



# **iJRASET**

International Journal For Research in  
Applied Science and Engineering Technology



---

# **INTERNATIONAL JOURNAL FOR RESEARCH**

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

---

**Volume: 7      Issue: XII      Month of publication: December 2019**

**DOI: <http://doi.org/10.22214/ijraset.2019.12033>**

**[www.ijraset.com](http://www.ijraset.com)**

**Call:  08813907089**

**E-mail ID: [ijraset@gmail.com](mailto:ijraset@gmail.com)**

# Design and Fabrication of Black Body for the Conversion of Wet Waste into Dry Waste

Anant Gupta<sup>1</sup>, Karan Srivastava<sup>2</sup>, Kumar Abhijeet<sup>3</sup>, Mani Sachan<sup>4</sup>

<sup>1, 2, 3, 4</sup> Under Graduate Student, Department of Mechanical Engineering Pranveer Singh Institute of Technology, Kanpur

**Abstract: Objective:** The Objective of Black Body is to provide heat which is generated from the sun and with the help of heat energy we will convert the Wet waste such as wet leaves, wet flowers, wet scraps which is Biodegradable in nature into Dry Waste which can be further use for many applications such as making incense sticks, bricks, tiles etc.

**Novelty Statement:** In this project we are using Black Body and Solar Panels with the help of which we will convert wet waste into dry waste, thus the disposal of wet waste is done effectively and efficiently.

**Proposed Methodology:** In this project we will get the wet place through Hopper into the container. In this container a hot air is provided through duct with the help of fan. With the help of black body the moisture of the wet waste will be get down through strainer into the base of container. And that dry waste will be taken out from the container and crushed into powder with the help of mixtures or crushers. Now that crushed dry waste will be converted into incense stick with the help of adhesive bonds.

**Beneficiary :** With the help of this approach we are managing the wet waste which is beneficial to the Environment by providing a cheap alternative method and manufacturing of incense sticks.

**Closure Statement:** We know that the wet waste such as wet leaves, scraps , flower are biodegradable countries are now facing big problems of high volume of wet waste , the cost involved the disposal Technologies and methodologies.

So, there is a clear need of any other approach which can resolve the problem of wet waste. For the management of wet waste we are fabricating black body with the help of which will convert the wet waste of temples into dry waste.

**Keywords:** Black Body, Solar Panel, Container, Mixture and Crushers.

## I. INTRODUCTION

When it comes to religion. we give generously to our gods and that is evident from our temple offering. It is estimated that some 800 million tonnes of flower are offered across the temple, mosque and gurudwara in the country. Along with flower ,raw milk, sweets and bangles made of synthetic material are also offered.

These generous offering turn into colossal waste which creates tricky problem that is detrimental for our environmental.

So, keeping in mind the importance of “WASTE MANAGEMENT”, we are making a project that would lay more emphasis on this less focussed area.

## II. LITERATURE REVIEW

S.N.	Title	Name Of Journal/patent	DOI/ISBN Number	Year	Reference Number
1.	Black Body	Thermodynamic properties of blackbody radiation: A Kaniadakis approach.	ISSN4474	August 2016	1
2.	Solar radiation (solar panel application)	Applicability of solar field for dry cooling of related thermodynamic cycle.	ATE10910	September 2017	2
3.	Heat Exchanger	Improving the thermal performance of ground air heat exchanger system using sand - bentonite(in dry and wet condition)	ISSN2509	February 2015	3
4.	Wet waste to dry waste	The exposure of temple workers to polycyclic aromatic hydrocarbon	ISSN3658	March 2017	4
5.	Manufacturing of incense sticks	New treatment Technology: The use of wet milling concrete slurry waste to substitute cement.	ISSN5498	June 2016	5

### III. CONCLUSIONS DRAWN FROM LITERATURE

- A. We have reconsidered and generalized the thermodynamic properties of a blackbody. A black body is an idealized physical body that absorbs all incident electromagnetic radiation, regardless of frequency or angle of incidence.
- B. Utilization of solar energy for the conversion of wet biodegradable waste to dry waste. Utilization of solar energy treats the problem of energy supply and energy use in the same way, that is to say that energy conservation starts with extraction of energy(fuel) and finishes with its recuperation. Solar energy is an important source of renewable energy and its technologies are broadly characterized as either passive solar or active solar depending on how they capture and distribute solar energy or convert it into solar power.
- C. Increase in efficiency of heat generation and storage with the help of fins. The experiments with the finned heater in a non-subcooled solid demonstrate that the addition of vertical fins to the rectangular surfaces is an economical and effective way of substantially enhancing the heat transfer rates. Both sets of experiments highlights the pivotal role played by natural convection in the heat transfer process.
- D. Supply of dry waste to the crushers and finally making of incense sticks with the help of bond. In India many places of worship generate 20 tones of flower waste daily. Much part of it ends up in landfills, where it do not decompose and mixes with other non-biodegradable wastes.
- E. Constructions materials are easily available, simple to construct and are eco-friendly.

### IV. GAP OBSERVED

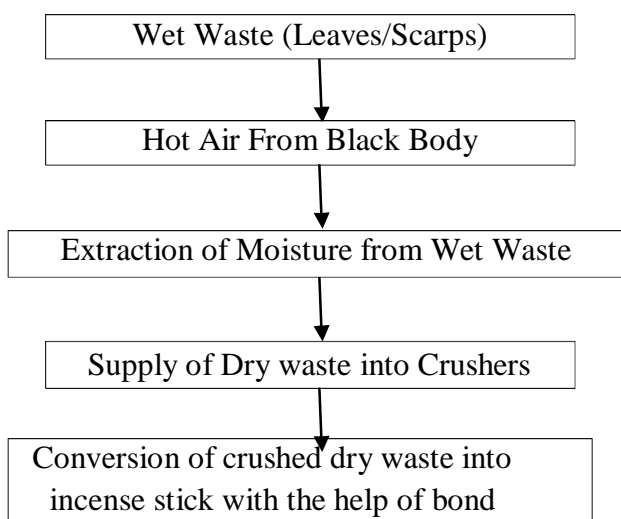
#### A. Early Incense Sticks were Made From

- 1) *Step 1:* Prepare and cut the herbs and flowers. *Step 2:* Bundle the herbs and flowers together.
- 2) *Step 3:* Use your twine to secure your incense bundle.
- 3) *Step 4:* Hang your bundles upside down to dry for two to three weeks. *Step 5:* Place your bundles on a heat-proof plate and light your incense.

Now we are using solar energy and black body concept for making it.

### V. PROPOSED METHODOLOGY

In this project we will get the wet waste through Hopper into the container. In this container a hot air is provided through duct with the help of black body. the moisture of the wet waste will be get down through strainer into the base of container. And that dry waste will be crushed into powder with the help of mixtures or crushers. Now that crushed dry waste will be converted into incense stick with the help of bonds.





## REFERENCES

- [1] C.R. Doering .”Thermodynamics properties of the black body radiation: A Kaniadakis approach” ISSN4474 . August 2016.
- [2] H.Espargilliere.” Applicability of solar field for dry cooling of relatedthermodynamic cycle.” ATE10910. September 2017.
- [3] L.del Campo.” Improving the thermal performance of ground air heat exchanger system using sand -bentonite(in dry and wet condition)” ISSN2509. February2015.
- [4] M Muselli. “The exposure of temple workers to polycyclic aromatic hydrocarbon”ISSN3658 .March2017
- [5] D. Rochier. “New treatment Technology: The use of wet milling concrete slurry wasteto substitute cement.”. ISSN5498. June2016.
- [6] Dr. Mayank Agarwal ( Professor, PSIT Kanpur)





10.22214/IJRASET



45.98



IMPACT FACTOR:  
7.129



IMPACT FACTOR:  
7.429



# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089  (24\*7 Support on Whatsapp)