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Review on Solar Wireless Electric Vehicle Charging For Non Stop EV Charging

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ABSTRACT: This project describes the Solar Wireless Electric Vehicle Charging For Non Stop EV Charging . It describes vehicle design of solar wireless charging . Now Electric vehicles have hit the road worldwide and are slowly increasing in numbers. Apart from environmental benefits electric vehicles have also helpful in reducing cost of travel by replacing fuel by electricity . Well here we are developing an small EV charging system that solves with a unique innovative solution. This EV charging of vehicles without any wires, No need to stop for charging, vehicle get charge while moving, Solar power for keeping the charging system going, No external power supply needed. The system consist of a solar panel, battery, transformer, regulator circuitry, copper coils, AC to DC converter, atmega controller and LCD display are needed to develop the system. The system demonstrates how electric vehicles can get charged while moving on the road, eliminating the need to stop for charging. Thus the system demonstrates a solar powered wireless charging system for electric vehicles that can be integrated into the road.

KEYWORDS: Battery; Micro Controller; Embedded System; Transformer; Microprocessor; Electric Vehicle.

I. INTRODUCTION

The Around the world EV's represent a new concept in transportation Sectors. It is expected that the market share of EVs will grow rapidly, comprising 24% of the U.S. light vehicle fleet in 2030, representing 64% light vehicle sales in this year. In this context, the EVs battery charging process should be regulated Maintain power quality in the power grids. Nevertheless, with the proliferation of Evs a considerable amount of energy will be stored in the batteries, raising the opportunity of the energy flow in the opposite sense. Interactivity with smart grids in the future EV will be one of the major technologies, contributing to the electricity grid autonomous operation. The concept of the on-board bidirectional charger with V2G and V2H technologies is introduced.

An Electric vehicles have become more competitive Compared to conventional internal combustion engine Vehicle Due to low carbon dioxide emissions and increasing fossil fuels. However, EVs were not widely adopted in the market Some limitations like high vehicle cost. limited charging Infrastructure and limited all-electric drive. EV vehicles that are Operated either partly or entirely on electric power. electric vehicles Lower running cost as they have fewer moving parts are also very eco-friendly in terms of maintenance and use few or no fossils.

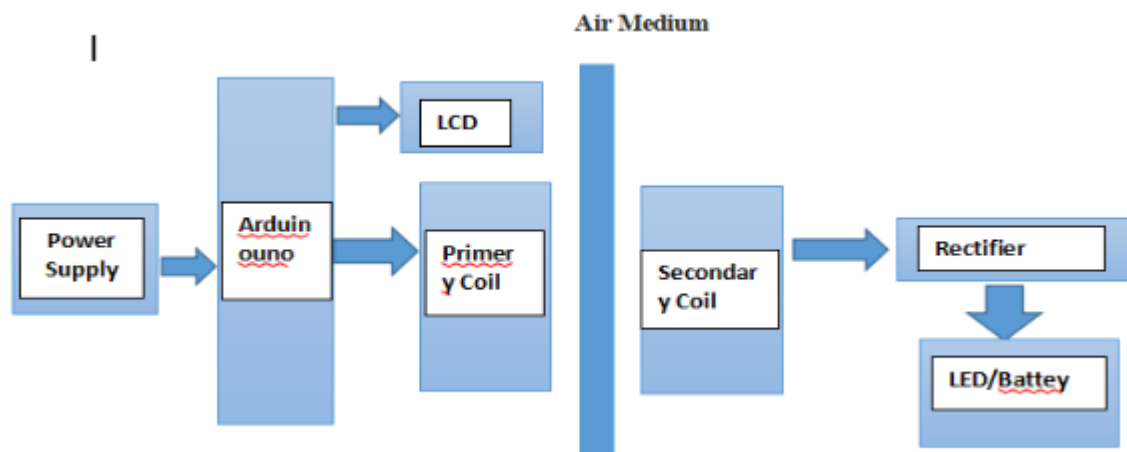
II. LITERATURE SURVEY

Following are the some of the latest research on this topic till date:- Alanson P. Sample has given the knowledge about the adaptation of the magnetically coupled circuits in the Electric vehicles [EV] and its efficiency in the power transfer wirelessly. C. Kainan and Z. Zhengming analyzed the spiral coil using the circuit which makes the process will be much efficient and will be suitable for the adaptation of different voltages. S. J. Gerssen-Gondelach and A. P. C. Faaij, analysed the battery stand by time will be the most important task in designing the Electric Vehicle because it will decide the standardization of the vehicle.



AUTHOR - YEAR	TOPIC	SUMMARY OF KEY RESEARCH
Alark A. Kulkarni 2013	“Solar Roadways”- Rebuilding our infrastructure and Economy	In developing countries instead of implementing the higher targets roads to be developed per day such countries can reduce the target and develop solar road so they could improve economy with infrastructure.
Ninsha Miriyam Raju, Anjana Gopi, Anju Rajan, Sibi Benjamin 2016	Electrical Vehicle OnRoad Dynamic Charging System with Wireless Power Transfer Technology Using Solar	A wireless dynamic charging system can charge EV batteries while the vehicles are moving and thereby greatly extend their cruising range. There will be no need to go to a charging station and EV users will not experience any range anxiety wherever such infrastructure is available.
ASST.PRO F.INGAW ALE P.K,DESH MUKH S.P,GAIK WAD A.S,AAWA LE S.K.	A Review on Solar Roadways	The concept of solar road technologies, developed by solar roadways. The proposed work of review of solar energy system and it require the development, of strong. Transparent and selfcleaning glass that has the necessary traction and impactresistance properties.
N.UthayaB anu, U.Arunkum ar, A.Gokulaka nnan, M.K.Hari Prasad and A.B. Shathish Sharma	Wireless Power Transfer in Electrical Vehicle by Using Solar Energy	The various technologies related to wireless power transfer system, which is used to avoid the flux leakage and short circuits occurred due to the cables. This will be helpful for those who are doing research in the area of wireless power transmission. The wireless power transmission is used to operate the cars whit high efficiency and improve the quality parameters. This project is in the progress of generating power source through renewal energy.

III. SYSTEM DESIGN

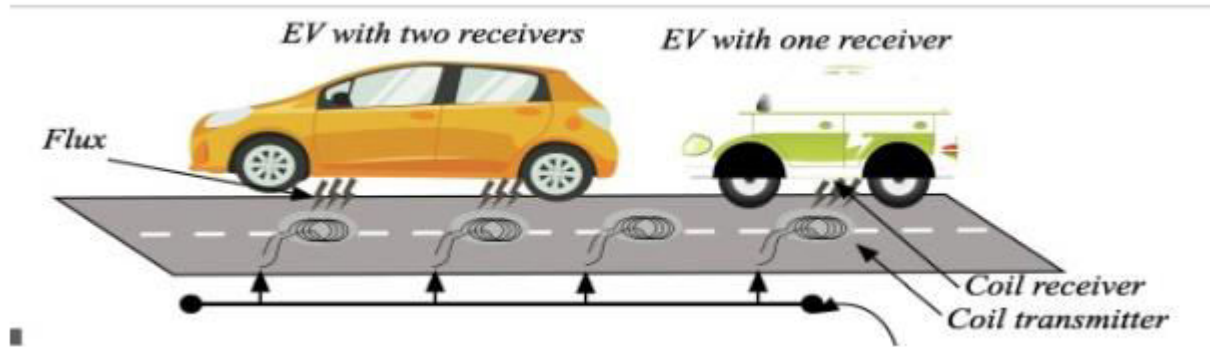


3.1 BLOCK DIAGRAM

Block diagram consists of aurdino controller, LCD display, LED battery, power supply etc. Primary coil is fixed at solar panel which is used while formation of solar road. Secondary coil is fixed at the base of car moving on road. Whole setup works on the basis of wireless power transmission (WPT) Concept. LED will glow when energy us transferred from primary coil to secondary coil.



IV. PERFORMANCE ANALYSIS



Shows the practical setup of the designed system. car driving on solar road made of solar plate. Primary coil is installed on this roadway. is fixed on the secondary coil Car base. The working principle of system is Wireless Power Transmission (WPT). Solar energy is incident on the solar roadway where solar The energy is converted into electrical energy. Energy will be store in 12 v battery in this system . With the help of voltage divider circuit 12V gets converted to 5V. the said voltage is supplied complete circuit. Whenever the car moves on the solar road and passes Solar roadway, through primary coil fixed on energy is transmitted from the primary coil to the secondary coil via WPT Concept. with the help of Electric energy, the car will run on the road. The transferred energy will be displayed on the vehicle

V. APPLICATIONS, ADVANTAGES

- APPLICATION
- Charge portable EV charging station•
- Signal parking lots•
- An intelligent, secure highway infrastructure that•
- Pays for itself.
- Secure, decentralized, self-healing power grid.•
- Snow• & ice management
- Traffic management•

- Advantages
- Renewability and life-span
- Military and rescue assistance•
- Lighting up of road•

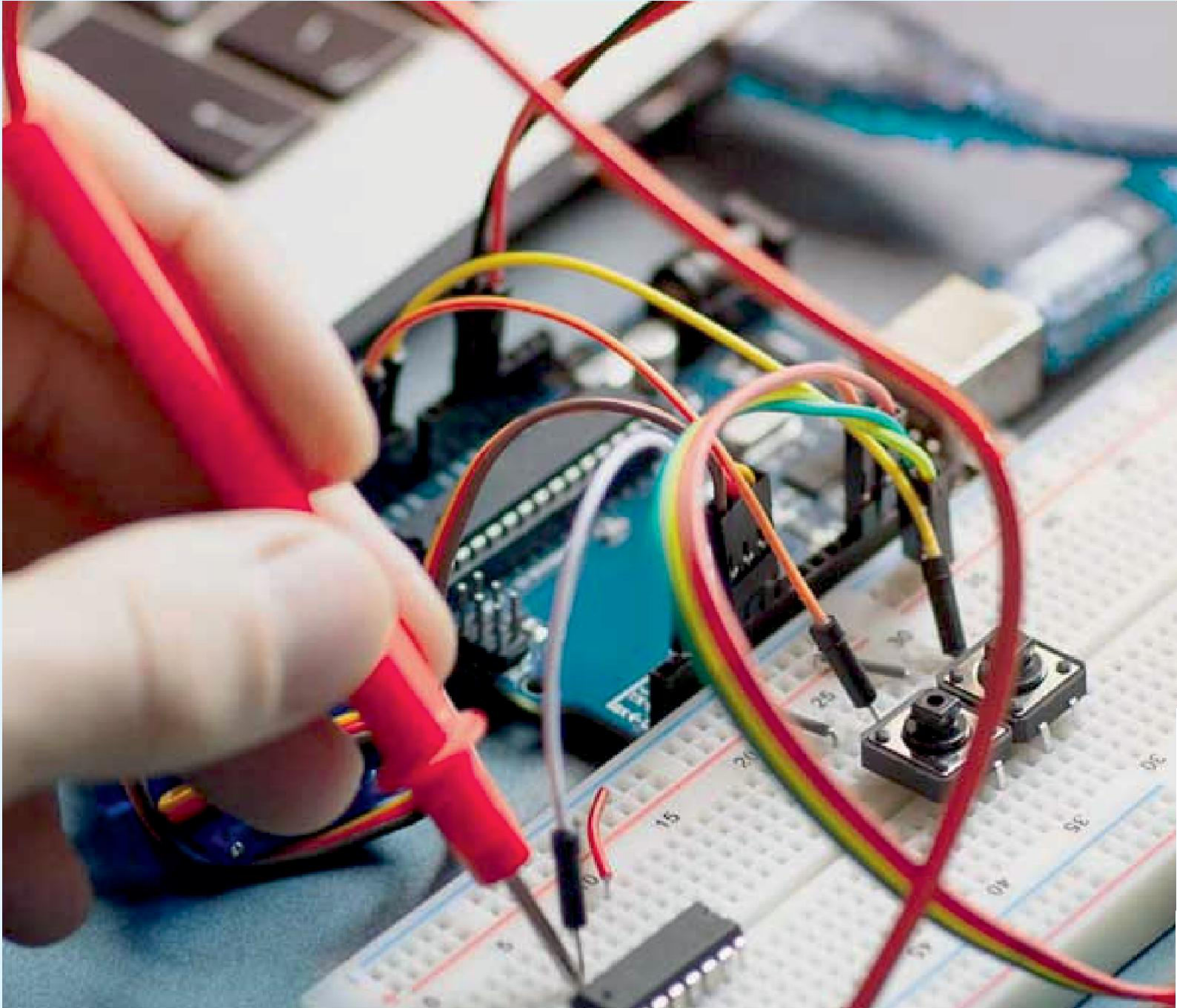
VII.CONCLUSION

The In this paper, we are presenting the various technologies related to Solar Wireless Electric Vehicle Charging For Non Stop EV Charging which is used to avoid the flux leakage and short circuits occurred due to the cables. This will be helpful for those who are doing research in the area of wireless power transmission . The Wireless Power Transmission is used to operate the cars with high efficiency and improve the quality parameters. The system designed in this paper is in the progress of generating power source through renewal energy



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