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FABRICATION OF ELECTRIC TWO-WHEELER

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ABSTRACT

In this journal paper,the electric two-wheeler is used to describe the use of electric motor, electrical control unit, dynamo, and a battery mainly. A recent study shows that the number of conventional whenever is used is more than the conventional four-wheeler considering rete of usage of fossil fuels by automobiles generates more pollution and increase global warming. So, it is better to shift in the alternate source of energy for transportation. Electric wheeler supports individual transportation in big cities around the world. With high environmental awareness which also have a large population and that the electric two-wheeler is a suitable sustainable fortransport. Here, electric two-wheeler market creates a huge influence on the working days, currently countries like China, Japan, and the United States using electric two-wheeler for short and medium distance for going offices, schools, and shops or for the free ride for enjoyment.

This paper study shows that the main contain electric supply, electric content unit, dynamo, and battery. A community observation was applied to observe the six main group of this research, largely depends on following topics Transportation, Lightweight, Easy assembling of the component, lesscomplicated, easy to ride, short to medium distance, non-rural and rural used and eco-friendly. This paper cover the global research mode electric two-wheeleris growing and that it should be considered a sustainable non-rural and rural transport and will, therefore, contribute to energy saving and sustainable energy.

KEYWORD: Sustainable, Eco-friendly, Personal transport, Campus transport, Energy Saving two-wheeler.

1. INTRODUCTION :

General

Global warming is becoming major problems in the current scenario. Thereforepeople try to move towards clean energy. transportation is one of the sources of pollution or global warming because bike or any type of vehicle work on fuel (petrol, diesel) it burn and produce harmful gases in air due to that pollution is increases and this source of energy is imitated therefore today's need to move another clean source of energy for transportation. that free from pollution and it easily available. The electrical bike is one of the ways to reduce this type of problem. Electrical bicycle called as an e-bike. In the 1890s, electrical bicycles were documented within U.S. Patents. On 31 December 1895, Ogden boltonjr. was granted u.spaten 552,271foe battery power bicycle with "6-pole brush –and commutator direct current (dc) hub motor mounted in the rear wheel". There were no gears and the motor up to 100 amperes from a 10-volt battery.

II. ELECTRIC BIKE :

DEFINITION

The Electric bike is a bike which is driven with the help of battery which is coupled to the electric motor.

MAIN PRINCIPLE

It works on the principle that the electromotive force of an A.C. motor which receives electrical energy stored in D.C. battery is converted with the help of D.C. to A.C. converter.

III. COMPONENTS OF E-BIKE :

The Electric bike consists of following main components -

- Dc Electric Motor.
- Electric bike controller.
- Battery.
- Chain Drive.
- Braking System.
- Sprockets.

DC Electric Motor

The Electric Motor is having 750 watts. capacity with maximum 2100 rpm. Its specifications are as follows: Rated Voltage – 48 Volts DC, Rated Speed – 450 r/min, Rated Power – 750 W, Rated Current – 13.5 Ampere

ELECTRIC BIKE CONTROLLER

The speed controller of an electric bike is an electronic circuit that not only controls the speed of an electric motor but also serves as a dynamic brake. This controller unit uses power from the battery pack and drives it to the BLDC motor. Different types of controllers are used for brushed and brushless motors.

BATTERY

In this journal, we are implementing a Lithium-Ion Battery. A lithium-ion battery is a type of rechargeable battery in which lithium ions move from the negative electrode to the positive electrode during discharge and back when charging. Lithium-ion batteries can be a safety hazard since they contain a flammable electrolyte and may become pressurized

if they become damaged. A battery cell charged too quickly could cause a short circuit, leading to explosions and fires.Because of these risks, testing standards are more stringent than those for acid-electrolyte batteries, requiring both a broader range of test conditions and additional battery-specific tests, and there are shipping limitations imposed by safety regulators.

Chain Drive

A Chain is an array of links held together with each other with the help of steel pins. This type of arrangement makes a chain more enduring, long lasting and better way of transmitting rotary motion from one gear to another. Chain Drive is a way of transmitting mechanical power from one place to another. It is often used in particularly bicycles and Electric Bike.

BRAKING SYSTEM

A drum brake is a brake that uses friction caused by a set of shoes or pads that press outward against a rotating cylinder-shaped part called a brake drum. The term drum brake usually means a brake in which shoes press on the inner surface of the drum.

SPROCKETS

The chain with engaging with the sprocket converts rotational power into rotary power and vice versa. The sprocket looks like gear but differs in three important ways: Sprockets have many engaging teeth but gears have only one or two.

Advantages

- Easy to commute with low fatigue.
- Less mai0ntenance cost.
- Cost of the unit is very low.
- Easy to carry since it is portable.

Disadvantages

- The high intensity of wind load
- High center of gravity.
- Cannot tolerate drastic changes in the environment.
- Needs Periodic Monitoring.
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VI. PROBLEM STATEMENT :

Many potential campus users of personal electric mobility vehicles (PEMV) have no effective choice apart from fossil fueled, vehicles at present, usually due to commuting distance or traffic conditions.How-ever it is possible to envisage a park-and-ride type scheme where a large car park on the periphery of campus allows commuters to park, pick up a PEMV and use this for intercampus transport. Campus occupants who need to attend a meeting elsewhere on a large campus may consider using some type of PEMV if it were available and Lack of cycling facilities.The methodology for each survey differed, so the bottom row of the table

indicates whether respondents were able to select only their primary reasons, were allowed to list multiple reasons or where given a free choice of answers .Since there is little correspondence between survey questions, and in some cases wide variations in the proportion of respondents citing a given reason, some interpretation is necessary. In his study, Cleland matched the top three reasons. However, it is reasonably clear without further ranking that some factors are more prominent than others as barriers to cycling.

V. LITERATURE REVIEW :

The main aim of this review paper is to present the idea of harnessing the various energy and use it in today's existence of human life. For human being travelling has become vital. In order to sustain in this fast forward world he must travel from place to place. It is very important that time taking for travelling should be less, also it should be economical and easily available. With the fast depleting resources of petrol and diesel, there is need to find intermittent choice. Taking all this into account, a shift away from conventional based fuels to using a renewable sources of energy is a must. Electric bike which will be driven with the help of battery and thus provide required voltage to the motor.

VI. METHODOLOGY :

To achieve the above stated objectives, the following methodologies are to be used.

- A simple control strategy has to be developed for Indian city driving conditions with less fuel consumption for reducing emissions.
- A conventional two-wheeler will be converted into a plug-in hybrid electric two-wheeler by retrofitting a hub motor in the front wheel.

VII. CONCLUSION :

It is clearly seen that the electrical bicycle gives a clean and more economical solution to the energy crisis. People use bikes and fuelled vehicles for even traveling short distances without making use of bicycles and other non – fuelled vehicles. Most numbers of people from the list have been those who think riding a cycle is equivalent to providing extra effort for cycling. In order to avoid this electric assistance has been provided to the cycle that will ease the user to ride the unit with the help of a motor. Even the hardship of climbing slopes and riding on rough terrains has been reduced. All these aspects are available keeping in mind the factor of pollution being affected at all. E-bikes with a top speed of 35-40kmph and a range of 80-100km are a good replacement for petrol bikes. Since now the cost of Petrol is Rupee78.25per Liter, the cost of traveling 1 km on a petrol bike will cost more than 1 Rupee (not including maintenance cost), Rupee1.25 including maintenance cost. While for an EV bike Its justRupee0.75 (including battery) and do note that there is no maintenance cost at all.**As India is the leading Bike manufacturer of the World, the future is, even more, promising for e-Bikes in India especially, when the cost of the lithium ion batterypack comes down.**

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