

ABSTRACT

Disposing of waste in place has not become a good tradition in the community. Waste production every day increases with the increasing number of products and people's consumption patterns. But if the processing and sorting are not good it will cause environmental pollution so that the emergence of germs. The way to minimize the impact of the waste is to recycle waste according to the classification of the type of waste itself. Organic waste that can rot will become compost for plants, inorganic waste can be recycled to become more useful items. Then the understanding of the type of waste classification will reduce environmental pollution and make it easier for further processing of waste.

To solve this problem, design a Smart Trash Bin system to sort organic and inorganic waste. By using several sensors that work at one time to analyze the type of waste. After the object is successfully analyzed, the servo motor as an actuator will move and open the valve to the Organic or Inorganic container. The results of the analysis of all sensors are connected to the microcontroller and use the Sugeno Fuzzy Logic method for the waste processing.

With the creation of this Smart Trash Bin system which has an accuracy value of 96.65%, 100% precision, and a sensitivity of 95%., It will facilitate the processing of waste to preserve the environment so it is not polluted. Incoming waste will be immediately determined according to its type organic or inorganic.

Keywords: *Organic and inorganic waste sorting, Smart Trash Bin, Fuzzy Logic, Sugeno.*