COMED KARES
INNOVATION HUB

INNOVATION & DESIGN THINKING
COURSE OUTCOMES

JP NAGAR

MAY 2023

Innovation & Design Thinking Course

The course revolves around a hands-on approach, incorporating engaging challenges into the curriculum to make learning enjoyable in every class session. Students are encouraged to experiment with various hand tools available in the makerspace, equipping them with the confidence and skill to construct a multitude of prototypes. Throughout the program, students are inspired to unleash their creativity and envision innovative solutions to real-world problems.

Overall program Rating	9.46/10
Attendance	75.52%
Student Enrolled	132

Highlights of Batch 1 @ JP Innovation Hub

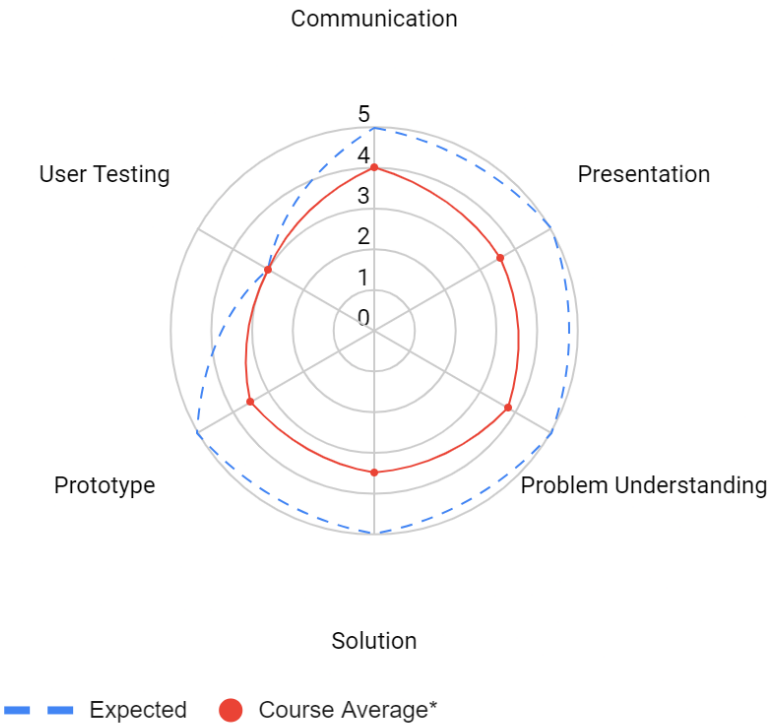
This program saw the participation of 132 students from T John institute. The students partook in the program for a duration of 3 months and came up with prototypes addressing various design challenges.

14 prototypes built for the final design challenge solving real world problems

24.84% increase in knowledge levels and performance of students in course milestones

Post Program Findings of our Courses

Innovation & Design Thinking Courses Assessment Report of Batch 1



The batch 1 of JP Innovation Centre in Bangalore, have resulted in a **significant increase in knowledge levels (0.77 points avg across all topics) self-reported by students.** Based on the course outcomes a total of 6 areas were assessed in program milestones where students presented their progress in the design challenge.

What our students had to say

1. *"Understood and first time built something as an engineering student"*

2. *"Even if I am from CSE branch how much the power tools are important and how to use these things were clearly taught by the faculties"*

Grindstone and electric grinder

T. John Institute of Technology and 2nd Sem

PROBLEM STATEMENT	TEAM MEMBERS
How efficiently can we use energy	Meghana gowda Krishna Vamshi Madesh S Manoj Kumar Mahesh

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INTRODUCTION

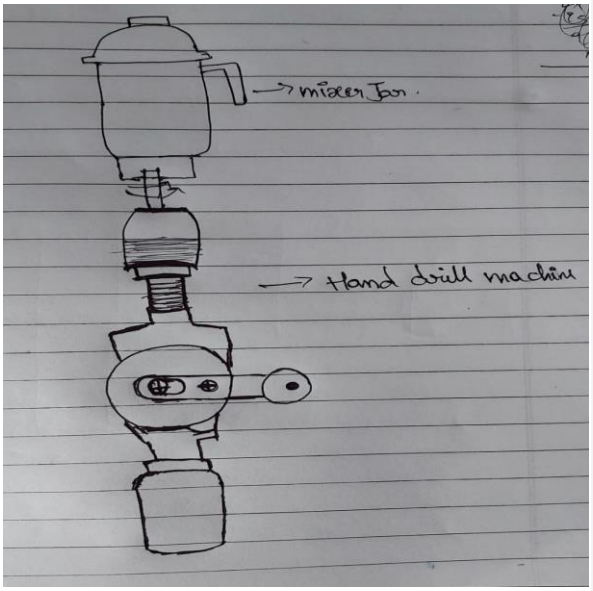
In the serene landscapes of rural areas, where the tranquillity of nature meets the resilience of human spirit, a fundamental challenge persists - the limited supply of electricity. This scarcity casts a shadow on the aspirations of the community, particularly in the context of daily sustenance. In these regions, a significant portion of the daily routine revolves around the essential task of grinding grains and food items. However, the absence of a reliable power source hampers the ability of the people to access basic necessities, leading to concerns of food security and livelihood.

Traditionally, the grinding process has been performed using manual labour, often relying on the laborious technique of grindstones. While these traditional methods connect communities with their heritage, they also present a paradox.

In response to this challenge, we embarked on a journey of innovation and ingenuity. We envisioned a solution that would harness the boundless energy of human endeavor and channel it into a transformative force. Our prototype stands as a testament to the harmonious coexistence of human potential and technological advancement. By

ingeniously integrating a cycle pedal mechanism, we have engineered a sustainable and self-reliant solution. This innovation empowers individuals in rural areas to grind essential food items with the sheer force of their own energy and determination.

Through this pioneering prototype, we aspire to usher in a new era of empowerment for rural communities. By offering a dependable and efficient means of grinding, we aim to liberate individuals from the constraints of time and labor. This liberation, we believe, will not only elevate their access to sustenance but also unlock newfound opportunities for growth, education, and prosperity.



IDEA GENERATION

As people in rural areas lack supply of electricity, they are unable to grind essential daily wages for food.

Even after having grindstone, this takes a lot of time to grind the wages

To overcome this problem we have built a prototype using cycle pedal, which use human energy to grind the things.

Piezoelectric transducer

T JOHN INSTITUTE OF TECHNOLOGY / SECOND SEM

PROBLEM STATEMENT

Wastage of kinetic energy and static/mechanical energy from moving vehicles and pedestrians and paying electricity bills

TEAM MEMBERS

MANASA.R

GANGOTRI

NANDANA ANAND

KISHAN GOWDA s

KAVYA SHREE P

KAVYA NK

INTRODUCTION

To build a smart road that can generates energy from weight , motion

Vibration.

The system can be configured to generate and store energy from roads , airport runways at the same time as delivering real-time data on the weight , frequency and spacing between passing vehicles . The harvested energy can be transferred back to the grid , or used for specific public infrastructure purposes such as lighting and widespread use of the system would enable far greater scrutiny and hence understanding of the behaviour of road vehicles.

IDEA GENERATION

To create a smart road .This means that parasitic energy of busy roads and runways near population centres can be converted into electrical energy that can run public lighting , or fed back into the grid.

WORK TO ENERGY

T JOHN INSTITUTE OF TECHNOLOGY / SECOND SEM

PROBLEM STATEMENT

When there is power cut in the home, it is not possible to charge the phones when in the case of urgency

.

TEAM MEMBERS

Shreya K Prabhu
Yugitha B
Arti Kumari
Anurag Singh

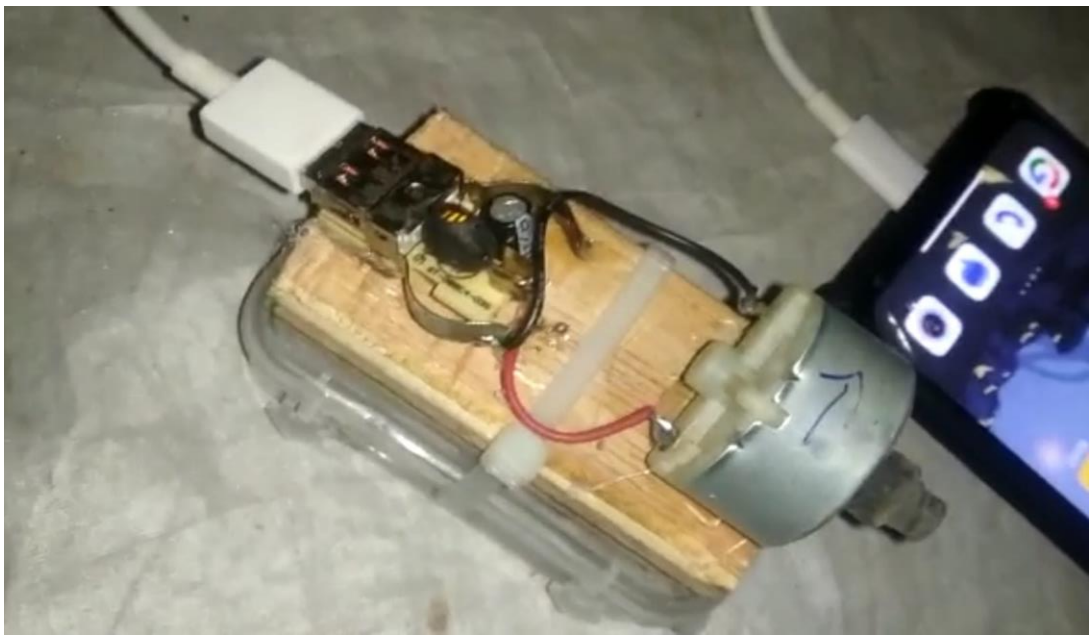
INTRODUCTION

Generating electricity from bicycles which can be able to charge up our phones.

IDEA GENERATION

The material and the required components which were required to make this prototype were - DC Motor, USB cable, red and black wires, car charger which already included the components diode, transistor, capacitor, and LED bulb for indication.
What we did was connecting DC motors to these car charger components and then connected a USB cable at the other end. At the side of the DC motor we connected a plastic rubber tire which get in contact with the cycle rim.
Once this prototype was finished we connected the phone to a USB charging cable and checked whether our phones were getting charged. The faster we pedal the cycle, the faster the phone gets connected and phones will start charging. The power output totally depends on how fast we pedal our cycles.

PROTOTYPE IMAGES



Generating electricity from fan

T JOHN INSTITUTE OF TECHNOLOGY / SECOND SEM

PROBLEM STATEMENT	TEAM MEMBERS
Energy is not being utilised properly. .	Devan S V.Tharun Kumar Sinchana R

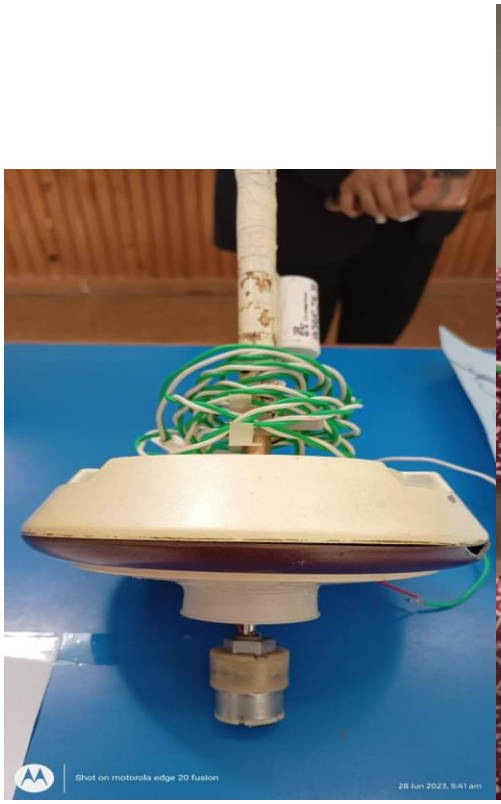
Varsha V S
Naina Tanvi Ali

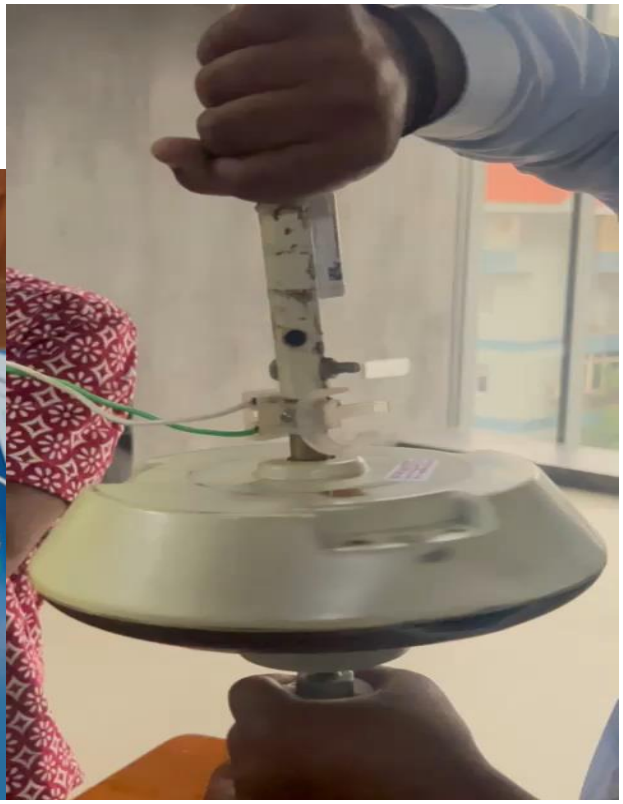
INTRODUCTION

We are working on a problem solving statement called work to energy and v have chosen the topic “ generating electricity from fan”. The energy is produced from the rotation or turning effect of the fan . This is a simple circuit which contains DC motor of 200 rpm so called gear up motors. Which is basically used for generating power.

We have attached gear up motor to the base of the fan, when the fan starts rotating the motor is withheld at a stable moment only the turbine starts turning inside. As soon as the turbine starts turning we can observe the variation in multimeter. This demo piece or model can produce up to 16V. This is just a prototype, we are still working on it to make it use efficiently and widely

PROTOTYPE IMAGES





Electricity through door movement

T JOHN INSTITUTE OF TECHNOLOGY / SECOND SEM

PROBLEM STATEMENT

This prototype addresses the issue of wastage in traditional door by capturing and converting it into usable electrical energy, promoting energy conservation and sustainability

.

TEAM MEMBERS

Cheran raj

HEMANTH N

MOHIT RAMESH

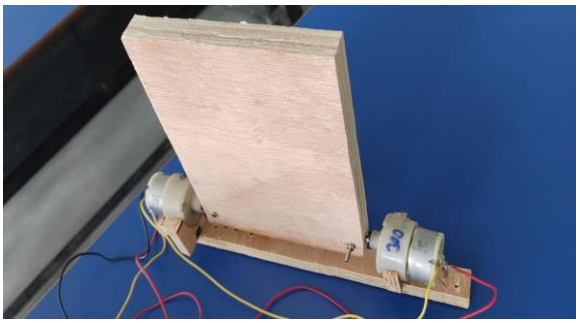
INTRODUCTION

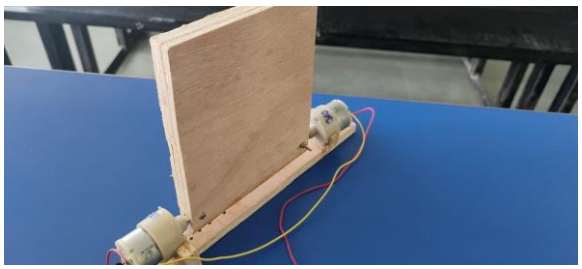
The problem of energy wastage in traditional doors occurs whenever and wherever doors are opened or closed, such as in homes, offices, public buildings, and various other settings.Users complain about the inefficiency of existing door systems, leading to wasted energy and higher costs, as well as the absence of energy capture and conversion mechanisms, impacting sustainability..

IDEA GENERATION

we can generate electricity through the mechanism of door (push and pull) , we can implement this concept in industries, airport, parks and residential areas

PROTOTYPE IMAGES





SMART AUTOMATIC DUSTBINS

T. John Institute of Technology and 2nd Sem

PROBLEM STATEMENT

Self-segregation of waste is mandatory, where the people are dumpling the wastes without segregating them separately.

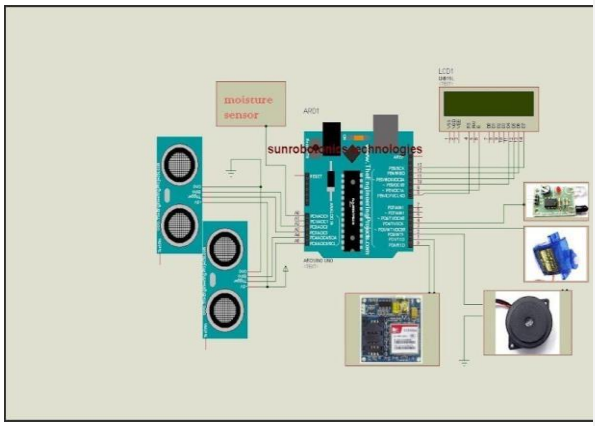
TEAM MEMBERS

Satiya Kumar
Abel Joshy
Muhammed Rabeeh
Lavanya KM
Blessy A Ani

INTRODUCTION

In today's world, waste management has become a critical challenge due to the increasing amount of waste generated by human activities. The improper disposal and mixing of different types of waste can lead to environmental pollution, health hazards, and resource wastage. Traditional waste segregation methods often rely on manual sorting, which is time-consuming, labour-intensive, and prone to errors. To address these issues, we have designed a revolutionary solution - an automatic waste segregation system that utilises advanced technology to efficiently categorise waste into dry and wet components.

Our innovative product leverages cutting-edge components such as the ARDUINO UNO microcontroller, ULTRASONIC SENSOR, LCD 16X2 display, BUZZER, and WIFI esp-01 module. By integrating these components, we have successfully developed a smart dustbin that not only streamlines waste management processes but also offers a cost-effective and sustainable solution.



IDEA GENERATION

Considering the hazards caused by the normal or the common ways of waste segregation an automatic waste segregation is designed to overcome this.

We designed a product which can segregate waste as dry and wet waste.

In our product we have used, ARDUINO UNO, ULTRASONIC SENSOR LCD 16X2, BUZZER, WIFI esp-01, ARDUINO CABLE

By using these components it is easy to produce a smart dustbin at a low cost.

List of tools / Softwares used:

1.ARDUINO IDE

2.ARDUINO UNO

3.ULTRASONIC SENSORS

4.WIFI esp-01

Biodegradable plastics

T JOHN INSTITUTE OF TECHNOLOGY / SECOND SEM

PROBLEM STATEMENT	TEAM MEMBERS
Improved problem of solid food packaging .	Naveen Kumar S Nikhil Nambiar P Samyuktha Mohammed Sameer Pavan Gowda S

INTRODUCTION

Reduction of plastic food packaging Using Corn starch this biodegradable package is made

IDEA GENERATION

Brown paper bags- These can be used for sandwich wraps and other dry foods. You can decorate the bags to make them more appealing and to add a personal touch.

Aluminium foil- This can used to wrap the foods that need to keep the food warm. It is also used for wrapping baked food.

bio silicone bags – These can be used to store sandwiches, snacks, and other foods. They are easy to clean, and can be used over and over again.

Power Generation by Walking

T John Institute of Technology/ 1st SEM/

PROBLEM STATEMENT

How might we help the average citizen or common man to obtain a self reliant and incessant source of electricity, from energy sources reliant on multiple external sources and have a self reliant energy source based on mere human exercise.

TEAM MEMBERS

Abhay Kumar Divedi
BomikBhoa BG
Chandrika R
Anusha N
Hemanth SSR

INTRODUCTION

Due to lack of alternate, independent and eco-friendly sources to generate electricity a large number of people residing in the rural areas have to suffer from unprecedented power outages and loss of productivity. The conventional methods of power generation are capital

intensive and require huge maintenance costs. Even the Solar and water based energy harvesting systems usually are inefficient to tackle this issue. Our proposal is to build a system that utilises man-power that is generally wasted to produce electricity. This will be a more efficient and localised way to tackle a problem of this scale.

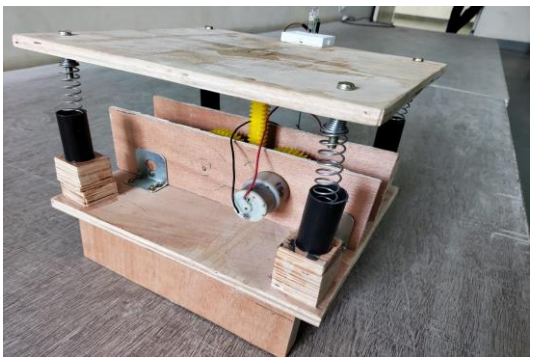
IDEA GENERATION

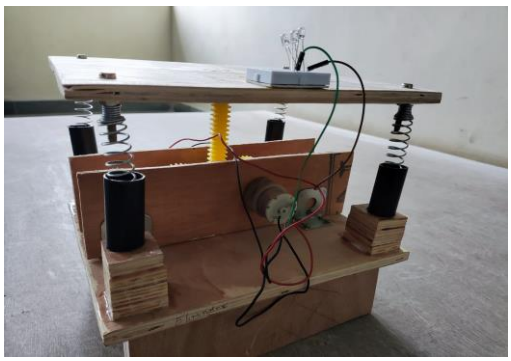
These are tiles that will be embedded into the floor of a walkway or a section of the flooring where many people have a common pathway through.

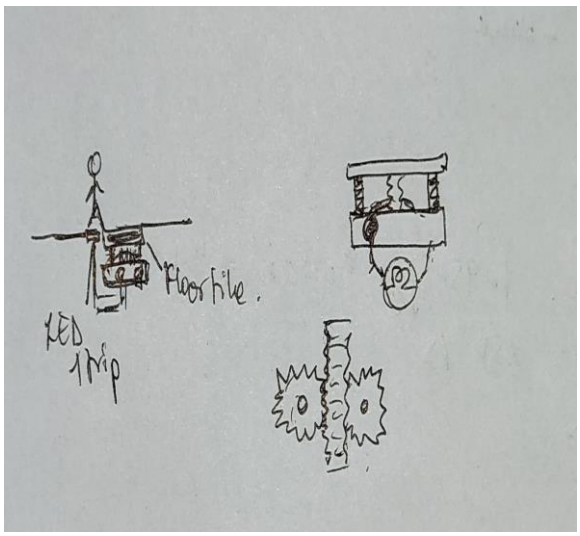
Stepping on tiles makes them generate electricity, which can be stored in capacitors or batteries for later use.

These can be configured for immediate usage as well to generate energy for illumination purposes.

PROTOTYPE IMAGES







Green step: Harvesting Energy From Footsteps

T John Institute of Technology/ 1st SEM/

PROBLEM STATEMENT

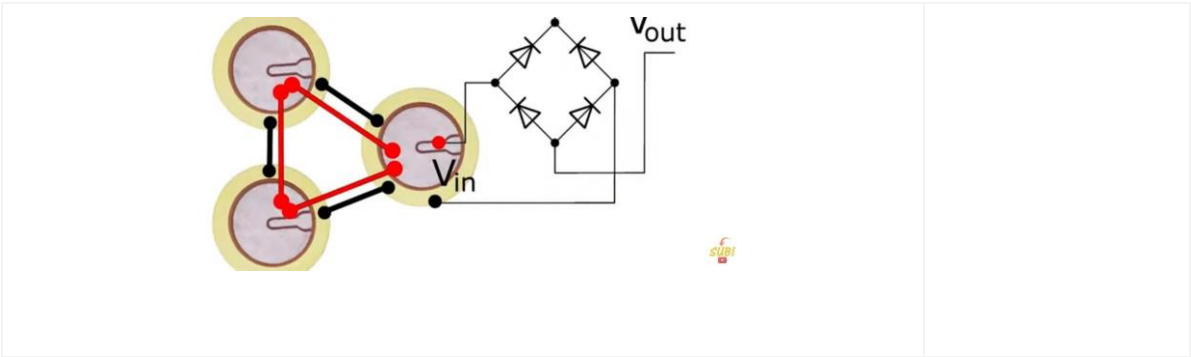
Developing Sustainable and Affordable Solutions to Provide Reliable Electrical Energy Access to Underserved and Remote Communities: Addressing the Energy Gap and Empowering Socioeconomic Development.

TEAM MEMBERS

Saniya Khanum
Ashwin
Syeda AnsharaSana
Mahaprasad

INTRODUCTION

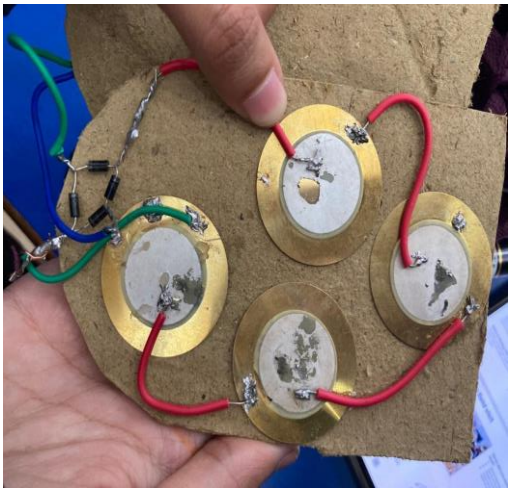
In an era marked by technological advancement and global interconnectedness, access to electrical energy has become a fundamental catalyst for social progress, economic development, and improved quality of life. However, a significant portion of the world's population continues to grapple with the challenge of obtaining reliable and affordable electrical energy, especially in underserved and remote communities. This glaring energy gap not only hinders the potential for socioeconomic growth but also exacerbates disparities in education, healthcare, and overall well-being. The problem at hand calls for innovative and sustainable solutions that can transcend geographical barriers and financial limitations, empowering communities with the transformative power of electricity. By bridging this energy gap, we have the opportunity to unlock new avenues for human advancement, enabling access to information, enhancing productivity, and fostering local entrepreneurship.



IDEA GENERATION

After conducting research, they proposed a solution to develop an efficient and user-friendly The ingenious concept of harnessing piezoelectric technology to generate electricity through the pressure exerted during walking and running presents an innovative solution to address energy challenges.This approach stands out as an environmentally friendly energy source, aligning with the growing global emphasis on sustainable and green energy alternatives.Remarkably, this technology thrives on its ability to efficiently convert even the slightest pressure into a substantial voltage output, promising an optimal energy generation process.The beauty of this idea lies in its simplicity; the system requires minimal pressure application, making it feasible for people of various ages and physical capabilities to contribute to energy production.The proposed energy generation mechanism taps into a largely untapped resource – human movement – which has the potential to revolutionise energy access in hard-to-reach areas and communities lacking conventional power infrastructure.By detecting and converting small pressure differentials into electricity, this innovative system showcases its adaptability and effectiveness, especially in scenarios where conventional energy sources are limited or absent.The integration of this technology could potentially lead to a paradigm shift in remote regions, offering a decentralised and self-sustaining energy solution that empowers communities and enhances their overall quality of life.

PROTOTYPE IMAGES



Power Generating Treadmill

T John Institute of Technology/ 1st SEM/

PROBLEM STATEMENT

We exert a lot of energy in the gyms to maintain a healthy lifestyle. A lot of energy is exerted by us humans during this process, How might we harness this energy efficiently to make our gyms a self sustained energy units

TEAM MEMBERS

Kushal L M
Ali ismail khan
Mohammed Irfan

INTRODUCTION

With a healthy lifestyle and not enough open spaces for physical activity we see gyms in every corner around us. While we exercise at gyms to keep ourselves fit, in this process we do a lot of work that just goes as waste. We came up with the idea to generate electricity from working out in the gym.

VERTICAL AXIS WIND ENERGY GENERATOR

T John Institute of Technology/ 1st SEM/

PROBLEM STATEMENT

How might we help the people from Inefficient Energy Utilisation Leading to Wastage of Electrical Energy and Limited Sustainability of Existing Solutions..

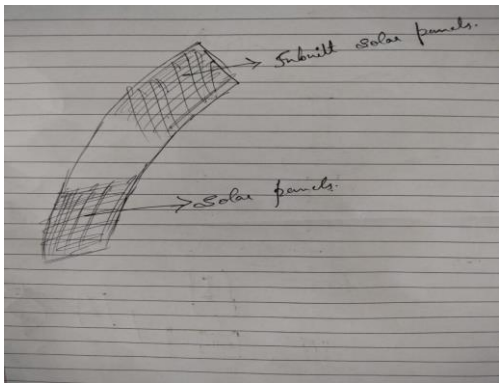
TEAM MEMBERS

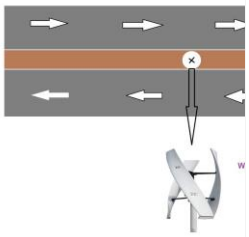
Santhosh
Sankalp Dinesh
Varun GT
Sneha P

Tanusha VR

INTRODUCTION

In the realm of modern infrastructure, highways have emerged as corridors of both connectivity and untapped energy potential. However, a prevailing issue lies in the underutilization of abundant wind energy along these pathways. The brisk currents generated by vehicular movement hold significant kinetic energy, yet much of this valuable resource dissipates without being harnessed. This inefficiency not only represents a missed opportunity for sustainable energy generation but also highlights the need for innovative solutions that can effectively capture and convert this wasted wind energy into a usable and environmentally beneficial form.





IDEA GENERATION

Proposing a visionary solution, we intend to revolutionise energy generation along highways by installing innovative wind turbines on dividers, capitalising on the kinetic energy of passing vehicles' wind currents. Through a groundbreaking design, these turbines will feature fan blades embedded with integrated solar cells, harnessing both wind and solar power simultaneously. This novel approach not only addresses energy wastage but also enhances overall efficiency, potentially outperforming conventional solar panels, especially under varying weather conditions. By seamlessly blending into the highway landscape, this hybrid wind-solar system aims to pave the way for sustainable, visually unobtrusive energy production, marking a significant step towards a greener and more energy-efficient future

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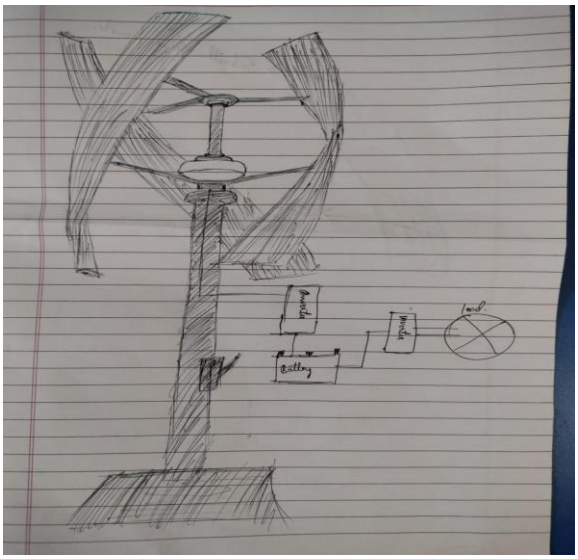
PROTOTYPE IMAGES



Smart Dust-Bin for Waste segregation

T John Institute of Technology/ 1st SEM/

PROBLEM STATEMENT	TEAM MEMBERS
Waste segregation has always been a	DARSHAN M S

challenge to tackle right from the source to its transportation. What methods can we use so as to prevent wet waste being mixed with dry waste.	VAISHNAVI S SAHANA M KATAGERI HARSHITHA C VAMSHI A

INTRODUCTION

People usually dump garbage on streets rather than dumping it in the garbage truck. Garbage starts to produce a foul smell after a certain period of time, and also it forms bacteria which might be the reason for several illnesses. Our society and all living organisms are facing this problem and also the upcoming generation might face this problem if we don't find the solution.

IDEA GENERATION

It is a known fact that segregation of waste is a big challenge, even if segregation happens at the source, it will eventually mix during the process further, so we came up with a device that prevents this from happening.

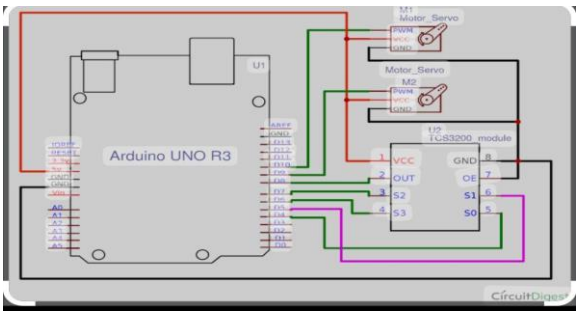
The idea is to have our device installed on the dump-trucks with compartments for dry and wet waste respectively.

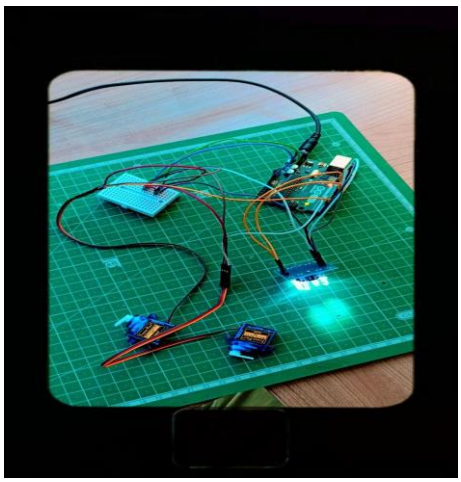
Two dustbins of different colours will be used to store dry and wet waste respectively.

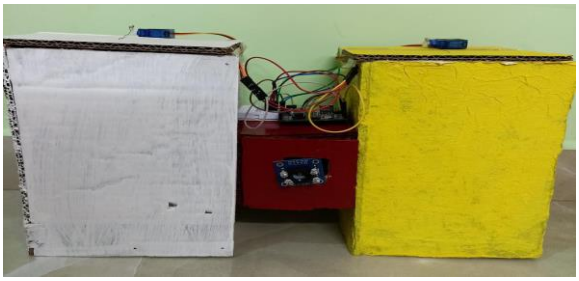
There will be a colour sensor which detects the colour of the bucket and based on the input one of the compartments will open.

This reduces the chance of any stray plastics getting into the dump-trucks also the segregated waste is not combined.

PROTOTYPE IMAGES







Gravity Light

PROBLEM STATEMENT

How might we use alternative sources to generate electricity?

TEAM MEMBERS

MITHUN H G
GOKUL A
PRAKRUTHI C
PRAJWAL J S
RAHUL B

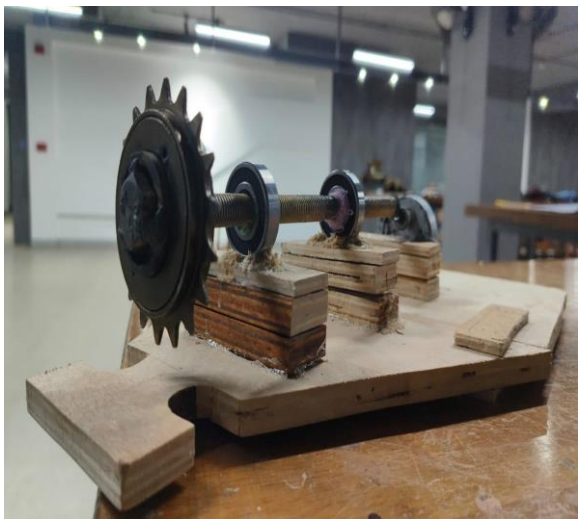
INTRODUCTION

Gravity light is an innovative and sustainable lighting solution that harnesses the power of gravity to generate light. It operates on a simple yet effective principle: as a weight descends due to gravity, it converts potential energy into kinetic energy. This energy is then transferred to a gear mechanism or generator, which drives an electric generator to produce electricity. The generated electricity powers an LED light, providing illumination. To use gravity light,

IDEA GENERATION

The weight is initially lifted to an elevated position, storing potential energy. When the weight is released, it gradually descends under the force of gravity, which drives the energy conversion process. The design of gravity lights is often compact and portable, making them suitable for off-grid areas or locations with limited access to electricity. This innovative approach offers an environmentally friendly and cost-effective lighting solution, particularly in communities where traditional power sources are scarce.

PROTOTYPE IMAGES



Automated Waste Segregation Unit

T John Institute of Technology/ 1st SEM/

PROBLEM STATEMENT

Waste segregation has always been a challenge to tackle right from the source to its transportation. What methods can we use so as

TEAM MEMBERS

NARASIMHA
CHETHAN RAMAPPA HELAVAR
DEEPIKA

to prevent wet waste being mixed with dry waste.	HEMALATHA B Y

INTRODUCTION

The Smart Dust Bin is an innovative waste management system consisting of three separate compartments: wet bin, dry bin, and a special compartment for mixed waste. The smart bin's unique function lies in its ability to process mixed waste effectively. When waste is dumped into the mixed waste compartment, it falls onto a conveyor belt, and a motor moves the belt, allowing the waste to be crushed by a crusher. After crushing, the waste is passed through a water tumb section, where wet waste dissolves in water. Non-dissolvable waste, such as plastics, remains in the tub. The water is then allowed to pass out of the compartment through a water outlet. The remaining solid waste is dried using a drier and subsequently passed to the dry waste bin. This process effectively separates mixed waste, enabling efficient waste management and recycling. The Smart Dust Bin represents a forward-looking approach to waste management, leveraging technology to handle mixed waste more effectively and contribute to a cleaner and more sustainable environment. By segregating waste into its appropriate compartments, this smart bin enhances recycling efforts and minimises the environmental impact of improper waste disposal.

IDEA GENERATION

Smart dust bin consists :

• This bin consists of 3 separate compartments.

• 1-wet bin

• 2-dry bin

• 3-mixed waste bin

• This smart bin special function is that this bin has a

compartment for mixed waste bin

• In this compartment the waste which is dumped into bin will fall on conveyor belt , then with

the help of motor the conveyor belt moves , in this process the mixed waste will be crushed

with the help of a crusher.

• Then it will be passed through the water tumb section ,

• The crushed waste will be passed into the water and the wet waste will dissolve in water.

• The non dissolvable waste like plastics will remain in the tub

• The water is allowed to pass out of the compartment through the water outlet.

• The solid waste will remain in the tub then it is dried using a Drier.

• Then it is passed to the dry waste bin .

• Thus mixed waste is separated .

PROTOTYPE IMAGES

Odour-Neutralizing Toilet Enhancement Project

T JOHN INSTITUTE OF TECHNOLOGY / SECOND SEM

PROBLEM STATEMENT

Developing a Comprehensive Solution to Tackle Persistent Malodor, Hygiene Deficiency, and Inadequate Maintenance in High-Traffic Public Toilets Under Resource and Infrastructure Constraints.

TEAM MEMBERS

Kusumanjali S
Shwetha BS
R Vishnu Das

INTRODUCTION

Public toilets have pungent odour of urine that is hard on olfactory senses as well as lack of hygiene due to improper maintenance which renders them unusable. Presently, exhaust fans, high raised ceilings with ventilating window are used to remove this smells but these ideas are not effective as the toilets are constantly used by a lot of people. Maintenance has been a big issue due to shortage of sanitation workers, improper supply of cleaning materials and lack of infrastructure .

IDEA GENERATION

The team selected the idea of using vinegar and baking soda to neutralise the smell of public toilets. Vinegar is chemically acetic acid and baking soda is sodium bicarbonate. When the two interact a neutralisation reaction occurs between the two , and the brisk effervescence of CO2 acts as a mild scrubbing agent which not only cleans the surface of the toilet but also removes the smell.

In order to address the problem stated, the team came up with the working prototype wherein, charging of general purpose 9V Battery through charging circuit can be charged though available phone charging adapters, through reverse charging capabilities from smartphone or from power bank and charging through independent

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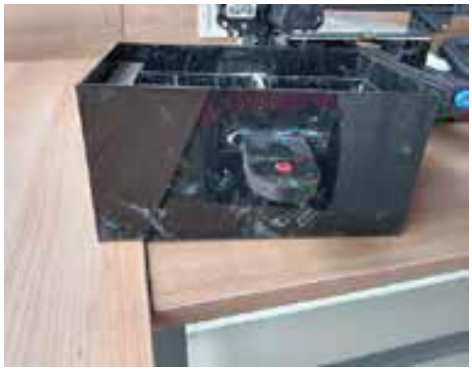
PROTOTYPE IMAGES



Dual-Action Door Drainage

T JOHN INSTITUTE OF TECHNOLOGY / SECOND SEM

PROBLEM STATEMENT	TEAM MEMBERS
Addressing the Issue of Persistent Water Stagnancy and Unhygienic Conditions Caused by Heavy Foot Traffic in Public Toilets, Impacting Cleanliness and Usability	K Manoj Mary Punitha Mahananda

INTRODUCTION

Public toilets often face the issues of poor infrastructure and low maintenance. One of the common problem found in public toilets is water stagnant on the floors.The prevalence of water stagnancy on the floors of public toilets presents a recurring and pressing issue. The constant influx of people in and out of these facilities has exacerbated the challenge, transforming the floors into an ideal breeding environment for unsanitary conditions. The combination of heavy foot traffic and continual use of the toilets results in persistent staining, leaving soiled footprints that mar the cleanliness and hygiene of the space. Addressing this problem is crucial not only for maintaining a presentable environment but also for ensuring the well-being of restroom users

IDEA GENERATION

Since there is need for a quick and easy solution, the team came up with a concept that helps to move the stagnant water while the user enters the washroom. The team thought of fitting some arrangements to the toilet door in such way that when the door is pushed open, the water on the floor is sweeped away.

As the team had planned to install the prototype into the doors, the main challenge was to create a door that would open both inwards and outwards. So we build two the build 2 different mechanisms to push water into the drain hole and tested it in the nearby not required washrooms.

PROTOTYPE IMAGES

Urinal Floor Enhancement for Public Toilets

T JOHN INSTITUTE OF TECHNOLOGY / SECOND SEM

PROBLEM STATEMENT	TEAM MEMBERS
Steep Corners in Traditional Restrooms Impede Efficient Floor Maintenance..	Chirag GP Nithin Maheshwari Navya

INTRODUCTION

Traditional restrooms are designed with steep corners. This makes it very difficult to efficiently clean the floors. Public restrooms have poor restroom door accessories such as handles, handrails, and door locks that lead to wear and tear. Stagnant water in public restrooms can harbour huge amounts of pathogens that can be easily transferred to the users. This is because they are used by many people daily. Poor ventilation is another major problem that users face in public restrooms. Without a constant flow of fresh air,a pungent smell remains.

IDEA GENERATION

To prevent accumulation of water near the urinals, an additional layer of floor will be installed on the actual floor. This additional floor will have pores which drains the stagnant water or anything spilled and thus keeps the floor dry and tidy. The next user will have a neat and hygienic toilet experience.

To implement this idea the team built a prototype using laser cutting by designing using onshape software . Two layers of sheets were attached where the top sheet had pores

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PROTOTYPE IMAGES

Compressed Dustbin for Efficient Waste Management

T JOHN INSTITUTE OF TECHNOLOGY / SECOND SEM

PROBLEM STATEMENT	TEAM MEMBERS
Lack of Adequate Disposal Infrastructure and Maintenance: Persistent Challenges in Public Restrooms, Particularly Affecting Women's Facilities, Leading to Overflowing and Neglected Dustbins, and Burdening Maintenance Workers	Mridula Allen Annapoorneshwari

INTRODUCTION

The common issues in public toilets are that of lack of maintenance and absence of good disposal systems. Even if dustbins are available, they are not cleaned regularly. This problem is more in ladies washrooms. Worker also face the issue of over-stuffed dustbins that require regular disposal and cleaning.

IDEA GENERATION

We developed our idea using the compressing mechanism that employs a rotating structure with two opposite rollers. When the handle is pushed down with the help of opposite rollers, and the waste material are compressed that reduces the size of the waste into half. The advantages is that we can continuously compress and control the compression the garbage volume. The compressing handles are made up of acrylic plastic with rollers which are held together by bolts and nuts and we used plywood for the dustbins.

To build this prototype, the team first checked how much compression can manual push achieve once we Once we were satisfied with the results, we then went into designing different parts of the dustbin using onshape. After the designs were ready, some parts were cut using laser and others were manually built using power tools to reduce time and cost. Then prototype was assembled and tested with different amount of garbages and also different types of garbages to check to what extent it

PROTOTYPE IMAGES

IDEA GENERATION

Our generation is evolving towards fitness. People of all age groups are working out, but the people who workout indoors are more than people who workout next door. Everyone who exercises indoors uses a treadmill. Treadmill works from electricity, but our product does not require any electricity to run, it just uses manpower to rotate the belt while running and due to the rotation, kinetic energy is created in the shaft, and then converted into electrical energy through a DC motor and then the power is stored in a rechargeable batteries and utilised when necessary.

PROTOTYPE IMAGES