TOP STUDENT PROJECTS

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PROJECT TITLE

AIR QUALITY MONITOR ROVER

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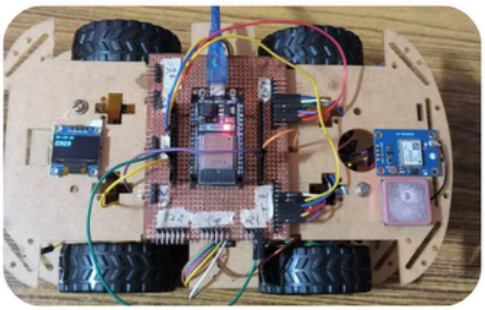


PROBLEM STATEMENT

During a field visit to a dumping yard, it was observed that waste decomposition releases harmful gases that negatively affect the surrounding environment and nearby residents. Existing air quality monitoring systems are expensive and fixed at specific locations, making it difficult to assess pollution levels across different areas. The lack of portable and real-time monitoring makes it difficult to identify hazardous locations and take timely action. Therefore, there is a need for a low-cost, portable air quality monitoring system that can detect harmful gases and provide real-time pollution data for improved environmental monitoring and public safety.

SOLUTION

The proposed solution is an IoT-based Air Quality Monitor Rover designed to continuously monitor environmental conditions and detect air pollution levels in real time. The system uses an ESP32 microcontroller integrated with MQ-135 and MQ-2 gas sensors, a DHT11 temperature and humidity sensor, and a NEO-6M GPS module. These sensors collect data related to air quality, harmful gases, temperature, humidity, and geographical location. The rover is capable of moving through different areas and collecting environmental data from multiple locations. The collected data is processed by the ESP32 and transmitted through Wi-Fi to a web-based dashboard. Users can view live sensor readings, Air Quality Index (AQI) values, temperature, humidity, and location information from any internet-connected device.



Technology stacks:

HTML,CSS

SCAN ME