

FUEL EFFICIENCY IMPROVEMENT BY HYDROGEN POWERED PETROL ENGINE

A Project report submitted
in partial fulfillment of the requirements for the award of the degree of
BACHELOR OF TECHNOLOGY
IN
MECHANICAL ENGINEERING

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CERTIFICATE

This to certify that project work is entitled **“FUEL EFFICIENCY IMPROVEMENT BY HYDROGEN POWERED PETROL ENGINE”** is a bonafide record done by **A.J.VARMA (15811A0301), B.R.K.RAJKUMAR (15811A0322), B.KASI (15811A0316), K.YASWANTH KUMAR (15811A0352)** students of final year **B.Tech** in the department of **Mechanical Engineering**, Avanthi Institute of Engineering and Technology, Visakhapatnam. This work was done for the fulfillment of the requirements of the award of **Bachelor of Technology** during the year 2018-2019.

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ABSTRACT

In this paper we have studied the basic properties of gas generated through electrolysis of water and then used this gas in the bike as a fuel with gasoline by mixing it with air. This results the increased mileage of bike 30 to 60% and reduce the polluting contents from the exhaust gases. The threat posed by climate change and the striving for securities of energy supply are issues high on the political agenda these days. Governments are putting strategic plan motion to decrease primary energy use, take carbon out of fuels and facilitate modal shifts. Taking a prominent place in these strategic plans is hydrogen as a future energy carrier. Energy stored in hydrogen would be available at any time and at any place on Earth, regardless of when or where the solar irradiance, the hydropower, or other renewable sources such as biomass, ocean energy or wind energy was converted. Hydrogen gas combined with the standard air/fuel mixture increases the mileage. This form of alternative fuel is provided by a hydrogen generator mounted in the vehicle. Once set up is ready, the hydrogen gas (fuel) will be produced from water, an electrolyte compound, and electricity supplied from a battery provided. Here we are designing a mixed fuel two wheeler engine. ie in a conventional SI engine we are incorporating traces of hydrogen along with gasoline in order to minimum consumption of gasoline as well as to increase the power of vehicle. Here in addition, a hydrogen generating unit is made to produce hydrogen .It is actually an electrolysis unit having high grade stainless steel/graphite/semiconductors as electrodes in a closed container and mixture of distilled water & suitable ionic solution(KOH or NaOH) as electrolyte. Power for electrolysis is taken from an additional battery provided (12V).This battery can be recharged from a dynamo/alternator/motor provided on the vehicle. Keyword- KOH, NaOH, SI engine, electrolysis of water, hydrogen cell.