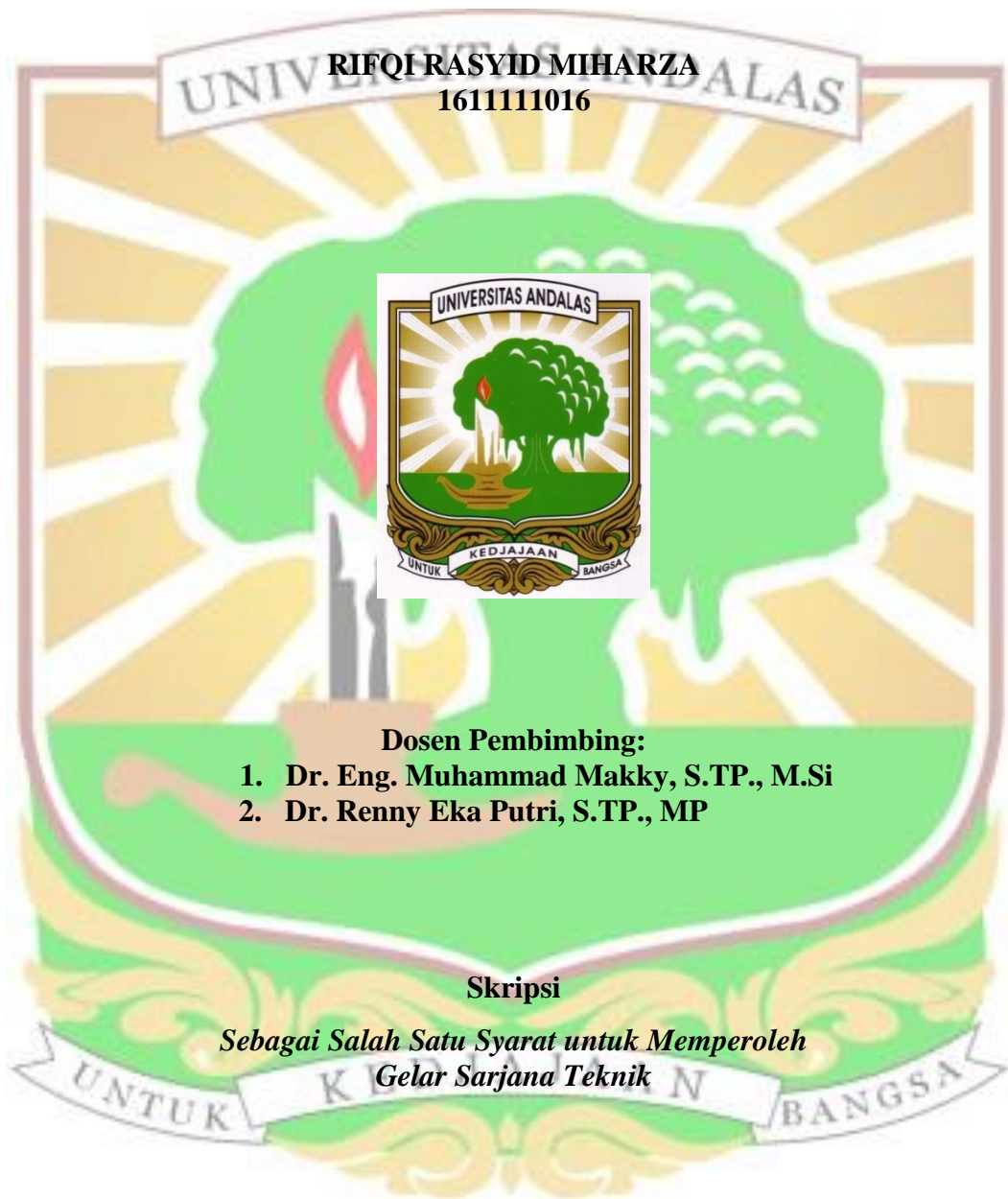


**PENGEMBANGAN ALAT *MINI COFFEE ROASTER* OTOMATIS
BERBASIS ARDUINO UNTUK *COFFEE SHOP***



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PENGEMBANGAN ALAT *MINI COFFEE ROASTER* OTOMATIS BERBASIS ARDUINO UNTUK *COFFEE SHOP*

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ABSTRAK

Kopi merupakan hasil komoditi perkebunan yang tergolong tinggi di Indonesia. Biji kopi asal Indonesia digemari hingga mancanegara, dibuktikan dengan ekspor biji kopi asal Indonesia yang mencapai wilayah Amerika, terutama Amerika Serikat. Perkembangan industri pengolahan biji kopi telah tersebar di seluruh Provinsi di Indonesia. Selain itu, biji kopi juga dimanfaatkan untuk berbagai olahan minuman di *coffee shop*. Berdasarkan penelitian Albestin (2018) tentang pengembangan alat *mini coffee roaster* untuk *coffee shop* yang memiliki beberapa kekurangan karena sistem kerjanya masih semi mekanis. Oleh sebab itu, dilakukan pengembangan terhadap alat *mini coffee roaster* untuk *coffee shop* dengan penambahan sensor *thermocouple*, motor *stepper* dan sistem kerja berbasis arduino. Penelitian yang dilakukan yaitu perancangan alat sekaligus pengamatan penyangraian *green bean* kopi. Pengujian dan pengamatan yang dilakukan yaitu: Kebutuhan energi, RPM, suhu penyangraian, kadar air, jumlah biji tidak tersangrai sempurna, jumlah biji rusak setelah disangrai, rendemen, analisis data statistik dan analisis ekonomi. Berdasarkan penelitian dihasilkan alat *mini coffee roaster* otomatis untuk *coffee shop* berbasis arduino, sehingga memudahkan proses *roasting* di *coffee shop* terutama dalam pengontrolan suhu dan meningkatkan efisiensi kerja alat. Berdasarkan penelitian dapat disimpulkan penyangraian biji kopi ukuran super dan menengah pada waktu 10 menit menghasilkan biji kopi dengan kriteria *Full City*, sedangkan penyangraian biji kopi ukuran super dan menengah pada waktu 5 menit menghasilkan biji kopi dengan kriteria *City*.

Kata kunci – Kopi, *coffee shop*, *mini coffee roaster*, *thermocouple*, motor *stepper*, arduino

DEVELOPMENT OF ARDUINO BASED AUTOMATIC MINI COFFEE ROASTER FOR COFFEE SHOP

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ABSTRACT

Coffee is a relatively high plantation commodity in Indonesia. Coffee beans from Indonesia are popular overseas, as evidenced by the export of coffee beans from Indonesia which reaches the American region, especially the United States. The development of the coffee bean processing industry has spread throughout the provinces in Indonesia. In addition, coffee beans are also used for various beverage processing in coffee shops. Based on Albestin's research (2018) concerning the development of a mini coffee roaster for coffee shops which has several drawbacks because the working system is still semi-mechanical. Therefore, the development of a mini coffee roaster for the coffee shop was carried out with the addition of a thermocouple sensor, a stepper motor and an Arduino-based work system. The research conducted was the design of the tools as well as the observation of the roasting of green beans. Tests and observations carried out were: Energy requirements, RPM, roasting temperature, moisture content, number of beans not completely roasted, number of damaged beans after roasting, yield, statistical data analysis and economic analysis. Based on the research, an automatic mini coffee roaster for arduino-based coffee shops was produced, thereby facilitating the roasting process in the coffee shop, especially in controlling temperature and increasing the efficiency of the equipment. Based on the research, it can be concluded that the roasting of super and medium sized coffee beans at 10 minutes produces coffee beans with Full City criteria, while roasting super and medium sized coffee beans at 5 minutes produces coffee beans with City criteria.

Keywords – *Coffee, coffee shop, mini coffee roaster, thermocouple, stepper motor, arduino*

