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Automatic Waste Segregation Using Embedded System

Dr. Manasa K Chigateri[1], Ramanagouda[2], Sandeep[3], Karthic C H[4] ,Sandeep Kumar[5]
Associate Professor, Electronics and Communication Engineering[1]
Students, Electronics and Communication Engineering[2-5]
Rao Bahadur Y. Mahabaleswarappa Engineering College, Ballari, India

Abstract: *Waste management has become a critical issue due to rapid urbanization and population growth. Improper segregation of waste leads to environmental pollution and health hazards. This project proposes an automatic waste segregation system using an embedded system to minimize human involvement. The system is designed to segregate waste into wet, dry, and metallic categories. Various sensors such as moisture sensors and inductive proximity sensors are used to identify the type of waste. A microcontroller acts as the central processing unit of the system. It receives input signals from the sensors and makes decisions accordingly. Based on the detected waste type, control signals are sent to motors. Servo motors are used to direct the waste into the appropriate bins. The system operates with minimal power consumption. It improves the efficiency of waste segregation. The proposed solution reduces manual labor and health risks. It enhances recycling processes. This system can be implemented in households and public places. It contributes to a cleaner and smarter environment.*

Keywords: Automatic Waste Segregation, Embedded System, Waste Management, Microcontroller, Sensors, Moisture Sensor, Inductive Proximity Sensor, Servo Motor, Recycling, Smart Environment

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