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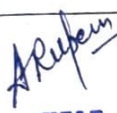
AUTOMATED WASTE SEGREGATION SYSTEM

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Automated Waste Segregation System

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Abstract— Urban regions and metropolises have faced an increase in waste segregation problems owing to the rapid population growth. The accumulation of huge quantities of waste has led to health hazards for workers. Scientific studies show that their life expectancy of them including their offspring decreases. Indian waste is not directly segregated as wet or dry waste. The total solid waste generated in the Palghar district is 613.6 MT/D. This main problem is owed to the waste consisting of all types of materials such as metals, plastic, leftovers, etc. In India, Waste segregation is done manually by workers. The above factors and the living conditions of the workers call for an Automated Waste Segregation System at least in the initial stages of separation on the landfills. The proposed system focuses on an Automated Waste Segregation System using conveyor belt, washing unit and other techniques. It emphasizes hardware in tandem with apposite sensors to reduce incompetence and redundancy. In simple words, the proposed system aims to reduce human intervention involved in waste segregation using effective automation suitable for large-scale waste.

Keywords— Waste Segregation, Conveyor belt, washing unit, Automation, Eddy-current separation.

I. INTRODUCTION

In India, where urbanization, industrialization, and economic growth have led to increased municipal solid waste (MSW) generation per person, waste management

is a major problem for many urban local bodies (ULBs). The littered waste lying around, dumped on open lands, becomes a major breeding ground for bacteria and viruses that cause disease. To minimize environmental and public risks, waste must be segregated, transported, handled, and disposed of appropriately. The spread of diseases in metro cities and urban areas makes waste management and segregation a necessary process. A city with high population density faces a major challenge when it comes to effective WM. Figure 1.1 illustrates how waste management is handled on a manual basis in India.

In an Indian traditional waste management system, the following steps are involved which are health hazardous, time-consuming, and inefficient for waste generated in India.[3]



Figure 1.1: Current Situation of Landfill

The waste is collected from all households and large bins across the city and brought into the landfill.

1. Later the accumulated waste in the landfill is manually taken in small quantities for processing.

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