



iJRASET

International Journal For Research in
Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 11 **Issue:** I **Month of publication:** January 2023

DOI: <https://doi.org/10.22214/ijraset.2023.48418>

www.ijraset.com

Call: ☎ 08813907089

E-mail ID: ijraset@gmail.com

Survey Paper on Future of Electric Vehicle and Its Charging Methods for Environment Protection

Sarika Satpute¹, Baburao Gurjar², Swati Joshi³, Priyanka Mahajan⁴

^{1, 2, 3}Assistant Professor, ⁴Technical Assistant, DY Patil Institute of Engineering Management & Research, Pune

Abstract: At present we are doing a lot of damage to the environment. Therefore we should produce and consume things that are environmentally friendly. This is one of the manufactures of electric vehicle. Electric vehicle are a substitute for petroleum vehicles. And the use of this can bring the environment under control to a great extent. Many countries are implementing this technology and contributing to the protection of the environment.

Keywords: Transmission Drive Shaft, Throttle

I. INTRODUCTION

The environment is polluted due to innovation and sources of pollution. There is a need to reduce global warming and carbon emissions. Carbon emission from vehicle amount for a typical passenger vehicle is metric tons year. Therefore, electric vehicle have proved to be a tool. And its impact on the environment has proven positive. The customer benefits from this technology. By 2022 there will be 127 different fully battery – electric car models available for purchase in the United States.[5] Electric vehicles have gained significant popularity over the past few years as they are generally believed to be a ‘greener’ solution compared to their gasoline peers.

II. LITERATURE SURVEY

We have referred following papers to get an idea about the domain. So, the knowledge we have extracted is:

In this paper, For a perfect charging facilities system is an important guarantee for the rapid development of electric vehicles, and charging facilities planning is an important part of the development.[1]

In this paper, describe on EVs attract buyers with benefits including energy efficiency and environmental friendliness. As EV usage grows, more public spaces are installing EV charging stations. The methodology presented here was time-and cost-effective, as well as scalable to other organizations that own charging stations.[2]

In this paper, discuss on presents a comprehensive review and evaluation of various types of electric vehicles and its associated equipment in particular battery charger and charging station. A comparison is made on the commercial and prototype electric vehicles in terms of electric range, battery size, charger power and charging time.[3]

In this paper, introduces the domestic and foreign research status about electric vehicle charging station, puts forward three-level network structure about electric vehicle charging station system based on smart grid, discusses the key technologies about electric vehicle charging station.[4]

III. PROBLEM STATEMENT

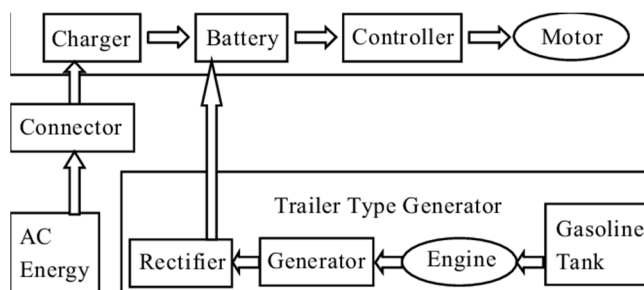
If you're a car buyer in India chances are your confusion goes beyond just "What car to buy?" Given the current environment, there have been several rumours of diesel engines dying in 2020 and electric vehicles becoming the new mainstay. We don't blame you, especially when cars seem like the first target when any pollution related concerns are raised.

IV. SOLUTION

For this problem we can design a different technique that does not harm the environment and also user friendly charging methods.

V. BLOCK DIAGRAM

An electric vehicle has many parts. But, an electric vehicle requires some basic parts which are shown in the block diagram.



- 1) **Charging Port:** The charging port connects the Vehicle to the external supply. To charge the battery.
- 2) **Battery:** Battery pack is a important parts in electric vehicle it is a set of many battery cells. The battery pack is the fuel source of the car, since there are hunderds of cells arranged to from a battery pack a special circuit is required to monitor these cells this circuit is called as the Battery Monitoring circuit. The voltage rating of the cells will be anywhere from 3.7V for a lithium batteries and a maximum of 12V for lead – Acid Batteries.
- 3) **Controller:** We known that battery is a D.C source andwe have motor which is 3-phase A.C controller is used to handle this situation. Each electric vehicle hasits own controller. It also controls the speed of the motor. The controller gets all the inputs form the user like the amount of throttle (acceleration),breaks pressure,driving mode etc.(6).
- 4) **Motor:** The motor converts electric energy into mechanical energy. Using power from the traction battery pack, this motor drives the vechicle wheels. some vechicle use motor generators that perform both the drive and regeneration functions.(7).
- 5) **Transmission Driveshaft:** The transmission transfers mechanical power from the electric traction motors to drive the wheels.

VI. CHARGING INFRASTRUCTURE

Charing infrastructure is installed for personal use vehicles. Customers charge their vehicles at home as well as charge the car at the park, shopping center, charging station, public parking. etc. Giving a major impetus to electric vechicle (EV) mobility the goverment has apporved installation of 2,600 EV charging stations in 62 cities under FAME II. Tamil Nadu will get 256 such charging stations while the union territory of puducherry will get 10. Maharashtra tops the number of charging points with 317 followed by Andhra Pradesh with 266. Gujarat, Rajasthan, and Uttar Pradesh will get 228,205 and 207 EV charging stations respectively. The union territories of Delhi and chandigarh are expected to get 72 and 70 charging stations while Uttarakhand and Himachal pradesh will get 10 each. The newlyminted union territory of Jammu and Kashmir will get25 charging points.

VII. CONCLUSION

This paper presents consideration of some case studies of electric vechicles. This project will lead to employment of many electric engineers. The implementation of electricvehicle in india aims primarily to reduce greenhouse gas emissions and cut oil expenses. The vision 2030 put forth bythe indian Government is an ambitious and difficult task. Thegovernment should more oppotunites and final ways tomeet the challenges facing the implementation of EV.

VIII. ACKNOWLEDGEMENT

A part from the efforts of ours,the success of any project depends largely on the encouragement and guidelines ofmany others.We thank all those who helped us successfully complete this research paper.

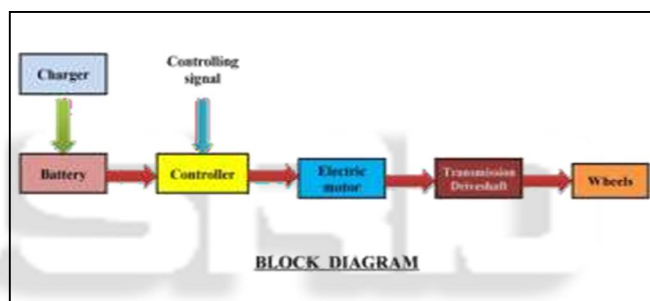
REFERENCES

- [1] Lei Deng, Min Liu, "A review of research on electric vehicle charging facilities planning in China" IEEE *Xplore*: 19 June 2017, Electronic ISBN: 978-1-5090-6339-0
Print on Demand(PoD) ISBN: 978-1-5090-6340-6
- [2] Sierra Hovet, Blair Farley, Jason Perry, Kevin kirsche, Michael jerue, Zion Tsz Ho Tse, "Introduction of Electric Vehicle Charging Stations to University Campuses: A Case Study for the University of Georgia from 2014 to 2017" DOI: 10.3390/batteries4020027,June 2018 with2,284 Reads.
- [3] Afida Ayob, Wan mohd Faizal wan mahmood, Azah mohd, Mohd Zamri che Wanik, "Review on Electric Vehicle, Battery Charger, Charging Station and Standards" RJASET 7(2):364-373 · January 2014 with 7,595 Reads DOI: 10.19026/rjaset.7.263

- [4] Benzai Deng, Zhiqiang Wang, "Research on Electric- Vehicle Charging Station Technologies Based on SmartGrid" IEEE *Xplore*: 11 April 2011, INSPEC
Accession Number: 11945059
DOI: 10.1109/APPEEC.2011.5748759

Web sites

- [1] <https://web.wpi.edu>.
[2] www.circuitdigest.com
[3] www.afdc.energy.gov





10.22214/IJRASET



45.98



IMPACT FACTOR:
7.129



IMPACT FACTOR:
7.429



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089  (24*7 Support on Whatsapp)