**AUTOMOBILE AIR CONDITIONING HARNESSING SHOCK ABSORBER ACTION**

**PROJECT REPORT**

Submitted to

The University of Kerala

In partial fulfillment of the requirements for the award of the degree

of

*Bachelor of Technology in Mechanical Engineering*

By

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**THIRUVANANTHAPURAM – 16**

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**CERTIFICATE**

This is to certify that the Project report entitled “**AUTOMOBILE AIR CONDITIONING HARNESSING SHOCK ABSORBER ACTION**”, submitted by **ARUN V.T., ASHWIN VISHNU.M, GOKULDAS NANDAKUMAR** and **SAJU V.J.**, to the University of Kerala in partial fulfilment of the requirements for the award of the Degree of Bachelor of Technology in Mechanical Engineering is a bonafide record of the work carried out by them under my guidance and supervision. The contents of this work in full or in parts have not been submitted to any other institute or university for the award of any degree or diploma.

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**ABSTRACT**

Vapour compression air conditioning system in automobiles relies on engine output for compressor work. The energy associated with shock absorber action, is lost as viscous dissipation in conventional suspension systems. By modifying the shock absorber to act as a reciprocating air compressor, to drive an air conditioning system, we can avoid the dependence on engine power. Based on theoretical calculations on Reversed Brayton cycle, it has been found that, it is possible to achieve a COP comparable to the conventional air conditioning system.

The on-road characteristic of the shock absorber system is found using an optical sensor comprising of an array of seven Light Dependent Resistors (LDR), and a LED light source. The sensors are coupled with computer interface and output is generated on different road conditions. This data obtained is used to develop an experimental setup simulating the road conditions.

The experimental setup is used to verify the theoretical calculations and feasibility of the proposed system.

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