

conducted yearly by



Industrial Waste Management Association

on

16<sup>th</sup> – 17<sup>th</sup> September 2011

★ Participants will be assessed in 2 levels

Level 1 – JUNIOR – Class VIII – X

Level 2 – SENIOR – Class XI-XII

★ Participants are required to simulate working

Models demonstrating innovative alternatives  
or solutions backed by adequate data

★ Participants must produce recorded readings  
for 3 months

Date remains tentative, please wait for further information.  
Find other details are annexed in the brochure, contact [www.iwma.in](http://www.iwma.in)  
for other queries

## YOUNG ENVIRONMENTAL SCIENTIST AWARDS 2011

### Details & Requirements

#### TOPICS

Junior level	Senior level
1. Recycling/Reuse of materials /waste products.	1. Climate change
2. Rain water harvesting	2. Renewable energy
3. Methods to manage domestic garbage – starting from home.	3. Global warming
4. Water conservation	4. Waste Reduction

- Team to consist of 1 or 2 members assisted by **Mentors/facilitators** from within school or outside.
- Awards for each category will be:
  - 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> - Rs.10000/-, Rs.5000/-, Rs.3000/- respectively.
  - A **best mentor** would be chosen and awarded.
  - Merit certificate for all participants

**Judgment:** The competition would be judged by a competent panel of members and their decisions will be deemed final and binding.

### PARTICIPANT'S APPLICATION FORM

**SCHOOL'S NAME &:**  
(Name & Contact No.)

**CONTACT PERSON DETAILS:**  
& **ADDRESS**

#### PARTICIPANTS DETAILS

<b>JUNIOR</b>	<b>P1 NAME:</b>	<b>Class:</b>
	<b>P2 NAME:</b>	<b>Class:</b>
	<b>TOPIC CHOSEN:</b>	
	<b>MENTOR'S NAME:</b>	
<b>SENIOR</b>	<b>P1 NAME:</b>	<b>Class:</b>
	<b>P2 NAME:</b>	<b>Class:</b>
	<b>TOPIC CHOSEN:</b>	
	<b>MENTOR'S NAME:</b>	

**TEACHER INCHARGE:**  
(NAME & SIGNATURE)

**PRINCIPAL**  
(NAME & SIGNATURE  
& SEAL)

(Participants are kindly requested to attach their school bona fides along with the form.) For further details log on to - [www.iwma.in](http://www.iwma.in)

**MAILING ADDRESS:** -- Industrial Waste Management Association, No. 13/4, First Floor, First street, Indira Colony, Ashok Nagar. Chennai – 600083 Contact no: 044-24748069

### ABOUT

The **Industrial Waste Management Association** was formed on the directive of **Tamil Nadu Pollution Control Board** to establish facilities for the safe and scientific disposal of the solid wastes from industries as per the **Hazardous Waste (Management and Handling) Rules and Environment Protection Act**.

**IWMA** was registered in 2002 and has facilitated the establishment and operation of a **Common Hazardous Waste Storage, Treatment and Disposal Facility** through a Service Provider for industries in Tamilnadu.



### OBJECTIVES

One of the main objectives of the association is to create environmental awareness and inculcate the habit of protection of environment among school children.

- Promote knowledge dissemination and public awareness in industrial waste management and pollution control
- Develop/explore various techniques Waste disposal to minimize pollution load
- Convene conferences, conventions, expositions and seminars to help industries in resolving issues relating to waste management and pollution control
- Create environmental awareness and inculcate the habit of environment protection among school children

### ACTIVITIES

**IWMA** has organized annual programmes on environment for school children in Chennai, jointly with **Science Olympiad Foundation** for the past 2 years.

### ENVIRO 2009

The Enviro-2009 drew participation from more than 75 schools in Chennai. The programme was conducted in **TNPCB** auditorium with competitions on Debate, Elocution and Essay writing on environmental issues. Mr. Nirmal of **EXNORA** presided over the function.



### ENVIRO 2010



**Enviro-2010** had participation from nearly 350 students from primary, secondary and high schools from 80 schools in Chennai on modeling and posters on Rain Water Harvesting, Global Warming and Climate Change. The event was presided over by Prof T S Natarajan of **IIT Madras**.

### SERVICES TO SCHOOLS

I.W.M.A has also in its run made some useful contributions for schools including constructing a compound wall facility for an elementary school in G.R.Kandigai village near Gummidipoondi.



Amongst other activities we have also provided financial support towards Exnora's initiatives on environmental protection.

# THE RESEARCH PROCESS TO BE ADOPTED

I → Identify a problem

- The question must be testable – backed by experimental evidence
- Not a mere ‘information’ question – with answers available in literature (either internet / books) – relating to the said topics

II → Background Research

- Review literature pertaining to question or research problem

III → Hypothesis

- Evaluate possible solutions to question with reasoning

IV → Experimental design

- Identify the critical parameters affecting the experiment vary them and obtain results

V → Data collection & Analysis

- Collect data from experiment to yield results as hypothesized earlier.
- Predict trends in the data – use graphs to see patterns

VI → Conclusions

- Draw conclusions based on the results and data analyzed.

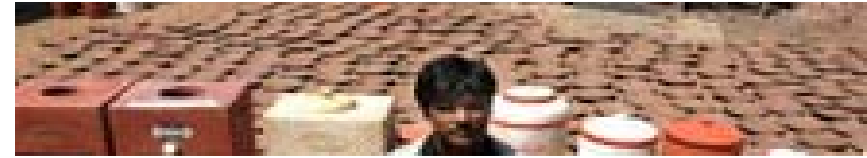
VII → Report

- Prepare the report for exhibit and discuss how it benefits the environment.

VIII → Review and Research further

- Discuss with peer and experts
- Question further and proceed for accuracy

TOPICS	
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**ZERO VOLT REFRIGERATORS from CLAY!!!**



**A MECHANICAL WASHING MACHINE**



**INSPIRATION FROM AROUND**

## ELEMENTS OF A SUCCESSFUL PROJECT

### 1. PROJECT DATA BOOK

- A very important part of the research project.
- Data collection must show a systematic approach and clarity of thought.
- Quantitative recordings must be complete with units.
- A dated record for 3 months must be maintained.

### 2. ABSTRACT

- A brief written explanation of the project **objective/purpose** → **procedure adopted** → **data collection & analysis** → **anticipated results**
- Must be to the point and limited to 250 words

**Possible Title:**

**Name:**

**School:**

**Purpose of project / experiment**

*In a sentence of 25 words or fewer, explain the reason for your research project or a hypothesis you have selected to test.*

**Methods of research**

*Explain in a sentence or two how you plan to research your topic. What methods will you use? What resources will you need?*

**Data/Observations**

*Determine what data do you need to collect and what difficulties you may encounter as you research.*

**Conclusions/Applications**

*Explain in a sentence or two what results you anticipate your research will produce. What conclusions or applications do you hope to be able to explain?*

**CAR WAS FUEL DRIVEN - NOW RUNS ON AIR!!**



**EXHAUST FUMES FILTER ACCESSORY**



**INSPIRATION FROM AROUND**

## SAMPLE ABSTRACT

**Env Sc-13 (Team) – (Ref. Initiative for Research and Innovative Science, National fair 2009 - Winners' abstracts)**

**Ankur Vaishnav , Hetal Vaishnav**

**Shree P V Modi School , Rajkot, Gujarat**

### **Eco Friendly Particle Board Made From Agricultural Waste Using Natural Binder Derived from Spoiled Garlic**

This project aims at deriving the natural binder from spoiled garlic and using that natural binder to make particle board from agricultural waste. The maximum life span of garlic is about 6 to 8 months. So every year lot of spoiled garlic is found in marketing yards and from farmers. And every year the agricultural waste which is remained on the farm after harvesting the crops, is burnt by the farmers. So it spreads air pollution. The main advantage of our process is that synthetic binder was not used during the whole process like urea formaldehyde and phenol formaldehyde. Secondly we have tried to utilize the agricultural waste by making particle board from it.

And the binder which we have used in making the particle board from agricultural waste is also made from spoiled garlic.

Process-1 :- (making natural binder from spoiled garlic) We collected the 250 gram of spoiled garlic bulb and put it into the pressure cooker. After that one liter water was added to it. It was heated with the help of stove till the volume of water does not become half. Then this boiled mixture was crushed in a kitchen mixture. After that again 500 ml water was added to it and was heated in the pressure cooker till the volume of water doesn't become half. Then that mixture was constricted with the help of cotton cloth to collect the extract in the liquid form. We got nearly 500ml extract in liquid form. After that we boiled it in an open vessel till it becomes thick paste. Then we got nearly 80 gram binder.

Process-2:- (making sheet from agricultural waste using natural binder) We collected agricultural waste like cotton straws, wheat husk, groundnut husk, castor straws, etc. and dried it in open sunlight. Then we crushed and pulverized it to convert it into powder form. After that we took 80 gram agricultural waste powder and mixed uniformly the 20 gram of binder made from spoiled garlic with it. Then we fed this mixture into the mould and gave appropriate pressure and heat on both the side simultaneously with the help of vulcanizing press. Then we took the sheet out of the mould and kept it for self cooling.

Uses:- We can utilize agricultural waste for making particle boards, thus replacing MDF, plywoods etc. We can also utilize the natural binder in place of Urea formaldehyde, Phenol formaldehyde etc. to make any type of particleboard. Such particle boards can be used in furniture applications.