

Design And Fabrication Of Hybrid Bicycle

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Abstract: -- A method of upgrades a conventional bicycle to solar powered electrical bicycle that is powered by an electric motor which get its supply from photovoltaic (PV) panels. And also from the dynamo will be placed to the front wheel. The PV panels must be mounted and installed at the electric bicycle without compromising riding comfortability. The method employs a small electric motor that are easily connected and separated for easy of transport. A solar collector is connected to the rechargeable batteries for collecting solar energy converting and such energy to electric power that is delivered to the rechargeable batteries for recharging thereof. A rechargeable battery is operable connected to DC motor providing electric power to drive the motor

I. INTRODUCTION

All vehicles that are in the market cause pollution and the fuel cost is also increasing day by day. In order to compensate the fluctuating fuel cost and reducing the pollution a good remedy is needed i.e. our transporting system. Due to ignition of the hydrocarbon fuels, in the vehicle, some time difficulties such as wear and tear may be higher and more attention is needed for proper maintenance. Our vehicle is easy to handle and no fuel cost to the other existing vehicle. Hence a need for a change in the existing alternative system which can produce higher efficiency at minimum cost was thought about an attempt has been made to design and fabricate such an alternative system. So this project "Hybrid bicycle" is very much useful, since it is provided with good quality of power source and simple operating mechanism. Hence each and every drop of fuel saves our economy and meet the needs is the saturation point that is to be attained as soon as possible. In order to achieve this saturation point we have to save and seek for some other source of power. This power the alternative power must be much more convenient in availability and usage. The most talented power against the natural resource is supposed to be the electric and solar energies that best suit the automobiles. The unadulterated zero emission electrical and solar power, is the only easily attainable alternate source. Hence we decided to incorporate the electric power in the field of automobiles, the concept of many multi national companies and to get relieved from the incorrigible air pollution. This implementation concept is tried to the best two wheeler bicycle.

II. WORKING PRINCIPLE

This solar bicycle is a two in one system. It is operating both the condition. They are,

1. By using normal pedaling
2. By using SOLAR-motor drive arrangement.

The working of solar motor drive mechanism is explained below. The working principle of the system starts with the solar connections. In solar there are two terminals. One is the positive terminal and another one is the negative terminal. the wire connections were made for the flow of electrons from one part to another part. When the motor energize through the current, the stator field coil gets magnetized and induces the rotor shaft to rotate in the counter clockwise direction. at the end of the seating of sprocket assembly. The sprocket chain arrangement is a power transmission device, which gives drive to the rear wheel.



DIAGRAM OF HYBRID CYCLE

III. ADVANTAGES

- No fuel cost.
- No pollution and no fuel residue
- Easy starting
- Less wear and tear because no reciprocating parts
- It will be run both the conditions(manual pedaling, solar running)

IV. DISADVANTAGES

- Solar should be charged periodically
- Not fit to the long travel
- Not applicable for heavy loads until suitable power supply and driving unit.

V. APPLICATION

It can be installed in all two wheelers and light vehicle

