PROJECT NAME - HYDROGEN POWERED VEHICLE

TEAM NAME -Hydroaction

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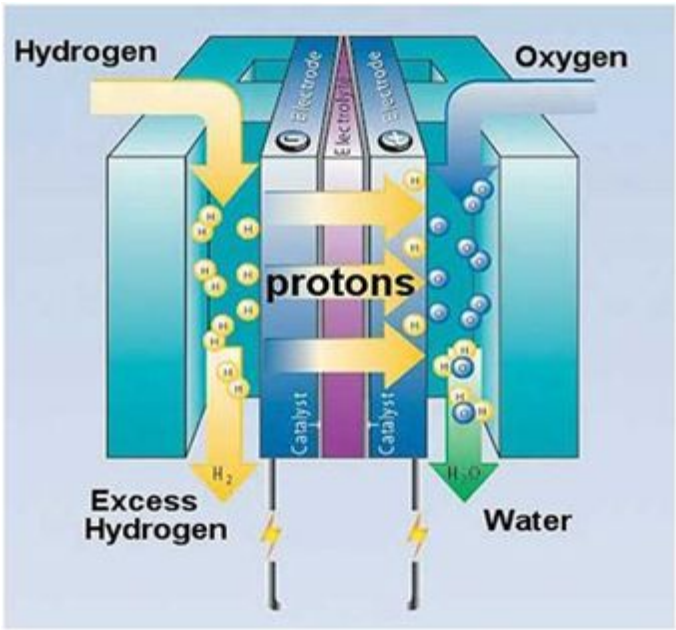
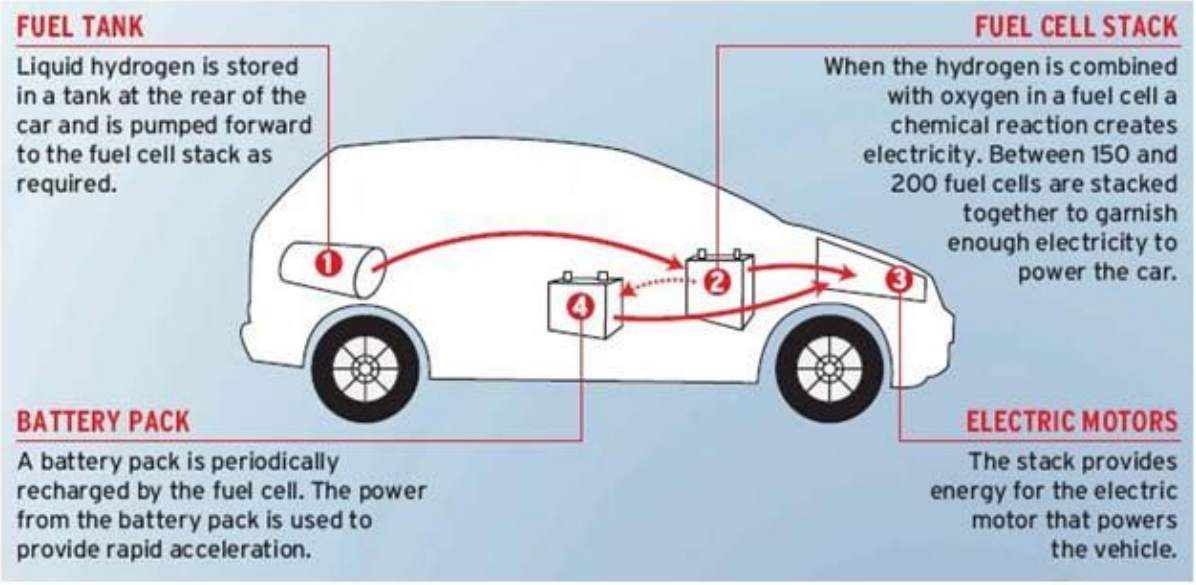
Introduction : The BASIC IDEA IS TO USE HYDROGEN TO GENERATE ELECTRICITY WHICH WILL BE USED TO POWER A VEHICLE. THIS WILL BE ACHIEVED BY MAKING A HYDROGEN FUEL CELL WHICH WILL TAKE HYDROGEN FROM STORAGE AND OXYGEN FROM AIR AS ITS FUEL AND GENERATE ELECTRICITY FROM THEM.



BASIC CONCEPT: Hydrogen powered car basically consists of the following:
1)Fuel tank: Liquid hydrogen is stored in a tank at the rear of the vehicle and is pumped Forward to the fuel cell stack as and when required.

2)Fuel cell stack: When hydrogen is combined with oxygen in a fuel cell a chemical reaction generates electricity.

a)Battery Pack: The battery pack is periodically recharged by the fuel cell. The power from the battery pack is used to provide rapid acceleration.
b)Electric motor: The stack provides electricity for the electric motor that powers the
. vehicle.



What we plan to do:
1)Search for an efficient and cheap membrane material for the fuel cell which is semi-permeable to only ions and not gases
2)Building the hydrogen fuel cell using the membrane and electrodes.
3)Have a source of hydrogen for the fuel cell in either of the following ways:
a)Hydrogen storage tank which will have to be ordered online or issued from energy sciences department if available.
b)Water as a source of hydrogen
4)Pumping mechanism to make available hydrogen gas to the fuel cell in controlled amount as required
5)Mounting a battery pack on the model of the car to store the energy generated by the hydrogen cell.
6)Building the structure of the car so as to efficiently place all the components.

Motivation for the project:
1) Around 60 percent efficiency of the fuel cell or 85 percent if the heat produced is captured for use.
2) Fully eco-friendly system, the byproduct of which being only water.

	FUEL EC0N0MY Mpg equiv- LHY basis (from GREET model; except fuel cell vehicles and H2 ICE/HEYs from DTI)	Well to Wheels Energy Consumption (BTU/mi)	Well to Wheels C02 emissions (g/mile)
IC ENGINE VEHICLES			
Conventional Gasoline SI Engine	*22.4*	6492	514
CNG SI Engine	*20.3*	6702	459
Adv. Diesel CI Engine	*37.0*	4565	378
ICE/HYBRID VEHICLES			
Gasoline SIDI/HEY	*46.9*	3092	252
CNG SI/HEY	48.6	2867	196
Ethanol SIDI/HEY	*46.9*	4921	67
H2 SI/HEY	**50.0**	3466 w/o C02 seq 3580 w/C02 seq	234 w/o C0**2** seq 41 w/ C02 seq
Diesel CIDI/HEY	*56.8*	2487	208
FUEL CELL VEHICLES			
Gasoline (probable) (best)	**38.0** **49.4**	3819 2938	304 234
Methanol (probable) (best)	**56.0** **64.2**	3212 2802	199 174
Hydrogen (from natural gas with steam reforming, pipeline delivery and compression to 5000 psi for onboard storage	**82.0**	2368 w/o C0**2** seq 2446 w/C02 seq	143 w/o C0**2** seq 25 w/C02 seq.

Requirements for the project:

1) Small hydrogen cylinder
2) Chassis for the car
3) Motors
4) Connecting wires
5) Wheels
6) Batteries
7) Remote control system

Order of working:

Getting the components and Construction of fuel cell - week 1
Construction of tank for storage of fuel - week 2
Construction of fuel dispensing system - week 3-4
Construction of the car - week 5