

FABRICATION OF WASTE SAPERATION USING SMART DUSTBIN

OBJECTIVE:

In recent times, garbage disposal has become a huge cause for concern in the world. A voluminous amount of waste that is generated is disposed by means which have an adverse effect on the environment. The common method of disposal of the waste is by unplanned and uncontrolled open dumping at the landfill sites. This method is injurious to human health, plant and animal life. This harmful method of waste disposal can generate liquid leachate which contaminate surface and ground waters can harbor disease vectors which spread harmful diseases and can degrade aesthetic value of the natural environment and it is an unavailing use of land resources. In India, rag pickers play an important role in the recycling of urban solid waste. Rag pickers and conservancy staff have higher morbidity due to infections of skin, respiratory, gastrointestinal tract and multisystem allergic disorders, in addition to a high prevalence of bites of rodents, dogs and other vermin. Dependency on the rag-pickers can be diminished if segregation takes place at the source of municipal waste generation. The economic value of the waste generated is not realized unless it is recycled completely. Several advancements in technology has also allowed the refuse to be processed into useful entities such as Waste to Energy, where the waste can be used to generate synthetic gas (syngas) made up of carbon monoxide and hydrogen. When the waste is segregated into basic streams such as wet, dry and metallic, the waste has a higher potential of recovery, and consequently, recycled and reused. The wet waste fraction is often converted either into compost or methane-gas or both. Compost can replace demand for chemical fertilizers, and biogas can be used as a source of energy. The metallic waste could be reused or recycled. 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

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means that more value could be recovered from the waste.

ADVANTAGES:

- Agricultural
- power generation using plastic
- bio gas generation

THE FOLLOWING ARE THE APPLICATIONS OF SMART DUSTBIN AT VARIOUS PLACES:

- 7 Shopping malls:
- 2 Public places
- Offices
- Reduction of waste at source.
- Reuse of material wherever possible.
- Recycling.
- Purchasing products with recycled content.

Usually, waste from almost all offices/companies will be dry, wet, or metallic waste. Our Smart Dustbin best suits this application

DISADVANTAGES:

- **Mixed waste cannot be separated:**

Using our Smart dustbin mixed waste cannot be separated.

- **Cannot be used for large waste:**

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Our smart dustbin cannot be use for large size waste. It is basically for separating waste at root source so, it is not designed for huge size waste.

CONCLUSION:

Waste Segregation using smart dustbin has been successfully implemented for the segregation of waste into metallic, dry and wet waste at root source. One of several environmental problems is bad waste management practices which can result in land and air pollution and can cause respiratory problems and other adverse health effects as contaminants are absorbed from the lungs into other parts of the body. The method presented provides a fruitful way to come out of this problem by making entire system automated. The components used in smart dustbin are economical, environmental friendly and gives accurate results for separating three different types of wastes which are generally produced at places like shopping malls, offices, houses, schools/colleges etc. Presently there is no device/product available for segregation of waste at root source other than manual separation probably the biggest advantage of smart dustbin is the safety it provides. This device carefully separates all three types of waste and not only increases the economic value of waste but also gives a healthy and beautiful environment at lesser cost.

Segregating waste manually is not accurate and many of us don't like to do that. Due to open dumping of solid waste, it emits bad smell due to presence of dead animal waste and biodegradable components. Rodents and dogs are feeding on such dumping place and they may bite peoples present in those areas. Such dumping sites are spoiling environment of nearby villages surrounding the dumping site.

FUTURE SCOPE:

Smart dustbin can segregate only three types of wastes. In future improvement can be done to segregate more number of wastes like plastic, glass, toxic waste, separation of different metals. This can be improved to segregate mix waste dumped at a time using different high accurate sensors and other technologies and segregation of mix waste can also be achieved by using a servo motor to give jerks to conveyor belt so that mix waste gets separated. Size of smart dustbin can be made compact using different technologies and different methodologies. Some additional feature can be added like generating power or biogas generation at root source itself.