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RECTIFIER FOR WIRELESS POWER TRANSFER (WPT)

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EXTENDED ABSTRACT

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ABSTRACT : A rectifier is an electrical device that converts alternating current (AC), which periodically reverses direction, to direct current (DC), which flows in only one direction. Rectifiers have many uses, but are often found serving as components of DC power supplies and high-voltage direct current power transmission systems. Rectification may serve in roles other than to generate direct current for use as a source of power. This project presents a full wave rectification. This project will use the full wave bridge rectifier. A full-wave rectifier converts the whole of the input waveform to one of constant polarity (positive or negative) at its output. Mathematically, this corresponds to the absolute value function. Two coil will be put parallel each other for wireless power transfer. One coil at the output supply circuit and the other at input load circuit. In order to verify the circuit, a simulation and system prototype of the wireless power transfer system has been built and implemented. The receiving power at different lateral offset between primary coil and secondary coil was also measured. The simulated and experimental results confirmed that the proposed system makes it possible to apply for the wireless connection activate the Bulb.

I.INTRODUCTION

The project title is rectifier for wireless power transfer (WPT) using the full wave rectifier. A Full wave rectifier is a circuit arrangement which makes use of both half cycles of input alternating current (AC) and converts them to direct current (DC). In tutorial on Half wave rectifiers, have seen that a half wave rectifier makes use of only one-half cycle of the input alternating current. Thus a full wave rectifier is much more efficient (double+) than a half wave rectifier. This process of converting both half cycles of the input supply (alternating current) to direct current (DC) is termed full wave rectification. [1]

Full wave rectifier can be constructed in 2 ways. The first method makes use of a center tapped transformer and 2 diodes. This arrangement is known as Center Tapped Full Wave Rectifier. The second method uses a normal transformer with 4 diodes arranged as a bridge. This arrangement is known as a Bridge Rectifier.

This project use the full wave rectifier because it have more advantages than the half wave rectifier. The half wave rectifier has more number of disadvantages as compared to the advantages.

The full wave bridge has been chosen to create the wireless power transfer. Two coil parallel to each other will be placed on the project circuit. One of the coil place at the output of the supply. The other one will be placed at the load. There are one component connect with the output which is Bulb.

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