The Effect of 25 % Coconut Shell Activation Temperature Variations on Exhaust Emissions for Supra X 125 CC Motorcycles

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ABSTRACT

The results from the combustion of fuel in the combustion engine release substances such as HC (Hydrocarbon), CO (Carbon Monoxide), CO_2 (Carbon Dioxide), O_2 (Oxygen), and NOx (Nitrogen Oxide) which can have a negative impact, both on human health and the environment. The purpose of this research was to determine the effect of adding an adsorbent made from coconut shell activated carbon. This research uses chemical activation and physical activation, where for chemical activation using 25% NaCl (Natrium Chloride) solution while for physical activation using activation temperatures of 550 °C, 600 °C, 650 °C, and 700 °C. This test is carried out on the engine idle state. The results showed that without the adsorbent the level of O_2 (Oxygen) was lower by 19.45% than using the adsorbent. The results of CO (Carbon Monoxide) levels showed that the activation temperature of 650 °C + 25% lower NaCl (Natrium Chloride) was obtained by 0.1325%. The results of HC (Hydrocarbon) levels showed an activation temperature of 550 °C + 25% lower NaCl (Natrium Chloride) obtained at 334.75 ppm. The results of CO_2 (Carbon Dioxide) levels showed an activation temperature of 550 °C + 25% lower NaCl (Natrium Chloride) obtained by 0.15%.

Key words: Adsorbent, Chemical Activation, Physical Activation, Engine Idle State