

The Effects of Dimethyl Adipate (DMA) on Coated Diesel Engine

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Abstract : An experimental study is conducted to evaluate the effects of using blends of diesel fuel with dimethyl adipate (DMA) in proportions of 2%, 6%, and 12% on a coated engine. In this study, cylinder, piston, exhaust and inlet valves which are combustion chamber components have been coated with a ceramic material. Cylinder, exhaust and inlet valves of the diesel engine used in the tests were coated with ekabor-2 commercial powder, which is a ceramic material, to a thickness of 50 μm , by using the boriding method. The piston of a diesel engine was coated in 300 μm thickness with bor-based powder by using plasma coating method. Due to thermal barrier coating, the diesel engine's hazardous emission values decreased.

Keywords : diesel engine, dimethyl adipate (DMA), exhaust emissions, coating

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