

# Smart Solar Device to Reduce toxic Gases from Environment

## Shivani Rao

B.Tech, Dept. of ECS  
Dronacharya College of  
Engineering  
Gurgaon, Haryana  
shivani715@gmail.com

## Nikhil Kaushik

B.Tech, Dept. of ECS  
Dronacharya College of  
Engineering  
Gurgaon, Haryana  
nikhilkaushik2996@gmail.com

## Sahil Mann

B.Tech, Dept. of ECS  
Dronacharya College of  
Engineering  
Gurgaon, Haryana  
sahil.18785@ggnindia.dronacharya  
.info

## Kajal

B.Tech, Dept. of ECS  
Dronacharya College of  
Engineering  
Gurgaon, Haryana  
baghelkajal25@gmail.com

## Parul Bansal

Assistant Professor, Dept. of ECS  
Dronacharya College of  
Engineering  
Gurgaon, Haryana  
Parul.bansal99@gmail.com

## Dr. Neelam Ruhil

HOD, Dept. Of CSE  
Dronacharya College of  
Engineering  
Gurgaon, Haryana  
neelamruhil@gmail.com

**Abstract-** The basic idea is to use the solar energy to burn the dry waste materials like paper crush, dry leaves and other garden waste in a controlled manner. It helps in keeping the environment green and clean. Due to its work on solar energy, no external energy or power supply is required. We keep the burning process in the controlled manner so that it does not catch fire and prevent unwanted happenings. A solar panel is used to store the sunlight and converted energy is used to heat up the lower surface of the dustbin which starts a controlled burning process for dry materials. On the above level we implement a cooling fan which starts after 30 degrees automatically by the using of sensor. On the lid of trash we will implement basic filter which removes few toxic gases and release the nontoxic gases in the environment.

**Keywords:** Inducting plate, Solar panel, Gas Filtering Lid, LM335 Sensor.

## I. INTRODUCTION

As we know the “law of conservsation” of energy. In this project we use to control greenhouse gases effect in the earth by the utilization of solar energy (photo voltaic systems) and convert this light energy into power energy (electric energy) which is used in the lower surface of the metal dustbin to the burning process. We use this Law of conservation to produce electric energy and we use it to burn the dry waste material. So we can use solar cell or photo voltaic cell (PV), it is a device which convert light into electric current using photo voltaic effect. This converted electric energy that is used to heat up the lower surface of dustbin which keep our environment green and clean. There are huge of waste material in the industry and after disposal of these wastage

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of material it emits harmful gases. So we use here filter lid on the top of the dustbin

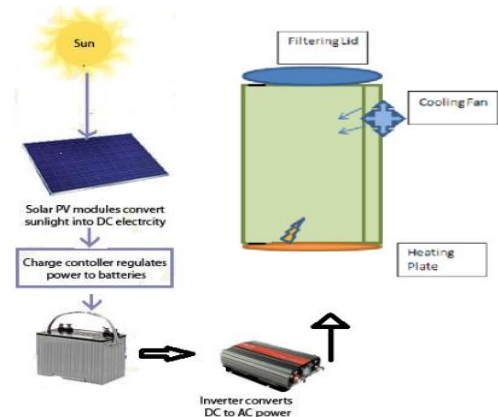


Fig. 1 Block Diagram of Solar Panel

## II. COMPONENTS

### A. SOLAR PANEL

In this we use photovoltaic cell (PV), which converts light energy into electric energy. As we know that the huge source of energy in the earth is solar energy. It is the direct source to generate heat, cold and power on the earth. So we can say that electric energy can generated through the light energy by using photovoltaic cell. By the using of photo voltaic effect in the semiconductor like silicon, we can

convert this solar energy into power energy (electric energy). Disadvantage of using the solar panel is that it depends on daylight, because sun raise during the day. Here we use this Solar panel to generate electricity and it gives DC output typically range from 100 to 320 watts. But in our project we need AC power so we use inverter which converts DC to AC power. A photovoltaic system has generally a panel, an inverter and sometime a battery. Tata BP Solar panel 1240 is use in our project to generate electricity which is used by various parts of the dustbin. The size: 150\*150 square cm, power: 74 watt and weight: around 30Kg. On monsoon days it generate min of 16.4 volts energy is stored in the battery and transferring it to the inverter which convert DC output to AC output battery Capacity 12V. We are using ten such batteries to panel; the voltage output of the panel is 120 V.

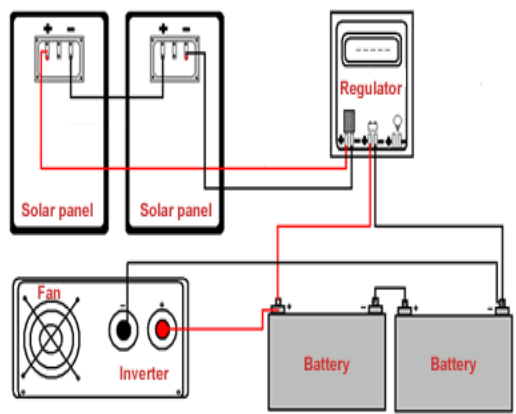


Fig. 2 A typical circuit diagram of solar panel with two batteries is:

### B. INDUCTING PLATE

Inducting plate is that portion of our dustbin where combustion will occur. Combustion is defined as a process in which a substance reacts with oxygen to give heat and light. Firstly we will deposit some Garages in the dustbin and when solar energy will fall on the lower surface of the

dustbin with the help of solar panel, combustion of the material will take place at this inducting plate. Induction is come out through the root (the word which refers to an induced voltage). Induction is defined as a process in which a loop of wire induced magnetic flux internally, so that the voltage is induced around the loop. In this project induction plate are used instead of heating plate because induction plate consumes less energy as compared to heating plate. So it is more economical friendly as compared to heater.

### C. GAS FILTERING LID

Gases flowing through the pipes in the lids, so the present gases carries various impurities that may be its parts. But that kind of impurities may also be present in the pipe due to the corrosion or some system default that has not being randomly used. Impurities which is carried by the gas may damage the system like measurement regulation system that will be not good for any device.

### D. LM335 SENSOR

The LM335 sensor is easy to handle device, it can used as for the sensitive temperature sensor. It is better for the things like temperature sensor and temperature controllers. This sensor is easier to use in comparison of thermocouples. Because it does not required any additional interfacing of circuit. As there is no much circuital problem or connections, so it may consider easier than thermistors and any other devices.

## III. CONCLUSION

Solar energy is the renewable source of energy, so it has the good scope in future. Solar trash will be very helpful in cleaning the environment. It plays an important role in “SWACH BHARAT ABHIYAAN”. We can also enhance the power of SOLAR TRASH.

## REFERENCES

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