

Abstract .

The Effect of Heating Diesel Fuel Upon the Engine Performance and the Noise by using CI engine and by using different Cetane number of fuel was studied. From the results , it was shown that the brake power is increasing with the engine speed and the increasing is (64.66 %) at maximum load with respect to brake power at the minimum load. Fuel Consumption decreasing after heating the fuel and by using different fuel Cetane number with the following values (6.631% , 7.483% , 9.15%) for Cetane numbers (53, 54, 56) respectively , and the brake specific fuel consumption also decreasing by about (6.056% , 6.98% , 8.654%) for Cetane number (53 , 54 , 56) , respectively and after heating the fuel .The Thermal Efficiency was found to be increased after heating the fuel and for different fuel Cetane numbers with the following percentage (5.96% , 6.837% , 8.498%) for Cetane number (53 , 54 , 56) respectively. The (CO₂) emissions is increase after heating the fuel and by about (11.35% , 11.065% , 9.457%) for Cetane number (56 , 54 , 53) respectively . The (CO) emissions is decreased after heating the fuel by about (24.165% , 21.7%, 20.581%) for Cetane number (56 , 54 , 53) respectively .Also The (HC) emissions decreased after heating the fuel by about (8.695% , 9.586% , 10%) for Cetane number (53 , 54 , 56) respectively , the result also show that heating diesel fuel to temperature of (65) reduce the emissions more than in (50) for fuel of Cetane number (56) and also increase the engine performance.

The noise levels increased with the engine speed , and there is no effect of the directivity on the sound level since the change in the value of the sound level value is too small , so the source (Engine) is monopole source , and there is no effect of heating diesel fuel upon the engine noise and it is affected only by the Cetane number of the fuel only.