ABSTRAK

Ada banyak faktor yang mempengaruhi pengoperasian mesin kendaraan. Mesin yang tidak bekerja secara teratur menyebabkan penurunan kinerja. Di sisi lain, peningkatan konsumsi bahan bakar, getaran dan emisi HC. Tujuan peneliti ini kami ingin mengetahui fenomena clearance pada busi pada motor torak 1300 CC dengan metode FFT akibat pengaruh putaran mesin pada 900 rpm 2000 rpm 4000 rpm 6000 rpm dengan hasil 5,358 mm/s^2, 226.561 mm/s^2, 79,1106 mm/s^2, 679.601 mm/s^2 pada clearance 0,5 mm dibandingkan dengan hasil amplitude 4,533 mm/s^2, 43,0957 m/s^2, 175.118 mm/s^2, 524.14 mm/s^2 pada clearance 1,0 mm. Bahwa amplitudo yang dihasilkan pada clearance 0,5 mm lebih besar dibandingkan clearance 1,0 mm. Setelah dilakukan analisis menggunakan Wavelet Transform pada putaran mesin teridentifikasi kondisi frekuensi instantantaneous (sesaat) pada busi dengan clearance 0,5 melebar jika dibandingkan dengan kondisi busi clearance 1,0 mm. hal ini menunjukan bahwa hasil Restoring Force kondisi busi rusak mengalami pelebaran frekuensi dengan nilai kekakuan K = - 9.904e+07*x^{3} - 8.667e+06*x^{2} + 5.82e+06*x - 2.521e+04 lebih besar dibandingkan dengan kondisi busi yang baik dengan nilai kekakuanya K = - 2.634e+07*x^{3} + 5.406e+06*x^{2} + 3.944e+06*x + 2.728e+04 lebih kecil.

Kata Kunci : *wavelet transform, busi , otomotif, getaran, FFT Spectrum Analyzer. Matlab*

EFFECT OF SPARK PLUG CLEARANCE ON 1300 CC PISTON MOTOR WITH WAVELET TRANSFORM METHOD
ABSTRACT

There are many factors that affect the operation of a vehicle engine. Machines that do not work on an ongoing basis publish performance income. On the other hand, increased fuel consumption, vibration and HC emissions. The purpose of this study we want to know the phenomenon of clearance on the spark plugs on the 1300 CC torque motor by FFT method due to combustion engine at 900 rpm 2000 rpm 4000 rpm 6000 rpm with the results of 5.358 mm/S^2, 226.561 mm/S^2, 79.1106 mm/S^2, 679.601 mm/S^2 at 0.5 mm clearance compared with the results of amplitude 4.533 mm/S^2, 43.0957 mm/S^2, 175.118 mm/S^2, 524.14 mm/S^2 at a clearance of 1.0 mm. That the amplitude produced at a clearance of 0.5 mm is greater than the clearance of 1.0 mm. After analysis using Wavelet Transform on the installation of the machine identification of the condition of the instantaneous frequency (instantaneous)on the spark plug with a clearance of 0.5 widened if installed with a spark plug clearance of 1.0 mm. this shows that the results of the recovery of damaged spark plug conditions experienced a frequency release with a hardness value of $K = -9.904\ e+07*x^{3} - 8.667\ e+06*x^{2} + 5.82\ e+06*x - 2.521\ e+04$ is greater than the condition of a good spark plug with a hardness value of $K = -2.634\ e+07*x^{3} + 5.406\ 06*x + 2.728\ e + 04$ is smaller.

***Keywords** : wavelet transform, spark plug, automotive, vibration, FFT Spectrum Analyzer. Matlab*