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Municipal Waste Aggregator

Mohammad Shams Alam[1], Himanshu Bhandare[2], Abhishek Kunnawar[3], Keshri Khanorkar[4], Dipanshu Kanoje[5], Abhijeet Amnerkar[6], Amit Gavhad[7]
[7]*Professor, Mechanical Engineering, RTMNU*

Abstract*: *Water is basic necessity of every living organism in earth. Whole earth have of around 70% of water but only 3% is sweet water or use full for humans rest of it is salt water and to make it useful we have to treat these water in water treatment plant. For better use of water we can reuse the water from sewage by treating it in a water treatment plant. The most of water waste is produce globally remains untreated causing wide spread water pollution this problem is usually occur at developing countries and in some developed countries also. By the research of UNDP (United Nations Development Program) and UN-Habitat it is estimated that 90% of the all water generated is release into the environment untreated. This paper provides the idea about the present situation with respect to Municipal solid waste quantity, quality and its management. Here we have briefly introduced about the MSWM in both urban and rural area of the cities. Also provided the interesting results regarding MSWM of rural areas of the town. In sewage around 200 to 500 liters of waste water is dispose individually which include Greywater (water from sink, tub, shower, dishwater) , Blackwater (water used in flush toilets, combined with the human feces and toilet paper).

Keywords*: *Municipal solid Waste (MSW), Wastewater, Environmental harm, Auxiliary cleaning.

I. INTRODUCTION

Household garbage and rubbish, street sweeping, debris, sanitation residues, non-hazardous industrial refuse and treated biomedical solid waste (msw). World bank gives estimation about urban india which produces approximately 10,000 metric tons of msw daily. This is the time where all the population is shifting in the cities. Because of urbanization solid waste is increasing in the cities. This waste is manage by the municipal of each city. Municipal solid waste (msw) include household garbage, rubbish, demolition debris and biomedical solid waste etc. As per the report of world bank urban india produces approximately 100,000 metric tons of msw daily which is 3,65,00,000 metric tons each year. This figure is increasing very rapidly because of increasing in population and rapid urbanization. Expected generation of msw until 2025 in india is 700 grams per capita per day. Because of these shocking facts of msw need of machine to clean the sludge effectively. Rapid collection and disposal of msw will be the key aspect for cleaning of sewage and to keep city clean. According to study it has come to know that in sewage line there is biodegradable waste which can be used for agricultural use as a fertilizer. In sewage line there is fine sand which fall inside the because of blow of wind and trap inside it, we can use it for construction in buildings.

Due to increase in population and rapid urbanization quantity of MSW is increasing day by day. By 2006 Indian urban cities are generating eight times more MSW than they did in 1947. By examining the present situation, expected generation of municipal solid waste until 2025 in India gram per piles per day. The management includes collection of MSW, storage, transportation and disposal of solid work. Poor work of MSWM leads to unhygienic status in surrounding governments all over the world taking major efforts for the better improvement of solid waste management for their respective countries. According to the study of UNDP (United Nations Development Program) and UN-Habitat in sewage line there is presence of organic pollutants (ammonia, Sulphur, nitrate alkalinity and PH value between 7 and 8) from the industries which directly induce untreated wastewater in the sewage line.

II. LITERATURE SURVEY

Ganesh U L [1] Drainage lines are dirty and toxic which may harm the worker who came direct contact with the wastewater. To solve the problem the propose the construction of semi-automated Drainage Cleaning by use of the mechanical linkages to replace the manual work require to clean the sewage line.

Elangovan K., [2] present the review paper on the replacement of manual work by automated system. Automated system can work in toxic environment which is in this case from due to the dumping of industrial biproduct, biomedical solid waste and human faces. They review on the control of automated cleaning system with the use of PLC control from siemens was to use in sewage cleaner control by stepper motor, compressor and gas exhauster etc. Arti Pamnani, Meka Srinivasan, [3] review on the problem of Municipal Solid Waste (MSW) in cities and its potential thread to hygiene of city. Their paper gives the prevision of the amount and

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quality if MSW will increase in India to the year 2025. They also give us the solution to overcome those problems by various method for proper disposal of MSW.

Prof S.D. Anup.[4] showed blockage is the biggest problem in the sewage line causing pollution and disease. They explain the easy and cost-efficient method to control the level of wastewater in the sewage line. They design the system to identify the level wastewater in sewage line resulting to stop overflowing of the line**.**

Vandana Bharti, Jaspal Singh and A.P. Singh [5] present the paper on the management of solid waste in India. The waste is good if it is properly held is their ideology some possibilities are given by them for management of solid waste by recycling and also the recovery of energy by the use of chemicals which occurs inside the sewage line.

Yadav, D (2014) said that [6] the this is the time where we are using the technology to reduce the time and human fatigue. modern technology is all about to reduce the human effort in daily life. Now we are involving the modern technology to do our work which is previously done by the human work.

R. Sathiyakala 2016[7], they implement the study of their research to convert the manual work into the automatic system. Drainage pipes are dirty every time but, in some cases, they contain the toxic element like Sulphur and ammonia which is very harmful to the human life and may also cause the cancer.

S S Rattan [8] they suggest the method to convert the state of the sludge. In they use the evaporating system to convert the wet sludge and into the dry sludge product which we can use it in the agricultural and gardening purpose.

M. Naveena Reddy, et.al. [9] their study helpful for design and production of high precision elliptical gears which can increase the efficiency and life of the gear. They develop the mathematical model to prove the study of elliptical gear profile. They investigate the behaviour of tooth in elliptical gears at various load and stress.

Elangovan K [10] Review paper presented by him is based on replacement of manual work by automated system. In toxic environment automated system can work which is in the case from due to dumping of industrial biproducts and bio medical solid waste and human faces usage of PLC control from simpler ways to use in sewage clean control by stepper motor, compressor and gas exhausted was released on the control of automated cleaning system.

Gregor Burger, et.al. [11] They described the use of the software modelling to design the various component of the machine. With the help of designing software we can find the stress and strain of the component at given load and to set the limiting value of load which we apply on the component.

K Mahadevan and Balveera reedy [12] proposed safe parameters for the gears and chain of to with stand the various loads with finite element method modelling. They set the bench mark to set the parameter of the gears to support their research work. The FEM method is the mathematical model to find the limiting stress of the any shape of the geometry of body

M. Naveena Reddy, [13] Their project concentrates the study of various types gears and their effective use in various application purpose. The gears which we use in our machine is reference to by this study. They develop the Driving and Driven profile of the elliptical gear.

Dr. K. KUMARESAN 14] They studied the conversion manual work into the automated work. They made their project efficient and economical by the resources around them and which is easily available. As to reduce the risk of the human life to clean the sewage line. For that purpose, they introduce the ‘drainage cleaning system’.

Mhael Okpara (2014) [15] They review about the risk of human life while implementing the manual work. They convert manual work to the automated system with the help of the PLC and SCADA. By their study they come to know that time taken by manual work is less than the automated system. They find the importance of automated system in the hazardous and toxic environment.

III.METHODOLOGY

A. Processing and Recovery

Various techniques, equipment’s and facilities used both to improve efficiency and to recover useful materials, modifications of product, produces energy and compost of solid waste are included in functional element. This process reduces the volume and weight of waste material having requirement of proper collection and segregation facilities. The processing and recovery have been carried out beginning separation and processing of waste on the source.

B. Reuse and Recycle

Reuse refers to the cleaning and using the material again after use. Reuse helps to reduce the unwanted increase of solid waste and manage the same waste to use for different purposes for solid waste problem, recycling is also an evident solution. This process makes the waste product the quality product which can be sold out at better prices.

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C. Disposal

Disposal refers to final functional element in solid waste management system. This disposal is used finally for filling the lands or spreading of land in commonly adopted by municipal agencies. This engineered facility of sanitary landfilling cannot occur hazards to public health and environment.

D. Regulatory Framework For MWSM In India

For better MSWM in India, the MSW rules 2000 have stipulated steps to be taken by all local administrative bodies. Each of the lab should have to provide the infrastructure and similar with regards to collection, storage, segregation, transport and disposal of MSW for enforcing the provisions urban government department of respective state government are responsible. The municipal solid waste management rule 2000 give all aspects of MSWM from collection to disposal.

IV.CONCLUSIONS

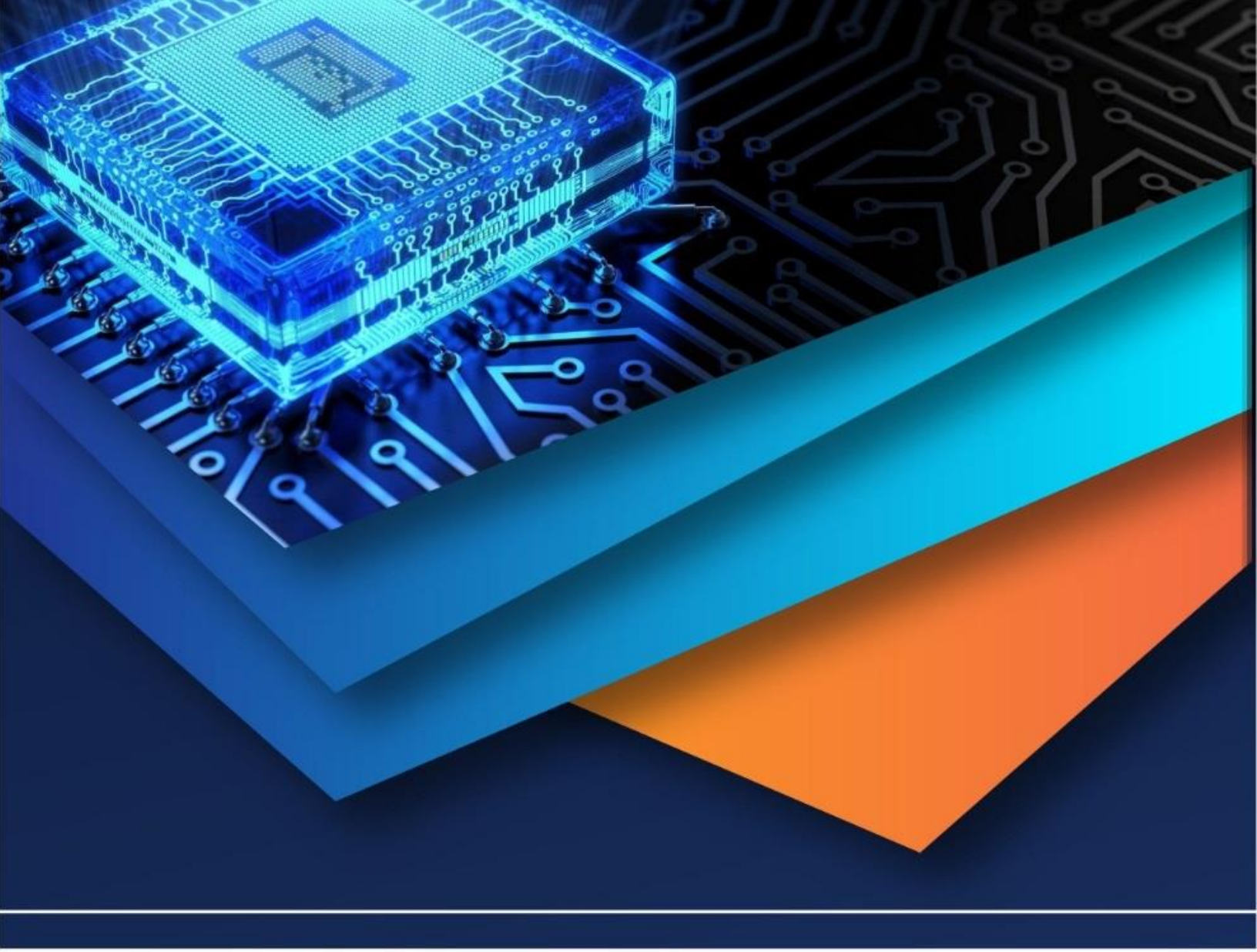
In recent pasts many scholars have taken serious steps to solve the problem of MSW. Many researches are going in this field to minimize this problem. We have supported the ideology that we have to save our planet and we have to deal with the waste in metropolitan cities and in rural areas also. We are trying to give flexibility to our machine for easy to use. we are also trying to give flexibility to our machine to be used in various types of sewage line. There are various benefits of using sewage machine

A. It is Easy to use and consume less time as compared with sweepers.
B. There is No direct contact of human and waste.
C. It is cheap and chances of failure is very less.
D. Proper disposal of waste.
E. Process is hygienic. Improvement will be seen in waste handling system.

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