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# SEGREGATION OF DE-COMPOSABLE AND NON DECOMPOSABLE WASTE USING CAPACI-TIVE SENSOR

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## ABSTRACT

Rapid increase in volume and types of solid and hazardous waste due to continuous economic growth, urbanization and industrialization, is becoming a burgeoning problem for national and local governments to ensure effective and sustainable management of waste. In India about 60 million tons of waste is being generated every year. Thus we have proposed a cost effective "Waste disposal segregator" for proper management of waste. In the proposed system garbage will be placed into conveyor belt which is used to move waste from one place to another then the capacitive proximity sensor detects the non degradable waste and send a command to servomotor which will push the waste in 90 degree rotation where the embedded c program will be dumped into arduino board for detection of sensor by dielectric constant and servo motor by time delay .this will capably help to segregate non degradable waste which can be used for recycling and reuse.

**KEYWORDS** Arduino, capacitive proximitive sensor, conveyor belt

 

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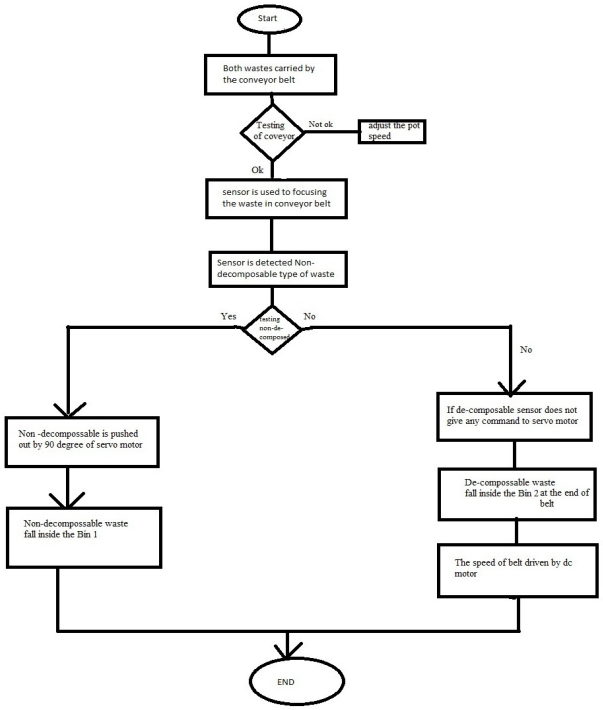
## INTRODUCTION

Segregation of waste is generally done by hand picking method. This method is carried out by the people who generally are unaware of the after-effects of this method and this method is un-controlled but we can avoid hand picking method by our project which is used to segregate the waste which is decomposable and non-decomposable where non-decomposable could be reused or recycled.

Decomposable waste could be used as the soil fertilizer. Even though there are large scale industrial waste segregators present, it is always much better to segregate the waste at the source

Itself. The benefits of doing so are that a higher quality of the material is retained for recycling which means that more value could be recovered from the waste. The occupational hazard for waste workers is reduced.

## METHODOLOGY




Waste coming out from the roller is moved through a conveyer belt and the conveyor belt move with the help of Dc motor where the motor will be programmed by time delay which has got capcitive proximity sensors embedded into it at the right side of conveyor belt where it detect non-decomposable waste by programmed dielectric constant in arduino and when non decomposable waste is detected by capacitive proximity sensor the sensor will command to servo motor and servo motor will push the detected waste in 90 degree rotation to the bin 1 and the waste which is not detected is moved to straight forward to bin 2.

## EXISTING SYSTEM

In the current waste segregation systems are mainly used on the Image signal processing. In this only one waste material is passed to the system which will takes some time to detect the product and gives the final output the main drawback of such systems are there size and time which they take process as ordinary peoples doesn't wait for such long time and drop the waste individually. The cost is another thing that comes in which the bulk production of such systems can't be huddled by small organizations and households. The implementation of such system in a public place is not possible. In order to avoid all these problems we have comes with the new system which is cost effective and place in all public place and have a much more speed response to the inputs given. The new system will provide much easier way of operations so that ordinary persons can use.

## PROPOSED SYSTEM

Previous project is done by using image processing and it took more time to segregate waste and its cost is high**.** In our project we are using conveyor belt and capacitive proximitive sensor and servo motor. This is used to detect de-composable waste and non-decomposable waste in less time. In Our project mixed waste is pushed onto a roller which is rotating and vibrating continuously so as to separate the waste based on mass and size. Waste coming out from roller is made to fall down into a conveyer belt so as to slow down and create a delay for proper sensing. The waste moves further for detection and it moves further with capacitive proximity sensor for detection of non-decomposable waste by programmed dielectric constant in it. With detection of non-decomposable waste, servo motor rotates in 90 degree direction to collect them in bin 1 If not detected de-composable waste will be move straight forward to bin 2.

## OUTPUT OF PROJECT

This project consist of two main components which are conveyor belt and capacitive proximity sensor And the conveyor belt need a dc motor to rotate a belt in forward direction.

Figure4.1

We have written a embedded c program for operating the dc motor and we run the embedded program in proteaus software

got the output successfully With the help of embedded c program we gave circuit connections to operate a dc motor in both forward and reverse directions. The output of dc motor operation is shown in below figure. We finished our conveyor belt construction which is one of the main components of our projects. We bought a capacitive proximity sensor which detects non decomposable waste by programmed dielectric constant in it to detect waste and it detects non decomposable waste approximately and it sends command to servo motor and the servo motor push the non decomposable waste to 90 degree rotation to bin 1 and decomposable waste to bin 2.this automatically segregate decomposable and non decomposable waste itself also the segregate waste could be directly send to recycling

## FUTURE WORK

The wastes collected by our project output will be recycled and can be reused in the future.

## REFERENCES

1. Automatic Metal, Glass and Plastic Waste Sorter Syeda Madiha Samreen1 , Dr. Baswaraj Gadgay2 , Veeresh Pujari3 , Pallavi B.V4
2. Capacitive Sensors: The Future of Waste Segregation 1Vishal V, 2 Sayantan Gangopadhyay