

Paper (8)

**Effect of multi carbon nanosheet on diesel engine performance and emissions**

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**Abstract**

The continuous increase in energy demand, fossil fuel consumption, harmful exhaust emissions and global warming, all these led to search about alternative fuel. This paper reports on the use of carbon nanosheet as additive to diesel fuel and their effects on performance and exhaust emissions of a single cylinder diesel engine. The used fuels in this study were diesel and carbon nanosheet blended fuel. CNS was blended with diesel oil in the mass fractions of 25, 50, 100 and 200 ppm with the aid of a mechanical homogenizer and an ultrasonicator. The stability characteristics of CNS blended with diesel oil was analyzed. The experimental investigations were carried out on a single cylinder and four stroke diesel engine of 5.7 kW rated power. All the experiments were conducted at a constant speed of 1500 rpm at different engine loads. Experimental results showed that performance and exhaust emissions were found to be comparable with diesel fuel. It was observed that carbon nanosheet additive to diesel oil is efficient in improving performance and reducing exhaust emissions in diesel engine. A dosing level of carbon nanosheet in the range of 200 ppm is recommended to achieve the best engine performance with optimal emissions reductions.