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Pioneering Carbon Free Sphere Technology for Global Sustainability

Guide: Mr.Vyas.S.N, E&TC dept, SSWP, Solapur.

Sanjana Gauda, E&TC dept, SSWP, Solapur.

Sonal Guntuk, E&TC dept, SSWP, Solapur.

Dakshayani Gutte, E&TC dept, SSWP, Solapur.

Chandana Jakkapalli, E&TC dept, SSWP, Solapur.

Sushmita Madake, E&TC dept, SSWP, Solapur.

Abstract - This project integrates smart road technology with traffic indicators for real-time congestion detection, accident prevention systems, and smart zebra crossings for pedestrian safety. Additionally, a pollution control system captures carbon emissions and converts them into ink powder, reducing environmental impact. In waste management, the system generates electricity from waste, promoting sustainable energy use. This innovation enhances road safety, reduces pollution, and supports a cleaner, more efficient urban environment.

1.INTRODUCTION

This project focuses on developing a smart road system integrated with intelligent traffic management, accident prevention, and advanced waste-to-energy solutions. The smart road features traffic indicators that detect congestion and provide real-time updates to drivers, reducing delays and improving road safety. Accident prevention mechanisms include detection and automated alerts to minimize collisions. Additionally, smart zebra crossings enhance pedestrian safety with sensor-based lighting and real-time traffic control. In waste management, the project incorporates technology to generate electricity from waste, promoting sustainable energy solutions. By combining smart infrastructure with renewable energy, this system aims to create safer, more efficient, and eco-friendly urban environments.

2. BODY OF PAPER

1.Electricity Generation by Waste:

When we burn waste materials , then heating panels convert heat to electricity and Red LED bulb glowing by electricity for showing electricity power ,After that circuit take electricity and give to battery for Battery Charging , And waste materials burning running in burning box , and there is heating sensor and when heating sensor is heated by heating ,Then Heating sensor turn On the LED bulb, (Because Heating sensor work as a on/off switch). After that You can See Full successfully Generating Electricity by Waste Materials.

2.Smart Roads:

In the Smart Roads there are 3 sections namely

1.Traffic indicator

2.Accident Prevention

3.Smart zebra crossing

4. Electricity Generation by wind

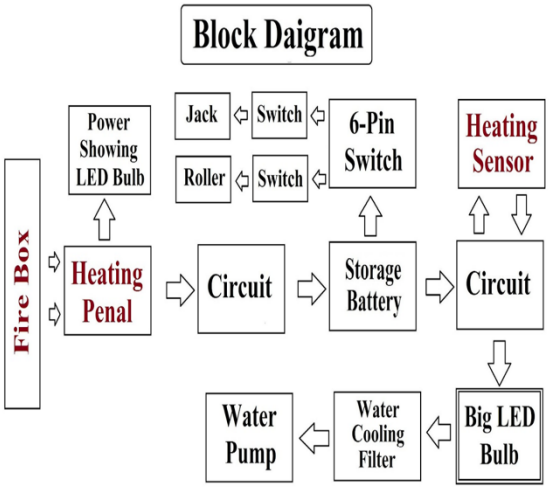
While pedestrians are crossing the road, drivers can stop at that moment. Accidents can happen With the help of a person to move a roadway is more risky, especially for

blind people. Therefore, in order to resolve these issues, we have developed a prototype. By creating smart - Zebra crossings which provides safe passage for pedestrians across busy roads. And also accident prevention road safety by using various sensor detectors.

3.Carbon To Ink Conversion:

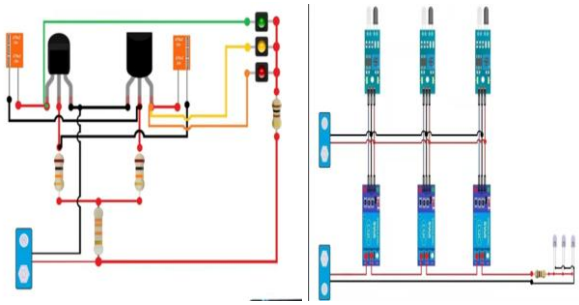
Carbon filtering works by adsorption, in which pollutants in the fluid to be treated are trapped inside the pore structure of a carbon substrate. The substrate is made of many carbon granules, each of which is itself highly porous. As a result, the substrate has a large surface area within which contaminants can be trapped. Activated carbon is typically used in filters, as it has been treated to have a much higher surface area than non -treated carbon.

Electricity Generation by Waste

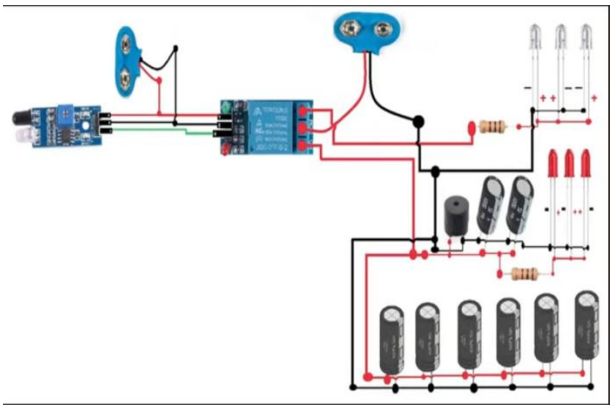


Smart Roads:

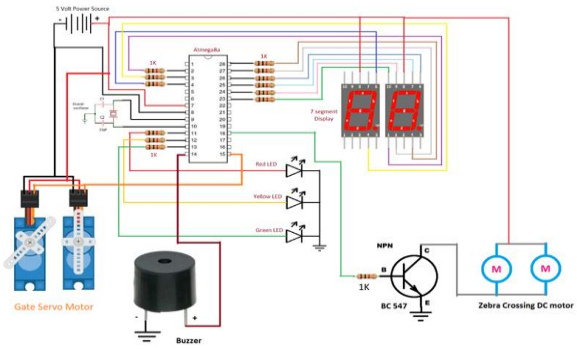
1.Traffic Indicator



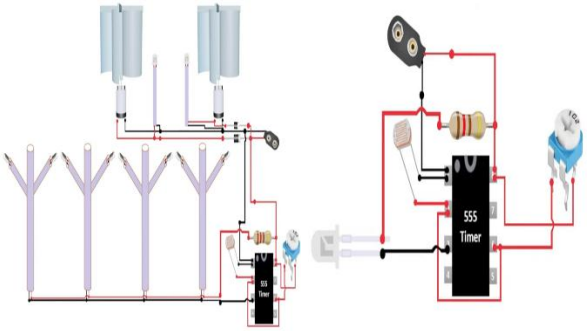
2.Accident Prevention:



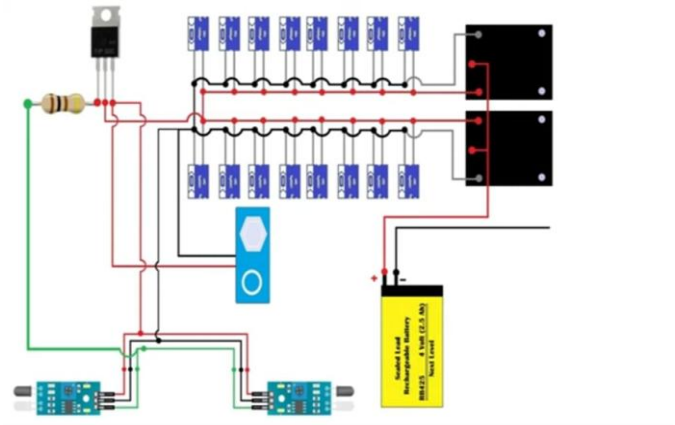
3. Smart Zebra Crossing:



4 Electricity Generation by wind:



3.Carbon To Ink Conversion:



3. CONCLUSIONS

In This Project we show How to Generate Electricity by waste materials is successfully and generated electricity is applied to Smart Roads. .Because of vehicles and burned materials the carbon emission created . So, to reduce this pollution we show in project how to control pollution by Pollution control filter.our Project is best for working and Showing , How to Generate Electricity by Waste materials .

ACKNOWLEDGEMENT

We sincerely express our gratitude to everyone who contributed to the successful completion of this project. We extend our heartfelt thanks to our mentors and guides for their invaluable support and encouragement. We also appreciate the resources and infrastructure provided, which enabled us to develop innovative solutions for smart roads, traffic management, pollution control, and waste-to-energy conversion. Lastly, we acknowledge the efforts of our team members for their dedication and collaboration in making this project a success.

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