PERFORMANCE PARAMETERS OF CERAMIC COATED DIESEL ENGINE FUELLED WITH COTTON SEED OIL IN CRUDE FORM AND BIODIESEL FORM

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ABSTRACT

Investigations were carried out to evaluate the performance of a low heat rejection (LHR) diesel engine with ceramic coated cylinder head [ceramic coating of thickness 500 microns was done on inside portion of cylinder head] with different operating conditions [normal temperature and pre-heated temperature] of cotton seed oil in crude form (CSO) and biodiesel form (BD) with varied injector opening pressure. Performance parameters of brake thermal efficiency, exhaust gas temperature, coolant load, sound levels and volumetric efficiency were determined at various values of brake mean effective pressure (BMEP) of the engine. Conventional engine (CE) showed compatible performance, while LHR engine showed improved performance with biodiesel operation at recommended injection timing and pressure. The performance of both version of the engine with biodiesel improved with increase of injector opening pressure when compared with conventional engine with pure diesel operation.

KEYWORDS: Crude Cotton Seed Oil, LHR Engine, Fuel Performance