

# Wireless Solar Charging Station and Battery Management using Arduino

Prof. Priyanka Lohiya<sup>1</sup>, Rasika Sonone<sup>2</sup>, Durga Dharpawar<sup>3</sup>, Mayuri Athavale<sup>4</sup>

Mayuri Athwar<sup>5</sup>, Yash Ingle<sup>6</sup>, Yash Chaturkar<sup>7</sup>, Dhiraj Bangare<sup>8</sup>

Guide, Department of Electrical Engineering<sup>1</sup>

Students, Department of Electrical Engineering<sup>2,3,4,5,6,7,8</sup>

P. R. Pote Patil College of Engineering and Management, Amravati, Maharashtra, India

**Abstract:** *Electric-powered vehicles will help reduce greenhouse gas emissions and increase fuel prices. The main purpose of wireless transmission in electric vehicles is to transfer power over a small distance. The wireless power transmission system consists of a transmitter and receiver part that is separated by a small distance. Wireless transmission technology uses a flexible electromagnetic field. This electric field is created in a free environment that carries a fixed amount of energy that creates a magnetic field around it and this field contains energy in it and the EMF is generated between the coils and transmitted to the receiver. BMS is a battery management system. In EV vehicles we use two batteries such as master and slave. The first preference is given to the master battery in BMS. If the master battery charge comes down automatically the relay will switch from battery.*

**Keywords:** Inductive, motive, internal combustion engines, coupling, plugged in, Thermal management

## REFERENCES

- [1]. S. Bhattacharya and Y.K. Tan. 2012. Design of static wireless charging coils for integration into electric vehicle, Proc. IEEE ICSET, Nepal. <https://doi.org/10.1109/icset.2012.6357389>.
- [2]. X. Mou and H. Sun. 2015. Wireless power transfer: survey and roadmap, Proc. IEEE 81st Vehicular Tech Conf, Glasgow UK. <https://doi.org/10.1109/vtcspring.2015.7146165>.
- [3]. Supriyadi, Edi Rakhman, Suyanto, Arif Rahman and Noor Cholis Basjaruddin, Development of a Wireless Power Transfer Circuit Based on Inductive Coupling, TELKOMNIKA, Vol.16, No.3, June, 2018. <http://journal.uad.ac.id/index.php/TELKOMNIKA/about/contact>.
- [4]. Electric vehicles standards, charging infrastructure, and impact on grid integration: A technological review H.S. Das a,\*, M.M. Rahman b, S. Li, a, C.W. Tanca Department of Electrical and Computer Engineering, The University of Alabama, Tuscaloosa, 35401, USA.
- [5]. Survey of the operation and system study on wireless charging electric vehicle systems Young Jae Jang Department of Industrial and Systems Engineering.
- [6]. Huan Ngo, et.al., Optimal positioning of dynamic wireless charging infrastructure in a road network for battery electric vehicles, 2020.
- [7]. Muhammad Adil, et.al., A Reliable Sensor Network Infrastructure For Electric Vehicles to Enable Dynamic Wireless Charging Based on Machine Learning Technique, 2020.