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HYBRID WIRELESS BATTERY CHARGING OF ELECTRIC VEHICLE

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Abstract
In this conservation of energy is the most necessary part of the society and as automobile is an important part of society in day to day life, hence the conservation of energy well as pollution due to the use of Bio-fuels in automobile sector is a challenging job. So energy conservation and pollution free vehicle became most important factor. To solve this issue the concept of Electric Vehicle (EV) (electricity powered automobile) system was introduced, this can be used in all type of automobile such as cars, bus, etc. But once the battery of EV is charged it travels a limited distance ,again we have to charge the battery of vehicle, which is a time consuming process. In this paper we worked on this issue of electrical Vehicle (EV). We resolved this by doing wireless charging alternating charge the battery .This will helps to improve the distance covering rang of electrical vehicle (EV) and make it more efficient. It will save the lot of time which is needed to charge the electric vehicle (EV).

Keywords–*Transformer, Rectifire, Filter, Buck Booster Kit,Primary Coil, Secondary Coil, Battery.*

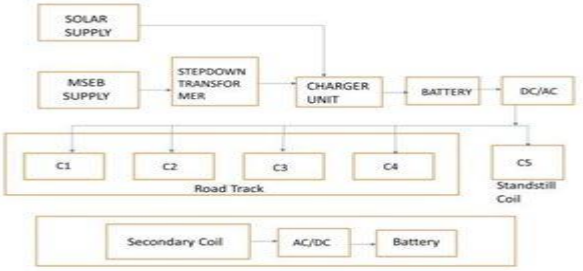
I. INTRODUCTION

The Wireless Power Transfer and Charging Module can be used in electronic equipment in common use for close wireless charging or power supply. Consist of a Transmitter & Receiver and coil, it could serve as a replacement for the Wireless Power Supply with stable 5V output voltage and maximum 600mA output current. Its small size and insulation coil is more suitable for using in wireless project. This module use an electromagnetic field to transfer electric energy between a transmitter circuit and a receiver circuit. An induction coil creates an alternating electromagnetic field from within the transmitter circuit powered with 12V. The second induction coil takes power from the electromagnetic field and converts it back into electrical current to the receiver circuit that outputs 5V - 600mA.
In recent years, under the background of global warming, electric vehicle (EVs) using clean energy are getting more attention among the developed and developing countries. Wireless charging for electric vehicle would also be a convenient feature, avoiding any need to remember to plug-in power cord after parking vehicle.

II. LITERATURE SURVEY

The introduction to wireless EV configurations has two purposees. First, it will orient the reader to terminologies for the already standard tankard components of wirelesscharging EVs, and second, it discusses the boundaries and abstraction level of wireless charging EVs from the perspective of operations and systems issues. The review ofmajor developments in, and uses of, wireless charging EVs is also worthwhile because a significant portion of the extant literature was produced by researchers involved in these projects. Although this discussion will not be exhaustive, it nonetheless introduces the key themes thatrecur across major projects and indicate the import of operations and systems issues for future work.
A comprehensive Study of Key Electric Vehicle (EV) Components, Technologies, Challenges, Impacts, and FutureDirection of Development .This paper is focused on reviewing all the useful data available on EV configurations ,battery energy sources, electrical machines, hargingtechniques,optimizationtechniques,impacts,trends,and possible directions of future developments. Its objective is to provide an overall picture of the current EV technology and ways of future development to assist in futures in this sector.

III. BLOCKDIAGRAM



Affordability:

IV. PROBLEMIDENTIFICATION

VI. METHODOLOGY

Battery technology is expensive because batteries in electric cars need to be able to hold massive amount of the charge to make the cars practical for most drivers. So they are made for expensive materials which are tough procure.

Solution:
Electric car could be less expensive if electric car makerscould ramp up production volume and use economies of scale.

V. CIRCUITDIAGRAM

In this project we all use a hybrid (MSEB+SOLAR) supply for the working of project. When in the day time the solar energy is available but in night time the MSEB supply is used, so this is based upon hybrid system. During day time the supply is given from solar panel and give to the battery through the freewheeling diode. The solar energy is in the DC form so this is helpful for the battery charging. When the supply given from MSEB is 230v and converted into the 12v AC supply. This 12v AC supply is given to the voltage regulator with the help of half wave rectifier and the capacitor. This is the power supply design. The voltage is regulate into 12 AC to 5AC .The
capacitor use to reduce or distort any distortion in the circuit. Then this supply is given to the opto-coupler's one terminal and another supply is given from the 12v battery to the another terminal of the opto coupler. Opto coupler output terminal connected to the IGBT'S gate terminal. It produces the two waves one is positive half cycle and another is negative half cycle in the circuit. The output of opto coupler is connected to the gate terminal of one IGBT through the resister and another output is connected to the another IGBT gate terminal through the resister. IGBT'S produces the positive and negative half wave into the full sine wave. The source terminal of the IGBT'S connected to the primary side of the coil and the another source terminal is connected to the secondary side of the transmitter coil.

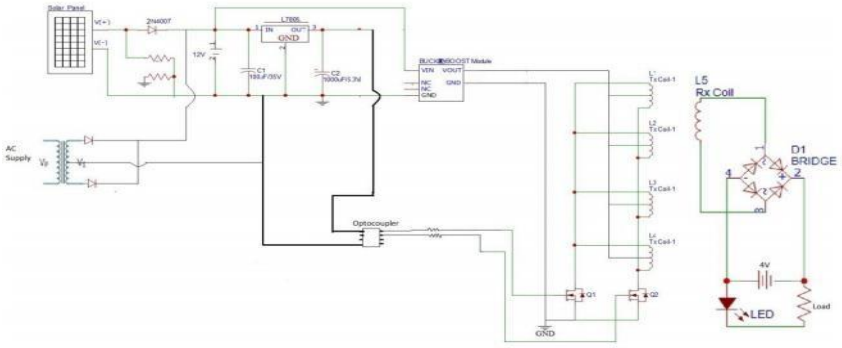


Fig. 2. Block Diagram

In this project wireless power transfer is done. This is a new technology. A current through a conductor produces a magnetic field surround it. The strength of this field depends upon the valueof current passing through the conductor. The direction of the magnetic field is found using right hand rule. There are two emf coil i.e. primary and secondary. There is the magnetic field between them.a system of principles, techniques, and procedures used by those who work in a discipline.

The Working of Vehicle Over Switch For Battery Switching the car will run with help of coil no.1Primary Coil no.2Second coil . The battery will charge by this coil

Case2-
When supply is turn off battery is charge by secondary coiland the vehicle will be run on road

VII. COMPONENTS DESCRIPTION1). Solar panel -

Solar panels work by absorbing sunlight with photovoltaic cells, generating direct current (DC) energy and then converting it to usable alternating current (AC) energy with the help of inverter technology.

2). Transformer -

Transformer is a static device which transfer electrical energy from one circuit to another circuit with change in voltage or current without change in frequency.

3). Resister -

A resistor is a passive two-terminal electrical component thatimplements electrical resistance as a circuit element.

4). Heat Sink -

A heat sink (also commonly spelled heat sink) is apassive heat exchanger that transfers the heat generated by an electronic or a mechanical device

5) Diode-

The most common function of a diode is to allow an electric current to pass in one direction while blockingit in the opposite direction

6) Primary and Secondary Coil -

If a changing flux is linked with a coil of a conductor therewould be an EMF induced in it. The property of the coil of inducing EMF due to the changing flux linked with it isknown as inductance of the coil

7) Buck Boost Converter-

Buck–boost converter is a type of DC-to-DC converter, AC-to-AC converter that has an output voltagemagnitude that is either greater than or less than the input voltagemagnitude.

8) Secondary Battery-

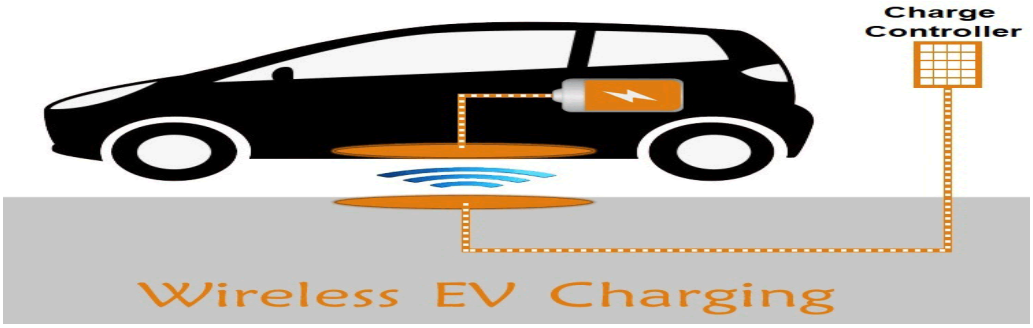
The storage battery, secondary battery, or charge accumulator is a cell or combination of cells in whichthe cell reactions are reversible.

IX. RESULT

The plug-in charging process is complicated, slower charging rate, low energy storage capacity, size and weight. A new technology is required to reduced battery related problems andfor development of electric vehicle. To reduce battery related problems, greenhouse.

VIII. ADVANTAGES

1. On road charging is possible.
2. Easy Driving.
3. It will save the fossil fuel petrol, coal, diesel etc.
4. I twill create pollution free environment.
5. Easy to make Autonomous Vehicle.
6. Energy efficient.7.



X. CONCLUTION

The equivalent input impedance of rectifier loadis mainly affected by system load resistance and rectifier input inductance; rectifier load equivalent inductance will impact system performances, and should be considered for compensation network design; the proposed load estimation methods have good accuracy, but still need to be improved in further research; the proposed rectifier load calculation method and system load estimation methods all have good robustness on conditions of WCS parameter variations. Although the works in this paper are conducted based on the specific system, they can be extended to more applications, such as wireless charging systems with other rectifier or compensation network topologies, etc. They will be helpful for system design and control to make EV wireless charging systems achieve stable operation and high performance. On road charging is possible.

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