ANALYSIS OF THE EFFECT OF A MIXTURE OF POLYPROPYLENE PLASTIC FUEL WITH OCTANE BOOSTER ADDITIVE ON TORQUE AND POWER IN 4-STROKE MOTORCYCLES

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ABSTRACT

Plastic waste can be used as liquid fuel, namely by using a pyrolysis process, namely the plastic will be burned and refined without O2, namely using an incinerator by heating the plastic waste at a temperature of 250-350oC. Seeing the increasing number of motorized vehicles and the decreasing petroleum content, polypropylene plastic fuel could be an alternative. However, the use of plastic fuel oil can only be used as an additive. This research was conducted to analyze the torque and power of a 4-stroke motor resulting from the use of alternative fuel from Polypropylene plastic waste with a mixture of Octane Booster additives which will be compared with Pertamax fuel. In this research, variations in the mixture of Polypropylene fuel with Octane Booster were carried out in the amounts of 125 : 0, 125 : 0.5, 125 : 1.5, 125 : 2.5, and 125 : 3.5 in milli liter (ml) units. The research results showed that the highest torque was obtained in the 125 ml : 2.5 ml variation with a torque value of 6,96 which was higher than the Pertamax torque, namely 6.91 Nm. The highest power was obtained in the 125 ml: 2.5 ml variation with a power gain of 6.65 hp, which is greater than the power produced by Pertamax, namely 6.15 hp.

Keywords: *Polypropylene Fuel, Octane Booster, Torque, Power*