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Studies on Performance and Emission Characteristics of Ethanol Blends in SI Engines

In the past few years, alternative fuels on internal combustion engine (ICE) recently has attracted the public attention because of the fact of protection concern for environment, and desires on reducing reliance on fossil fuels and meeting the present rigorous regulation. Alcoholic fuels are utilized as alternative fuels since these are produced from renewable resources and is oxygenated. To produce better engine operation in spark ignition engine, methanol fuel is a popular substitute alcoholic fuel which could be blended at lower blending ratio with gasoline. Methanol is nowa-days being utilized in place of diesel in Railways, marine sector, generator sets, power generation and methanol-based reformers may be the best compliment to electric and hybrid mobility. The economy obtained from methanol is a way to achieve the dream of complete hydrogen based fuel systems. Methanol combusts efficiently in all internal combustion (IC) engines, produces very negligible amounts of particulate matter almost zero SOX and NOX emissions towards near nil pollution. The gaseous version of methanol – di methyl ether blended with Liquefied petroleum gas (LPG) can form an excellent alternative for diesel in giant trucks and buses. Hence, this project is focused on blending methanol 15% with gasoline M15 in 4-stroke Petrol engine of Pulsar 150cc and studying its performance parameters. The M15 Blending essentially constitutes 15% blending of methanol in petrol, 85% gasoline and 15% methanol. Blending methanol with gasoline will also prolong fuel supplies which could even lead to implementation of alcohol engines which are currently being used by most race cars. In terms of volume almost twice as much methanol needs to be used to obtain the same mileage as a given amount of gasoline because of the calorific value of each fuel