ABSTRAK

Perkembangan teknologi otomotif didorong terutama karena jumlah pemakaian kendaraan bermotor yang semakin meningkat khususnya kendraan bermotor roda dua dan dilain pihak akan berdampak pada pengurangan minyak bumi di dunia. Penelitian *Hydro Cracking System* (HCS) Berbasis Fluida Berupa Air dilakukan untuk menghemat bahan bakar tanpa mengubah sistem dari kendaraan, meningkatkan daya kinerja pada mesin, serta mereduksi gas buang pada kendaraan. Secara umum, metode penelitian yang dilakukan menggunakan metode kualitatif dan studi eksperimental dengan variasi jumlah lilitan katalisator dan jenis busi. Dari penelitian tersebut didapat hasil terbaik dengan menggunakan 6 lilitan katalisator diperoleh data: (i) dapat memreduksi serta mengidealkan kandungan HC, CO, CO_2, O_2. (ii) dapat meningkatkan daya kinerja mesin sebesar 0,83 kW pada busi Iridium dan 0,92 kW pada busi Platinum. (iii) kosumsi bahan bakar sebesar 0,0000444 kg/kW. Didapatkan kesimpulan perbedaan tanpa dan dengan alat HCS dapat mempengaruhi daya kinerja mesin, penghematan konsumsi bahan bakar, serta mereduksi gas buang dan mengidealkan pencampuran bahan bakar pada kendaraan.

Kata Kunci: *hydro cracking system*, katalis, hidrogen, alat penghemat bahan bakar.

ABSTRACT

The development of automotive technology has been driven mainly due to the increasing number of motorized vehicle use, especially the two-wheeled motorized vehicles and on the other hand it will have an impact on the reduction of petroleum in the world. The Fluid-Based Hydro Cracking System (HCS) research in the form of water is carried out to save fuel without changing the system of the vehicle, increase the performance of the engine, and reduce exhaust gas in the vehicle. In general, research methods carried out using qualitative methods and experimental studies with variations in the number of catalyst turns and types of spark plugs. From the study, the best results were obtained using 6 catalytic turns obtained data: (i) can reduce and idealize the content of HC, CO, CO2, O2. (ii) can increase engine performance power by 0.83 kW on Iridium spark plugs and 0.92 kW on Platinum spark plugs. (iii) fuel consumption of 0.0000444 kg / kW. Conclusion of differences without and with HCS tools can affect engine performance, save fuel consumption, and reduce exhaust gas and idealize mixing of air fuel ratio in vehicles.

***Keyword**: hydro cracking system, catalyst, hydrogen, fuel saver.*