## INVESTIGATION ON EFFECT OF LOW HEAT REJECTION ON TURBOCHARGED DIESEL ENGINE PERFORMANCE

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## Abstract

A cycle simulation program has been developed for mathematical model of compression ignition engine. Models for the prediction of combustion and heat transfer have been formulated and developed. A woschini's heat transfer model for I.C engine has been considered for the calculation of gas -wall heat transfer. A wall heat transfer model has been formulated and developed and coupled along with the above combustion and gas -wall heat transfer model to predict the effect of varying wall temperature on combustion, heat release, heat transfer and overall performance of a low heat rejection direct injection diesel engine. Two different insulation coating material (zirconia and silicon nitride) are considered for insulating combustion chamber.

In the present research work, a computer simulation of the conventional and LHR (with and without turbocharger) direct injection diesel engine system has been developed in order to study the performance characteristics of total system and to evaluate the performance differences between conventional engine and Low heat rejection diesel engines (with and without Turbocharger)

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Keywords: Low Heat Rejection (LHR), Convection and radiation.