ABSTRACT

This paper presents an experimental study of an engine driven by compressed air. The compressed air engine is a modified 100 cc internal combustion engine. The engine is modified from a 4-working stroke to a 2-working stroke engine (power and exhaust) by modification of cam-gear system. A temperature decrease from room temperature to 15 Â°C was observed at exhaust. The project was successfully manufactured and tested. Experimental analysis were carried out on this modified engine to find out its performance characteristics like brake power, indicated power, torque etc.

It should be noted that pressure higher than that currently employed can result in increased engine performance in terms of output power, torque and speed. Nevertheless, the main advantage of this engine is that no hydrocarbon fuel is required that means no combustion process is taking place, thus the compressed air vehicle will play important role in reducing air pollution. Another benefit is that it uses air as fuel which is available abundantly in atmosphere. This study presents the atmospheric air which can be used in vehicles as the main or auxiliary source of power system.

The latest trend in the automotive industry is to develop light weight vehicles. Every automotive industry is looking to reduce the weight of the vehicle as it helps in the better handling of the vehicle and increases the efficiency of the vehicle. Today, the heavy vehicles are known for producing a large amount of harmful gases like CO2, SO2 etc. which act as the major source for global warming. So research is going on to find a light weight vehicle which does not pollute the environment.

One of the alternatives is the use of compressed air to generate power to run an automobile. Due to the unique and environmental friendly properties of air, it is considered as one of the future fuels which will run the vehicles. So in this paper an effort is made to study the extent of research done and the potential advantages and disadvantages of the compressed air technology.