

Department : **Mechanical**

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Guided By

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Project Title

DESIGN & ANALYSIS OF A.C SYSTEM FOR AUTOMOBILE VEHICLE USING EXHAUST HEAT

Abstract:

The refrigerating units currently used in road transport vehicles are of Vapor Compression Refrigeration system (VCRS). This system utilizes power from the engine shaft as the input power to drive the compressor of the refrigeration system, hence the engine has to produce extra work to run the compressor of the refrigerating unit utilizing extra amount of fuel. This loss of power of the vehicle for refrigeration can be neglected by utilizing another refrigeration system i.e. a Vapor Absorption Refrigeration System (VARs). It is well known that an IC engine has an efficiency of about 35-40%, which means that only one-third of the energy in the fuel is converted into useful work and about 60-65% is wasted to environment. In which about 28-30% is lost by cooling water and lubrication losses, around 30-32% is lost in the form of exhaust gases and remainder by radiation, etc. In a Vapor Absorption Refrigeration System, a physicochemical process replaces the mechanical process of the Vapor Compression Refrigeration System by using energy in the form of heat rather than mechanical work. The heat required for running the Vapor Absorption Refrigeration System can be obtained from that which is wasted into the atmosphere from an IC engine.

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