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Wireless Power Transmission Technology

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Abstract: In this WPT, the main concept is power transmission without use of wires. In electrical power system, most of losses occurred in transmission & distribution with the use of this concept transmission system to related history of wireless power transmission system also the related Power transfer technology it is technology eliminates the drawbacks of existing wires technology. In this electrical energy transfer by electromagnetic induction is typically magnetic. It will be power transmits transmission wireless energy (WPT).

Keywords: Wireless Power Transmission; Laser Power Transmission; LASER Transmission; Magnetic Resonance; Microwave Power Transfer;

1. INTRODUCTION

In this wireless transmission of electrical energy from a power source to an electrical energy load without conductors it is useful in cases where interconnecting wires are inconvenient. Hazards its possible it wiil be (WPT) is the 1901- Nikola Tesla constructed the wardenclyffe tower that was capable of wireless power transmission between the America & Europe. in this fig shows (WPT) is order to transmit power source & receiver condition that is natural frequency system transmission coil away from electric source produce in magnetic field arrows and second coil is receiver in the same and frequency electric current flows through it that called electromagnetic induction and various types of WPT Near field techniques and Far field techniques Near field is inductive coupling are used & Resonant inductive coupling are used and second is far field techniques is microwaves power transmission used and LASER power transmission are used.

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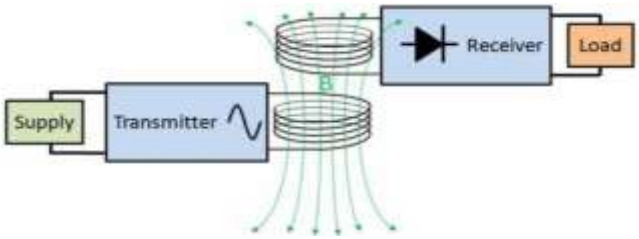


Fig 1: Wireless Power Transfer (WPT)

1.1 Inductive coupling

Inductive coupling is primary and secondary coil are not with wires and energy transfer is due to mutual induction. For example of transformer, wireless charged pad electric brushes are used it is wireless charging pad the device are to be kept battery and will automatically charged.

1.2 Resonant inductive coupling

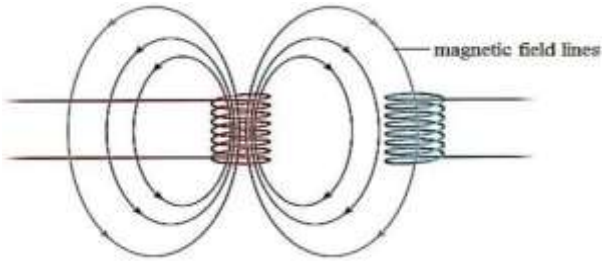


Fig 2: Resonant inductive coupling

In fig shows that resonant inductive coupling makes two objects interact very strongly. Inductive induce current in magnetic field lines.

1.3 Near Field Techniques

It is near field technique is need of battery is estimated. And efficient energy transfer using RLC it will be maintenance costs less. & field strength have to be under safety levels.

1.4 Far –Field Wireless Power Transfer

It is far field is high power transfer and it can be a laser of microwave transmission it also needs line of sight it is radioactive in nature.

Table -1: Comparison Between Qi-Stanard, Pma, And A4wp Standard

Sr no.	Qi Standard	PMA	A4WP Standard
1.	Magnetic induction charging	Induction charging ”	Magnetic resonance charging
2.	Communication Technique in-band	Bluetooth	In-Band

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3.	Power transmitted is continuous	Continuous	Oscillated power
4.	Uses small precise inductor coil	Small coil	Much larger coil

Advantages of Power Transmission

1. Efficient, easy
2. Need for grid eliminated
3. Low maintenance cost
4. Long transmission efficiency over long distances
5. Simple design

DISADVATAGES

1. No longer low power consumption wireless power transfer efficiency is very high.
2. High power loss
3. Non-directionality

APPLICATIONS

1. Electric Automobile charging
2. Energy to remote areas
3. Industrial purpose

2. CONCLUSION

It is Wireless Power Transmission is the future technology the wireless power transmission we have conclude that (WPT) has improved sustainability but still consist of various drawbacks which need to be researched upon in order to the represented as wireless power transmission technology.

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