Analysis Of The Effect Of Pertalite And Carbon Cleaner Fuel Mixture With Shell And Tube Type Heat Exchanger Fuel Preheater And Octane Value On Exhaust Gas Emissions

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ABSTRACT

This study aims to determine the Carbon Cleaner mixture that can reduce exhaust emissions by preheating the Shell and Tube Type Heat Exchanger fuel. Variations of Pertalite and Carbon Cleaner mixtures, namely 15 ml which has an octane value of 88.4 and 20 ml has an octane value of 88.7. The shell and tube type Heat Exchanger is used to heat the fuel before entering the combustion chamber, with an initial temperature (Tin) of 28.5 ° C and a final temperature (Tout) of 50 ° C. The test results using a Heat Excharger and a mixture of 15 ml and 20 ml Carbon Cleaner showed that the carbon monoxide (CO) gas results increased by 0.4% and Oxygen (O2) decreased by 0.9% from the test results without using a Heat Excharger. The decrease in oxygen (O2) and the increase in carbon monoxide (CO) are due to this combustion being a partial combustion process where the fuel does not burn completely due to limited oxygen because there is not enough oxygen to complete the process to CO2.

Keywords: Combustion, heat exchanger, exhaust emissions, CO, O2,