Engine Performance Analysis and Exhaust Gass Emission from Variation Of Fuel Mixture Gasoline (RON 90) And Ethanol Grade 97% With Comparison Of Ignition Angle

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ABSTRACT

This research aims to determine the performance of fuel gas mixture (RON 90) and ethanol grade 97% (E0, E7, E14 and E21) by using of different ignition angles (standard and 12° BTDC), and relationship between performance values with exhaust gas emissions. This research, make a dynotest and gassbox autopower. For the engine performance test, the highest power value at 12° BTDC ignition angle by using E7 fuel at 8000 rpm with a power value of 9.5 hp. For the highest torque at 12° BTDC ignition angle by using E14 fuel at 6000 rpm with a torque value of 9.86 N.m. For the exhaust emission test, the lowest CO value obtained at 12° BTDC ignition angle is by using E7 fuel at 7000 rpm with CO value 1.78 (% vol). For the lowest HC value at 12° BTDC ignition angle is by using E0 fuel at 8000 rpm with HC value of 227 ppm.

Keywords: *Performance, Exhaust Gas Emissions, Power, Torque, CO & HC*