

**ANALISIS PENAMBAHAN MEDAN MAGNET PERMANEN
PADA MUFFLER TERHADAP EMISI GAS BUANG (ANALYSIS
OF PERMANENT MAGNETIC FIELD ADDITION ON MUFFLERS TO
EXHAUST GAS EMISSIONS)**

Commision Guide, Azamataufiq Budi Prasajo, ST, M.T.

Ahmad Hafizh Muhajir

*Study Program of Automotive Machine
Engineering Department*

ABSTRACT

Several technologies to reduce exhaust emissions such as catalytic converters, electromagnetic additions to mufflers have begun to be developed to comply with government regulations in an effort to reduce the reduction of exhaust emissions that are harmful to the environment. Like research that has been done by adding electromagnetics to the muffler to reduce exhaust emissions. From the data produced by the study, the level of exhaust gas emissions can be reduced, But the temperature released increases. In this research, we will replace electromagnetics with permanent magnets in order to suppress the temperature so that it does not increase as in the use of electromagnetics and to see the effect of permanent magnetic fields on the muffler on vehicle exhaust emissions. In this research, we will use several magnetic field configurations and use idle rpm for the process of taking exhaust emission data. From the results will be compared between the muffler using a magnet and without a magnetic field. From the test results, the hydrocarbons decreased by 7.1% in the second magnetic configuration. CO gas increased by 15.9% in the second magnetic configuration. CO₂ gas increased by 2.36% in the first magnetic configuration. gas O₂ decreased by 1.42% in the second magnetic comparison. From these results it can be concluded that the use of a permanent magnetic field on a vehicle muffler can only slightly affect vehicle exhaust emissions and the exhaust emission test results still show better previous research using electromagnetic magnetic fields with HC results down 22%, CO down 39.65%, CO₂ increased 23.15%, O₂ decreased 26.83% after the electromagnet was attached to the exhaust.

Keywords: Exhaust gas emissions, Mufflers, Permanent magnets, Neodymium