

***ANALYSIS OF THE USE OF SHELL AND TUBE TYPE FUEL  
PREHEATERS ON EXHAUST GAS  
EMISSIONS***

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***ABSTACT***

*This study aims to analyze the addition of a shell and tube type heat exchanger as a fuel preheater to be a reference for reducing the viscosity and exhaust emissions of vehicles that cause pollution and hazardous substances. A heat exchanger is a heat exchanger that has the potential to be used as an effort to reduce vehicle exhaust emissions. This type of research uses experimental research. The object of this study is the viscosity and exhaust emissions of vehicles using Pertamina fuel with the addition of a heat exchanger. The results of the study are viscosity and exhaust emissions testing carried out at each variation of fuel temperature. The viscosity value produces the lowest data at a fuel temperature of 50 °C with a viscosity value of 0.457 cP. The exhaust emission value produces the most optimal emission reduction data at a temperature of 50 °C with an HC gas value of 1041ppmvol. For CO gas, the results are 2.4%vol.*

***Keywords:*** *shell and tube type heat exchanger, viscosity, exhaust gas emissions*