

ABSTRACT

Production of waste every day is increasing as the number of products and patterns of consumption. As you know there are still many problems that seemed to be garbage dreaded thing for the community. The way to minimize the impact of the waste is to recycle waste. Garbage is divided into two trash bins Inorganic and Organic. Which can decompose organic waste can be recycled as fertilizer, while the inorganic waste can be recycled into useful items can be returned. Waste to be recycled should be done sorting beforehand because if the two categories of the waste has been separated, the garbage will become easier to process.

To solve this problem implemented an automated trash system uses two detection plate that serves as a capacitor to detect objects based on the dielectric constant of garbage material. That two plate is connected to the circuit IC LM555 as a translator PWM signal detected by the plate. The result detection of two plates are connected to the microcontroller and by using fuzzy. Once the object is detected, the servo motors to direct the object to the container inorganik or organic in accordance with the results obtained. All systems are integrated into the microcontroller as the driving system.

From the tests, the system has worked well. The system has been translated value of the dielectric object passing between the two plates which are then translated using fuzzy logic. Conditions are obtained for the dielectric values under 3.0 and values approaching 3.0, then the servo will sort the waste into the container inorganic. For the dielectric value is above 9.0 and 9.0, the closer the value of the servo will sort the waste into the organic container. As for the dielectric value is between 3.0 to 9.0 then the servo will move the garbage with a value approaching 3.0 or 9.0 in accordance with the result PWM output.

Keywords: IC LM555, Plate as Capacitors, Dielectric, Waste Inorganic and Organic Waste, Microcontroller, Fuzzy Logic