
Smoke and NO_x emissions improvement of GCI engine fueled with gasoline-biodiesel blend using EGR and intake boosting

Yanuandri Putrasari ¹⁾, Ocktaeck Lim ^{*2)}

¹⁾Graduate School of Mechanical Engineering, University of Ulsan, Ulsan, 44610, South Korea

²⁾School of Mechanical Engineering, University of Ulsan, 44610, South Korea²⁾

Key words : GCI, Emission, Gasoline, Biodiesel, EGR

* Ocktaeck Lim, E-mail: otlim@ulsan.ac.kr

The combustion and emission of GCI engines fueled with gasoline and biodiesel blends were investigated in this study. Tests were conducted using a single-cylinder direct-injection diesel engine, with 5% biodiesel proportion in gasoline fuel blends compared with neat diesel fuel. The engine control parameters namely EGR rate and intake pressure variation were adjusted to investigate their influences on combustion and emissions of the GCI engine with early single injection mode at 40 °CA BTDC. It is found that changes in EGR rates and intake boosting effect on performance and combustion of GCI engine, which is closely related to its emissions, respectively.

Acknowledgement

This research was supported by The Leading Human Resource Training Program of Regional Neo industry through the National Research Foundation of Korea (NRF) funded by The Ministry of Science, ICT and Future Planning (2016H1D5A1908826).