Analysis Catalytic Converter Aluminium with Additions Cooling System to Exhaust Gas Emissions on Diesel Motor. Pembimbing Ahmad Robiul Awal Udin ST., MT. dan Mochamad Irwan Nari ST., MT.

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ABSTRACT

This research is an experimental research that used experimental method data of quantitative research approach to analyze the influence of catalytic converter with aluminium catalytic added by cooler system towards outcasted emission gas of diesel motorcycle which in the form of carbon dioxide (CO_2), hydrocarbon (HC), carbon monoxide (CO), and outcasted gas energy in the form of heat energy and LMTD temperature (log mean temperature difference). The object of this research is aluminium catalytic converter with a cooler system. The result of aluminium catalytic converter added by a cooler system towards energy and outcasted emission gas of diesel motorcycle in the form of heat and ltmd temperature shows that the cooler system is effective in transferring the heat of outcasted emission gas and had a significant rising in every machine rotation with a highest LMTD temperature value which is 81,58^{0}C in 2700 rpm machine rotation. The result of aluminium catalytic converter towards outcasted emission gas of diesel motorcycle in the form of carbon dioxide (CO_2), hydrocarbon (HC), carbon monoxide (CO) shows uneffective result which the amount of carbon dioxide (CO_2), hydrocarbon (HC), carbon monoxide (CO) is lower than the exhaust catalytic converter with the average gap is 0,37% in carbon dioxide (CO_2), 8,4 ppm in hydrocarbon (HC), and 0,0098% in carbon monoxide (CO).

Keywords : *catalytic converter, aluminiumum, exhaust emissions, cooling systems, diesel motor*