

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 to prevent wet waste being mixed with dry waste.

TEAM MEMBERS

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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



