



**THE EVOLUTION OF NANO
LAYER ON GCI DURING HIGH
TEMPERATURE SLIDING
WEAR**



A PROJECT REPORT

Submitted by

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in partial fulfillment for the award of the degree

of

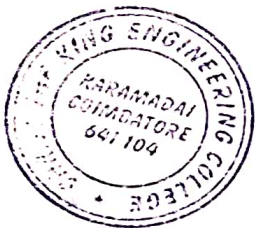
BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

CHRIST THE KING ENGINEERING COLLEGE, KARAMADAI

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BONAFIDE CERTIFICATE

Certified that report “**THE EVOLUTION OF NANO LAYER ON GCI DURING HIGH TEMPERATURE SLIDING WEAR**” is the bonafide work of **AJITH S (710419114007), ERAIANBU V (710419114018), MAHESHWARAN D (710419114038), SARAN R (710419114057)**, who carried out the project work under my supervision.


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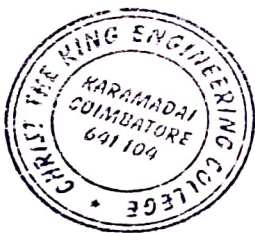
Submitted for Anna University project viva-voce examination held on 23/05/23




INTERNAL EXAMINER


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ABSTRACT

Grey Cast Iron (GCI) is the material used in most of the automotive parts such as piston, cylinder, and flywheel. These parts are subjected to friction during running of automotive. Due to this action high sliding wear occurs on the surface of GCI. This reduces life of the automotive parts. My project is to provide a nano layer coating on the surface of GCI and compare it with normal GCI. Various tests are to be conducted for both type of specimens. This helps us to make material resist against friction and improve surface properties and to reduce sliding wear.



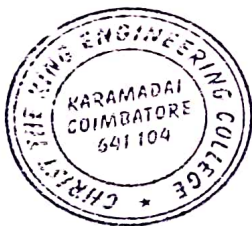

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CONCLUSION AND FUTURE WORK

1. Distance is the highest statistical factor, in wear rate followed by sliding speed and load has very less influence.
2. According the F table ANOVA for SWR shows that distance is significant parameter.
3. The confirmation test shows that error associated with dry sliding wear of the GCI is less than 5%.

The similar test specimens are to be coated with nano particles in the PVD machine. The similar processes and analysis to be carried out for the nano coated samples.

The best samples of different wear tests are to be analyzed under Scanning Electron Microscope (SEM).




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