

Dynamic Wireless Charging for Electrical Vehicle

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Abstract: For the user convenient of user, the electrical vehicles are reliable for electrical vehicles. Dynamic wireless charging charges the vehicle when the vehicle is in the motion. Based on the application, wireless charging system for EV can be distinguished into two categories, static wireless charging and dynamic wireless charging, so we are using inductive power transfer for charging the battery. In this project we are optimizing battery size and also proving how the dynamic wireless charging is effective than the plugged charging of electrical vehicle.

Keywords: Dynamic Wireless Charging Of Electrical Vehicle, Battery Charging, Electrical Vehicle (EV), Inductive Power Transfer

REFERENCES

- [1]. SUN Yue, XIA Chenyang, SU Yugang, et al, "Analysis and optimization of transmission power and efficiency for rail- type contactless power transfer system,"
- [2]. N. Tesla, "Art of transmitting electrical energy through natural medium,"
- [3]. International Energy Agency, "Global EV Outlook: Understanding the Electric Vehicle Landscape to 2020,"
- [4]. Aqueel Ahmad, Mohammad Saad Alam, Rakan Chabaan, "A Comprehensive Review of Wireless Charging Technologies for Electric Vehicles, "
- [5]. O.C. Onar, J.M. Miller, S.L. Campbell, C. Coomer, C.P. White, L.E. Seiber, "A novel wireless power transfer for in-motion EV/PHEV charging", twenty-eighth annual IEEE Applied Power Electronics Conference and Exposition (APEC), pp 30733080, March 2013
- [6]. S. Sarabi and L. Kefsi, "Electric vehicle charging strategy based on a dynamic programming algorithm," 2014 IEEE International Conference on Intelligent Energy and Power Systems, Kiev, 2014, pp. 1-5, doi: 10.1109/IEPS.2014.6874180.
- [7]. C. Liu et al., "Field Circuit Coupling Analysis of Dynamic Wireless Charging for Electric Vehicle, " 2018 IEEE 2nd International Electrical and Energy Conference (CIEEC), Beijing, China, 2018,
- [8]. M. Zamani, M. Nagrial, J. Rizk and A. Hellany, "A review of inductive power transfer for electric vehicles," 2019 International Conference on Electrical Engineering Research & Practice (ICEERP), SYDNEY, Australia, 2019, pp. 1-5,doi:10.1109/ICEERP49088.2019.8956971.
- [9]. N. Liu and T. G. Habetler, "Design of a universal inductive charger for multiple electric vehicle models," IEEE Trans. Power Electron., vol. 30,no. 11, pp. 6378– 6390, Nov. 2015.
- [10]. O.H.Stielau and G.A.Covic," Design of loosely coupled inductive power transfer systems," Proceedings IEEE International Conference on Power System Technology, vol.1, pp. 85-90, 2000.