# DESIGN AND ANALYSIS OF COFFEE ROASTING MACHINE SHIFT WITH ROTARY WORKING PRINCIPLES


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## Abstract


Liberika coffee is coffee that is cultivated in the lowlands which only has a height of about two meters above sea level. Liberika coffee that lives in the lowlands of Rangsang Pesisir, Meranti Islands Regency, is one of the typical icons of Meranti, so as not to lose the taste of Liberika Meranti coffee. The author wants to design and build a coffee roasting machine to make it easier to determine Light, Medium, Dark roasts so that coffee quality is maintained and the price is more affordable for a coffee roasting machine. From the provisions in coffee roasting according to the criteria, it can be concluded that roasting using a coffee roasting machine with a rotary working principle of an initial temperature of 180℃ can produce a light roast in 3 roasting experiments, the average value of which is Light Roast at a temperature of 162.5 . Medium Roast 164.4 . Dark Roast 168.1 . For rotary shaft analysis, coffee roasting machines get the feasibility results from the moment given during installation using Autodesk Inventor 2019 analysis for the shaft to get a load of 1000,000 N/mm in the Von Mises category 37,3961 MPa, 1st principal stress 35,8446 MPa, 3rd principal stress 2,62256 MPa, Displacement 0,418702 mm, Safety Factor 15 ul.



*Keyword* : *liberica, coffee, meranti, roasting, rotary*