Smart Public Restroom/Toilets Monitoring System

[1]Ms. Nikita Ingale, [2]Ms. Rutuja Sapate, [3]Ms. Sayali Khose, [4]Prof. Veena Chitrashekhar

Student, Department of Electronics & Telecommunication[1,2,3]

Professor, Department of Electronics & Telecommunication[4]

JSPM's Imperial College of Engineering & Research, Wagholi, Pune, India

Abstract*: Hygiene concerns in public toilets, particularly in low-income areas, persist due to inadequate ventilation and maintenance. Despite significant government investment in upkeep, ensuring cleanliness remains challenging without a central monitoring system. Across various regions, including India, substandard sanitation infrastructure contributes to health issues. Addressing this, a cost-effective hygiene monitoring device, based on air quality standards, is proposed. This paper outlines the development of an "IoT Enabled Portable Air-Quality Monitoring and Control Device for Public Restrooms/Toilets." The device aims to monitor and regulate air quality within public toilets to a certain extent. Employing the ESP8266 microcontroller and MQ gas sensors, it detects harmful gases like ammonia, carbon dioxide, carbon monoxide, methane, alongside temperature and humidity levels. Furthermore, the device integrates an exhaust fan control system to enhance air quality.*

Keywords: Internet of Things, Public Toilet Hygiene, Air quality monitoring, ESP8266 microcontroller, MQ gassensors, Portable

REFERENCES

[1]. https://ieeexplore.ieee.org/document/10216100

[2]. https://ijariie.com/AdminUploadPdf/IoT_Based_Smart_Bathroom_Monitoring_System_ijariie20459.pdf

[3]. https://ieeexplore.ieee.org/document/9297839

[4]. https://www.sciencedirect.com/science/article/abs/pii/S2542660522000658

[5]. https://ijarsct.co.in/Paper15346.pdf

[6]. https://www.ijert.org/intelligent-hygiene-monitoring-system-for-public-toilets