

## Solar E- Bicycle Using Hub Motor

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### ABSTRACT

The method of upgrades conventional bicycle over to Solar Powered Electric bicycle that is powered by an electric motor which get supply from photovoltaic (PV) panels. This is no fuel Required & free pollution. The PV panel must be mounted and installed electric bicycle without comprising riding. It is used for heavy traffic areas. This method is both modes working. One of the Solar Power Bicycle Modes. Another one of the Electric Bicycle Modes. Solar Power Bicycle is meant a challenge to get on sunny summer days. Electric Bicycle is meant challenge to get on Winter days. Solar Electric bicycles are considered a sustainable alternative to automobile transportation today. The solar electric bike includes all the benefits that conventional bicycle offer , plus faster, more comfortable and longer trips, as well as less effort for user. In this paper , we specifically focus on a new type of e bike , the so –called Solar Powered E-Bike. Therefore review paper explores existing literature findings for use solar energy transportation and more specifically in ebikes. This Paper aims to capture the status of and experience with the use of e bikes ; more specifically, with solar powered e-bikes.

### 1. INTRODUCTION

Energy is one of the most vital needs for human survivals on earth . We are dependent on one form of energy or the other for fulfilling our needs. One such form of energy is the energy from fossil fuels. We use energy form sources for generating electricity ,running automobiles etc. But the main disadvantage of these FOSSIL FUELS are that they are not environmentally and they are exhaustable. To deal with these problem of fossil fuels, we need to look at the non – conventional sources of energy. Introduced Electric Bicycle & Solar Electric Bicycle. One of the largest sources of air pollution in urban areas in transportation. Air pollutants have numerous impact on human health ,the climate, ecosystem and the built environment .European and worldwide authorities support emission-free mobility and consider it necessary for the development of their national sustainable strategies. Since 2000 government have been promoting bicycles as an alternative mode of transporting replace private cars. Solar Bicycles could contribute to the reduction of air pollution ,traffic congestion ,noise emission ,and energy consumption ,allowing at the same time a healthier lifestyle for users. In addition Solar e-bikes constitutes one of the most accessible and cheapest transportation modes ( e.g. .there is no extra cost for taxes, no driving licenses, parking costs or high service maintenance, as in the case of cars) .

A typical e bike travel up to 40km/hr, depending on the country regulation ,with motor power 800w to 1000w,a battery 36V.The first first commercial e bikes were available in Japan in 1980 [13,14] but they only started being massively marketed in the early 2000s, when the improved battery and motor technology simplified the manufacture and assembling of the bikes ,hence allowing components modularity and reduced cost

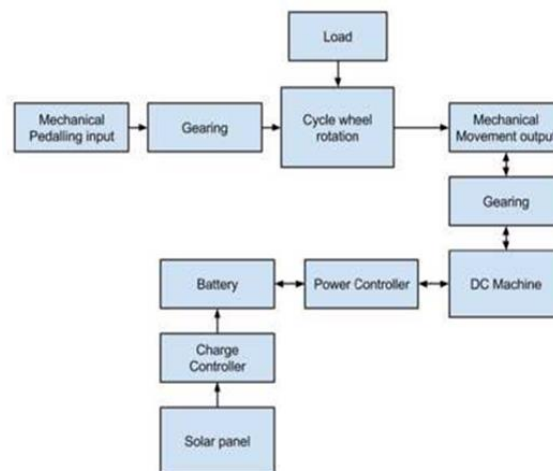
## 2. GUIDELINES FOR MANUSCRIPT PREPERATION

It is Research on ebikes on adapted based on social geographical motivation and according to the experience in those societies. Research mainly emphasizes self reported belief or estimation information collected form users .

## 3. OBJECTIVE

To built an electric bike that everyone can replicate with minimal cost ,without electrical know how ,but powerful reliable the same time To upgrade a conventional electric powered bicycle to solar powered Electric bicycle that can be used.

## 4. SYSTEM ARCHITECTURE





## 5. HARDWARE DESCRIPTION

### 1. MOTOR

DC motor is appended to the framework with a specific end goal to give the essential torque to the chain drive and the pulley framework. Here we are utilizing 2DC motor one for driving the sprocket of the chain.

### 2. BATTERY

Batteries work by changing over compound into electric vitality through electrochemical release response. Lead acid battery are very in our day to day life. It is most frequently used battery in electronic is as lead acid battery used.

$$V=12v \quad AH=28$$

$$W=12 \times 28 = 336w$$

$$\text{Motor power} = 1000w$$

$$3 \text{ Lead acid battery} = 3 \times 336 = 1008w$$

### 3. SOLAR PANEL

A photovoltaic module is a packaged, connected assembly of typically 6 x 10 solar cells. Solar photovoltaic

## ADVANTAGE

1. Less maintenance cost
2. Free pollution
3. No fuel required

## CONCLUSION

This project is a way of using the outgoing power and producing from wind solar panel. The concept of the project is providing ease to the rider while riding a bicycle and also to conserve energy by all possible means. When the solar power bicycle is kept under sunlight then the solar rays charge the battery through the solar panel placed above the carrier of the cycle. The battery power powers an electric motor in the back wheel. It also lowers the resistance in pedaling to make it easier to go up hills. When there is no sunlight, bicycle can be charged by mains electricity.

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