Patent Search

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Abstract:

ABSTRACT: The Arduino-Driven Smart Dustbin for Waste Management is an automated, contactless waste disposal system designed to enhance hygiene and efficienc particularly during the COVID-19 pandemic. By utilizing an Arduino microcontroller, the system minimizes physical interaction with waste bins, reducing the potential transmission. The smart dustbin is equipped with proximity and ultrasonic sensors that detect user presence and automatically open the lid for easy waste disposal, touch-free experience. In addition to its contactless operation, the system incorporates waste segregation capabilities. The dustbin is divided into multiple compartm recyclable, biodegradable, and non-recyclable waste. Sensors identify the type of waste being disposed of and automatically sort it into the appropriate section, prom waste management practices and supporting sustainability efforts. The system is powered by a rechargeable battery and is designed for easy integration into various such as public spaces, healthcare facilities, and residential areas. Its scalable and adaptive nature ensures that it can be used to meet the waste management needs c environments, providing a safer, cleaner, and more efficient way to handle waste during and beyond the pandemic.

Complete Specification

Description:DESCRIPTION:

Field of Invention

The present invention relates to waste management systems, specifically an Arduino-driven smart dustbin designed to enhance waste disposal operations during tl COVID-19 pandemic. It integrates automation and sensors to streamline waste handling processes while minimizing physical contact, improving hygiene and safety. management has always been an essential aspect of urban infrastructure; however, the ongoing pandemic has necessitated new approaches to minimize virus transmission, especially in public places, commercial establishments, and healthcare facilities.The invention falls within the fields of robotics, automation, Internet o (IoT), and environmental management. It addresses the need for smarter waste disposal methods that reduce human intervention while ensuring cleanliness and e waste segregation. By utilizing an Arduino microcontroller, the system is designed to operate efficiently and autonomously, reducing the risks associated with manu handling of waste.

The invention also finds relevance in the broader context of sustainable environmental practices. As cities look to enhance their waste management infrastructure, integration of IoT devices for waste monitoring, sorting, and disposal offers a modern solution that supports public health and environmental sustainability during a health crisis.

Objective of the Invention

The primary objective of this invention is to develop an automated, contactless waste management system that ensures hygienic and efficient waste disposal, parti during the COVID-19 pandemic. By leveraging Arduino-based automation, the system aims to minimize the need for physical interaction with waste bins, reducing t

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