



Review Paper on Solar Dust Collector

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Abstract:

In this competitive world, it is very hard to get Co-operative People. It got fully support in our project by many persons. Any project is not individual effort. It is contribution of many hearts, hands and brains. The principle used to generate electricity from the solar panels is the same as that used to generate electricity from the chemical reaction using a standard battery. The basic working of solar panels depends on the semi conductor property of silicon. The silicon is a unique substance that has revolutionized the way electronic appliances work. This property is used to generate electricity from the solar panels. In order to understand how solar panels work we need to understand how silicon works at an atomic level.

I. INTRODUCTION

The solar dust collector

First dust collector was invented by Edwin Budding in 1827 in Throop, just outside Stroud, in Gloucestershire. Bud ding's mower was designed primarily to cut the dust collector sports grounds and extensive gardens, as a superior alternative to the scythe, and was granted a British patent on August 31, 1830. As well as these machines having been the catalyst, world-wide, for the preparation of modern-style sporting ovals, playing fields, pitches, dust courts, etc., in turn this led to the codification of modern rules for many sports, including most football codes, lawn bowls, dust collector tennis and others. Solar electric mowers are powered by a variable number (typically 1-4) of 12-volt rechargeable batteries. Typically more batteries mean more run time and/or power. Batteries can be in the interior of the lawn mower or on the outside. If on the outside the drained batteries can be replaced with recharged batteries. Cordless mowers have the manoeuvrability of a gasoline powered mower and the environmental friendliness of a corded electric mower, but are more expensive and come in fewer models (particularly self-propelling) than either.

II. TYPES OF DUST COLLECTOR:

- a) Commercial Dust collector.
- b) Rotary Dust collector.
- c) Cylinder Dust collector.
- d) Petrol Dust Collector.
- e) Hover Dust Collector.
- f) Electric Dust Collector.
- g) Solar Power Dust Collector.

Problem Definition:

In our country most of the work associated with agriculture done with manually as entirely. This Situation change after the some year when peoples came to know about the mach they start to use such machines which are for agriculture purpose.

The different types of effort less machines now are in markets .some of them are really helpful to the farmers but, machine used for the cutting, harvesting are all are based on the conventional energy and such machines are not eco-friendly.

III. SCOPE OF THE WORK

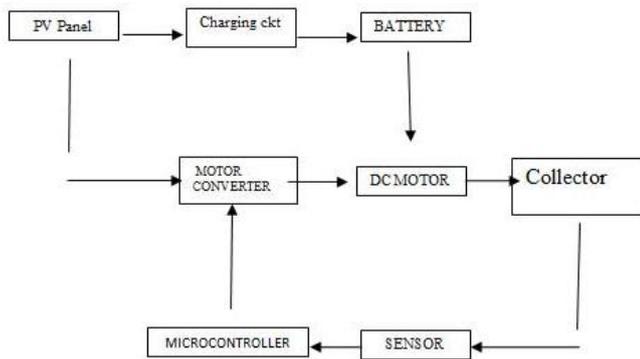
This phosphorus atom is negatively charged this makes the silicon/phosphorus plate negatively charged. In the same way when another substance such as boron is introduced in a pure silicon plate, it becomes positively charged. This is because boron has valence 3 and there is one space left in the boron atom which is called "a hole". Since this plate hence needs an electron and hence it becomes positively charged. These 2 positive and negatively charged plates when combined together can now produce electricity. This is when the sun's energy comes into picture. The solar radiation coming from the sun is used as a trigger to initiate a flow of electric current from positive plate to the negative plate. Now what exactly in the sun's radiation causes the electrons to agitate? The substance is photon. When this photon falls on the negative plates of the solar panel it knocks off free electrons on the plate. As this electron is loosely attached to its parent atom is freed it can now move around the plate. However this electron is attracted by the positively charged plate and the electron is bounded again. In the same way when more photons knock off electrons, electricity is generated. The current produced by a single solar cell is very less. However when this current is drawn by the wires, it can power a small motor or other small electronic devices. Many solar cells when combined together can produce sufficient amount of electricity to power a house.

IV. PROPOSED METHODOLOGY:

This project is a proposed model of the automatic dust cutting machine by using the non-renewable energy (i.e. solar energy). The automatic dust cutting machine is a machine which is going to perform the dust cutting operation by its own which means no manpower is required. This machine consists of the photovoltaic, dc to dc converter, motor, controller, sonar sensor and microcontroller. The photovoltaic is used to receive the solar energy from the sunlight and output of the photovoltaic panel is varying. So the dc to dc converter is used to convert the low level dc voltage to high level dc voltage.

The dc to dc converter is act as buck, boost and buck-boost mode of operation. The step up dc voltage is stored in dc battery. The battery is charge by the dc input which is get from the photovoltaic panel. If the battery is fully charged then the controller is disconnected the contact between dc to dc converter and output voltage from battery is convert the dc voltage as step up and step down voltage by the requirement of the dc motor. Converter's mode of operation is selected by the controller is fully based on the required of motor and battery. The speed of the motor is maintained constant. If the motor torque is increase then boost mode is activate. If the motor torque is decrease then buck mode is activate. The dc voltage is step up and step down by varying the duty cycle.

V. PROPOSED EXPERIMENTAL SETUP:



General block diagram

Figure.1. General Block Diagram

VI. CONCLUSION

We are going to utilize the solar energy to run dust collector. This project will be more suitable for a common man as it is having much more advantages. The solar energy (non-conventional energy) is vastly available, so it is easy to charge the battery and is also pollution free. But the initial investments of the solar powered dust collector will high. At present in order to curtail global warming and ozone depletion, the Government of India is offering subsidy for the solar equipment. The industries are producing these components in mass productions, so the cost of the system may come down. So in future it is expected to run all equipment by using solar energy.

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