

ABSTRACT

The rising population of India poses serious threats with regard to the availability of living space, utilization of natural resources and raw materials, education and employment. But another serious peril that follows is the escalating amount of waste generated each minute by an individual. An astounding 0.1 million tonnes of waste is generated each day in our country. Sadly, only 5% of this colossal amount of waste is recycled. In India, the collection, transportation and disposal of MSW are unscientific and chaotic. Uncontrolled dumping of waste on outskirts of towns and cities has created overflowing landfills which are not only impossible to reclaim because of the haphazard manner of dumping but also has serious environmental implication in terms of ground water pollution and contribution to Global warming^[1].

One possible solution for this problem could be segregating the waste at the disposal level itself. Currently such a waste sorting system is present in European countries. Waste is collected and sorted at factories using expensive near infrared cameras. In other countries including India, waste is separated manually. This has found to reduce the average life span of the manual segregators. In 2012, the Bruhat Bangalore Mahanagara Palike (BBMP) formulated a rule that made waste segregation compulsory in all homes. Sadly, a very small percentage only does the waste separation. Developing a mechanized system to help save the lives of many and making the world a cleaner and a greener place is the noble objective of our project. We have thus proposed an automatic waste segregator that aims at segregating the waste one at a time at the disposal level itself. It is designed to sort the waste into 3 major categories, namely metallic, wet and dry. An 8051 microcontroller forms the heart of the system. Inductive proximity sensor is used to detect if the waste is a metal. Wet and dry waste can be distinguished based on their weight. A high speed blower system is used to blow dry waste off the belt while most of the wet waste remains. It then falls off as the belt rotates and is collected later. This cost effective system is particularly suitable for installation in apartments and colonies. It is now time to give back to Mother Nature. Therefore to set the ball rolling, we have proposed this project to give back to our nation, making our India a 'Swachh Bharath'.