

BATTERY OPERATED THREE WHEEL SEGWAY

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Abstract - In the present days, we are dealing with a problem of increase in number of vehicles with ever-lasting demand of fuel to run them. If this situation remains with time, it would be difficult for us to save our future from increasing pollution and fuel demand. With time the population on earth increases obviously; which cannot be controlled so to fulfill the demands of fuel or energy in future world, effective steps should be taken as soon as possible. Our dependence on fuel can be reduced with an alternative such as, use of battery-operated vehicles. The aim of this project work is to build up an Tri-wheel electric segway at a very low cost, highly efficient rate and easy to handle and operating also. . Three wheels Segway is an electric scooter of future technology; it is often used to transport a user across mid-range distances in urban environment. It has more degrees of freedom than car or bike and is faster than pedestrian. They are more efficient than fuel powered vehicles for shorter distance and time of travelling.

Key Words: POLLUTION, TRI-WHEEL, SEGWAY, HIGHLY EFFICIENT, FAST

1. INTRODUCTION

Our research is about the design and development of an economical compact and eco-friendly electrical vehicle for the large campus where walking consumes a lot of time. It is a front wheel drive battery operated vehicle, specially designed with the help of 3D designing software for indoor mobility in large campus.

The main parts used in three wheels Segway are

- 1) Motor that is rotating main device.
- 2) Controller that controlled the speed of motor, voltage and current of battery.
- 3) Throttle for acceleration and
- 4) Batteries for power supply.

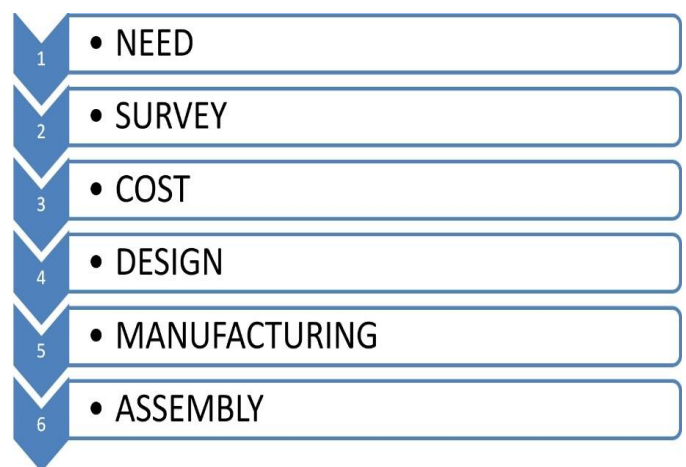
1.1 LITERATURE REVIEW

Design and Development of Three Wheeled Campus Vehicle by Sharad Patel, Parth Jadhav, Rikesh Vasava

It is seen that the researchers choose to develop an electric scooter that we can help to ease the problems of conventional transportation by being a much cheaper alternative than gas powered scooters. The study aims to underscore the importance of tapping alternative and clean energy sources to address various energy issues confronting the global environmental landscape. This burning desire of the researcher leads to realization of major objective of the

study, which is to design electric Tri-wheel scooter. Increasing interest from large manufactures and decreasing battery costs offer an opportunity to drastically change the current market landscape for electric motorcycles and electric scooters. [1]

2. METHODOLOGY



2.1. NEED (REQUIREMENT OF THREE-WHEELS SEGWAY):-

- Our target is for college, School and office use where required longer to travel on footsteps.
- In some NGO for handicap people. It is meant for those people having difficulty to walk.
- In government department where most of the officers are aged, and have long corridors.
- For amusement parks.
- In parks, our three wheels Segway would be so simpler that even kids can drive safely.
- For police patrol in airport or at public place.

2.2. SURVEY:-

After scrutinizing the mechanisms, the team started surveying of market for various parts related to the project. Then we started doing the research on materials of the components that we will be using.

Table -1: LIST OF THE COMPONENTS & MATERIAL

COMPONENTS			
SR NO.	PART NAME	MATERIAL/ SPECIFICATION	QUANTITY
1	CIRCULAR ROD	Ms	4-5 Kg
2	NUT & BOLTS	STD	25 nos

3	WHEELS	STD	3
4	THROTTLE	-	01
5	BATTERY	12 v DC	3-4 nos
6	MOTOR	-	01
7	SPEED CONTROLLER	-	01

2.3 Cost:-

We also decided which part is supposed to be bought from the market and which part is to be fabricated as it will become an economical. The estimated cost of overall project is around 20,000RS.

2.4:- Design:-

The aim is to make a light weight and ergonomic design so the components are selected as per our requirement with reduced cost and maximum efficiency. Finally the 3D CAD model of the Segway is created.

2.5 Manufacturing:-

We have to manufacturer the parts like main frame battery, cage as per the requirements to support the overall body and batteries. Nuts-Bolts are used wherever required some of the parts are welded for perfect finishing and adequate strength.

2.6 Assembly:-

In the end all parts are to be assembled together and painted well as an aesthetic point of view.



Fig -1: Assembly of segway

3. CONCLUSIONS

This project brought together several components and ideas to achieve a common goal: to prove that it is possible to build a Three Wheels Segway. We put a lot of time into this Three Wheels Segway to make sure that it was perform best it possibly could. Some of the conclusions are,

- By using this vehicle we can move on limited space easily.
- This vehicle is design as compact as possible to take less space that makes it easy to park .
- Design project is for only 24-48 volts hence it consumes less power.
- As electric motors used it creates less noise.
- It's proprietary and delivers incredible maneuverability (true zero turning radius), a small footprint and a fantastically unique riding experience.
- As not used fuel, it directly affect the impact of global warming.

REFERENCES

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