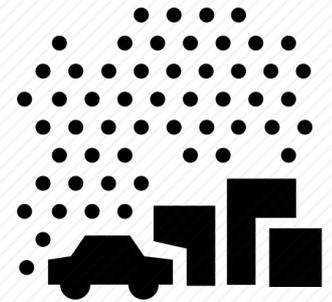


PERSONAL AIR POLLUTION SENSOR

WHAT IS THE PERSONAL AIR POLLUTION SENSOR?

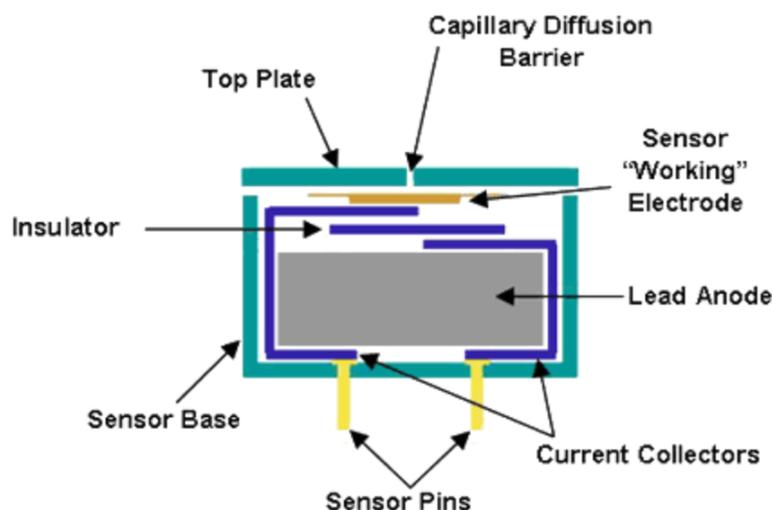
Personal air-pollution sensor is a multi-gas sensing device made for monitoring air quality of a user's environment. It can accurately detect the presence of Nitrogen Dioxide (NO₂), Volatile Organic Compounds (VOCs), and Particulate Matter (PM_{2.5}, PM₁₀). Some of the advanced sensors can also measure temperature and humidity. Sensors are also equipped with LED to notify its user of the current air quality score: Red - "severely polluted," orange - "very polluted," yellow - "polluted," green - "moderate," and blue - "good." Other forms of the sensor is also capable of transmitting timely information of air quality to our mobile phone



HOW DOES IT WORK?

The most typical type of personal air pollution sensor works via electrochemical method. Any gas or particulates that can be oxidized or reduced electrochemically will get detected by the sensor by means of a fuel based electrochemical sensor. Sensor box that is equipped with capillary diffusion barrier and sensor 'working' electrodes will sense the incoming pollutants. When oxidation of pollutants occur, a current will be produced which will eventually trigger the light of sensor.

For those capable of sending detailed information of air quality, the data gained from this sensor will be sent to our mobile phone via bluetooth. Then, the backend and system communication will analyze the GPS and user interface to provide more detailed and timely information of air quality to the user.



WHY IS IT IMPORTANT?

It is important for us to be aware of air quality and prepare for any preventive method. Severe air pollution has now become a major cause of death and disease globally. Particulate matters are capable of entering lung passage ways and entering the bloodstream causing various cardiovascular and respiratory impacts. The health effects range from lower respiratory infection, lung cancer, chronic obstructive pulmonary disease, heart disease, to increased risk of premature death. Thus, accurate and timely information of air quality around us is a powerful tool to mitigate harmful effects of air pollution.

