

# IoT Based Interior Structure of Electric Vehicle: A Review

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**Abstract:** *Electric vehicles came into existence in the century. Earlier, they did not do that 19th well in the market because of its high cost. range, low speed and short-range. We are going to present new idea about electric vehicle. As today only a ton of vehicles are running on the road, they required fuel for their vehicles. As in this system, no fuel or toxic gases are used then it will be environmental friendly. That is no harm to our beautiful environment. As we all know electric vehicles use the battery for running, this battery regularly needs to charge for that we required electricity for charging. So, in future we need an alternative for this. with this project it is possible to get alternative and solve the issue of recharging of battery in the vehicle. Now by this idea it is possible to run the vehicle by charging battery only at one time. Our aim of the research is to implement such a system that can charged by itself.*

**Keywords:** IoT

## I. INTRODUCTION

The First Crude Electric vehicle is developed around 1832, Robert Anderson develops the first crude electric vehicle, but it isn't until the 1870s or later that electric Cars become practical work only Practical. Between 18.32 and 1839, Scottish inventor Robert Anderson also developed a crude electric carriage. In 1996, the first electric vehicle was a three wheeler. Invented by scooter's India PVT. Ltd, and it was named VIKRAM SAFA.

From the name IOT based interior structure for electric vehicle' we get an idea about the project. It is based on technology, power electronics & power generation. The projects aim is to make the electric battery and does not Supply. Vehicle which contains motors to run but it need any external charging one or supply. system keep charging the battery with the help of dynamo-motors or alternators which is connected in a single closed loop. We have also used the IoT technology here. Node MCU ESP 8266 which is an open source IOT platform is used.

This system or project that we have. Made is on small scale or a small prototype. It is also be applicable in large systems, to run a motor bike or any other electric vehicle. Dynamo motors were the first electrical generators used for power generation. It was based on Faraday's principles with the help of these Dynamo motors mechanical rotations are converted into electric power. we can also called it as a generator, for generating electric power. becoming IoT is now be in wireless technologies in a new platform the field of electric vehicles. With the help of this technology we can easily monitor our system/ vehicle from anywhere.

## II. LITERATURE REVIEW

A literature review is an overview of the previously published works on a specific topic or subject. Producing a literature review is often a part of graduate and post graduate Student work, including in the preparation of a thesis et or a journal article.

It can be a type of review article. It is the basic to gain proper and accurate knowledge purpose. we want on the topic the main sources for this project are the previous projects and thesis that is related to this project. And the other Sources are journals and articles obtained From Internet.

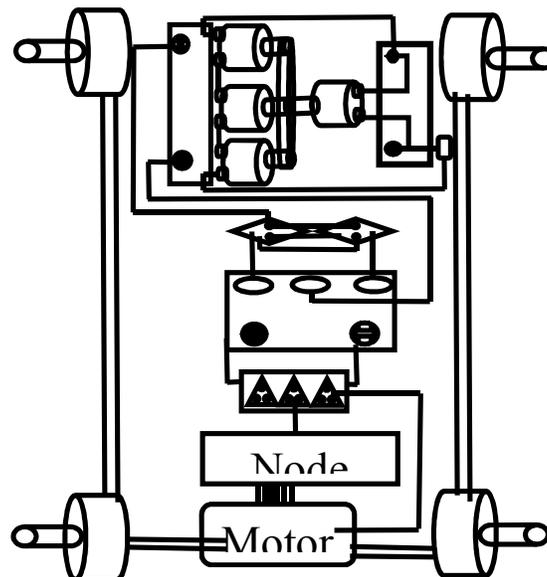
Information about few research papers of that we have used for reference of our project are specified below:

In [1], Modern electric vehicle technology, by CC Chan, KT Chau, Oxford University, press on demand, 2001 covers multidisciplinary aspect of electric vehicles (EVS), and written for a wide coverage of readers. In [2] A review on the state-

of-the-art technologies of electric vehicle, its impact and prospects by Jio Ying Yang, vigna K Ramachandaramurthy, Kang Miao Tan, Nandarajah Mithulananthan, Renewable and sustainable energy reviews 49, 365-385, 2015, is a approach to alleviate the climate change issue for electrifying transportation. The adoption of electric vehicle into market has introduced significant impact on various fields, especially the power grid. In [3] Electric vehicle technology explained, written by Janes Larminie, John Lowry, John Wiley & sons, 2012., fully updated throughout, electric vehicle technology, second edition is a complete guide to the principles, design and applications of electric vehicle technology. In [4] Electric vehicle development by Lixi Situ, 2009, a vehicle is a consider green when it more environmentally friendly than the traditional petroleum combustion engine, in which includes any non-tradition vehicle like HEV, Plug, EV, Fuel cell, Bio fiel etc. In [5] The coming electric vehicle transformation, George Crabtree, 2019, A future electric transportation market will depend on battery innovation, the future generation will use this electrified transport services. In [6] Power Electronics systems and Applications, 2009, Author K.W.E. Cheng, this paper provides an overview of development & the comparison of different part of components. The major components in battery technology,

### III. PROPOSED SYSTEM

The system consists of two normal motors and three dynamo motors. These motors are connected to each other in series connection.



**Figure: 2.1** System block diagram

The normal motor help in rotating dynamo motor. Dynamo generates output of 8 volts we are using three dynamo motors, so our total voltage will be 24 volts. The battery used here is 12 V, lithium-ion battery. So, for self-start or (button) starting the system /vehicle it needs 12 volts that it will get from the output of dynamotors. One diode is connected Between +ve end of motor and +ve end of battery. so current will flow in one direction. Now, the remaining voltage output of the dynamos is given to step-up transformer. The output of the motor is given as input to the transformer. Step up transformer and two transistors acts as an Inverter.

First transistor's base is connected to second transistor's collector and second transistor's base is connected to first transistor's collector. The two collectors end of two transistor are connected to the transformer's two end. Now the Emitter of first transistor is connected to the emitter of second transistor and it is directly connected to the middle end of the transformer. The output is taken from transformers' middle end and transistor's -ve end. Node MCU is connected to the adapter's Output. The connections are further move towards the motor drive which controls the system. Through wi-fi and Router it will cork accordingly from our mobile.

As it is IOT based, it can be control or access from anywhere & any time. Blink Software with python programming Language is used.

### 3.1 Advantages

- As the system is IOT based it can be Controlled from anywhere. and any time external supply or power is required.
- AS the vehicle system is electrical it doesn't require any petrol or fuel.
- Low maintenance costs.
- No complicated controls so, convenient to drive
- NO harm to environment.

### 3.2 Disadvantages

- If the system is switch off for long period of time then there may be issue of self-starting.
- For mobile control, network is required
- As it is a small prototype it can run 5-6 hours at a time.

## IV. CONCLUSION

In this paper a dynamic methodology has been proposed in most effective way to handle the issue of environmental pollution occurred due to toxic gases from vehicle and problem of vehicle charging. Using this concept, we don't require fuel for their vehicles and as this system is electric vehicle it don't need to recharging. So, it gives better efficiency and also saves a lot of fuel and electricity. With this system we get healthy and environmentally friendly life.

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