

Design and Development of Solar Powered Bi-Cycle

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Abstract- As we all know there is increase in Global Warming which is cause due to pollution. People use automobiles to travel short distance which contribute to the pollution. Also, there is problem of increasing rate of fuel. To avoiding this, we can use the alternative and eco-friendly source for transportation like solar bi-cycle.

Keywords- DC motor, eco-friendly, Solar Energy

I. INTRODUCTION

As we all know there is increase in pollution which leads to the global warming. Also, there is increase in fuel rates and as it is non-renewable, it may exhaust in future. Keeping the environment in concern, it is better to move to alternate source which is pollution free and economical. There are many alternatives like normal cycles which we need to paddle, electrical scooters and bi-cycles. To overcome above disadvantages solar powered bicycle is best remedy.

II. IDENTIFY, RESEARCH AND COLLECT IDEA

1. From this paper we came to know that Solar Assisted bi-cycle is modification of normal bicycle and solar energy is primary energy source. It can be widely used for short distance travelling by school children, postman, villagers etc. The important feature of this bicycle is, it is Eco-friendly, Economical and does not consume any fuel sources.
2. From this paper we came to know that it can be run on city as well as country roads which are made up of cements, asphalts and mud. Operating cost is minimum. We can manually paddle in case of any emergency. Mountings and dis-mountings are easy so maintenance cost is less.
3. From this paper we came to know that high capacity motor is used for higher power generation. The ride of the bi-cycle is noiseless, eco-friendly and cheaper than the motor or e-bikes. Battery can be charge even when bi-cycle is in motion.

4. From this paper we came to know that the concept of the project is easy ridding and conserve the energy by all possible ways. Resistance in paddling while going up the hills is also minimized. It can work in both the conditions (normal as well as cloudy).

III. WRITE DOWN YOUR STUDIES AND FINDINGS

Study of Solar Energy

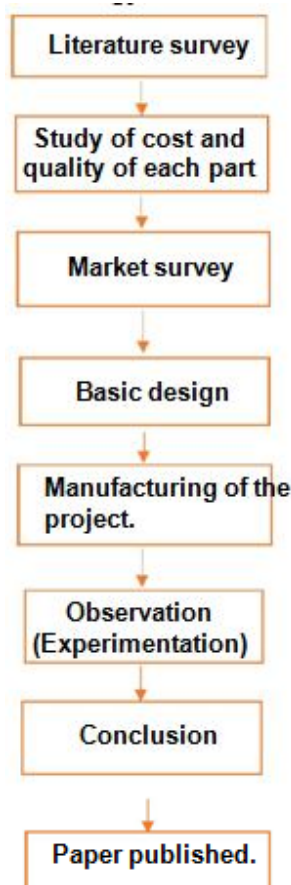
A solar bicycle is completely powered by Solar energy which uses photovoltaic effect. The photovoltaic effect involves the creation of a voltage into an electromagnetic radiation. The photovoltaic cells are contained in solar panel which converts energy.

Working of Solar powered Bi-cycle

Solar panel are place on top of bi-cycle carrier and battery is connected to it. Voltage regulator is used to control the battery voltage. Brushless DC motor are placed in hub of motor it is used to run the bicycle. Accelerator is used to control the increase the motor speed

Components in Solar powered bicycle.

1. Hub Motor: It is an electric motor that is incorporated into hub of the wheel and drives it directly.
2. Solar panel: Used to absorb solar energy and convert into electric energy.
3. Voltage regulator: Used to maintain a constant voltage level.
4. Battery: To provide electric power to bicycle.
5. Motor controller: Used to monitored Amount of power supply to hub motor.
6. Accelerator: Used for varying speed of bicycle.

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2321-9939**IV. CONCLUSION**

Solar assisted bicycle is modification of existing bicycle and driven by solar energy. This bicycle is cheaper, simpler in construction & can be widely used for short distance travelling. . It is eco-friendly & pollution free, as it does not have any emissions. Moreover it is noiseless and can be recharged with the AC adapter in case of emergency and cloudy weather.

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