Machine Learning Enabled Chemiresistive Sensors for Multiple Gas Detection

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Table No.20

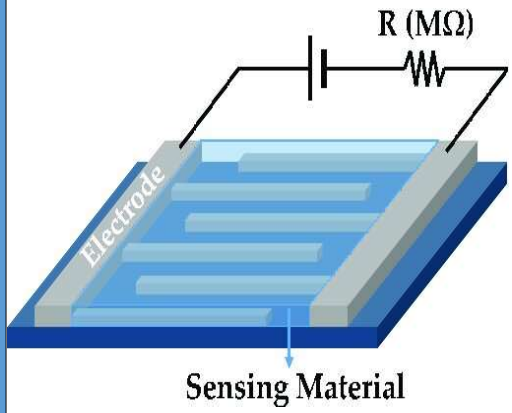
Abstract

I aim to design an intelligent gas sensing system using Chemiresistive sensors and ML to detect and classify harmful gases in densely populated areas, enhancing environment monitoring and public health.

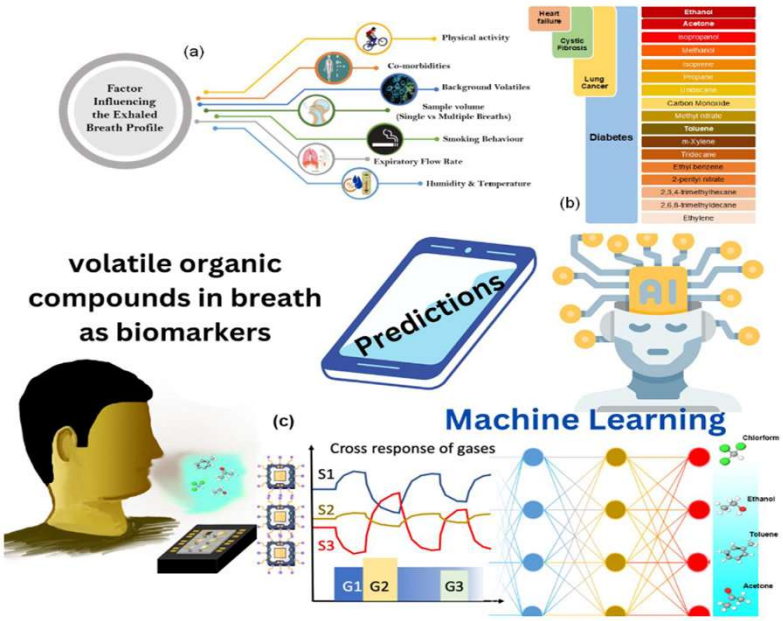
Main Results

- **Enhanced Gas Detection with Machine Learning**
- **Real-Time Monitoring and Adaptability**
- **Scalable and Versatile Solution**

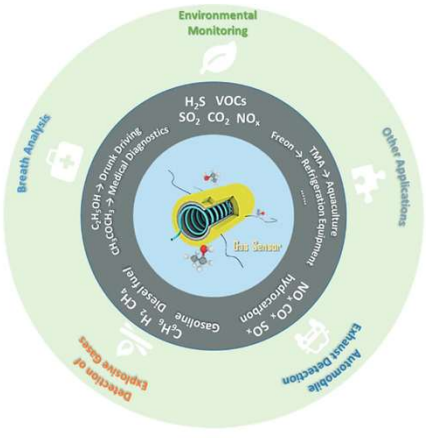
Chemiresistor sensor that measures the sensing material resistance changes between the two interdigited electrodes when exposed to the desired analytes



AI-powered Breath Analysis: VOC Biomarkers for Health Predictions



Some fields of the application of gas sensors



The data is synthetic and randomly generated for demonstration purposes, to showcase the classification of gas concentrations using SVM and k-NN models, highlighting safe and harmful regions based on concentration thresholds and plotting data points for different gases with distinct colors and markers.