WIRELESS ELECTRIC VEHICLE CHARGING SYSTEM

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ABSTRACT

This article describes the design of a solar station for hybrid electric vehicle charging, addressing major issues s uch as fuel and pollution. Electric cars are now on the road all over the world and their numbers are slowly incre asing. In addition to their environmental benefits, electric vehicles have also been shown to help reduce travel co sts by replacing gasoline with cheaper electricity. Here we have created an EV charging system that can be solve d with custom solutions. This electric car charges without cables.

The system makes use of a solar panel, battery, transformer requlator circuitry, copper coils, AC to DC converter, atmega controller and LCD display to develop the system. The system demonstrates how electric vehicles can be charged while moving on the road, eliminating the need to stop for charging. Thus the system demonstrates a solar powered wireless charging system for electric vehicles that can be integrated in the road.Well here we develop an EV charging system that solves both these problems with a unique innovative solution.

Keywords: Hybrid electric vehicle, wireless charging, solar energy

INTRODUCTION

Charging uses a new type of energy transmission technology – wireless power technology. This technology frees the charger from the limitations of the line and allows the appliance and power supply to be completely separated. It shows better advantages than traditional chargers in terms of security, flexibility and so on. Today, with the rapid development of science and technology, wireless charging has shown broad development prospects.

Compared to hybrid cars, electric cars have become more competitive due to lower CO2 emissions and increase d fossil fuels. However, electric vehicles are not widely used due to some limitations such as high vehicle costs. Pay less and limit all electric drives. Electric cars are cars that use electricity partially or completely. Electric car s are inexpensive to run because they require less movement to maintain and are environmentally friendly as the y use little or no fossil fuels.

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PROBLEM STATEMENTS

Some of the problems faced by the Petroleum Industry in India are : -

1. Shortage of Petroleum Crude
2. Dependence on Foreign Countries:
3. Price Hike
4. Shortage of Oil Refining Capacity:
5. Exploration of New Reserves:
6. Technical Problems
7. Pollution
8. Lack of Market-Determined Pricing System

LITERATURE SURVEY

Electric vehicles (EVs) use electricity as their primary fuel or to improve the efficiency of conventional vehicle designs. EVs include all-electric vehicles, also referred to as battery electric vehicles (BEVs), and plug-in hybrid electric vehicles (PHEVs). In colloquial references, these vehicles are called electric cars, or simply EVs, even though some of these vehicles still use liquid fuels in conjunction with electricity. EVs are known for providing instant torque and a quiet driver experience. Other types of electric-drive vehicles not covered here include hybrid electric vehicles, which are powered by a conventional engine and an electric motor that uses energy stored in a battery that is charged by regenerative braking, not by plugging in, and fuel cell electric vehicles, which use a propulsion system similar to electric vehicles, where energy stored as hydrogen is converted to electricity by the fuel cell. Regenerative braking allows EVs to capture energy normally lost during braking by using the electric motor as a generator and storing that captured energy in the battery.

The application of wireless charging technology in traditional battery-powered wireless sensor networks (WSNs) growsrapidly recently. Although previous studies indicate that the technology can deliver energy reliably, it still faces regulatory mandate to provide high power density without incurring health risks. In particular, in clustered WSNs there exists a mismatch between the high energy demands from cluster heads and the relatively low energy supplies from wireless chargers.

In recent years, the number of electric vehicles in China has continued to rise, and the charging network for electric vehicles has developed rapidly. This paper studies the development characteristics of the electric vehicle charging network business market and forms a charging network policy environment that includes national and local policies. Then, use policy tools and divide policy tools into supply, environment and demand. Finally, based on the policy influence from the perspective of policy tools, the corresponding development suggestions are put forward.

METHODOLOGY

The system uses a solar panel, battery, transformer, voltage regulator circuit, copper coils, AC to DC converter, atmega controller and LCD display to build the system. The system demonstrates how an electric car can be cha rged while driving on the road without being charged.

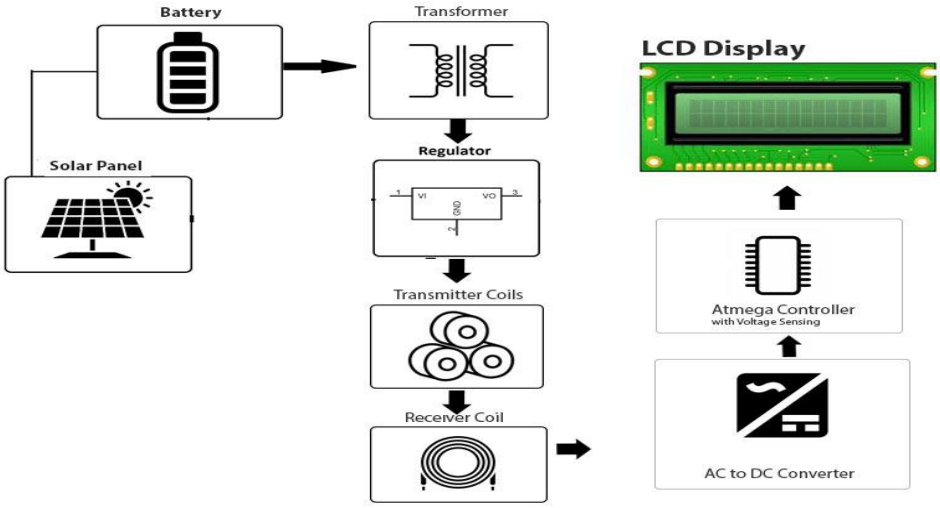
Thesolar panel is used to power the battery through charge regulation. The battery charges and stores current. N ow the direct current must be converted to alternating current for conduction.

For this we use transformer here. Thepower supply is converted to AC using a generator and controls the use of a voltage regulator. Electric current is used to power the copper used for wireless transmission. A copper coil is also placed under the EV. When the car is driven on the steering wheel, the power is transferred from the transm ission to the electric steering wheel.

Note that the power is still the DC current induced in this coil. Now we convert it back to DC so it can be used t o charge EV batteries. Using the

AC to DC converter we convert this back to DC current. We are now using atmega microcontroller to measure t he input voltage and display it on the LCD screen. Therefore, this system brings up the solarpowerewireless char

ging system for electric vehicles that can be used on the road.



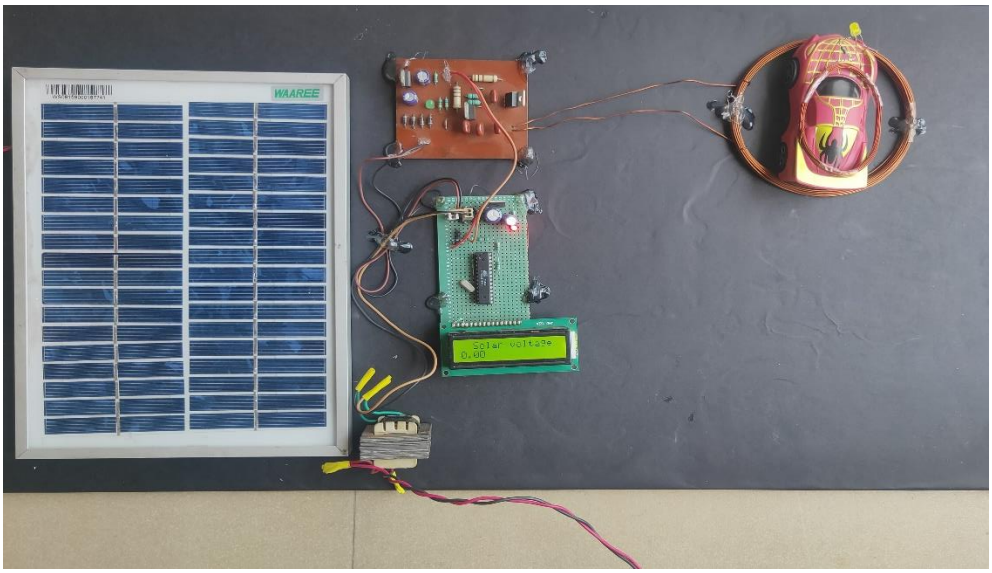
WORKING

The solar panel is used to power the battery by controlling the charge. The battery charges and stores current. N ow the direct current must be converted to alternating current for conduction. For this we use transformer here. Thepower supply is converted to AC using a generator and controls the use of a voltage regulator.

Electric current is used to power the copper used for wireless transmission. A copper coil is also placed under th e EV. When the car is driven on the steering wheel, the power is transferred from the transmission to the electric steering wheel. Note that the power is still the DC current induced in this coil. Now we convert it back to DC so it can be used to charge EV batteries.

We convert this back to DC current using an AC to DC converter. We are now using atmega microcontroller to measure the input voltage and display it on the LCD screen. Therefore, this system brings up the solarpowered wireless charging system for electric vehicles that can be used on the road.

RESULT



The working of Wireless Electric Vehicle Charging System obtained result.

FUTURE SCOPE

Wireless payments are not for familiar applications such as smartphones, smartwatches, wearables, tablets or de vices. The future of wireless chargers can also be used for all types of (self-
driving) cars, autonomous robots and forklifts, and electric vehicles in general. wireless charging is being touted for the resource, cost, and operational efficiencies that it enables. One of the significant advantages of wireless charging is that charging is brought into the vehicle workflow. This ensures that the workflow isn't disrupted when the vehicle needs to go off to be recharged, as with plug-in charging. For instance, wireless charging can be installed at the dock, thereby charging the vehicles while they are loaded.

CONCLUSION

Wireless charging is simple and effective, but not enough research has been done to improve efficiency and the distance between the device and the charger.

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