

# **PARK COLLEGE OF ENGINEERING AND TECHNOLOGY**

Kaniyur, Coimbatore- 641659

## **SMART WASTE MANAGEMENT SYSTEM Literature Survey**

Team Members:

- Prawin KR (712219205027)
- Ari Hara Sundar M (712219205004)
- Nithish P (712219205025)
- Saran R(712219205033)
- Soundarraaj K (712219205035)

## **1. Smart City Waste Management through ICT and IOT driven**

**Authors:** Dipak.G , P.S.Aithal

**Published Month & Year:** May 6, 2021

### **Project Description:**

The growing population and mass relocation of citizens from urban and semi-urban areas to Smart Cities have resulted in exponential growth in Smart Cities and thereby certain challenges. One of the major challenges Smart Cities are facing is to control, manage and process waste generation on a daily basis. Waste collection and processing at a wider scale is not an easy job. The growing population and resource constraints in waste management activities are the primary reasons, which have made waste management a tough job. To deal with this challenging process, Smart Cities use Smart Waste Management System. (iSmartWMS).

### **GAPS**

The model only accounts for waste management in smart cities which is highly populated and accounts to waste production.

It should also be used in urban and rural areas. Since waste management is not a problem only in smart cities. Finding a proper balance by which both rural and smart cities use iSmartWMS is essential in controlling waste management overall.

## **2. Household Waste Management System Using IoT**

**Authors :** Pushpa Singh , Krishna Kant Singh

**Published Year & Month:** 16 April 2020

### **Project Description:**

This model discusses the collection and decomposition of waste in the smart way so that benefit from the waste is maximized and the actual waste is minimized efficiently. This paper focus on the segregation of the waste at two levels: the first level of segregation is on the individual house of the society and the second level of segregation is at the society. Author, discuss the recycling of the biodegradable waste for making compost.

The machine learning technique such as KNN is used to generate an alert message for various combinations of three sensor values like level of bio and non-biodegradable waste, concentration of poisonous gas. The overall impact of this research is in the upliftment of the green technologies by reducing pollutants, conserving, resourcing and reusing the energy through the use of technology.

### **GAPS**

The model basic premise is recycling of biodegradable waste for producing compost.

Recycling process are always unhygienic, unsafe and unhygienic, the whole recycling process poses health risks for individuals responsible for recycling these waste products

Also, if such waste products come into contact with water, it results in polluting the water bodies.

Instead of all of this we can use anaerobic digestion for decomposition, anaerobic digestion is more suitable for wet waste and sludges that degrade easily.

### **3. Smart Waste Collection System**

**Authors:** Javed Ramzan; Muhammad Wasif Nisar

**Published Month & Year:** 10 June 2018

#### **Project Description**

This project named smart waste collection is need of today as there is no efficient waste collection system installed in the earth these days this system is to revolve the waste collection method of the advancing technological 21st century. This system is supported by an android app named “SWC” and firebase real-time data for more efficient user-friendly usage. where’s cloud storage also makes it easier for storage of collection records providing the authorized origination to control manage and audit performance data. To compare several collectors, their configurations, and program behavior, we use an accurate simulator that models all heap objects and the pointers among them, but does not model cache or other memory effects. For object-oriented languages, our results demonstrate that an older-first collector, which collects older objects before the youngest ones, copies on average much less data than generational collectors. More importantly, we reopen for consideration the question where in the heap and with which policies copying collectors will achieve their best performance.

#### **GAPS**

This model is supported by an android app which already makes it less available for the regular people.

By making it available across all platforms like iOS, Linux, etc. or making an website it can be used widespread with not having to download a separate application and creating an account and doing all those stuff can be avoided easily.

## **4. Smart Garbage Management System**

**Author:** Akshat Mishra, Sushmit Mehta, Vivek Solvande

**Published Month & Year :**05 January 2018

### **Project Description:**

The proposed system monitors the garbage bin. While monitoring the garbage bin it sends the notification to the authority about the level of garbage filled. If the lower authority ignores the notification, the next notification goes to the higher authority. The proposed system will help them to actually know that where and when to go to collect the garbage. The proposed system manages the effort to check the area by visiting there. The proposed project is quite helpful for both the Brihan Mumbai Municipal Corporation (BMC) and the citizens in that area by time-to-time interaction between Brihan Mumbai Municipal Corporation (BMC) and the proposed system. Hence the proposed system makes a better way to manage garbage.

### **GAPS**

The proposed model requires a greater number of waste bins for separate waste collection as per the population in the city. This results into high initial cost due to expensive smart dustbins compared to other methods, sensor nodes used in dustbins have limits size. By increasing the memory size of the sensors and making it more durable in detection of the waste and making it cost efficient we can overcome these setbacks and also practicing the 3'Rs we can control the waste management.