Pengaruh penambahan additive oksigenat bahan bakar pada mesin variable compression ratio (VCR) dengan variasi waktu penyalaan = Efect of oxygenate as fuel additive on variable compression ratio (VCR) engine performance with various ignition timming

Mursal, author

Abstrak

Kualitas emisi gas buang dan performa suatu mesin tergantung pada kualitas bahan bakar yang digunakan. Salah satu cara untuk meningkatkan kualitas bahan bakar dengan cara menambahkan zat aditif pada bahan bakar tersebut. Salah satu zat aditif yang dianggap memenuhi syarat tersebut adalah senyawa oksigenat yang dibuat dengan proses ozonisasi dari minyak kelapa sawit, minyak kelapa, minyak kedelai, dan minyak jarak. Penelitian ini dilakukan menggunakan mesin Variable Compression Ratio (VCR) model TD43F. Parameter yang yang dianalisa yaitu Daya (BHP), Spesific Fuel Cosumption (BSFC), Efisiensi Thermal dan kadar emisi gas buang (CO dan HC). Waktu Penyalaan di set antara 6_ dan 14_. Hasil pengujian membuktikan bahwa penambahan 2 mL Oksigenat dapat meningkatkan Daya mesin (BHP), efisiensi termal dan menurunkan laju kosumsi bahan bakar (BSFC) serta kadar emisi gas buang.

.....Engine performance and exhaust emissions quality depend on fuel quality that used on engine. One of the way to increase fuel quality is by mixing the fuel with additive. One of additive that meet the criteria is oxygenate compound that made by ozonation process from palm oil, coconut oil, soybean oil, and jarak oil. This research will focus on the effects of mixing Premium and oxygenate as an additive on four stroke otto engine. These research are held by using Variation Compression Ratio (VCR) Engine model TD43F. Parameter that will be analyzed is power (BHP), specific fuel consumption, thermal efficiency, and percentage of emission (CO and HC). Ignition time is set between 6_ and 14_. Fuels are mixed between premium and 2 mL Oxygenate. The result prove that premium with addition of 2 mL Oxygenate can increased the engine power (BHP),thermal Efficiency and decreased Specific fuel consumption and exhaust gas pollutant.