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IOT Based Wireless Electric Vehicle Charging Station System

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Abstract –

The automotive industry is quickly transitioning from IC engine vehicles to electric vehicles as we enter a new era of automobiles. The growing demand for electric vehicles is also driving up the number of charging stations. In this idea, the automobile is charged wirelessly through inductive coupling using a wireless charging system. All we have to do is pull the automobile into the charging station. Wireless Power Transmission is the process of sending electrical energy from a source to a load over a distance without the need of cables or other conducting wires. This project can open up new possibilities of wireless charging that can use in our daily lives**.** Wireless power transfer (WPT) using magnetic resonance is the technology which could set human free from the annoying wires**.** This system can be used to charge the battery of Electric Vehicle

***Key Words*:** Wireless, Power, Transmission, Charging Station, Magnetic Resonance.

1.INTRODUCTION

Our world is one of rapid technological development. Every day, new technologies are developed to improve our quality of life. In spite of all of this, we still charge our common electronic devices using the traditional wire approach. When multiple electric vehicles are being charged at once, the traditional wiring system gets messy. Additionally, it hogs a lot of the charging port's electrical outlets. One may ask a question at this point. What if there was a single piece of equipment that could charge all of these electric cars at once without requiring cables and without making a mess? We thought about it and came up with a concept. The straightforward and efficient method of solving this issue is inductive coupling.

2. Body of Paper

Section 1: Block Diagram

The timer circuit's output is fed into an inverter circuit to invert the oscillating signal, which is referred to as signal 2 instead of signal 1 for an oscillating signal that is not inverted. The MOSFET driver ic receives this original and inverted oscillating signal, which it uses to create high and low pulses that open the MOSFET terminal's gate. As a driver circuit, this forms. The LC circuit received the alternating current from this driving circuit.

Section 2: Methodology

The magnetic field is created by the current flowing through the capacitor and inductor. The magnetic field surrounding the coil is produced by the energy that enters the coil from the primary side.

The high-frequency output being used will result in a very powerful magnetic flux production. Current will be induced in the parallel-connected inductor and capacitor when the flux from the primary coil links with the secondary coil or receiver coil. Alternating current (A.C.) is applied to the bridge rectifier circuit by use of a voltage generator across the linear circuit. This circuit creates a smooth DC signal by converting the alternating current to direct current and connecting the capacitor to the output. The voltage is limited by the voltage regulator to shield the load from harm.

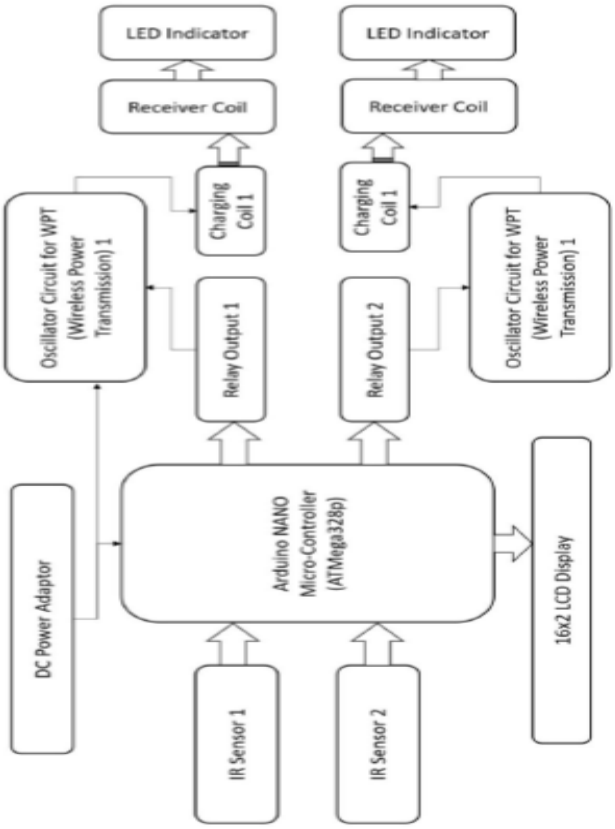

Fig No. 2.1 Block diagram

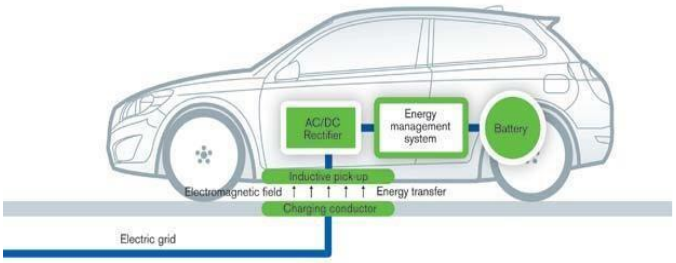

Fig No. Tested Working System

3. CONCLUSIONS

It is observed that, the electric vehicle in the market is increasing. We can use the wireless charging system to charge our vehicles. This system shows the efficiency and implementation of the charging station in future technology. Overall, this paper compares various smart parking, charging and combined charging-parking system, which can help to solve various issues related with it. Also, it contains a table of comparison of various research paper. There are various types of methods and techniques used for parking and charging are discussed.

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