

WIRELESS CHARGING STATION

PBL PROJECT
A9 GROUP

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INTRODUCTION

- *Electric cars (EV's) are the future mode of transportation & electricity will be the future fuel for these vehicles . so it is important to provide charging stations for the Evs to charge them to make them run larger distance without carrying extra batteries.*
- *These power stations help the Evs to charge.*
- *The wireless charging stations can be so compact that it could fit easily even in narrow spaces, which will save space (less space than current fuel pumps).*

WORKING PRINCIPLE

- *These wireless charging stations works on the principle of mutual induction.*
- *The energy from the solar panel will be directly transferred to transformers and from transformers to the station Batteries.*
- *These station batteries will charge the car battery with greater efficiency*
- *Power will be transferred from the coil which will be located at the base of the station*
- *Secondry coil will be present in the coil.*

CONSTRUCTION OF CHARGING STATION

- *Charging station contain a directly supply from electric power station and also a alternative source of solar energy.*
- *These electricity is step down to 15V and 50hz frequency via a transformer circuit.*
- *A primary copper coil is present at the base of the station which will circulate current in it from the transformer.*
- *A secondary coil is present in the car, from mutual induction the current is induced in the secondary coil and from the coil to the battery of the car.*

CONSTRUCTION CIRCUIT

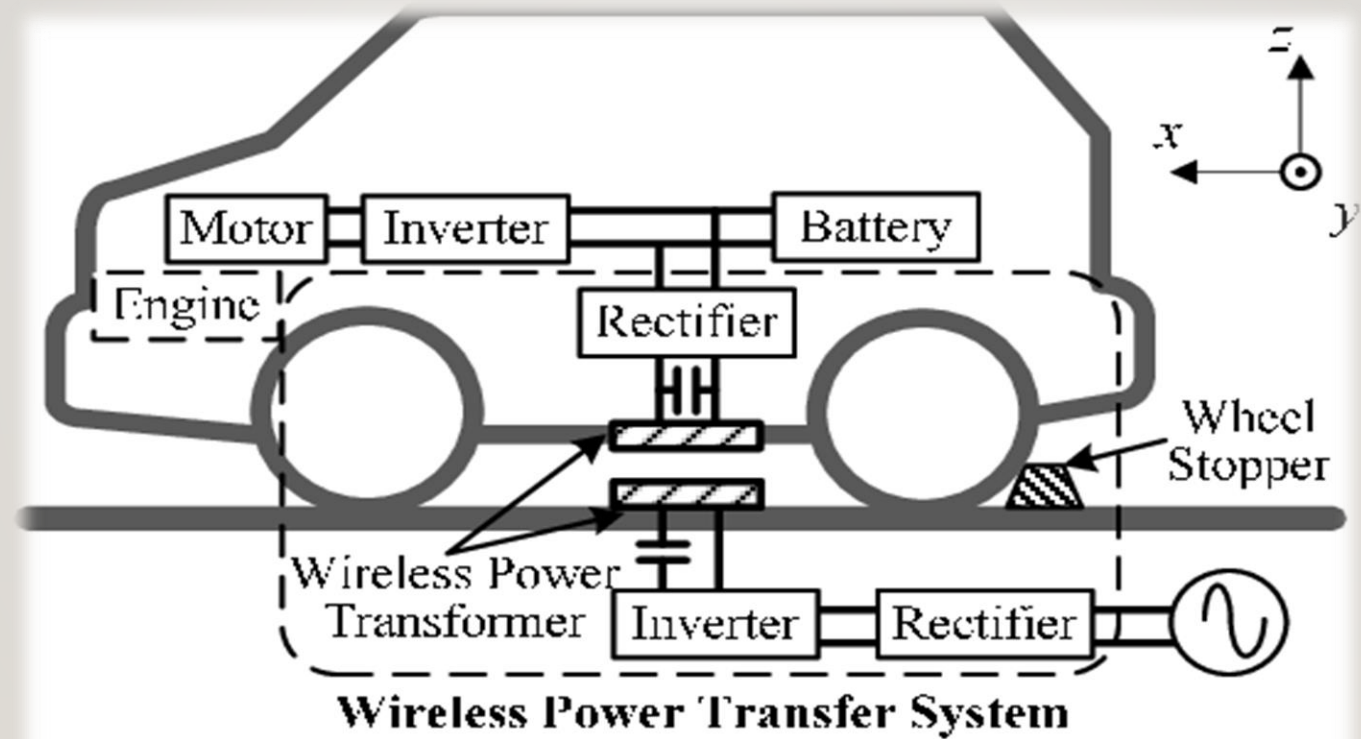
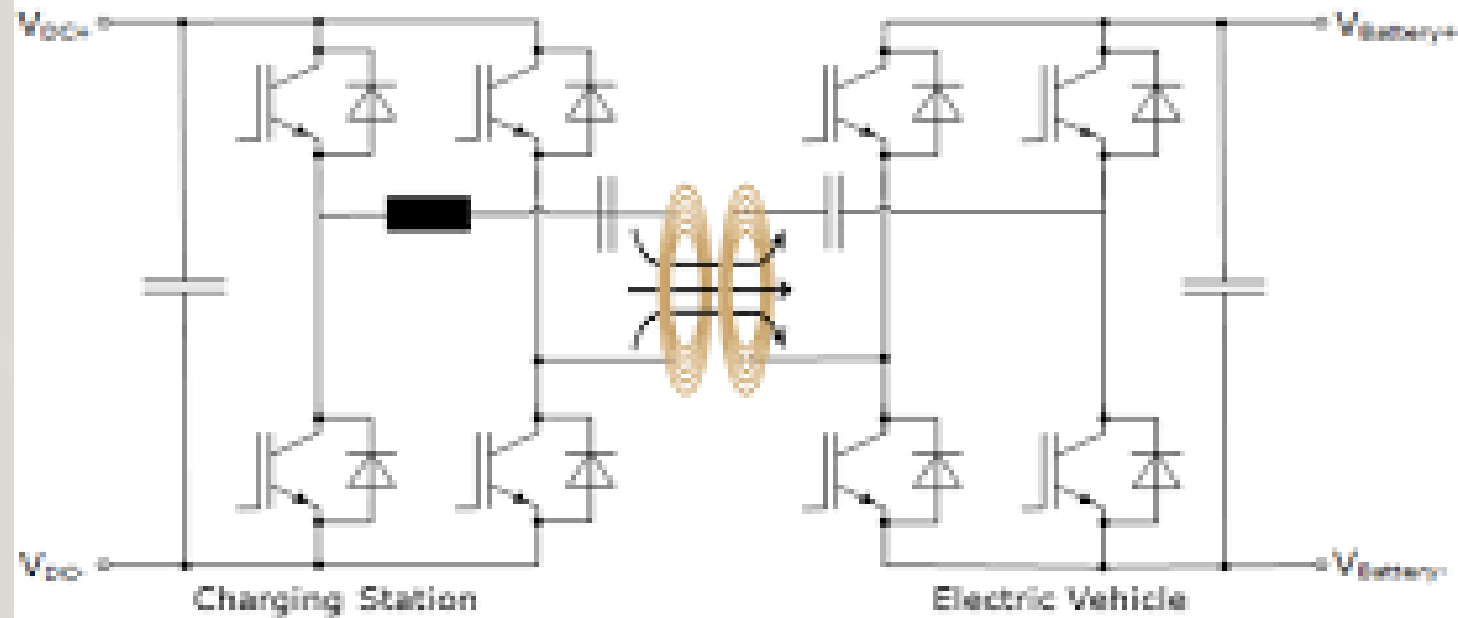


Figure 1. Wireless power transfer system of an EV and PHEV

WHY WIRELESS CHARGING STATIONS ?

- *Less space required. Hence compact and installed in rural, urban areas where there is shortage of space.*
- *No man power required. Everything can be operated via machines and electronic system using AI.*
- *Require less time to charge the battery. As it can be upgraded to high watt charging.*

CIRCUIT DIAGRAM:



DISADVANTAGES:

- *Require more maintainance. The station uses mutual induction so it is wireless and require more space.*
- *High installation cost. The cost of copper coils are very high which directly affects cost of installation.*

BIBLIOGRAPHY:

- www.google.com
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- *Basic electrical engineering references*