ABSTRACT

In this study, the effects of various loads on the performance and emission characteristics of a DI diesel engine using methanol (0%,5%, and 15%) blended-diesel fuel were investigated. The tests were conducted on five different loads (0 kg,3 kg,6 kg and 12 kg) at 1500 rpm. The results indicated that indicated mean effective pressure (IMEP), brake mean effective pressure (BMEP), and nitrogen oxides (NOx) emissions increased as brake thermal efficiency (BTE), smoke opacity, carbon monoxide (CO) and total unburned hydrocarbon (THC) decreased with increasing amount of methanol in the fuel mixture. The best results were achieved Alternative fuel for BSFC, BSEC and BTE at different loads and performance variations. For the alltest fuels, the increasing Methanol injection pressure and timing caused to decrease in the smoke opacity, CO, THC emissions while NOx Diesel engine emissions increases approxmately 6%.