



MANUAL FOR ADULTS *by Kids*



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H₂O



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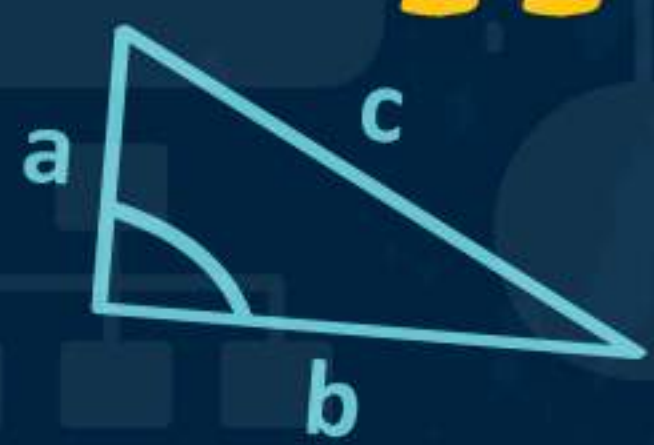




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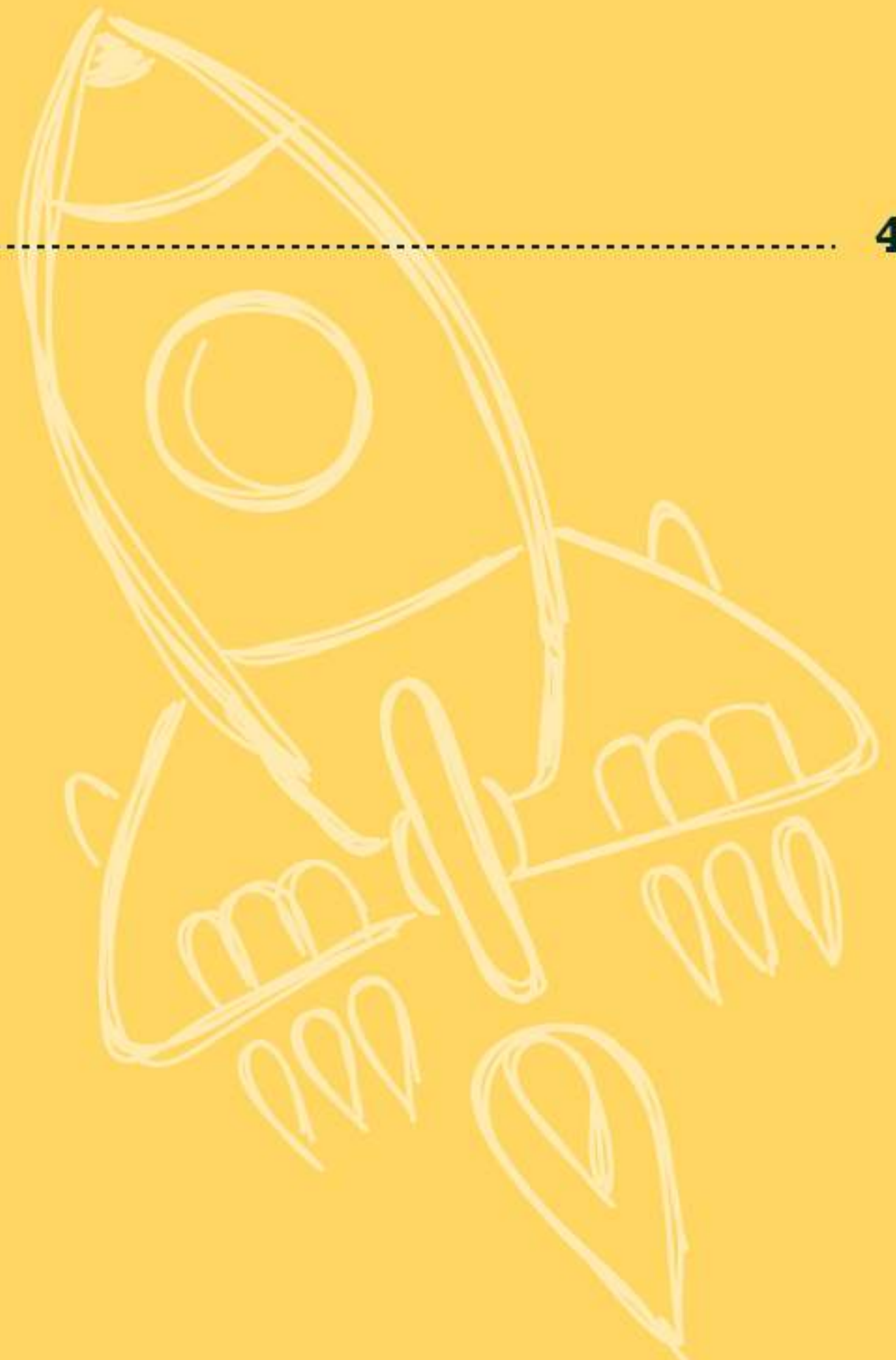
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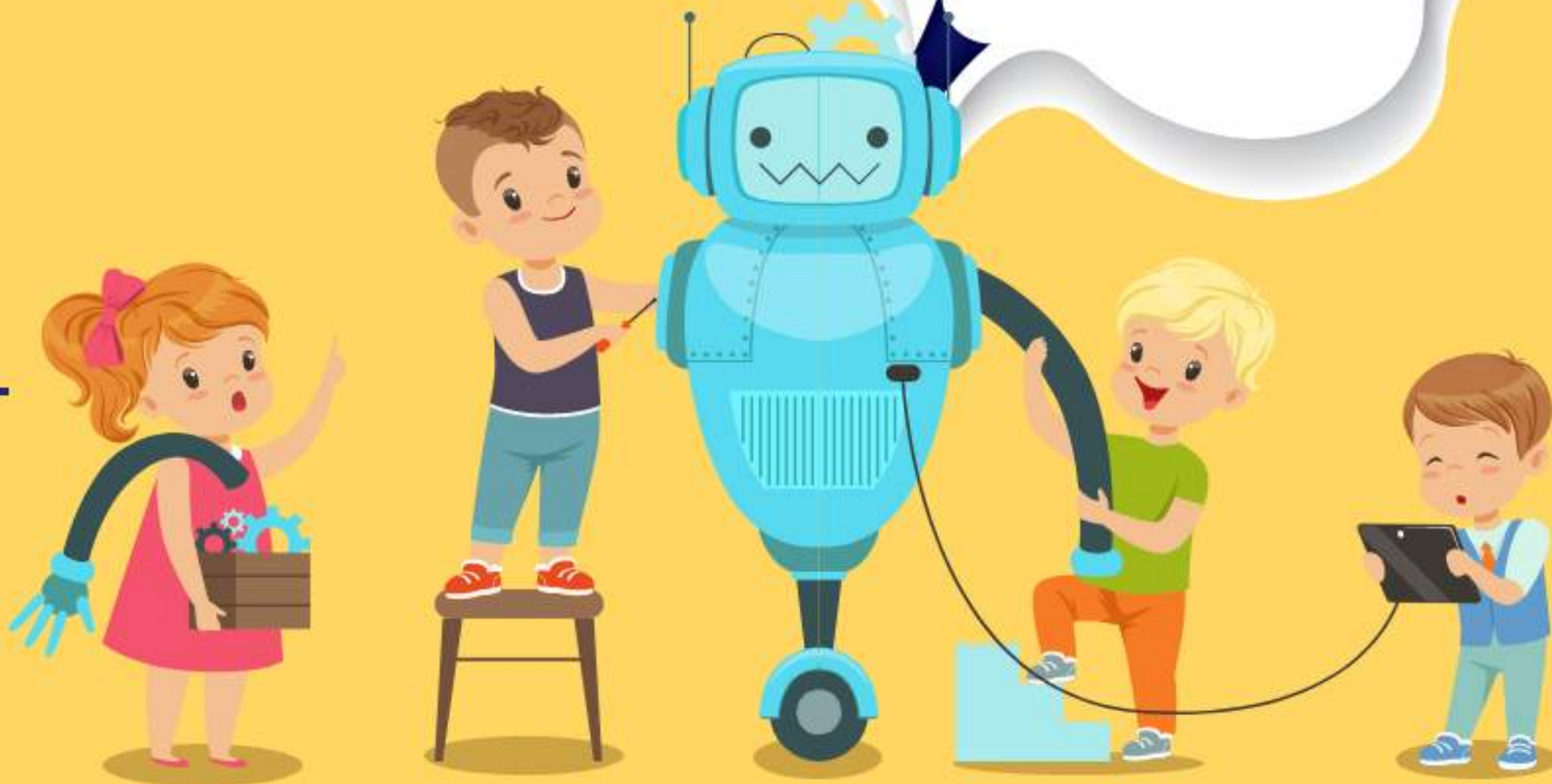
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**When kids take matters in their hands,
wonderful things can happen.**

Take a look at the

20 shortlisted innovation entries

from the **Voices Of The Future** contest, a part of the **#BreatheFree** initiative by Volvo Cars where we invited kids across the country to share their ideas for a sustainable future.

**Jainam Shah**

14 yrs

Marine Deplasticizer

-  **Marine Deplasticizer will remove the plastic pieces (big or small) floating on the surface.**
-  **It consists of an array of strainers, from activated carbon filters to normal filters, which will catch and hold the plastic garbage till it is manually emptied.**
-  **Marine Deplasticizer will be able to detect if there is there any fish caught in it and will immediately start the removal procedure as well. If it doesn't work, it'll alert the concerned authorities.**
-  **Most importantly it removes plastic from the marine life cycle and ensures that the delicate balance of the ecology of the planet is maintained.**



Jainam Shah

14 yrs

Marine Deplasticer









Sahil Desai

16 yrs

Regenerative Braking

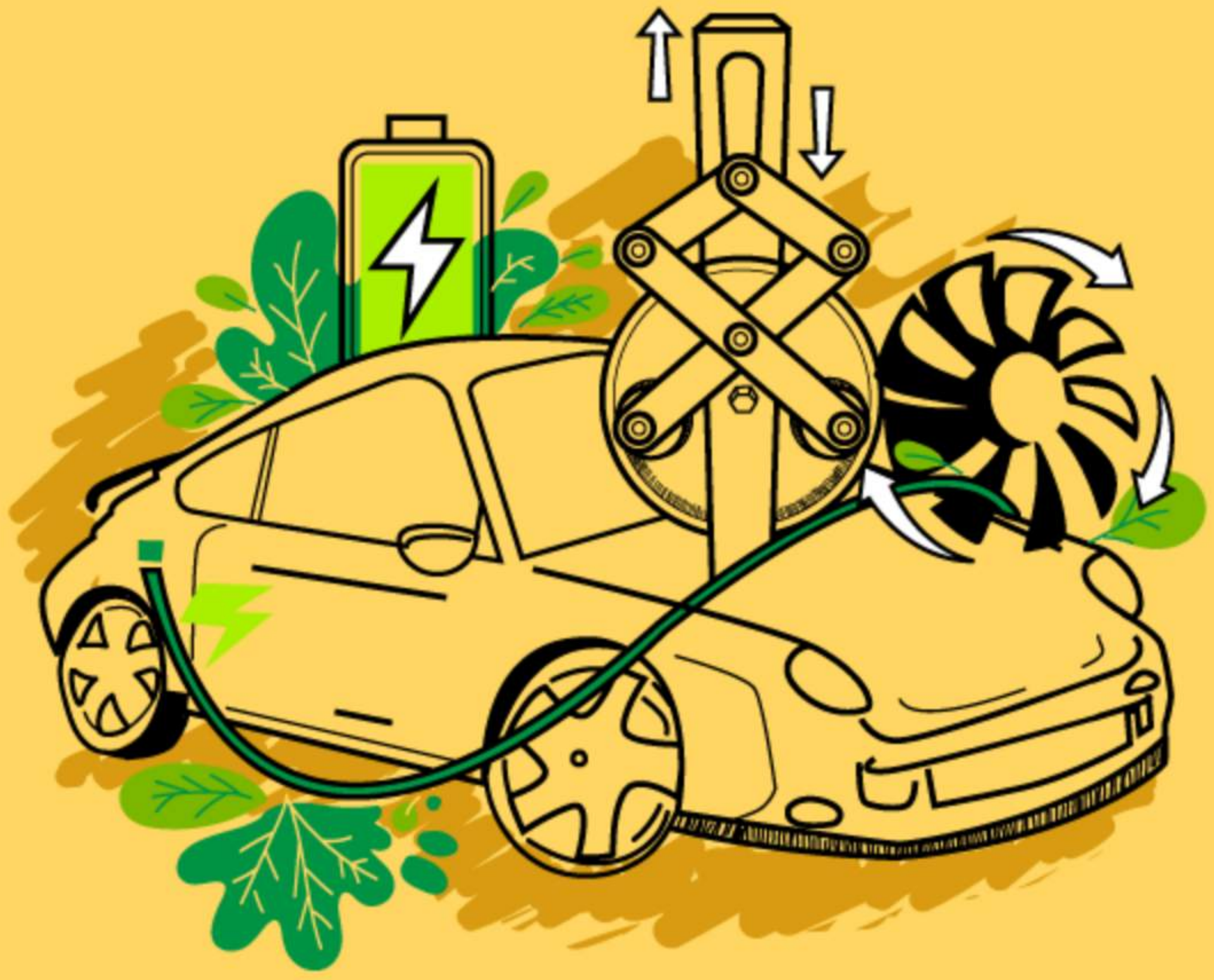
-  **A braking system that provides power to the vehicle.**
-  **When brakes are applied, the outer wheel will stop and the inner wheel will start rotating. With use of the dynamo, this mechanism will start generating power. This power can be stored in a battery and be used in various operations of the car.**
-  **The air resistance due to the high speed of cars on highways leads to a lot of wastage of petrol. This air resistance can be used to generate power.**
-  **The cars can be equipped with small windmill like structures or “turbines” on the front end of the bonnet and on the rear end of the side-mirrors so as to generate electricity.**



Sahil Desai

16 yrs

Regenerative Braking





Nimit Sheth

15 yrs

Brick Building



Building bricks made out of reused plastic.



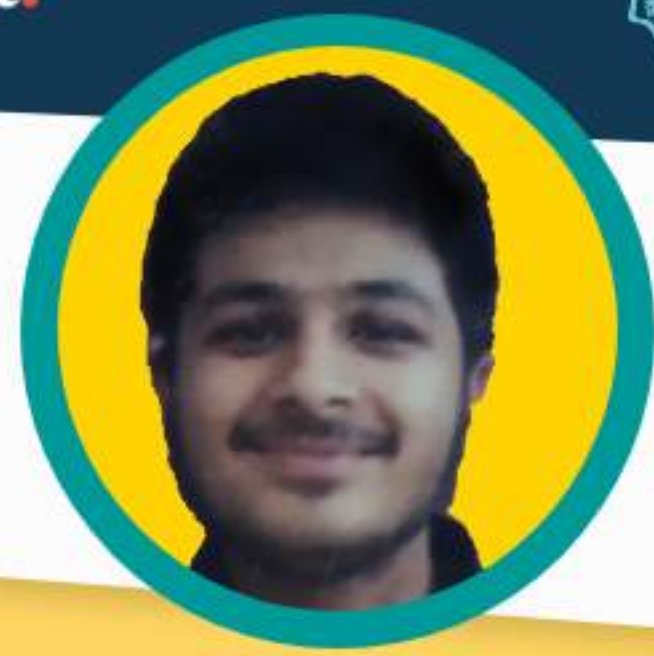
The plastic waste is placed inside a huge plastic melting machine. When the plastic is melted completely, the mixing of sand and water is carried out. The sand is mixed with plastic in various ratios to obtain durable bricks.



The hot plastic sand mixture is then poured into containers that have the shape of bricks. They are then left to dry and what we get is a freshly made plastic brick.



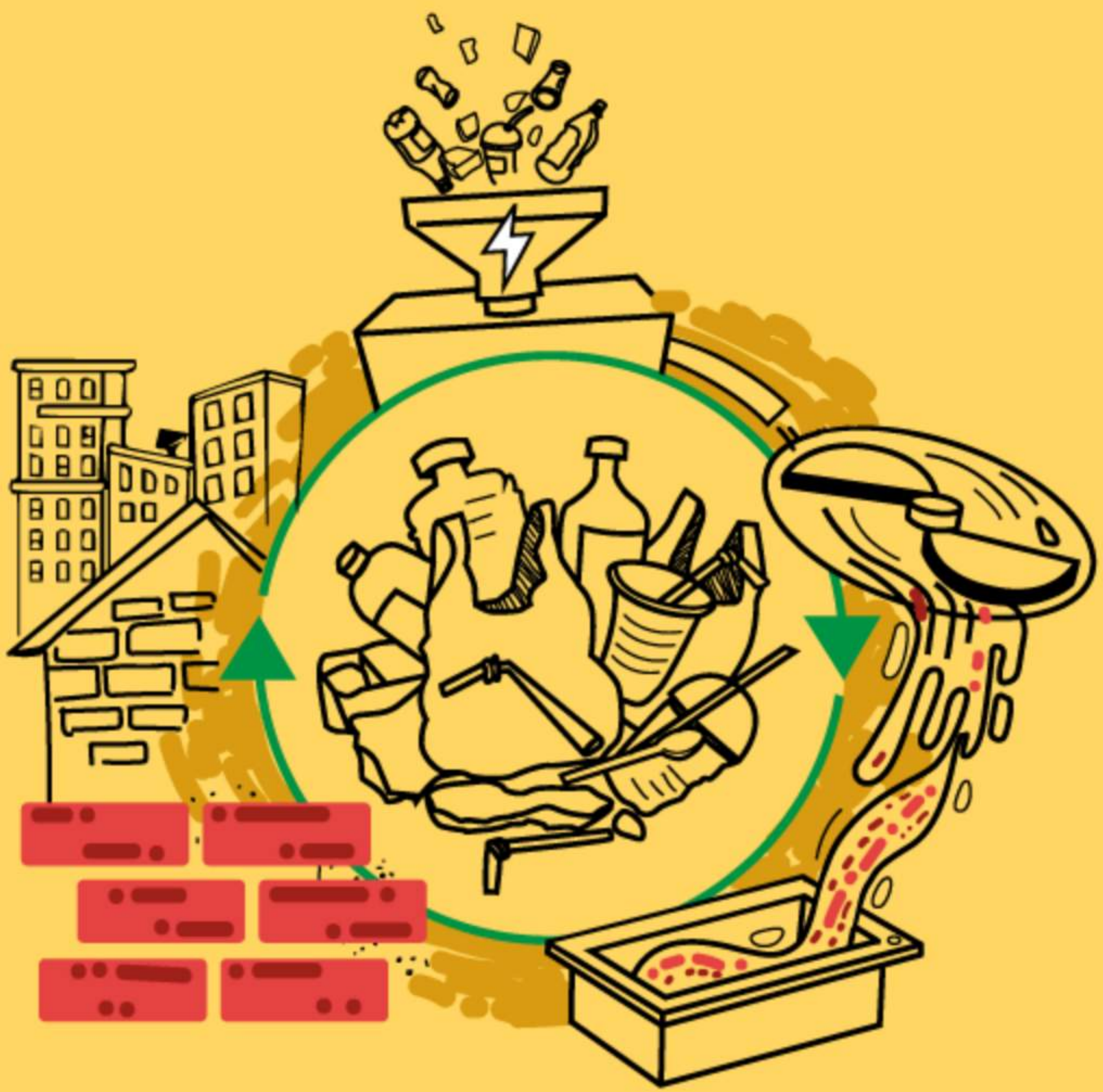
These bricks can be extensively used to build concrete houses in villages instead of the traditional straw houses.



Nimit Sheth

15 yrs

Brick Building









Adityavikram Iyengar

13 yrs

The Hybrid Cycle

-  **An automatic electricity powered hybrid bicycle which is a vehicle made by modifying a bicycle.**
-  **This vehicle works on electricity. It will have mini windmills at the side, thus when the cycle starts moving the mini windmills will move and produce electricity. This electricity will be stored in a battery.**
-  **When the driver is tired he/she can shift to automatic mode and when he/she presses a button which is near the hand grip, the bicycle will start to move and the driver doesn't even have to pedal. The electricity can also be used to light up headlights and backlights in the night or when it is dark.**
-  **There are gears to change the speed of the bike. There is also a waterproof speedometer to check the speed. This vehicle helps in sustainable energy as it doesn't work on fuel.**



Adityavikram Iyengar
13 yrs

The Hybrid Cycle








Milonee Thakur

11 yrs

Air Purifying Robot

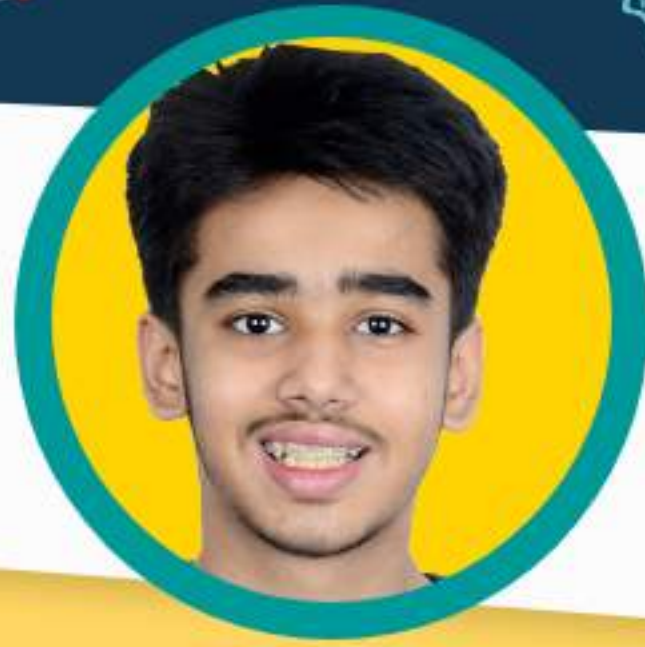
-  **A robot that purifies air through the distillation process separating all the harmful gases from the air.**
-  **With air pollution control, the wastes accrued from dead crops and bad water will be limited or stopped. With the presence of air pollution control, economic slowdowns like this will be prevented or at least managed to the barest minimum. Controlling air pollution helps to tackle climate changes.**
-  **This new technology allows these plants to use different, potentially less-harmful materials**



Milonee Thakur
11 yrs





Air Purifying Robot



**Soham Shah**

14 yrs

Design & Implementation of a Pharmacy Genie

-  **A smart band, a medicine dispenser, and a health monitoring app, which comes with medicine reminders and have proper accuracy in reminding people to take their respective medicines.**
-  **It has a disease scanner which can detect health problems and prescribe the right amount of medicine in the right time, and in the right dose.**
-  **The app provided contains all the latest information about the patient like blood pressure, body temperature and so on. The near & dear ones can access this information anywhere which reduces the effort to stay home and monitor the patient.**
-  **Compared to other health companies who offer health products for a cost around 15000 to 20000 rupees, this costs 6000 rupees.**



Soham Shah

14 yrs





Design & Implementation of a Pharmacy Genie



**Yashanil Tiwari**

14 yrs

Sustainable Environment

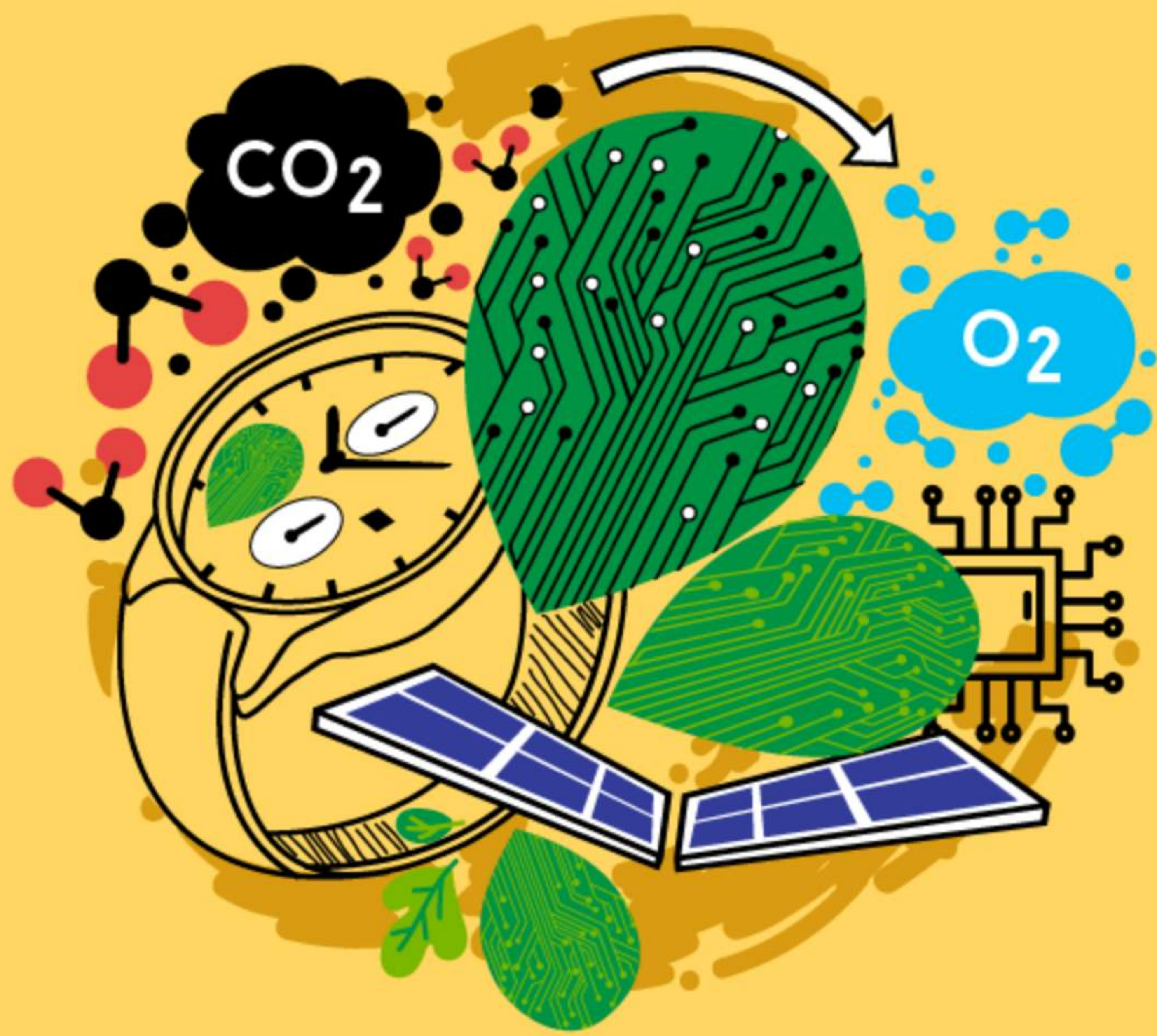
-  **A watch that converts CO₂ to O₂ by the process of artificial photosynthesis.**
-  **Artificial Leaves are used for artificial photosynthesis. Artificial Leaves can convert CO₂ into O₂ at a rate of 10 times better than ordinary leaves.**
-  **We place a traditional artificial leaf inside a water-filled capsule constructed out of a semi-permeable membrane. When the sunlight warms the water, it evaporates through the membrane. At the same time, the capsule would suck in carbon dioxide.**
-  **A watch is found on every hand. An artificial leaf in every watch will convert huge amounts of CO₂ into O₂.**



Yashanil Tiwari

14 yrs





Sustainable Environment



**Aditya Desai**

14 yrs

Innovation Everywhere

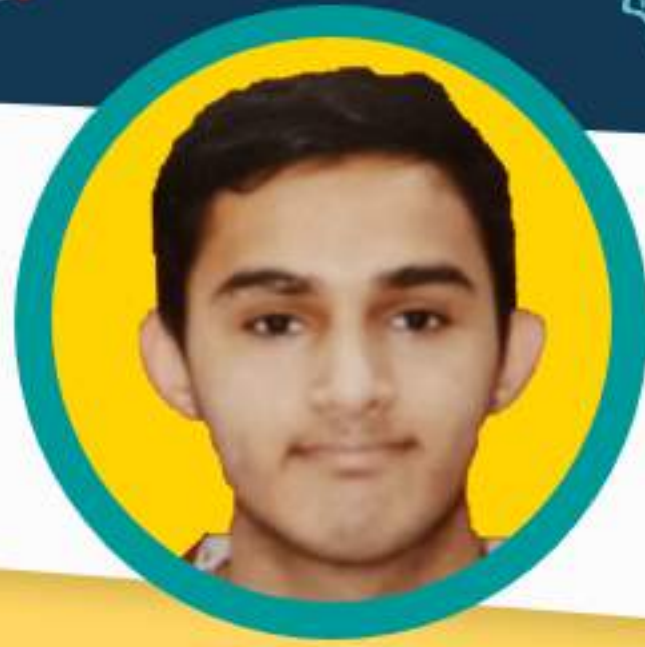
-  An e-bicycle is a regular bicycle which has been enhanced with an integrated electric motor and a battery which are used for propulsion, and we have a range of electric bicycles with three various models.
-  The first is the XCELERATE 1.0 model. This utility bicycle targets all delivery men, including workers at Swiggy, UberEats, Zomato and similar food delivery systems, lunch-box delivery men, mailmen, laundry men, and various other service providers who travel around big cities for a living.
-  Second and extremely unique e-bicycle is the CYCLOTRIC 1.0 model. This e-bicycle works on an entirely chain-less mechanism, rather it works on gears; providing the rider with a unique up and down motion, rather than the regular 360 degree motion.
-  XCELERATE 2.0 model, which is an advanced version of first model. It has mag wheels which have hub motors pre-installed in them. Its distinctive white alloy enhances the looks of the bicycle.



Aditya Desai
14 yrs

Innovation Everywhere





Neel Atulkumar Raja

14 yrs

Footprints



Artificial leaf is a silicon-based device that uses solar energy to split hydrogen and oxygen in water, thereby producing hydrogen energy in a clean way, leaving virtually no pollutants.



This technology is expected to reduce CO₂ emission from oil companies, automobile companies, and steel companies.



It can also provide clean and sustainable fuels, methanol, for vehicles and aircrafts.

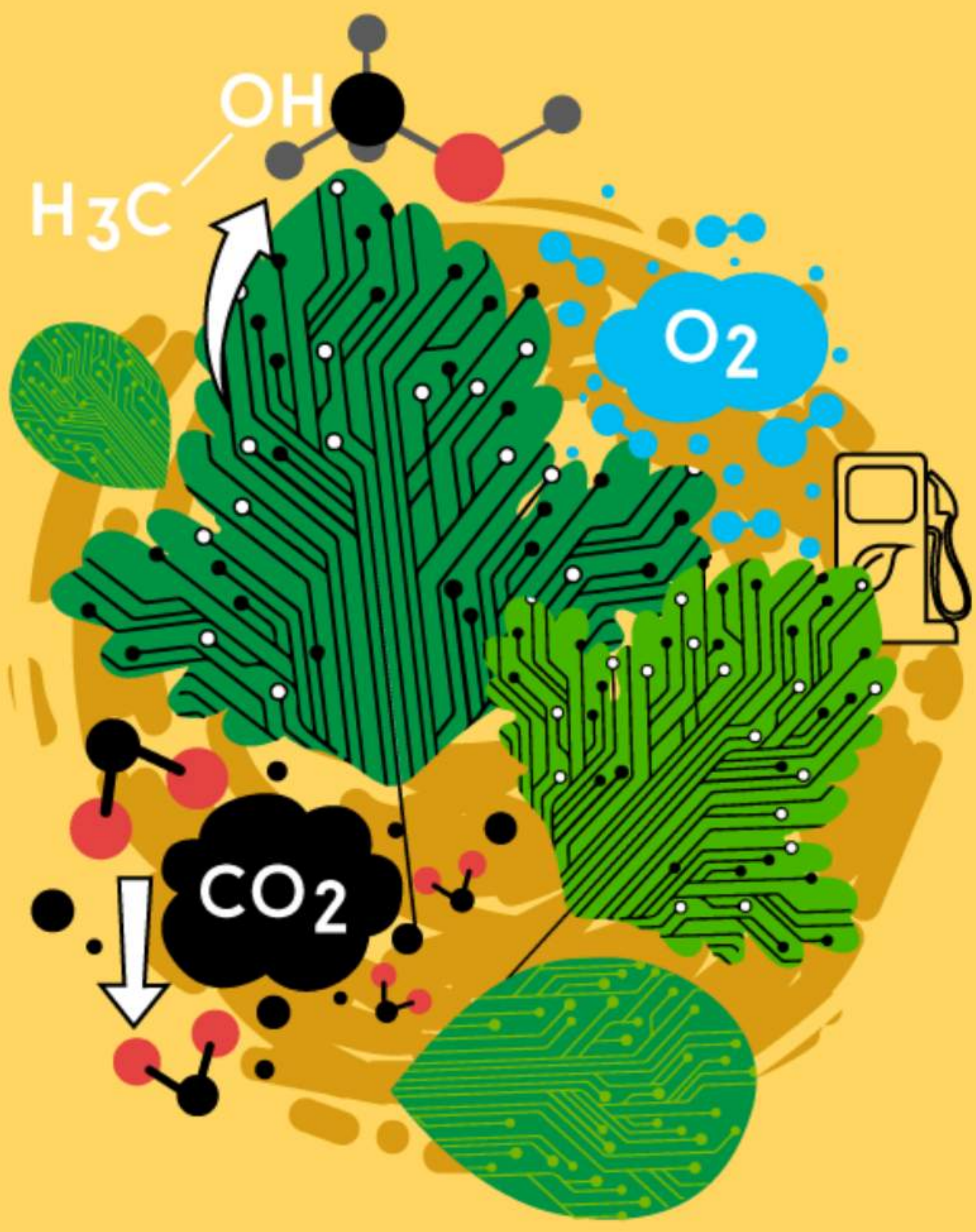


The resulting alternative fuels will allow for people to continue relying on non-electric automobiles, thus giving us more time to make the transition to carbon-neutral living.



Neel Atulkumar Raja
14 yrs

Footprints





Aarav Sekaria

10 yrs

Farming and Forestry



Rainwater Harvesting on the highway.



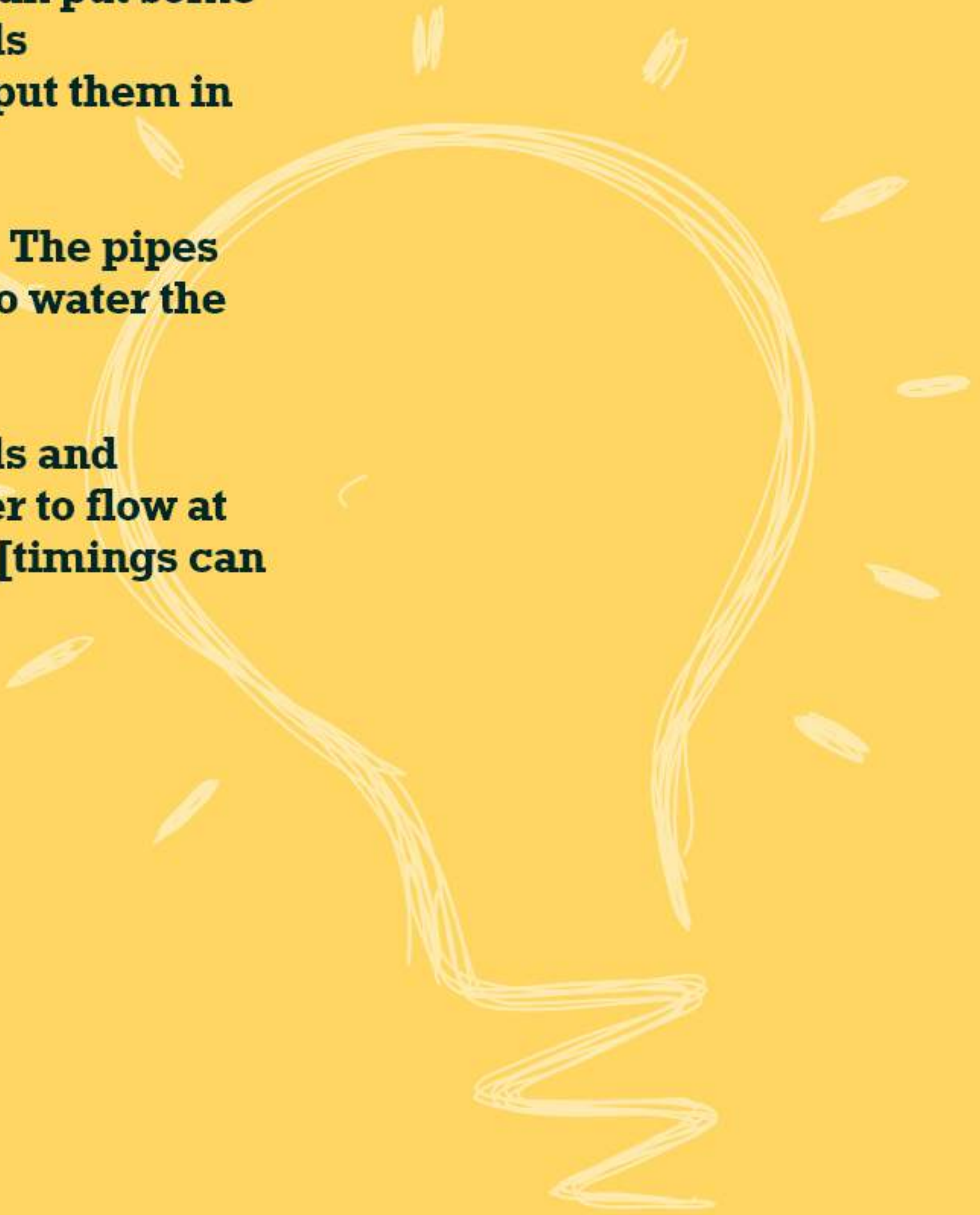
Mostly when it is raining, we can put some holes in the highways and roads which will suck the water and put them in pipes.



There will be a bunch of pipes. The pipes will lead to the farming areas to water the crops.



As per the programing the walls and motors will only allow the water to flow at the particular times of the day [timings can be changed].





Aarav Sekaria
10 yrs


Farming and Forestry




**Tirth Shah**

16 yrs

CO₂ Adsorber

 This CO₂ absorber will adsorb the carbon dioxide using adsorbents (substances that attract particles towards the surface and not absorb them) like activated carbon or pyrogenic carbon which are easily available and cheap.

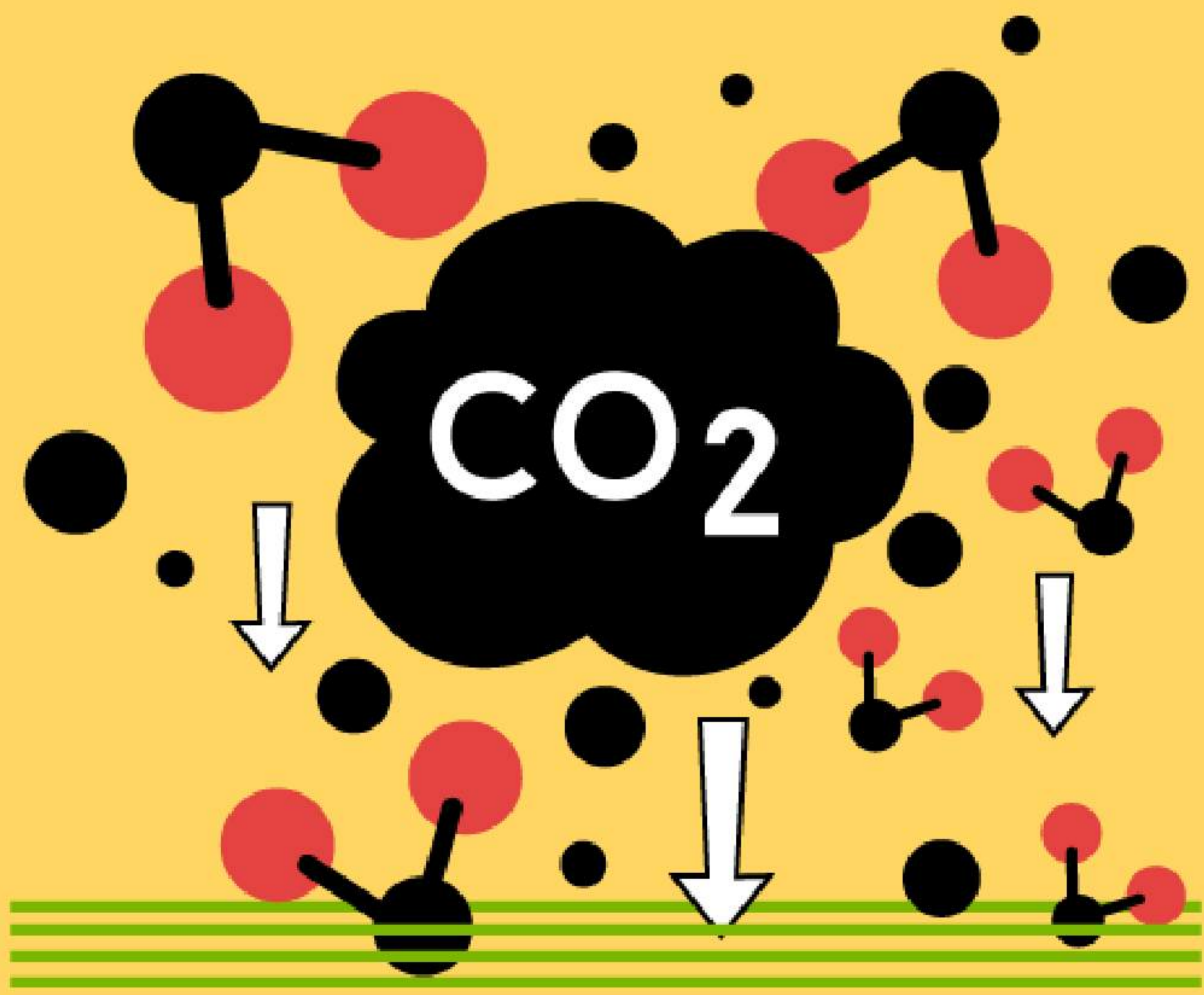
 At present a lot of industries do not use CO₂ scrubbers because of their extremely high cost (which starts from about \$1000). If implemented, this method could help reduce a huge amount of carbon emission.

 The main problem faced here is that the fuel gases degrade the quality of adsorbent for which it becomes necessary to treat them in order to decrease consumption of the adsorbents in this process, but this could be solved by using more efficient adsorbents like carbon nano-fiber.



Tirth Shah
16 yrs

CO₂ Adsorber



**Arya Shah**

14 yrs

Electrical Bicycles



A range of electric bicycles involving three various models. Each model has its own advantages and they target different audiences which influences the design and overall outcome of these three individual e-bicycles.



It uses a motor controller. An addition to the motor controller is an in-built anti-theft system which (as the name suggests) comprises of an intelligent yet extremely simple burglar alarming system.



We can start a rental-based programme for the e-bicycle. Through this programme, potential customers have the option of experimenting with the e-bicycle and checking how comfortable they are with the electric vehicle.



Arya Shah
14 yrs

Electrical Bicycles



**Sarvam Vora**

11 yrs

Paryabot



A solar powered machine which absorbs smoke, separates it into its constituents, soot and water vapour (about more than 90% of smoke is water vapour), and cools the vapour to form water.



The name is 'Paryabot'. It means Environment + Robot.



This will reduce global warming and also help the water crisis. It can be placed beside streetlights on roads or can be fixed to the pipes of vehicles which emit smoke.





Sarvam Vora
11 yrs

Paryabol









Ishan Golwala

13 yrs

Hydrous

-  **Hydrous is a device which can be installed at public places, roads, highways, markets etc., making it easy to use by common people.**
-  **It even uses rainwater harvesting system to save rainwater. The monsoon season is a prolonged period in many parts of India and one can take advantage of Hydrous to the fullest.**
-  **Hydrous basically is a water dispenser which even purifies the water several times before it comes out of the dispenser. It is connected to a huge water tank through many pipes which can contain around 10,000 litres of water.**
-  **The best part about Hydrous is that it dispenses water like a vending machine giving a bag of chips.**



Ishan Golwala
13 yrs





Hydrous



**Param Thakkar**

13 yrs

Environmental Robot - Garbage Management

-  **A robot designed to take all the biotic waste from the given area and decompose it in the soil to improve the fertility of the soil, by adding water and red ants to it.**
-  **The red ants would make the waste a natural fertilizer for the soil and water would act as an increase to the fertility of the soil.**
-  **The robot would be assigned a specific area (of the city) where it would go through IR sensor and would collect the biotic waste.**
-  **The waste that is collected, would be kept in the robot for a few days and then would be buried in the soil around any tree. With depositing the waste, water will be also added near the tree.**



Param Thakkar

13 yrs

Environmental Robot - Garbage Management



**Yug Shah**

12 yrs

Wind Turbine



Umbrella shaped disc wind turbine to produce renewable energy with moderate wind speed.



This design is inspired from the canopy of the umbrella and the sails of the ship. This is based on the insight that immense drag force is produced when the gust of the wind is obstructed by a specific geometry such as the canopy of an open umbrella.



Sail ships are propelled by the huge drag force experienced by the massive sails which are kept at a certain angle with respect to direction of wind flow in order to steer the ship in the desired direction in the down-stream of a wind current.

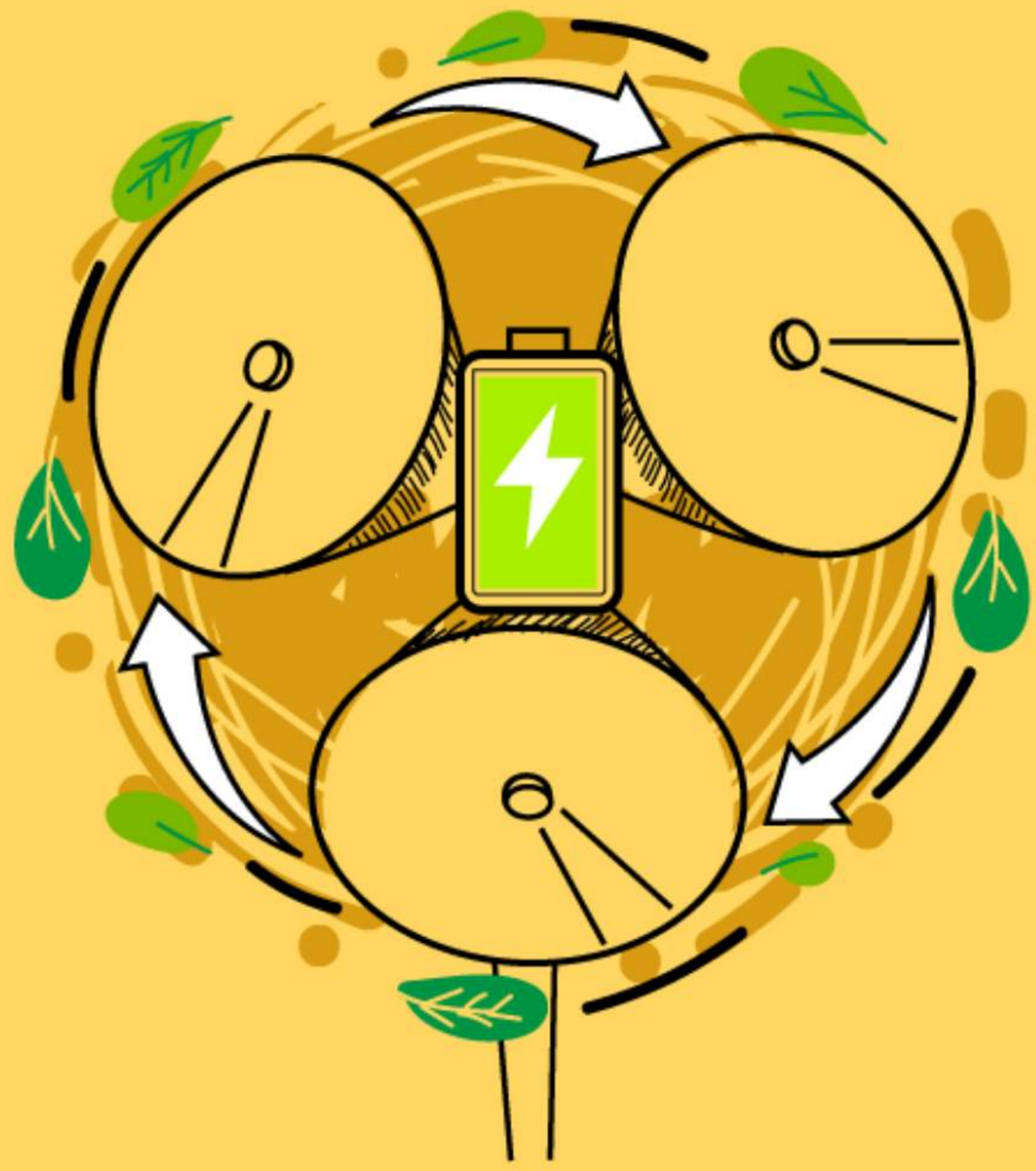


This research of Adaptable Blade Less Disc Wind Turbines aims at curbing various issues which cause the hindrance to the implementation of these power generators. This design requires much less space and can even produce power in very low wind speed conditions.



Yug Shah
12 yrs





Wind Turbine



**Mahir Veera**

12 yrs

Nature's Worker

-  **Creating the best manure for all purposes with cow dung.**
-  **Appoint Cows who cannot give milk for every 35-40 kgs of fresh waste vegetables. They will eat and give cow dung and rest in the shed and enjoy retired life. In around 8 hours, the waste will be converted into 1/4th of the cow dung.**
-  **This fresh cow dung has high quantity of Ethane Fuel. This Cow Dung will be transferred to Bio Digester and we get Methane free Cow Dung.**
-  **This cow dung will be then handed over to EarthWorms. Earthworms eat the cowdung and whatever comes out from the worms is called "WormiCast".**



Mahir Veera
12 yrs

Nature's Worker









Vivaan Patil

11 yrs

Self Help

-  **A food dispenser that accepts plastic instead of money.**
-  **In this bin like dispenser the more plastic you put, the better meal you get. For 250 gms of plastic, the bin dispenses one packet of food. So for a kilogram of plastic, you can have a fulfilling meal.**
-  **With this two problems are solved: littering of plastic and food for the needy.**
-  **One more advantage of this is that the food packets in the dispenser are made by women in need of work.**



Vivaan Patil

11 yrs




Self Help

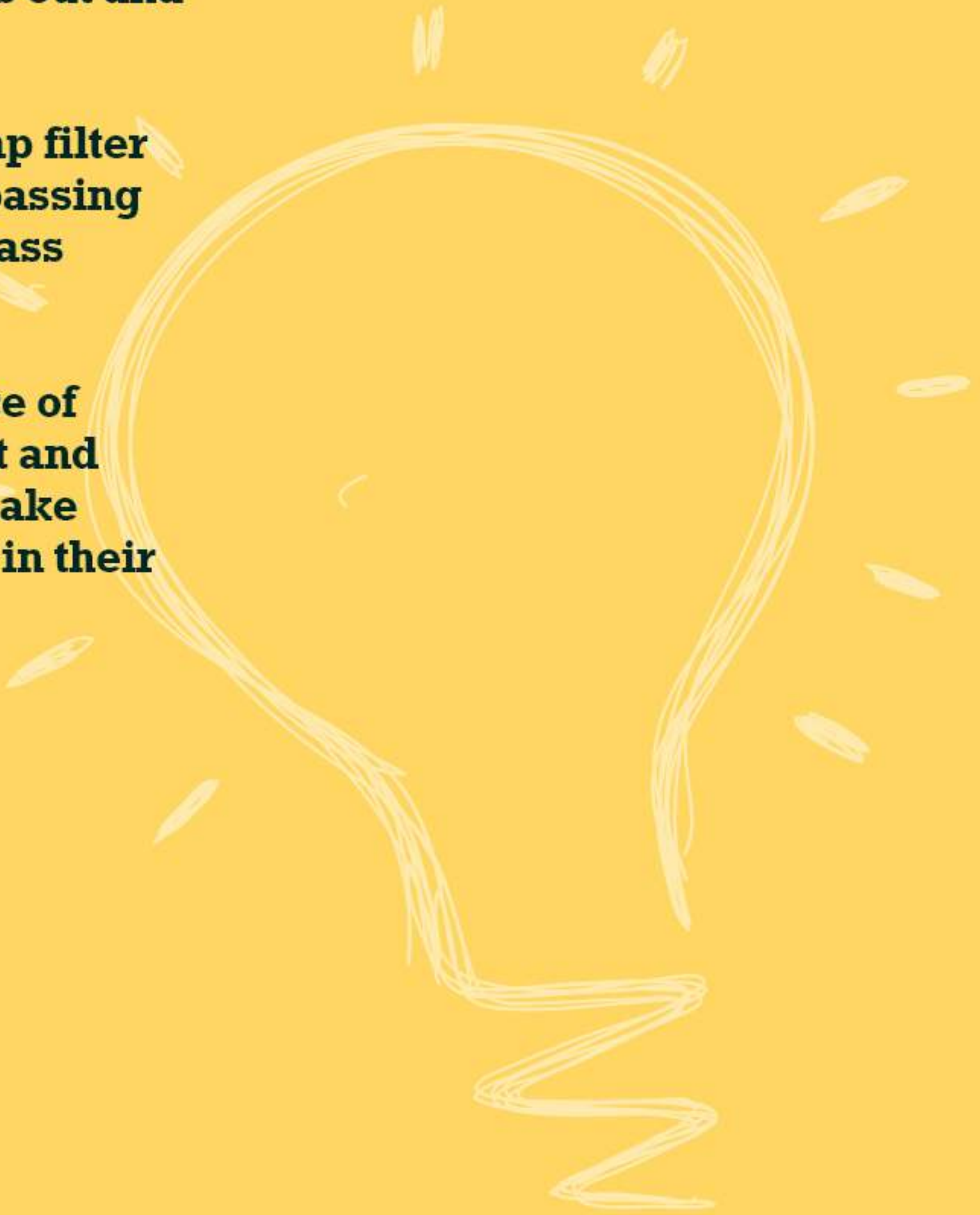


**Saniya Parekh**

15 yrs

Air Sanitizer

-  **A sanitiser for air, Air sanitiser does to air what a hand sanitiser does for your hands. It extracts the pollutants out and leaves behind fresh air.**
-  **It does so with the help of a heap filter that stops the pollutants from passing through letting only fresh air pass through it.**
-  **The sensor detects the presence of polluted air in the environment and sends a signal to the siren to make people aware of the air quality in their surroundings.**





Saniya Parekh
15 yrs

Air Sanitizer








Shanaya Shah

11 yrs

Pollution into Energy

 **A white box that purifies the emission from cars, thus acting as a purifier.**

 **Smoke enters the white box through emission where the area of the hole is reduced to increase pressure.**

 **Through this box the impure air passes where the residue left behind the filter is stored, and what comes out is purified air filtered by the white box.**





Shanaya Shah
11 yrs

Pollution into Energy

