



Self Charge Electric Vehicle

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ABSTRACT:

The electrical vehicle is not a new concept to us .the electrical vehicle first introduce in 1890.the petrol vehicle need fuel to drive it but as we now that fuel is not renewable source in future we cannot be depend on petrol vehicle .hence we have to developed electrical vehicle .we go to make electrical vehicle which runs on renewable energy source .we use electricity as fuel in our two wheeler bike by the help generator or alternator we charge batteries

Keywords: - Electric vehicles, self-Recharging, E-Bikes, battery capacity, electric motor, electrochemical battery.

I. INTRODUCTION

The electrical vehicle faced the big problem batteries charge in short time .in this hybrid power electrical vehicle some system involves to battery charge like Alternator, 220V ac charger and dynamo .when vehicle is run by the help of above some components we charge battery again and again . the self charge electrical vehicle is nothing but the self power generating vehicle this energy is to charge batteries .in this bike we addition to the electrical control unit to control the speed of the vehicle .in this system we used two batteries when we run the vehicle from first battery as rotation of wheel alternator is also run with their motion .in this condition second battery are charge .same condition for frits battery charging .in this method renewable energy is eco-friendly this method is used in any type of vehicle to produce self charge electrical vehicle

2. Main components of electrical vehicle

- 1) DC motor
- 2) Motor controller
- 3) Throttle
- 4) Battery
- 5) Battery charging device

1) Dc motor

It is a electrical device is convert electrical energy into monarchical energy .in a simple D motor used stator and armature with one or more winding and insulated wire is rotated around the soft iron core that concentrated to the magnetic field . this dc motor is directly operated by recharge able the batteries



Fig 1.1 Hub motor

2) DC motor controller

It is a device used to controller DC motor .by the help of DC motor controller we run the and stop the electrical vehicle .this controller is regulate the current (voltage) is required to control speed and torque.

In this controller speed of vehicle is control by four different way

1. Flux variation
2. Armature voltage
3. Change in dc supply voltage
4. Pulse width modulation(PWM) Pulse width modulation (PWM) is commonly used for speed control in a DC motor by altering the pulse width the DC motor controller is able to regulate the voltage supply

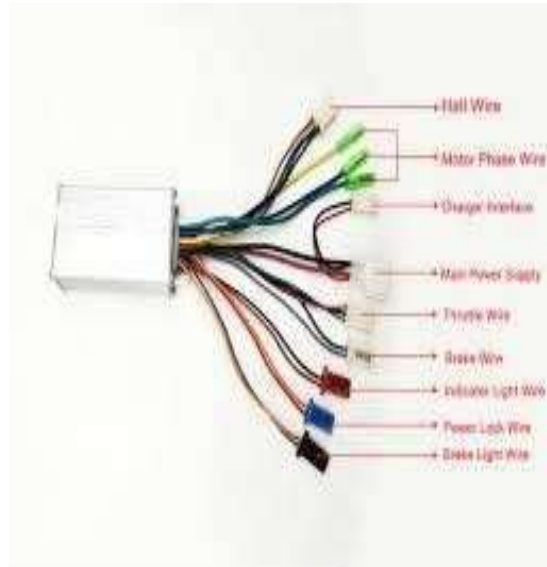


Fig 1.2 DC Motor Controller

3) Electrical Throttle Controller:

A major advantages of an electronic throttle controller is that it can be easily linked to other system such as like engine controller ,electronic stability controller and cruise controller .these throttle controller is the latest of non – contact hall effect sensing technology to provide a durable ,rugged and reliable drive by wire single for vehicle electronic fuel management system or the motor controller battery powered vehicle



Fig 1.3 Electrical Throttle Controller

Electronic throttle controller benefits:

- Work behind the scenes
- Ensure seamless and consistent use
- Fuel consumption is reduce
- Air fuel ratio mixture control

- Exhaust emission control

4) Batteries :

In this project 12volt batteries is connected in series .the main thing is note about it in series connection battery voltage is added in each other .in cell contain a positive terminal which allow the flow of battery to perform work

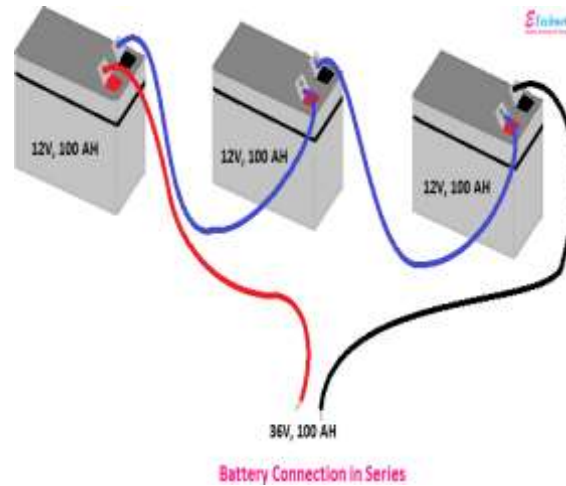


Fig 1.4 Batteries

Switch:

The switch have two terminal one switch is connected to the motor and second terminal is connected to the battery there are two switch 'ON' it used to start electrical vehicle and 'off' it used to stop the vehicle



Fig 1.5 Switches

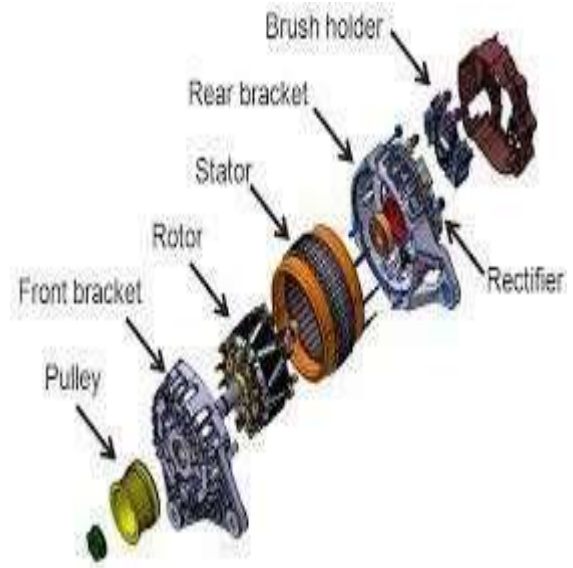


Fig 1.6 Alternator

Alternator:

Alternator is a device which converts mechanical energy into electrical energy in a alternator permanent magnet is used. Magnetic field is called a magneto.

References

1. Yogesh jadhav ,Gaurav Kale , Shekhar Manghare , Sager Patil "Self Charging Electric Bicycle" International Journal on Recent and Innovation Trends in Computing and Communication ISSN:2321-8169 Volume: 4 2017Adithya Kumar, Srirenga Venkatesh, Satheesh Kumar, Pragatheeshwarar "FABRICATION OF SELF- CHARGING ELECTRIC BIKE" International Journal of

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2. *Pure and Applied Mathematics Volume 118 No. 22 2018*
 3. *“Electric Bicycle System” By Robert Cong, Rodney Martinez, Mark Casilang, Peter Vong, California Polytechnic State Ilyas Hussain University San Luis Obispo June 2010*
 4. *“Self-Generated Electric Bicycle” by Prof. S. H. Shete, Nitin Patil, Ganesh Khot, Kiran Kokitkar, Santosh, Vardapgol, Jayashri Sawan, INTERNATIONAL JOURNAL*
 5. *OF INNOVATIVE RESEARCH IN ELECTRICAL, ELECTRONICS, INSTRUMENTATION AND CONTROL ENGINEERING Vol. 4, Issue 3, March 2016*