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(57) Abstract :

The invention provides a smart waste management system designed to enhance the efficiency of waste separation and processing. This system integrates an advanced detection mechanism using ultrasonic and rain sensors to identify and measure the type and moisture level of waste. An automated separation unit, driven by a servo motor, directs waste into separate bins based on the detection results. The system includes a water adjustment mechanism that regulates water levels for optimal processing of wet waste, which is repurposed for agricultural use. Powered by a combination of solar energy and a lithium-ion battery, the device operates independently of conventional power sources. Constructed from durable foam sheet (PVC), the system is portable and suitable for diverse environments, promoting eco-friendly practices and contributing to sustainable waste management.

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