

Rapid depletion of fossil fuels, increasing fuel prices, increasing number of vehicles on the roads and stricter emission legislations has aroused global interest in alternative renewable fuels, which are environmental friendly, renewable and economical. Among alcohols, Methanol has emerged as an important alternative fuel due to its liquid nature, presence of oxygen in fuel molecule, high octane number and production from a number of waste and renewable resources. Due to the presence of oxygen in the fuel molecule, Methanol promotes oxidation of hydrocarbons and carbon monoxide. Higher latent heat of vaporization lowers the peak in-cylinder temperature compared to baseline mineral diesel, which reduces NO<sub>x</sub> emissions. In this study, experiments are performed using stable diesel-methanol blends for evaluating engine performance, combustion and emission characteristics in a single cylinder naturally aspirated direct injection diesel engine typically used in genset. Methanol-Diesel blend (10 and 15 % v/v) i.e M10 and M15 were stabilized in this study using 1-dodecanol, which is used as an additive and experimental results are compared with the baseline mineral diesel.