Pollution Free Bus

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***Abstract*—The paper aim of the possibility of charging the electric vehicles wireless using inductive coupling. The paper increasing key elements that will overcome problem according with charging of moving electric of bus vehicles and will successfully demonstrate the feasibility of wireless power transfer directly to vehicles cruising at highway speed, magnetically-coupled resonating coils located in the roadbed and in the vehicles. It's also uses RFID technique for id of vehicles.**

Keywords— Eco-friendly,RFID tag ,Inductive coupling

I. INTRODUCTION

The reducing CO_2 emissions of the electricity supplied from degenerative the range-nor did cost-competitive compare to conventional vehicles due to limited of recharging option and expensive energy batteries. The aim of this paper is increasing wireless power transfer to change the moving electric vehicles. The electromagnetic induction non-contact power are transmission the electric current to adjacent one coil medium.

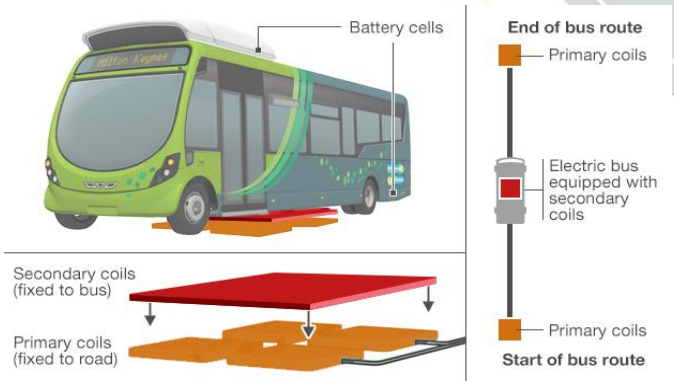

Fig. 1. Pollution free bus structure with inductive coupling.

II. LITERATURE SURVEY

Today's all buses are operate on petrol or diesel. The solution for this buses which operate without such fuels.

The following specification:

- Electric power consumption: less than 100kWh/60mins
- Acceleration: 0–50 km/h in 20s
- Top speed: 96 km/h
- Normal charge: 6h for full charge
- Fast charge: 3h for full charge
- Overnight charging: 60 kW Max power to fully charge the bus within 5h

If we compare Normal bus and BYD electric bus then we are observe, BYD system requires more investment cost than normal bus, But BYD bus is One Time investment service. So think that these buses are more useful now.

1) Wireless power transmission using microwave in system which contains satellite based solar power system .The DC power received on earth is converted into AC for various useful purposes system.This paper comprehensive study of various components of the satellite based SPS and projects this technology bulk source of power generation in the future.

2) Wireless Chargeable Pollution free Bus Now a days conventional buses which run on fuel results in release of the harmful gases such as CO2 which leads to increase in environment pollution global warming.This also affect the health of human being, along with these fuels which is used in buses is non-renewable source of energy and goes on decreasing day by day. This bus is pollution free bus uses renewable source of energy.

3) The main objective of this paper is to develop a concept of transferring power without use of any wires.The concept is based on low frequency to high frequency conversion. High frequency power is transmitted between inductor through air core. By using two self resonating coils non-relative power is transmitted over distances up to three times the radius of the coils.

4) Design of Fast Response Smart Electric Vehicle Charging Infrastructure.The response time of the smart electrical vehicle charging infrastructure is the key index of the system performance. To reduce the traffic signal between the smart EV charger and the control center.

5) Design of RFID system for Electric Vehicle Smart Charging Infrastructure With increased number of Electric Vehicles on roads, charging infrastructure is gaining ever-

more important role in simultaneously meetings needs of the local distribution grid and of EV users.

6) Analysis and design of non contact plats charger using LC load resonant coupling for electrical vehicle system. A wireless power transfer system for roadbad powered electric vehicles is presented.Due to the convenience of using electronic devices, contact less energy transfer systems have garnered interest in various fields of industry. In this system, a new design approach that uses anti parallel resonant loops for CET systems is presented. The forward and reverse loops forming an anti parallel resonant structure stabilize transfer efficiency and prevent from dramatic distance related changes.

7) In this paper we have introduced a technology in which we can transfer the electric energy using wireless technology. Also we have a short overview on wireless transfer of electricity.

III. BLOCK DIAGRAM DESCRIPTION

The block of proposed system divided into two part.

1) Bus stop unit.
2) Bus unit.

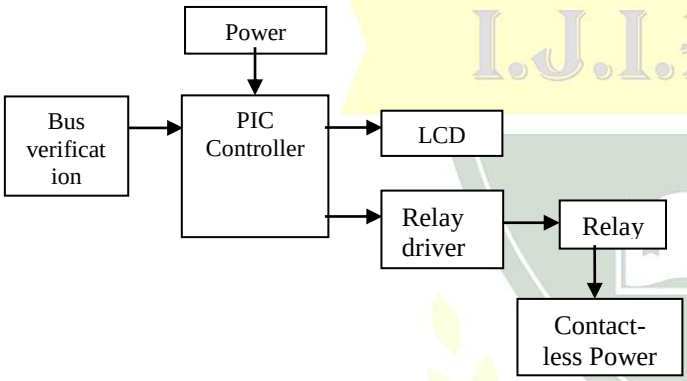

Fig. 2. Bus Stop Unit.

In the bus stop unit verification identifies the sending bus into to controller. The controller switch is ON relay through relay driver circuit. Then the relay activates contact-less power generation plats circuit through inductive coupling the battery charged. The current status of the battery is displayed on LCD.

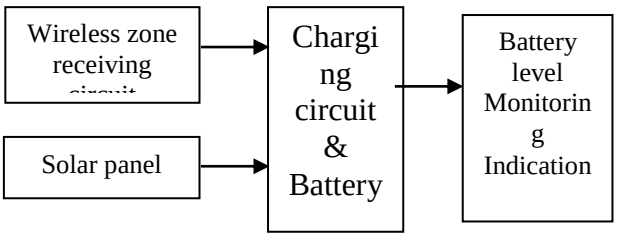

Fig. 3. Bus Unit.

It is consists of wireless zone receiving circuit and solar panel through which charging of the battery is done.

A. *Elements In The Block Diagram*

The following are the important elements in the block diagram.

- Micro-controller
- RFID transponders
- LCD display

B. *Microcontroller Comparison*

TABLE I. MICROCONTROLLER COMPARISON

	AT89S52	PIC	AVR
Flash Program Memory	8K	4K/8K	2K
Data Memory	256	192	128
Ports	4	3-5	4
Timers	3	3	2
ADC	8 channel	8 channel	Not present
Micro-Controller	8 bit	8 bit	32 bit
I/O Pins	32	22	15

1) Controller: The micro-controller is the all signal are display on LCD.

2) Features: Fully-integrated low-cost method of reading passive RFID transponder tags.

3) EM Reader: RFID transponders come in the range of EM reader. it will read the unique id number.

4) RFID Transponder: RFID transponders are used for unique identification.

5) LCD Display: It is used for the displaying the information.

6) Relay: Relay is used to the switching purpose and its converted ac to dc load.

7) Solar Cell: It is convert sun energy into electrical energy.

8) Bettery: Battery is the converted chemical energy into electrical engrgy.There are two types of batteries

a) Primary batteries (disposable batteries): It is used to once time and discarded.

b) Secondary batteries (rechargeable batteries): It is recharged and used multiple time.

CONCLUSION

Develop wireless charging system having the RFID authentication for the moving vehicle using inductive coupling principle.

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