

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

DEDICATION

This work is dedicated to the tireless effort's and overwhelming support provided by our parents. Throughout our entire education, they encouraged us to succeed and shared the joy of our accomplishments. Also dedicated to our teachers who molded us to become responsible citizen.

ACKNOWLEDGMENT

The successful completion of this Project “CAMLESS ENGINE” is indebted to the Grace of the ALLAH Almighty, who has been always kind to us.

*We are highly obliged for the valuable guidance imparted by our honorable Project Supervisor Col. (R) **Hafiz Sibghat Ullah Fazil** HOD Mechanical Engineering Department for imparting knowledge and skills, encouragement and boosting our moral and enhanced the confidence in us for the completion of this Assignment. His good self along with his Excellent Team always extended help throughout our B.Sc Mechanical Engineering Session 2010-2014. We salute them and also our esteem Wah Engineering College, University of Wah.*

May Allah Almighty blessed.

ABSTRACT

There has always been an effort on engineering side to modify the technology of vehicles which can be efficient in terms of performance and fuel. The given arrangement of valve operating mechanism presents complicated design which uses pulleys, shafts and gears to operate and is vulnerable to wear and tear. A camless engine system provides a way to eliminate these mechanical linkages. An electro mechanical system has been engineered to replace conventional valve actuating mechanism by electromechanical actuators. A conventional valve arrangement takes power from the crank shaft that puts additional load on the engine. Electromagnetic valve actuation is a simple design as compared to valve arrangement used in a reciprocating engine, electronically operated valve arrangement takes no direct power from the engine via mechanical linkages.

Electronic circuit controls the operation of electromechanical actuators which operates the engine. The camless modification hence provides a system for engine operation that is simple in design and provides a way for acceptable engine operation

The following report documents the Camless Engine .The aim was to develop a system that replaces mechanically operated valves system by electronic operation in reciprocating engines. The report aims to let the reader understand the project .A brief introduction to the project is explained in the introduction section. Finally, the results, some reflection and recommendations of this project are discussed

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LIST OF ABBREVIATIONS

| | |
|------|---|
| IC | Internal combustion |
| SI | Spark ignition |
| CI | Compression ignition |
| SAE | Society of automotive engineers |
| AVT | Active valve train |
| VVT | Variable valve timing |
| VCT | Variable camshaft timing |
| VTEC | Variable valve timing and lift electronic control |
| HP | Horse power |
| DC | Direct current |
| AC | Alternate current |
| EMA | Electro mechanical actuator |
| TDC | Top dead center |
| BDC | Bottom dead center |
| ECU | Electronic control unit |
| ECVA | Electronically controlled valve actuation |