

E-SCRAMBLER

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Keywords:

: Li-ion Battery, Hub Motor, BMS Module

Introduction:

The concept of the battery electric vehicle is essentially simple. The vehicle consists of an electric battery for energy storage, an electric motor, and a controller. The battery is normally recharged from mains electricity via a plug and a battery charging unit that can either be carried onboard or fitted at the charging point. The controller will normally control the power supplied to the motor, and hence the vehicle speed, in forward and reverse. This is normally known as a 2-quadrant controller, forwards and backwards. It is usually desirable to use regenerative braking both to recoup energy and as a convenient form of frictionless braking. When in addition the controller allows regenerative braking in forward and reverse directions it is known as a 4-quadrant controller.

Objectives:

Developing a light weight, compact, portable low-cost and eco-friendly E-scooter with a novelty in the basic design of the scooter unlike, normal electric scooters available in the market

Methodology:

Electric vehicles have been attracting unprecedented attention in light of the volatile market prices and prospect of diminishing supplies of fuel. Advances in battery technology and significant improvements in electrical motor efficiency have made electric vehicles an attractive alternative, especially for short distance commuting. Brushless DC motors are being encountered more frequently in electric vehicles due to their high efficiency and robustness.

Motor scooter manufacturers worldwide grapple with the new design challenges posed by electric motor scooters. The competition world is where the most cutting-edge design solutions are firstly tested. The present study examined the initial design and consequent

iterative process of improvement and development of a e-Scooter. All parts are designed to be fabricated in Mild Steel.

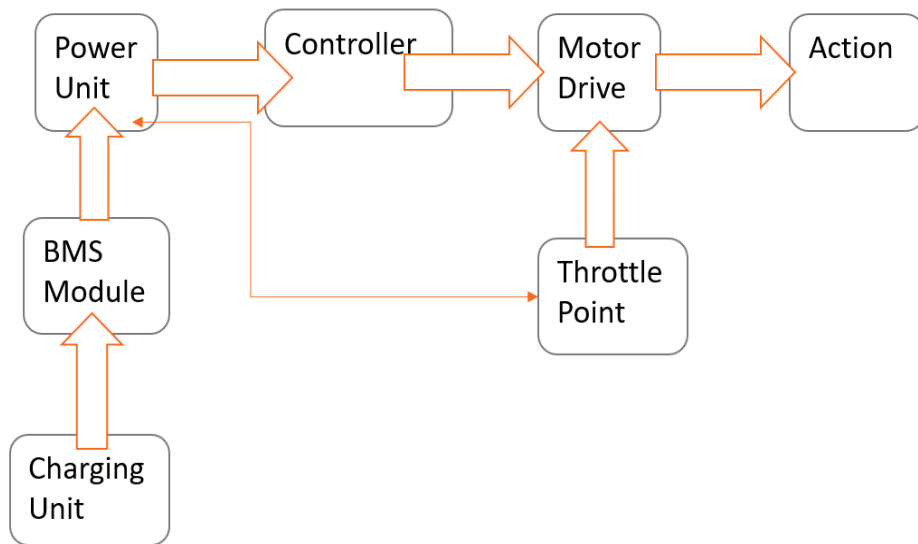


Fig 1. Working Block Diagram

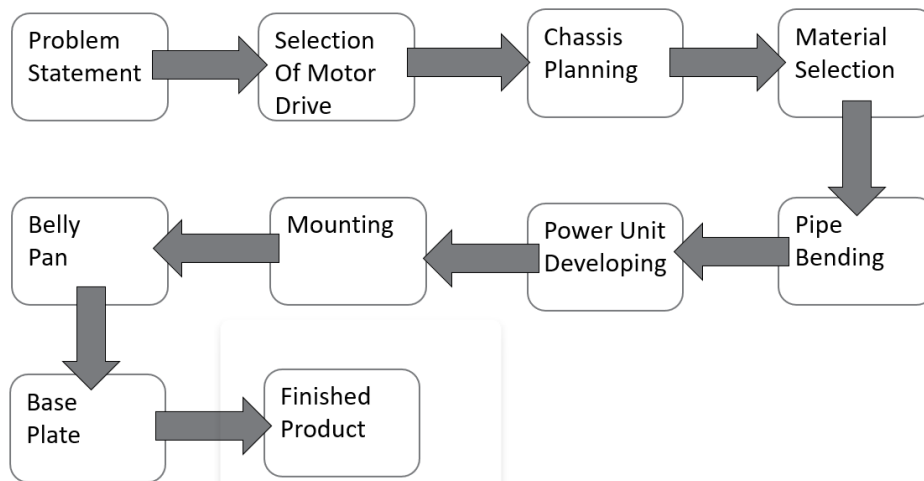


Fig 2. Design Steps



Fig 3. 3-D Model

Conclusion:

The eco-friendly e-bike developed with ergonomics which has the potential and benefit to the human beings economically and reduce our dependence on conventional fuels. National Urban Transport Policy 2006 emphasize on use of non-motorized mode of transport and improving streets by proper inclusive and visionary approach in city planning. This leads to decreased speed of travel and increased chaotic traffic jam on roads. Present paper is focused on E-scooter as a sustainable transport strategy to reduce traffic congestion. An electric scooter is one sort of light motorcycle driven by an electrical motor and used with small wheels

Scope for future work:

- By introducing IoT we can control the vehicle motion.
- By adopting BMI module in vehicle and we can access the Body weight management.
- By introducing smart watch, we can access the health records.