



IEEE
IEEE WIE CLIMATE TECH
BIG IDEA PITCH
COMPETITION

To promote the growth of women-led startups in technical fields

Call for proposals:

1 September, 2023
12:00 am EST

New Deadline!!
October 15, 2023
11:59 pm EST

5 Cash Prizes!

Selected finalists will virtually deliver their pitches to the judges panel on
~~18 October 2023!~~
7 November 2023!

With a team, develop a business pitch devised to mitigate one impact of climate change!

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<https://wie.ieee.org/ieee-wie-climate-tech-big-idea-pitch-competition/>

Two Teams participated in the IEEE WiE Big Idea Pitch Competition. The teams were not shortlisted for the next round

Team 1: Emission Controllers

*Rutvik Patil
Prem Singh
Mayuri Kadam
Dibyarupa Pradhan*

Team 2: Piezo Pioneers

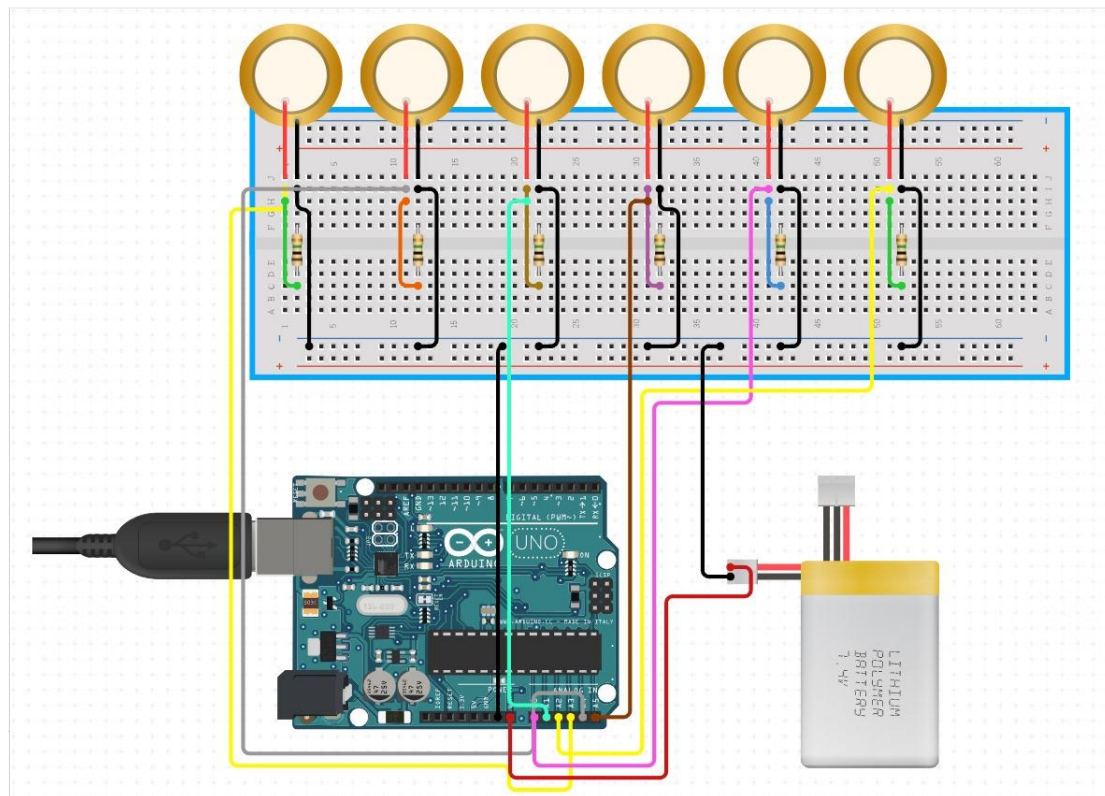
*Aditya Jadhav
Mohd. Raza
Girish Sangare
Zubia Sarang*

Harvesting Tomorrow: A Sustainable Solution to Power Generation and Storage

Problem Statement: In an era defined by the urgent need to combat climate change and reduce our carbon footprint, traditional methods of power generation have become increasingly unsustainable. Fossil fuels, while abundant, are finite and environmentally damaging. The demand for clean, renewable, and self-sufficient energy solutions is at an all-time high. This project seeks to address this challenge by proposing a cutting-edge system that leverages piezoelectric technology to harness energy from everyday mechanical vibrations and footsteps.

Solution: The proposed solution involves using piezoelectric sensors to generate electrical energy from mechanical vibrations in high-traffic areas such as sidewalks,

public transportation stations, and busy buildings. The generated energy will be captured, converted, and stored using an Arduino Uno microcontroller, which will serve as the central control system. The energy storage system will include lithium-ion batteries or supercapacitors, and a comprehensive data monitoring system will track energy generation, consumption, and storage in real-time to optimize energy use and efficiency. The insights gained from this monitoring will enable continuous improvement, ensuring that the system operates at peak performance.



Expected Outcomes:

1. **Clean Energy Generation:** The piezoelectric system will actively contribute to reducing the carbon footprint by generating clean electricity from everyday mechanical vibrations and footsteps. It's a significant step toward a greener future.
2. **Eco-Friendly Solution:** This project focuses on harnessing renewable energy, making it a key player in the journey towards a more sustainable and eco-friendly power generation method.
3. **Self-Sufficiency:** The system's ability to generate and store energy ensures self-sufficiency. It reduces reliance on non-renewable energy sources and makes communities more resilient to power outages.
4. **Climate Change Mitigation:** By decreasing dependence on fossil fuels and other non-renewable energy sources, this project actively combats climate change by reducing greenhouse gas emissions."

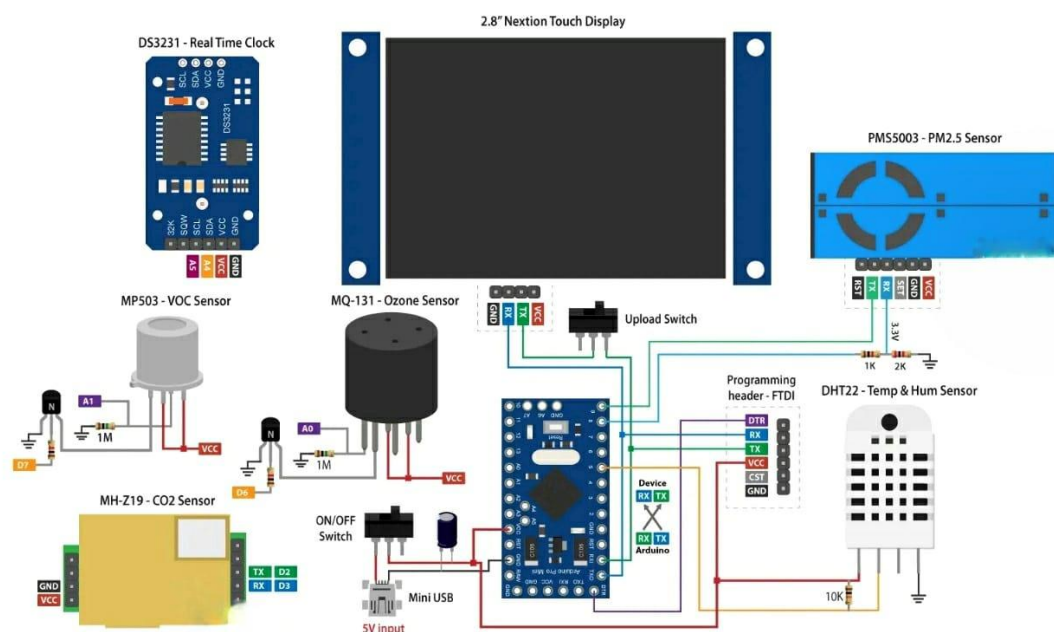
Conclusion: The "Harvesting Tomorrow" project proposal outlines a comprehensive solution to the pressing challenges of climate change and unsustainable power generation. By employing piezoelectric technology, interfacing it with an Arduino

Uno, and implementing efficient energy storage and data monitoring, this project aims to be a game-changer in the energy sector. The project's expected outcomes align with the urgent need for clean, renewable, and eco-friendly power solutions, making it a significant step toward a more sustainable and resilient future.

"Real-Time Emission Tracking and PUC Monitoring System for Vehicles"

Problem Statement: "Current PUC (Pollution Under Control) calculations and compliance verification processes lack efficiency, accuracy, and real-time analysis capabilities. This deficiency leads to potential environmental hazards and discrepancies in emissions data, demanding the development of a more streamlined and reliable method for real-time monitoring and ensuring vehicle emissions adherence."

Solution: The proposed project is an Inbuilt PUC Monitoring System for vehicles that continuously monitors the vehicle's PUC status and presents this information in real-time through a digital display integrated into the vehicle's dashboard. The system detects even minor faults in the vehicle that may have otherwise gone unnoticed, enabling vehicle owners to address and rectify issues promptly, reducing unnecessary emissions, and contributing to a decrease in air pollution. The early fault detection feature also enhances the longevity of vehicles, reducing the frequency of major breakdowns and costly repairs, prolonging the life of the vehicle, and reducing the need for premature vehicle replacements.



Expected Outcomes: The "Inbuilt PUC Monitoring System for Vehicles" project aims to develop a system that provides accurate and real-time data on vehicle emissions, enabling drivers to monitor and control their environmental impact. The project will significantly reduce unnecessary emissions by detecting and addressing minor faults early, contributing to a decrease in air pollution and its associated health hazards. The early fault detection and timely maintenance alerts will help extend the lifespan of vehicles, reducing the need for premature replacements and conserving resources. Improved vehicle maintenance will lead to enhanced fuel efficiency, saving vehicle owners money and reducing the consumption of petrol and diesel. The project will generate valuable data on vehicle emissions and PUC compliance, which can inform policy decisions and regulations related to vehicle emissions and environmental protection. The successful implementation of this project is expected to contribute to a more sustainable and responsible approach to vehicle emissions and maintenance. The "Inbuilt PUC Monitoring System for Vehicles" project is expected to have a significant impact on the transportation sector. The system developed through this project may have commercial potential for manufacturers, leading to business opportunities and job creation. The project can raise public awareness about the impact of vehicle emissions on the environment and the importance of regular vehicle maintenance. Ultimately, the project's outcomes will contribute to a cleaner and healthier environment by promoting responsible vehicle emissions management. Vehicle owners will experience financial savings due to reduced fuel consumption and fewer costly repairs. The project represents a significant innovation in the transportation sector by combining real-time monitoring, emissions reduction, and smart vehicle maintenance.

Conclusion: In conclusion, the "Inbuilt PUC Monitoring System for Vehicles" project is expected to have wide-ranging environmental, economic, and social impacts. It promotes responsible emissions management, encourages cost savings for vehicle owners, and contributes to a cleaner and healthier environment. By empowering drivers with real-time data, it underscores the importance of environmentally conscious driving and responsible vehicle maintenance practices, making it an innovative and impactful solution in today's era of heightened environmental awareness.

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