

Investigation of Combustion Parameters for different Injection timings on a LHR Extended Expansion Diesel Engine

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Abstract: *The fundamental aim of extended expansion concept is to achieve higher work done which in turn leads to higher thermal efficiency. This concept is compatible with the application of LHR engine. Diesel engine efficiency can be improved through the insulation of combustion chamber using ceramic materials called as LHR with the several limitations. The LHR engine was developed by coating on the piston crown, inner side cylinder head with valves and cylinder liner with PSZ coating of 0.5 mm thickness. Extended Expansion in diesel engines is termed as Miller cycle in which the expansion ratio is increased by reducing the compression ratio by modifying the inlet cam for late inlet valve closing. This present work is mainly concentrated to combine the advantages of LHR engine and LHR (EEE) concept. Hence detailed analysis is made on various parameters such as cylinder pressure, flame temperature, heat release rates, cumulative heat release, cumulative work done, total heat transfer, NO concentration for different injection timings. The simulation is carried out in 'C' language.*