

HYBRID CAR

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ABSTRACT: *The purpose of this research is to design and suggest a new transformation of energy covert into electricity. Hybrid cars are the cars, which keep running on somewhere around one exchange wellspring of vitality and fuel. More often than not excessively substitute wellspring of vitality for half and half vehicles is power (battery-powered batteries) henceforth those are called electric Hybrid Car. This venture decides the utilization of inexhaustible assets in plentiful. This covers the utilization of sustainable hotspot for generation of vitality and this vitality uses for number of works and one of the work is by utilizing this vitality we run the Sports vehicle. The main objective of this project is to use wind, solar, sound and shock absorber energy at the same time in the form of hybrid energy output.*

1. POWER GENERATING SHOCK ABSORBER

2. TRANSFORMATION OF SOLAR ENERGY INTO ELECTRICAL ENERGY

3. TRANSFORMATION OF WIND ENERGY INTO ELECTRICAL ENERGY

Keyword : *Hybrid Car, Solar Car, Sports Cars, Electric car, Solar car , shock absorber , Best electric car, Hybrid Car SUV etc*

I. INTRODUCTION

Any Vehicles is a hybrid when it combines two or more sources of power .In fact many people have Any vehicle probably owned a hybrids vehicle at some point. Hybrid vehicles are surrounding us. Most of the trains we see pulling trains are diesel - electric Hybrid vehicles. Urban communities like Seattle have diesel electric transports these can draw control from overhead wires or keep running on diesel when they are far from wires. Goliath mining trucks are regularly diesel electric Hybrid vehicles. Submarines are moreover Hybrid vehicles some are atomic - electric and some are diesel electric. Any vehicle that joins at least two wellsprings of that control that can legitimately or by implication gives drive

control is a Hybrid vehicles. The gas electric half and half vehicle is only that a cross between fuel's controlled vehicle and an electric vehicle. Hybrid electric vehicles (HEVs) are fueled by two vitality sources. A vitality change unit, such as, an ignition motor or energy component. What's more, vitality stockpiling gadget, such as, batteries so ultras capacitors, fly wheels. A fuel, methanol, compacted petroleum gas, hydrogen, or other elective fills may control the vitality change unit.

1.1 What are Hybrid Cars ?

Hybrid cars are the cars, which keep running on no less than one exchange wellspring of vitality and fuel. Most of the time that substitute wellspring of vitality for energy and hybrid power (battery-powered batteries)

Henceforth those are called electric Hybrid car. These new electric hybrid vehicles are inventive, productive and moderate

1.2 How Hybrid Cars Work

Hybrid Cars integrate the power of the conventional gasoline engine with that of an electric engine. A powerful battery pack gives vitality to the engine which itself gets revived at the point when the vehicle is decelerating. This is called as regenerative braking. The gas motor can likewise help the battery in reviving. This slaughters the need to plug the vehicle to an the car to an external source of Energy.

1.3 Material used in Hybrid Car

- (a). 4 Wheel (3inch-4inch)
- (b). 2 Spring (4inch)
- (c). 12V Solar Panel (8inch-10inch)
- (d). Dynaometer
- (e). Small Fan
- (f). 12V Chargeable battery
- (g). Iron (2 feet length, 1 feet breadth)
- (h). Plywood
- (i). Diode
- (j). Capacitor
- (k). 2 LED
- (l). Rack pinion
- (m). DC Motor

1.4 SCOPE & OBJECTIVES

This task decides the utilization of inexhaustible assets in bottomless. This covers the utilization of inexhaustible hotspot for generation of vitality and this vitality uses for number of works and one of the work is by utilizing this vitality we run the little vehicle. The principle goal of this venture is to use wind, solar, sound and shock absorber energy at the same time in the form of hybrid energy output.

II. SOMETHING NEW IN HYBRID SYSTEM

1. POWER GENERATING SHOCK ABSORBER

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There are at least two entities who have spent time/resources developing this concept: Goldner and Oxenreider

2.1 Ability to use a smaller engine

A conventional engine is sized for peak power requirement, while an examination demonstrates that most drivers achieve this under 1% of our driving time

The Hybrid engine is estimated for running at the normal power not the peak.

However, when it reaches that point that it needs assistance

up a slope or to pass somebody, it draws additional control from the batteries and the electric engine to take care of business.

III. TRANSFORMATION OF SHOCK ENERGY INTO ELECTRICAL ENERGY

The Shock safeguard harvests vitality from vibration experienced by a vehicle's suspension framework into power that can charge the battery and power vehicle gadgets.

A vitality gathering safeguard that can be introduced in a vehicle's suspension framework to assimilate the vitality from obstructions, convert the vitality into power and improve fuel productivity by 1-8%.

3.1 How it Works

A conventional automotive shock absorber dampens suspension movement to produce a controlled activity that keeps the tire immovably out and about. This is done by converting the kinetic energy into heat energy, which is then consumed by the shock's oil. The Power-Generating Shock Absorber (PGSA) converts this kinetic energy into electricity rather than warmth using a Linear Motion Electromagnetic System (LMES). The LMES utilizes a thick lasting magnet stack installed in the fundamental piston, a switchable arrangement of stator coil windings, a rectifier, and an electronic control framework to deal with the shifting electrical output and damping load. The base shaft of the PGSA mounts to the moving suspension part and powers the magnet stack to respond inside the annular exhibit of stator windings, delivering rotating current power. That power is then changed over into direct current through a full-wave rectifier what's more, put away in the vehicle's batteries. The power produced by each PGSA would then be able to be joined with power from other power age frameworks (for example regenerative braking) and put away in the vehicle's batteries.



A SHOCK ABSORBER

3.2 Adjustable Dampening

An electronic control system monitors the requirements of every individual street wheel's suspension and changes the hosing by rapidly turning on or off individual stator coil rings. With all stator loop rings exchanged on the PGSA produces a solid hosing power which can at that point be shifted for unique street conditions by switching coil on and off as required. This gives an additional dimension of advantages in enabling the stun to be delicate in cruising

circumstances (little, high-frequency movements) and in a flash change to a game sport in forceful cornering circumstances (longer, lower-recurrence developments). Further, the bounce back and pressure strokes can have diverse hosing qualities and application bends relying upon execution prerequisites. Flexible suspensions have turned out to be characteristically connected with lowrider vehicles. The prevalent picture of these vehicles is of one "jumping" on its suspension, or sitting with one wheel totally off the ground. These frameworks were at first adjusted from the hydraulic pistons.

IV. TRANSFORMATION OF SOLAR ENERGY INTO ELECTRICAL ENERGY

Solar energy is a very large, inexhaustible source of energy. The power from the sun caught by the earth is around 1.8×10^{11} MW, which is a large number of times bigger than the present utilization rate on the earth of all business vitality sources

4.1 HYBRID SOLAR SYSTEM

Solar power, produced primarily amid the daytime in the non-storm period, supplements wind which create control amid the rainstorm months in India. Sun based boards can be situated in the space between the towers of wind-power plants. During the daytime, the extra helper control utilization of a sun based warm capacity control plant is almost 10% of its evaluated limit with regards to the way toward extricating solar energy in the form of thermal energy.

4.2 SOLAR PANEL MANUFACTURING

The assembling limit of sun based cells and sun powered modules in India was 1,590 MW and 5,620 MW, respectively. Except for crystalline silicon wafers or cadmium telluride photovoltaic or Float-zone silicon, about 80 percent of sun oriented board weight is level glass. One hundred to 150 tons of level glass is utilized to make a one-MW sunlight based board. Low-iron flat or float glass is fabricated from soft soda ash and iron-free silica.

4.3 COMPONENTS USED

- Solar Array.
- Power Tracker.
- Batteries.
- Motor and Controller

It is a device which converts solar energy directly into electricity. Since sun powered vitality is a light vitality so we can say, "sunlight based exhibit is a device which convert over light energy into electrical energy."

4.4 SEMI-CONDUCTORS

- Semi-Conductors are those substances which have low Electrical conductivity.
- They are neither bad conductors nor good conductors of Electricity.

4.5 POWER TRACKER

Power trackers convert the sun based cluster voltage to the framework voltage.

Power tracker in the vehicle get the vitality from the sun oriented exhibit, and change the vitality that it gets to vitality that the vehicle can be use

4.6 BATTERIES

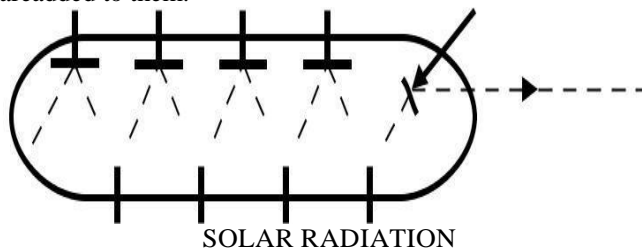
The batteries store energy from the power tracker and makes them accessible for the engine's utilization. After the power tracker convert the vitality to the vitality that is usable for the vehicle, it sends to the battery then the battery stores the vitality

4.7 MOTOR AND CONTROLLER

The motor controller modifies the measure of vitality streams to the motor to compare to the throttle. The engine utilizes that energy to drive the wheels

4.8 PROCESS OF TRANSFORMATION OF SOLAR ENERGY INTO ELECTRICAL ENERGY

Solar energy is transformed within the shape of electromagnetic radiations of different wavelength. These radiations contain seen light and invisible light (infra-pink) solar cells can rework mild strength into electrical strength which also can be converted into mechanical energy. The conductivity of solar cells, this is ability to behavior electricity of semi conduct power of semi-conductors will increase if positive impurities like Boron and Arsenic are added to them.



V. TRANSFORMATION OF SOLAR ENERGY INTO ELECTRICAL ENERGY

Wind energy generation ability in India has drastically accelerated in latest years. As of 30 June the full mounted wind energy ability was 34.293 GW, the fourth biggest set up wind energy capacity inside the global. Wind power capacity is particularly spread through Out the south, West and North areas. Wind power expenses in india are lowering rapidly. The levelised tariff of wind electricity reached a record low of Rs 2.43 according to kWh all through auctions for wind initiatives in December. In December, Union authorities announced the relevant recommendations for tariff-primarily based wind power auctions to deliver extra readability and minimise the risk to the builders.

5.1 CONCEPT

A Wind powered car converts wind power into electric powered energy. There by helping the automobile

- There's an consumption valve seated at the roof to a mass the wind needed to energy the automobile.
- An alternator connects to the intake valve which convert the kinetic power to electric strength.
- This electrical energy is connected to a D.C. battery p.c.

Which is supply of energy to a controller.

5.2 WIND TURBINE

A wind turbine is a device for changing the kinetic strength in wind into mechanical strength. Wind generators may be separated into simple kinds primarily based on the axis approximately which the turbine rotates. Generators that rotates around a horizontal axis are more common, Vertical-axis turbines are much less often used. Wind power first seemed in Europe throughout the middle a while, the first historical data in their use in England date to the 11th or twelfth centuries and there are reports of German Crusaders taking their windmill-making talents to Syria round 1190. By way of the Dutch windmills have been in use to drain areas of the Rhine delta. Superior wind generators had been described Croatian inventor fausto Veranzio, he defined vertical axis win generators with curved or V- formed blades.

VI. METHODOLOGY AND IMPLEMENTATION

METHODOLOGY

In order to address the short comings of existing instructional techniques, For electric electricity systems, a hybrid wind turbine and solar cellular machine, shock absorber has been implemented .The system became designed and carried out with the following desires ;To be completely distinct from traditional power labs and to be fresh and thrilling. To be intimately related to real International business strength problems consisting of power pleasant , to reveal a complicated, interrelated device that is closer to the – real global than the same old simple.

IMPLEMENTATION

(A). SOLAR

In India, the annual average sun radiation of 5KWh/sq.m in keeping with day with day with about 2300-3200 sunshine hours in line is available in the most parts of the many country.

(B). WIND

The southern and western coastal regions are the suitable place for wind turbines, For the telecommunication network in rural regions instates like Tamil Nadu.

(C). SHOCK ABSORBER

Industry ARC publisher sorts of marketplace reports in shock Absorbers industry, one form of file makes a speciality of international market place length, key clients, call for estimate through surprise Absorbers applications .

VII. RESULT

We Constructed a hybrid car, where in we used 4 varieties of strength, Transformation of Shock absorber convert into electricity, Transformation of solar energy convert into electricity, Transformation of wind energy convert into electricity. We are the usage of the cloth for built Hybrid car is that this, 4 wheel, 2 Spring, 12V Solar Panel, Dynamometer, Small fan, 12V Chargeable Battery, Iron, Plywood, Diode, Capacitor, 2 LED, Rack Pinion, DC Motor and so on. The shock absorber harvests electricity from vibration experienced by way of a automobile's suspension device into electricity producing surprise absorber converts

this kinetic electricity into energy in place of warmth via the use of a linear motion electromagnetic device. Solar Strength is a completely inexhaustible source of the strength. The energy from the solar intercepted by the earth is approximately 1.8×10^{11} MW, that is many thousand of instances large than the prevailing consumption rate on the earth of all business strength supply. It is a tool which converts solar strength directly into energy. In view that sun strength is a light energy so we can say, "Solar array is a device which converts light energy into electric strength". Power tracker convert the sun array voltage to the device voltage. Power Tracker Inside the automobile receive the electricity from the sun array, and trade the energy that it get hold of power that the hybrid may be used ,it convert strength, it sends the energy to the battery. Batteries shop strength from tracker and makes them available for the motor's use after the strength tracker convert the electricity to the power that is usable for the car . The Motor controller adjust the amount of energy flows to the motor to correspond to the throttle. The Motor makes use of that energy to pressure the wheels. It's far used to free the battery and transfer of the transistor T-1 by applying opposite bias ti is base whilst 230V, AC mains deliver is available. Diode D-2 & D-4 offers. Then finally we constructed a Hybrid car.

VIII. CONCLUSION AND FUTURE WORK

Obviously, a complete hybrid power system of this nature may be too high- priced & too labour extensive for many commercial departments however if we are making in a bulk the value of solar panel and different device's can be decreased, there are wide variety of hybrid motor within the global is to high priced the cause at the back of there logo our material used and their design. But if we're the usage of this hybrid power generation for charging the battery it reduces the consumption of power, and it costing now not much high as through this car are made in quantity. The enhancement to training, in particular in making electric energy management.

FUTURE WORK

For controlling the incoming strength from this supply, we use a diode which permit most effective one directional go with the flow and it received permit the modern to backflow, and also, we use a resistance for controlling the modern day and it will permit best deliver the require quantity of the cutting edge to the battery due to the fact our battery is 12Volt rechargeable battery so resistance simplest permit this quantity of cutting-edge. Now speak me on scope of this task, as we understand our developing populace and additionally increasing pollutants stage DIESEL and petrol automobiles produces to much pollutants so for controlling this automobiles industries working on the hybrid machine because hybrid system gained' reduce 100% pollutants but it is able to lesson 40% to 60% of pollutants.

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