The Effect of Adding Polyethilene Terephthalate Glycol on Engine Performance and Exhaust Emissions on 4 Stroke Motorcycle

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ABSTRACT

This research was conducted to determine the addition of Polyethilene Terephthalate Glycol to the performance and the exhaust emissions of a four stroke motorcycle, performance testing to determine power and torque with variasion of pure pertalite mixture, PETG (Polyethilene Terephthalate Glycol) 10% (100 ml), 20% (200 ml), 30% (300 ml) at 1500 RPM to 6000 RPM. From the results of performance testing it is found that the power and torque values of pure pertalite fuel are 9.1 Hp and 20.40 Nm for each PETG (Polyethilene Terephthalate Glycol) 10%, 20%, 30% power valus are 9.4 Hp, 9.2 Hp, 9.5 Hp and 26.67 Nm, 25.28 Nm, 27 Nm of torque. The second test of exhaust emissions was to determine CO, HC, CO_2, O_2 with variasions of pure pertalite mixture, PETG (Polyethilene Terephthalate Glycol) 10% (100 ml), 20% (200 ml), 30% (300 ml) with 2000 RPM, 2500 RPM, 3000 RPM. From the results of testing the lowest exhaust emissions of pure CO_2 pertalite 0% at 2000 RPM, 30 % PETG with an HC value of 15 ppm at 2500 RPM, 2.9 % pure CO_2 pertalite at 2000 RPM, and PETG 30% O_2 9.31% at 3000 RPM.

Keywords :*Performance Testing,Exhaust emissions,RPM,Polyethilene Terephthalate Glycol*