

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202621022412 A

(19) INDIA

(22) Date of filing of Application :25/02/2026

(43) Publication Date : 10/04/2026

(54) Title of the invention : Waste Segregation Monitoring System for Urban Local Bodies

(51) International classification	:G01N 33/00, G06Q 50/26, G01F 23/296, H04W 4/38, G01N 33/18	(71)Name of Applicant : 1)Dr. Prabhat Sharma Address of Applicant :Associate Professor, Department of ECE, Oriental Institute of Science and Technology, Bhopal, Madhya Pradesh, 462022, India Madhya Pradesh India 2)Dr. Divya Rai Shivhare 3)Ruchi Gupta 4)Sanjh Shrivastava 5)Ritik Yadav 6)Ahsan Ahmed 7)Vishwajeet Singh 8)Prabhanshu Pandey
(31) Priority Document No	:NA	(72)Name of Inventor :
(32) Priority Date	:NA	1)Dr. Prabhat Sharma
(33) Name of priority country	:NA	2)Dr. Divya Rai Shivhare
(86) International Application No	:	3)Ruchi Gupta
Filing Date	:01/01/1900	4)Sanjh Shrivastava
(87) International Publication No	: NA	5)Ritik Yadav
(61) Patent of Addition to Application Number	:NA	6)Ahsan Ahmed
Filing Date	:NA	7)Vishwajeet Singh
(62) Divisional to Application Number	:NA	8)Prabhanshu Pandey
Filing Date	:NA	

(57) Abstract :

ABSTRACT Waste Segregation Monitoring System for Urban Local Bodies The present disclosure relates to a Waste Segregation Monitoring System designed for Urban Local Bodies to improve the efficiency of municipal solid waste management. The system integrates multiple sensors, including an ultrasonic sensor for monitoring garbage fill level, a moisture sensor for detecting wet or mixed waste, and a gas sensor for identifying harmful gases generated due to waste decomposition. A microcontroller unit processes the sensor data and manages system operations in real time. The system further includes a display unit that provides continuous local monitoring of bin status and a GSM communication module configured to transmit SMS alerts to authorized personnel when predefined threshold conditions are exceeded. The alert mechanism ensures timely waste collection and immediate attention in cases of improper segregation or unsafe gas concentration. The system is designed to function as a standalone embedded unit without requiring internet connectivity. The proposed invention reduces manual inspection efforts, prevents overflowing bins, enhances waste segregation monitoring, and improves environmental safety. Owing to its cost-effective design and ease of implementation, the system is suitable for small-scale municipal deployment and supports smart sanitation initiatives in urban areas.

No. of Pages : 17 No. of Claims : 6