VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM

Approved by
"KATANATAKA STATE COUNCLE FOR SCIENCE AND TECHNOLOGY"

A Project Report on

"REDUCTION OF EMISSION USING BI-METALIC PISTON IN CI ENGINES"

A dissertation submitted to the Department of Mechanical Engineering of The Rao Bahadur Y Mahabaleshwarappa Engineering College affiliated to VTU in the partial fulfillment of the Award of Degree of Bachelor of Engineering during the academic year 2010–2011.

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ABSTRACT

All over the world, the use of petroleum products has increased day by day.

- The vehicle population is also increased day by day.
- The vehicle population has tremendously increased in the recent year with the explosion of vehicle population in the world wide.
- As the vehicle population increases the use of fossile fuel like petrol and diesel has increased tremendously.
- As the use of fossile fuel like petrol and diesel increased in the vehicles the emission level are also increased and which effects the environment and leads to air pollution.
- Generally the emissions like Co,Hc,So_2 particulate matters and smoke are treated as emissions from the exhaust gas of engines.
- Among the emissions, the Hc and Co are more toxic in nature and which lead to the air pollution.
- The diesel engines predominant then petrol engines in the developed countries.
- India as a developing country the diesel engines predominant in agriculture sector, power sector, automobile sector.
- The main aim of the project is to reduce emissions like Co, Hc from the exhaust gasses of diesel engines for the above specific application, the semi adiabatic air gap silver crown piston is used as a modified piston.
- The experiment is conducted using this modified piston in the existng diesel engine and experiment conducted.
- From the experimental results it is found that the Co is reduced by 31.9% at zero load for semi adiabatic air gap silver cross piston compared to conventional piston.
- At ¾ load the Co is reduced by 25.75% silver compared with the conversion piston from the experimental results.
- It is also observed from experimental results that Hc is reduced by 28.35 % in zero and reduced by 31.34% in 2.5kw (3/4 load) for semi adiabatic air gap silver crown piston when compared with convention piston.

From the experiment results it is conducted that the semi adiabatic air gap silver crown piston effective reduced Co and Hc.