

Influences of Gasoline Fuels on Waste Heat Recovery Potentiality of a Spark Ignition Engine

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Abstract

Objectives: In this study, evaluation of the potential of energy recovery in spark ignition engine using RON 95 gasoline fuels. **Methods:** The engine has been operated at a single engine speeds of 3500 RPM with 50% of Wide Throttle Open (WTO). The potential of energy recovery was measured by means of engine effective power, Water Heat Losses (WHL) and Exhaust Heat Losses (EHL). **Findings:** Comparative analysis of the experimental results showed an improvement of 1.16%, 2.12% and 3.08% in EHL at 75°C, 50°C and 25°C, respectively, by taking 120°C as the reference temperature of EHL. The results of the contour plot showed that a trade-off between the WHL and EHL. **Conclusion:** Higher proportions of energy losses can be utilised by considering both WHL and EHL.

Keywords: Exhaust Heat Losses, Effective Power, Water Heat Losses (WHL)