
Designing of eco-friendly water-run car

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Abstract

This review paper highlights the use of water driven motor as an alternate energy source to conventional engines. Water run motors can be efficiently utilised in vehicle. It will solve the problem of energy crisis as well as the pollution problem. Brown's gas is used to run such engine. The electrolysis procedure and hydrogen burning is the two main steps in the operation of such engines. Limitations of such engines are also discussed.

Keywords: *Water fuel cell, Electrolysis, Hydrogen energy, Eco-friendly*

1. Introduction

The main issue with earth's sustainability is going to be the increase in population and subsequently the increase of demand in energy resources. The fossil fuel will definitely fail to fulfil this increased demand in near future. This crisis of natural energy resources will also affect the transport medium and will lead to uncertain future. Global warming is also accelerated due to the extensive use of such fossil fuel. So, it is the need of the time to look for alternative solution to these problems by using other sources of energy for running a vehicle. In this context, the concept of electrolysis can be utilized to have water run car. Water (usually salted water) is broken into its component hydrogen and oxygen by the method of electrolysis and the generated hydrogen can be used to supply energy to the vehicle. Since carbon is not involved in this process, it becomes more eco-friendly. Development of water powered vehicle can be treated as one of the solution of the energy and environmental crisis. The water vehicle is based on the concept of converting water energy to the mechanical energy. The proposed design allows for fewer moving parts, which gives higher efficiency. This technique of water driven energy source can use as a passenger vehicle, as a load carrier.

2. Description

The water fuel cell splits water into its two component elements i.e. hydrogen and oxygen. The produced hydrogen gas in this process is then burned to generate required energy. Devices run by this method require less energy for electrolysis compared to other predicted procedures. The mechanism involves "Brown's gas" which is a mixture of oxyhydrogen with a ratio of 2:1.

This motor device based on water is usually reversed for cells that generate electricity from a chemical red-ox reaction, in contrast this consumes electricity. By using this cell we generate sufficient energy which we can use for driving a car. We use this energy to substitute fuel. We separate the oxygen produced in the

electrolysis process and by using silencer pipes we can release the oxygen gas in nature to make the car eco-friendly. As we know water is easily available so it will not be very costly for the people to use this kind of car. Figure 2 is a water fuel cell by using this we need minimum energy to perform the electrolysis.

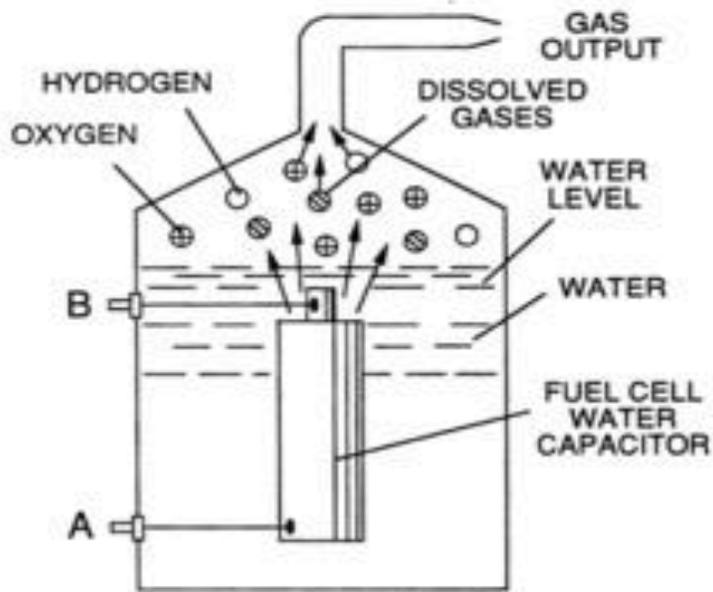


FIG 1. Electrolysis. Figure is taken from Wikipedia.

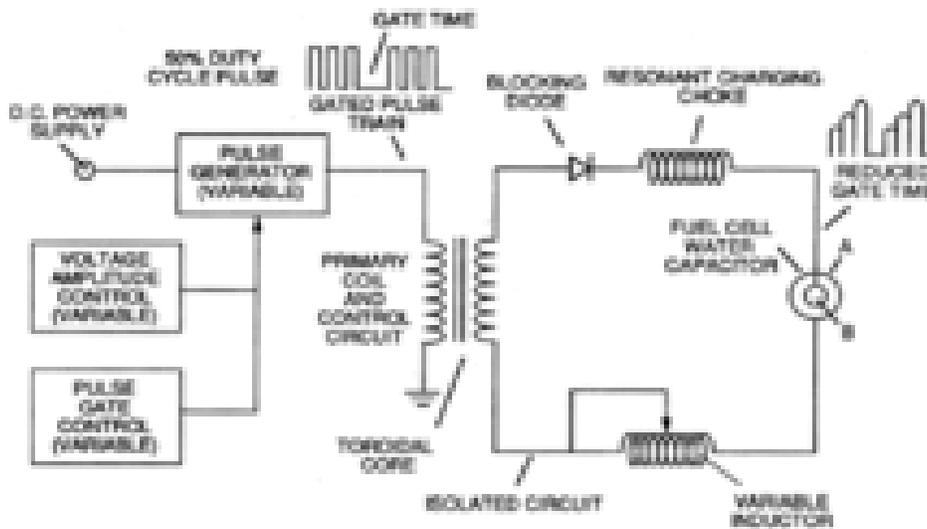


FIG 2. Water fuel cell patent by Stanley Meyer. Figure is taken from Wikipedia.

3. Results

When we calculate the driving performance we have to account for vehicles, maximum speed, time to accelerate and more over one of the important factor is its grad ability. All these design parametric depends upon speed and power characteristics of the motor. The motor has a fixed power in the high speed region, which is higher than its base speed. Measurement of performance of such motor is done by calculating speed ratio (x), which is defined as the ratio of maximum speed to the base speed of the motor. And the Electronic control unit keeps the motor voltage constant and due to this the flux weakens and drops out in the shape of a hyperbola when the speed is increased after the base speed. And the torque also starts dropping down in the form of a parabola when speed is increased. Water run car is a permanent solution to the problem of pollution. It is a solution to the problem of increasing of prices of petrol and diesel; hence it is cost-friendly. Since water is all time available source so water-run car is a permanent solution to the problem of the resource crisis the world is facing now-a-days.

4. Conclusion

Climate change is actually happening and this is just the beginning. Carbon emission is on a constant rise and we are hardly doing anything about it. According to UN's report, in the next 12 years, global greenhouse emission need to go half than what it is today. Basically all the coal plants and petroleum fuel based vehicles on Earth need to be replaced by zero carbon alternatives. If it is possible to make a water run car it will be very helpful for entire world. In this paper, the working of a water run energy source is discussed. The utilization of such source can be running a vehicle. The advantages over conventional sources are also discussed in terms of environmental benefit. In addition to this, the gears which were used for transmission of power from motor to the wheels were also analysed and the results were satisfactory.

5. Limitation

If we want to make this device hundred per cent efficient it will violate first and second laws of thermodynamics. So it can't be fully efficient.

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