# IEEE Techithon 2018

**Date : 3rd to 5th October 2018**
**Place : Atharva College Of Engineering, Mumbai**

The IEEE Atharva Student Chapter successfully conducted the annual technical festival, IEEE Techithon2018from3rdto5th of October. The festival depicted the unique theme, "ESSENTIA".

## Theme Name :Essentia (Eonian elements)

- The theme proposed for this year is **"Essentia"**. This theme revolves around the idea of Renewable Energy, Sustainable Development and all branches pertaining to it.
- We aim to increase awareness amongst the students regarding planet Earth and its issues by creating solutions to real world problems that will affect our planet in the years to come.

The inaugural session was presided over by eminent personalities from the field of technology .Dr. Capt.C.M.Chitale, Chair Professor at Savitribai Phule Pune University, was the chief guest, and presided over the keynote session.

Mr. Parag Walinjkar, Senior Scientist in Bhabha Atomic Research Centre, was the guest of honour. The keynote session commenced with expert discussions regarding the advancement of the "ESSENTIA" theme which basically deals with the 4 crutial elements of life i.e Earth, Air, Fire and Water, as the dignitaries enlightened the audience with their knowledge and innovative ideas.

The unique centre model displayed various projects that revolved around the theme of the festival. The flagship events at the festival, Technical Paper Presentation and Technical Project Exhibition, along with Poster presentation witnessed an overwhelming response from students coming from all around the city.
Through Tech Debate and Tech Quiz, the participants were given a chance to showcase their debating and quizzing skills. The Fun events included Escape the Room, Laser Tag and LAN gaming events. The other fun events and technical events also saw a huge response by the crowd.

The workshops on Internet of Things and Ethical Hacking made students gain additional technical expertise, the seminar on Foreign Education by Professors from the University of South Australia (UNISA) was a huge hit among the students as they attended the seminar in huge numbers.
Three day festival ended with joy and lots of Learning, with Executive President Hon. Shri Sunil Rane sir, Atharva Group of Institutes, appreciating the projects and the innovations.

The projects were based on the theme "ESSENTIA" that included projects and many such innovative ideas that can be included to make a city smarter and a better place to live in. The festival was made possible by the support of IEEE Bombay Section and Student Activities Chair,Prof. Kiran Talele, the guidance of Atharva College of Engineering, Director Dr. P.N Nemade ,Principal, Dr.S.P.Kallurkar and IEEE Branch Counselor, Prof. Jyoti Kolap along with the Techithon Coordinator Prof. Santosh M Dodamani.
The efforts put in by each council member and volunteer was noteworthy and highly appreciated by everyone visiting the festival. We thank all the participants and the people involved making the festival a success in every possible manner.

## Techithon Projects:

- Vertical Windmill And Solar Panel
- Unidirectional Speaker
- Traffic Laser And Traffic Tracking
- Water quality monitoring system
- Fire detection using wireless senor network
- Piezoelectric walkway
- Plastic to Pellets

# Technical Projects Ideas proposed by students:

## *Vertical Windmill And Solar Panel*

**Our Goal-**

Wind power has been utilized for thousands of years, starting with the invention of sail boats as the first and most obvious example of making use of wind energy.

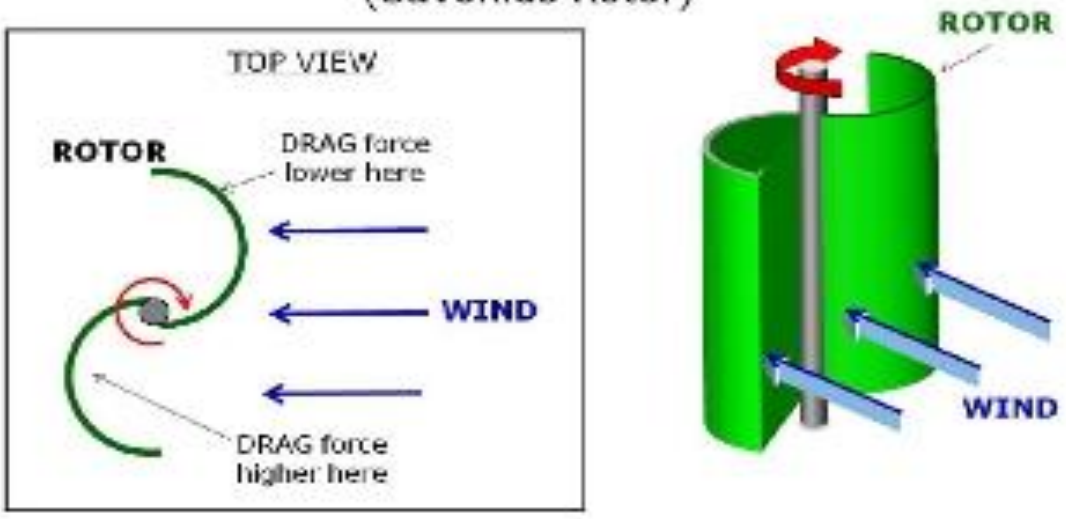
For years there have been Horizontal windmill in the market to start something new and to initiate research in the field of vertical windmill and solar. Solar and wind power together can bring revolution in renewable energy sector.

**How will it work-**

- Wind mill arrangement is the mechanical arrangements which are easily rotated.
- The rotating speed depends upon the wind strength.
- The electricpower is generated in the dynamo.

The generated electric power is given to battery through the charging circuit.

**Figure 1: Drag-based Wind Turbine Concept**
(Savonius Rotor)




Rotation created by difference in DRAG forces on the convex and concave surfaces of the rotor

**Future Scope:**

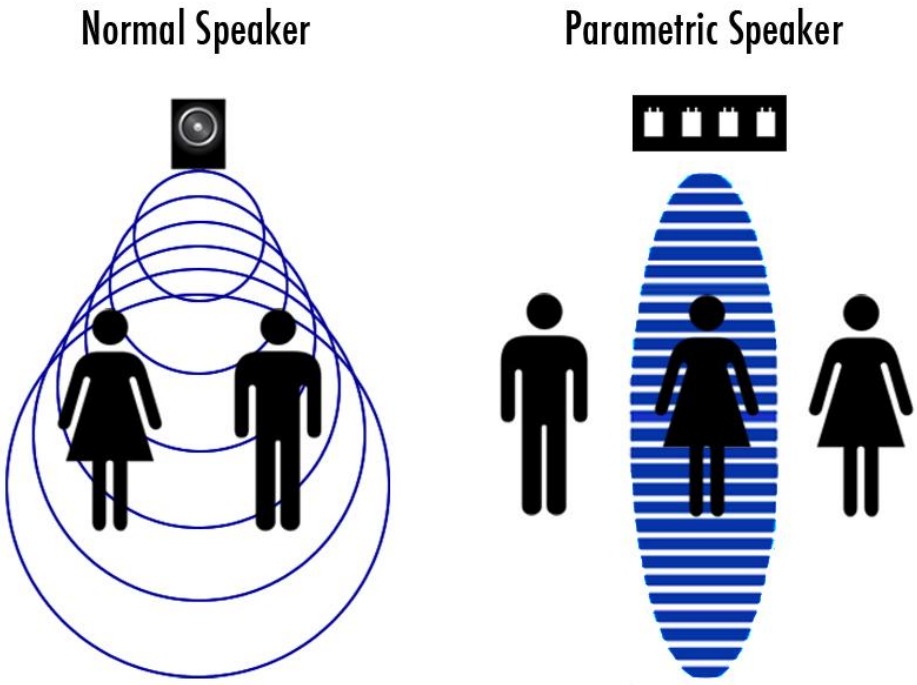
Technical Head: Parag Chaure.
Assistants Technical Head: Karan Gohil.
Technical Team: Brandon Saldanha, Sanchit Patil.

## ***Unidirectional Speaker***

**Our goal**-
Most speakers are designed to throw sound as far and loud as possible. Parametric speakers are more like a laser beam with the sound focused at high intensity into a relatively small area. The result is that two people can be standing only a few feet apart from each other yet only one of them will hear the directional audio waves emanating from the parametric audio source.

Directional speakers work in an entirely different way from conventional loudspeakers. The biggest difference is that they don't produce ordinary, audible sound waves with a single, moving electromagnetic coil and cone. Instead, they

generate ultrasound (high-frequency sound) waves that are too high pitched for our ears to hear using an array of electrical devices called piezoelectric transducers. Ultrasound is used because its higher-frequency waves have a correspondingly shorter wavelength and diffract (spread out) less as they travel, which means they stay together in a beam for longer than ordinary sound would. Also, having an array of many, small transducers make sound diffract less than it would do from a single, large transducer.




Technical Head: Parag Chaure.
Assistants Technical Head: Karan Gohil.
Technical Team: Abhishek Rathod, Shubham Shinde.

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# *Traffic Laser And Traffic Tracking*

**Our Goal**-

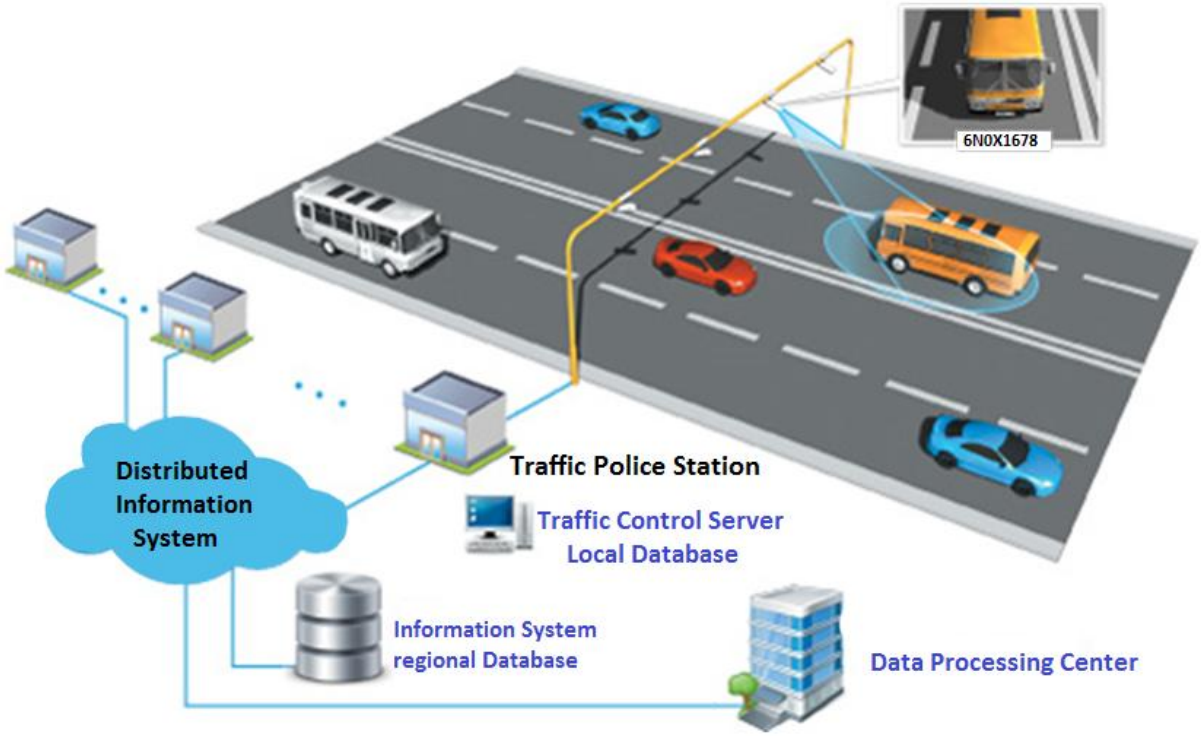
Our goal is to create a traffic management system which will help the commuters to reduce their travel time which intern will save lot of fuel.

Such system in city region can make management of traffic much easier and will reduce congestion and will ease the flow of Vehicles.

**How will it work**-

At first it will detect the number of vehicles at a signal and then it will process the information and then it will come up with an optimum Wait time at every signal that everyone has to wait for less amount of time which in turn will increase the efficiency of the traffic management system.

If any vehicle breaks the signal a laser detector will help in determining if the vehicle has broken the signal and authorities will be alerted and appropriate actions will be taken.




Technical Head: Parag Chaure.
Assistants Technical Head: Karan Gohil.
Technical Team: Pawan Badsewal, Kung Bhatt.

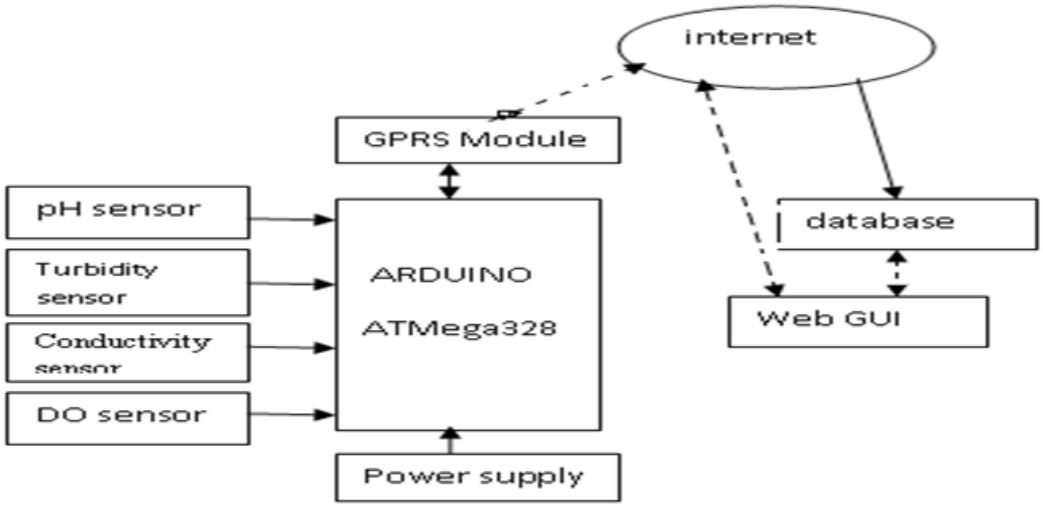
# *Water quality monitoring system*

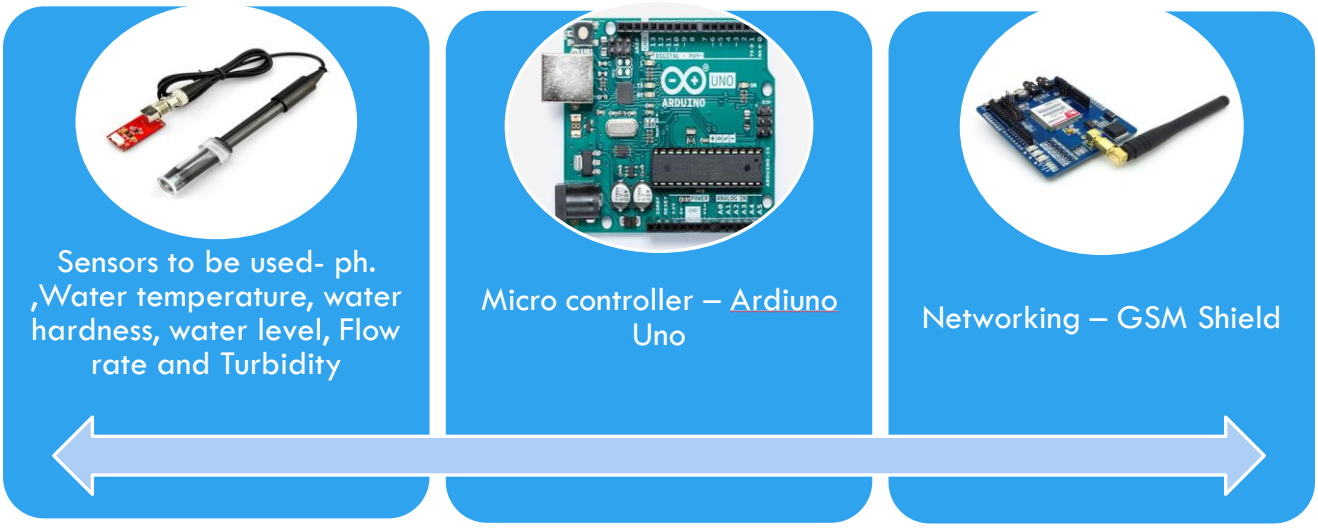
**Our Goal**-

In 21st century population growth is very high. Very few people getting pure drinking water but most of people not get pure drinking water ,this is big problem in today's situations. In a system there are different sensor used to detect water quality therefore easily understand which area supplying water is pure and safe . These system require in home ,small area, water purification plant, water tank which can provide pure water to people. So people will aware about the pure water and stay away from disease which is caused by only water.

**How will it work**-

The Arduino software written in java but programming is in any language. The different water parameter sensor is connected to Arduino. The system uses GPRS module for wireless data transfer. This GPRS module is connected to Arduino and it will send data to webpage through GPRS. We are creating webpage and it also provides security. GPRS module sends data via internet it will upload on created Web GUI.






Technical Head: Parag Chaure.
Assistants Technical Head: Karan Gohil.
Technical Team: Abhishek Patil, Kunal Raul, Suman Parui, Prathmesh Pawar.

## ***Fire detection using wireless senor network***

**Our Goal**-

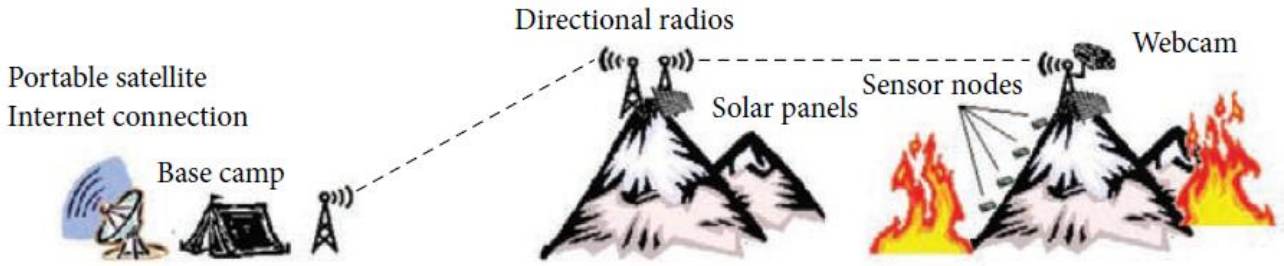
Our Goal is to create a network of fire sensors that will be able to detect outbreak of fire in Forest and arid terrain which will help ease the work load of the authority and will help them act accordingly.

This will help us to control forest fires and will help us save our valuable natural resources and prevent loss of life.

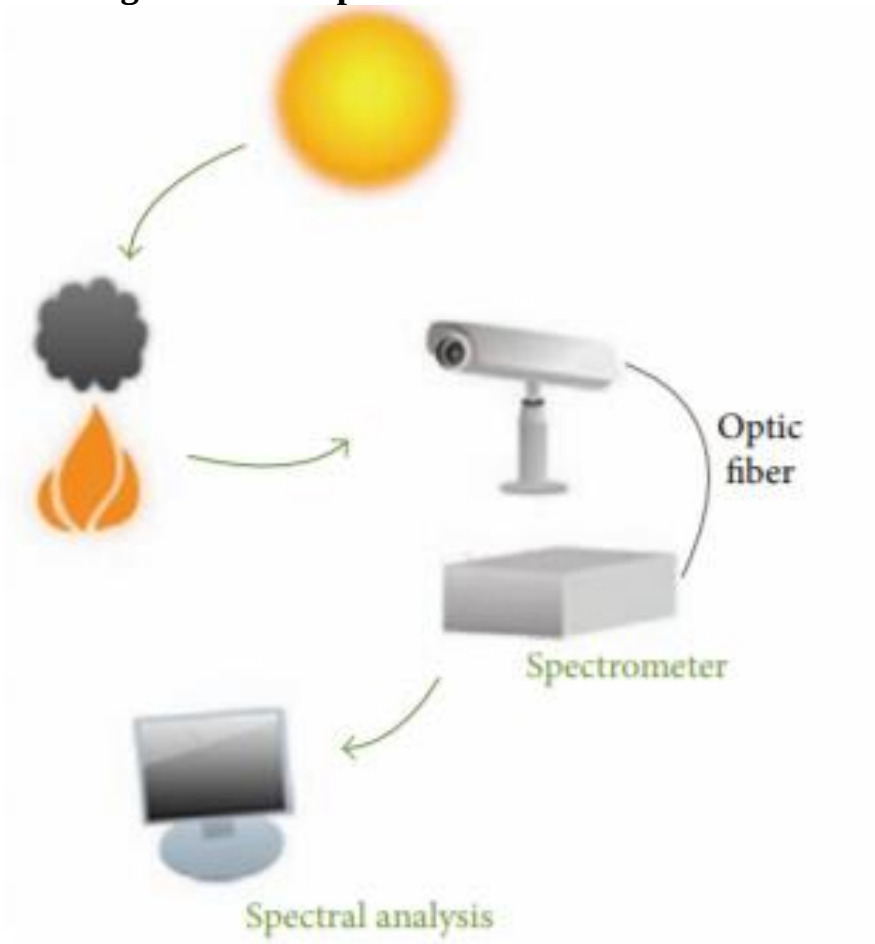
**How will it work-**

It will utilize a centralized server in this case it will utilize Raspberry pi as the sever and then it will communicate with the sensors with a Wi-Fi network .in this it will utilize a NODE MCU and in which a fire sensor will be connected. There are Wi-Fi sensors which are available in the market which have an incredible range of up to 11km.

We can expand these networks according to our needs as all the networks will get power from solar energy which will help them work even in the harshcondition. This will help keep our system working even when there is no sun light because of the battery backup for days.




**Basic Diagrammatic representation-**




Technical Head: Parag Chaure.
Assistants Technical Head: Karan Gohil.
Technical Team: Sameer Naik.

# *Piezoelectric walkway*

## Our Goal-

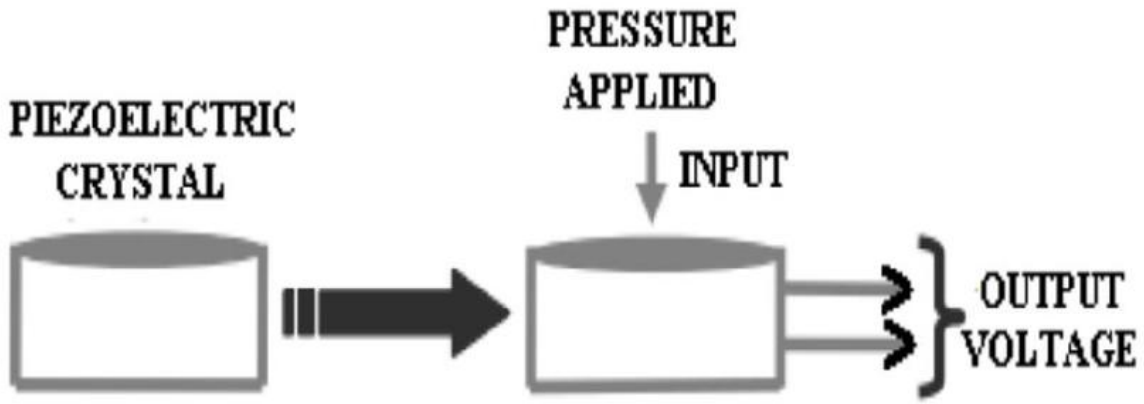
At first sight, anything that minimizes waste energy and improves efficiency sounds really sensible. If you could use the floor of a grocery store to capture energy from the feet of hurrying shoppers pushing their heavy carts, and use that to power the store's lights or its chilled cabinets, surely that must be a good thing? Sometimes energy harvesting can indeed provide a decent, if rather modest, amount of power.

**Our Goal is to install this renewable electric source at public space.**

## How will it work-

Squeeze certain crystals (such as quartz) and you can make electricity flow through them. The reverse is usually true as well: if you pass electricity through the same crystals, they "squeeze themselves" by vibrating back and forth. That's pretty much piezoelectricity in a nutshell but, for the sake of science.

In practice, the crystal becomes a kind of tiny battery with a positive charge on one face and a negative charge on the opposite face; current flows if we connect the two faces together to make a circuit. In the reverse piezoelectric effect, a crystal becomes mechanically stressed (deformed in shape) when a voltage is applied across its opposite faces.




Technical Head: Parag Chaure.
Assistants Technical Head: Karan Gohil.
Technical Team: Abhay Dubey

## ***Plastic to Pellets***

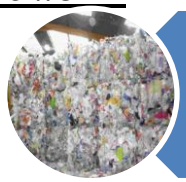
**Our goal-**

Our objective is to create a cost effective solution.

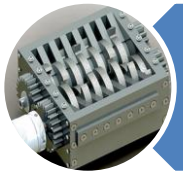
The overall objective of the project is to reduce plastic in waste streams saving non-renewable resources and enabling carbon neutral energy production from waste.

More specifically, the project aims at: Identifying the main challenges and barriers for reducing plastic waste in mixed waste and residual waste streams, hereby stimulating prevention and recycling of plastic waste. Promoting recycling of plastic polymers

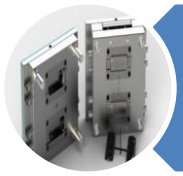
**How will it work-**



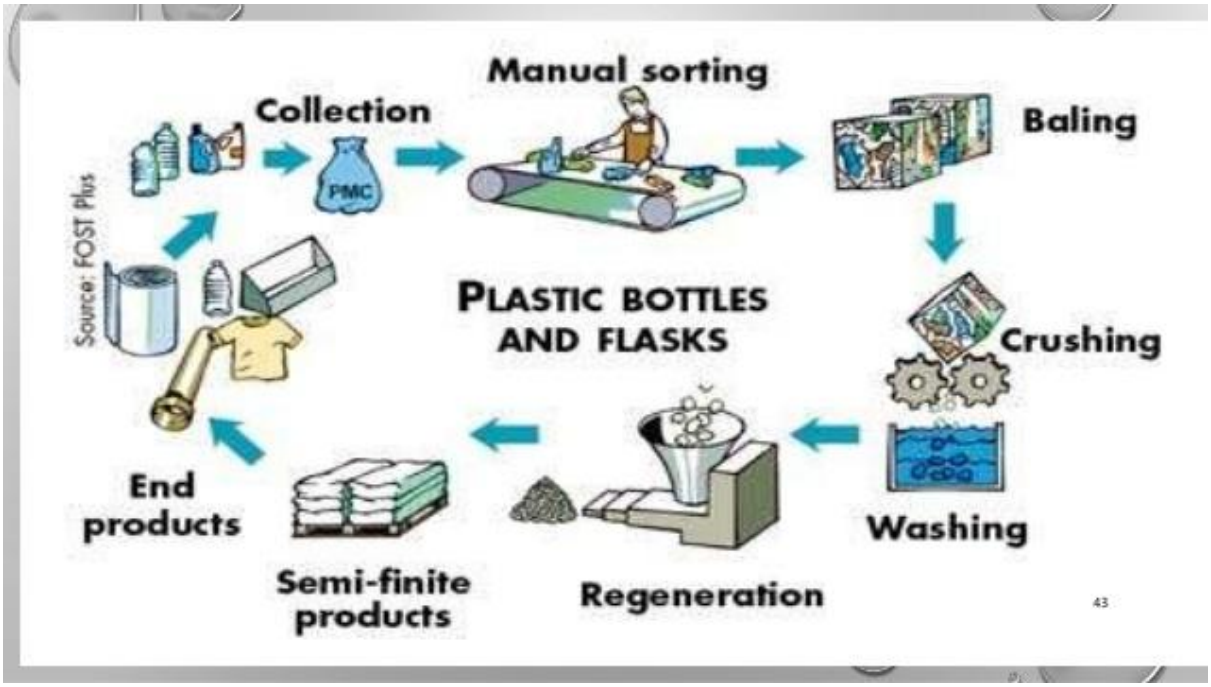
At first we will take different type of plastic and



Then we will shred it separately



And after that we can mould the plastic properly in basic blow mold.




Technical Head: Parag Chaure.
Assistants Technical Head: Karan Gohil.
Technical Team: Vedant Pawar

## Other Events:

### Technical

- Technical Project Exhibition
- Technical Paper Presentation
- Robo wars
- Poster Presentation
- Codex
- Web designing

### Special Attraction:

- Hogathon
- Paintball
- Zorb ball
- PUBG
- Escape the room

**Fun:**

- Neon cricket
- Neon football
- Strongman events
- Dota (lan event)
- Fifa(lan event)
- Counter strike (lan event)
- Need for speed (lan event)

## IEEE/Techithon 2018 Student Heads Committee:

| SI NO. | COMMITTEE HEADS | BRANCH | ROLE | CONTACT NUMBER |
|---|---|---|---|---|
| 1 | Varoon Chhatre | ETRX | Chairperson | 9769918198 |
| 2 | Rishab Shetty | CMPN | President | 9920039984 |
| 3 | Parag Chaure | EXTC | Technical Head | 7021797349 |
| 4 | Karan Gohil | EXTC | Asst.Technical Head | 7715920075 |
| 5 | Shreyas Kulkarni | ETRX | Tresaurer | 9167540502 |
| 6 | Namrata Walawalkar | ETRX | Creative Head | 8108453447 |
| 7 | Rahool Rangnekar | IT | Digi Creative Head | 9167691276 |
| 8 | Pratiksha Singh | ETRX | Vice-Chairperson | 9960596067 |
| 9 | Ishani Parkar | EXTC | Sectretary | 9930830726 |
| 10 | Uday Vishvekar | ETRX | Reg. Head | 9820282671 |
| 11 | Pratik Pawaskar | ETRX | Asst. Creative Head | 8828159076 |
| 12 | Chetan Naik | ETRX | Asst. Reg. Head | 9004631438 |

Memories of IEEE/Techithon 2018:


Principal Sir Dr.S.P.Kallurkar sir felicitating Chief guest of the event Dr. Capt.C.M.Chitale.


Inauguration by Chief Guest of the event Dr. Capt.C.M.Chitale.

Chief Guest of the event Dr. Capt.C.M.Chitale. and Guest of honor Mr. Parag Walinjkar along with principal Dr.S.P.Kallurkar sir visiting innovative projects developed by the students of Atharva College of engineering.

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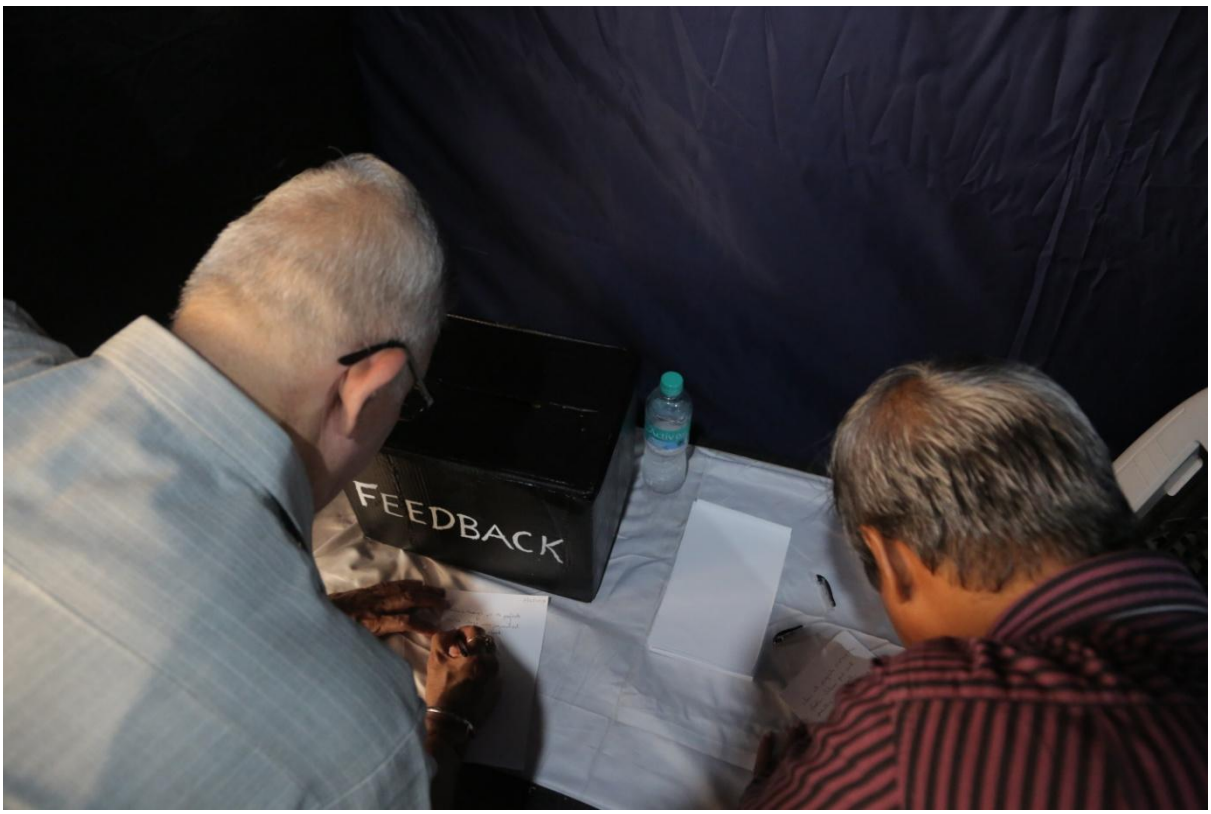


Feedback provided by Chief Guest Dr.C.M.Chitale and Guest of honor Mr. Parag Walinjkar

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