

COMPARATIVE ANALYSIS OF UTILIZATION OF HYDROGEN (THROUGH ELECTROLYSIS OF WATER) ALONG WITH DIESEL IN A DIESEL ENGINE

ABSTRACT

The project aims at substituting diesel with hydrogen in a diesel engine. In the current energy scenario the substitution of diesel with some alternate fuel is one of important needs of the day. Main aim is to produce hydrogen from water; the process of electrolysis is selected for this purpose. Water is cheap and plentifully available and thereby the project aims in producing hydrogen from electrolysis and utilizing it in substituting diesel with hydrogen (partially) in diesel engine.

Production of hydrogen from an electrolytic cell with various types of Electrodes are tested by trial and error and found that production of hydrogen produced from aluminum electrodes was found to be more volumetrically and also advantageous in many ways.

The gas produced in the cathode was confirmed as hydrogen and combustible. It is mixed with diesel in the inlet manifold of the engine. Comparative load tests done with pure hydrogen and diesel and hydrogen in dual mode. Readings are taken for fuel consumption with respect to time at various loads. Graphs are plotted to depict comparative analysis.

Project aims in developing a new era of alternative fuels and aims in developing new such methods in near future in the field of energy development. The main aim of selecting a boat engine to do the load test is to implement this technology to help the economically weaker section. Our technology has to somehow help the poorest of the poor.