

Nanostructured Gas Sensor Arrays System

Application

- Gas sensing solution for smart home applications.
- Enabling IoT integrated devices to monitor indoor air quality real time via bluetooth to a mobile device
- Gases detection such as VOCs, CO₂, CO, radon, etc.
- Gas sensors market size projected to grow from USD1B in 2019 to USD1.4B in 2024 at a CAGR of 6.4%¹

Technology

- A low power, wireless & nanostructured gas sensor component being a monolayer thin film of SnO₂ deposited on a 3D porous nanostructured anodized aluminum oxide (AAO) template in which the SnO₂ coated structure can be further modified by deposition metal decoration of metals Pt, Pd, Au, and Ag.

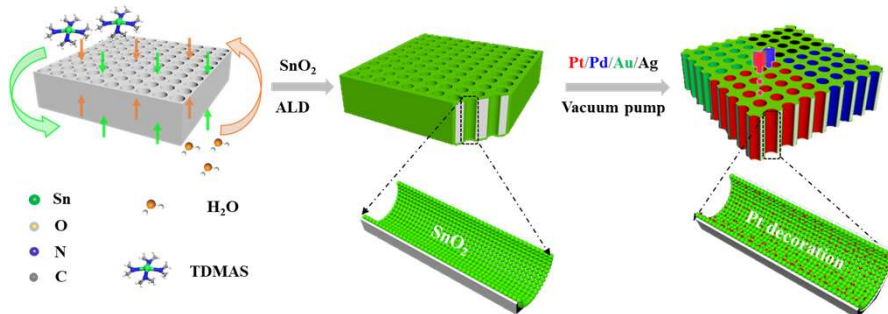


Fig 1. Nanostructured Gas Sensor Fabrication



Talk to Us

Eric Leung, ericleung@ust.hk

Head (Microelectronics & Sensors)



Advantages

- Low power consumption with high sensitivity
- Miniaturization and Integration
- Gas recognition and alerts for multiple gases in gas sensor arrays
- Real time monitoring via a mobile app
- Indoor light harvesting for continual unit operation by external solar panel

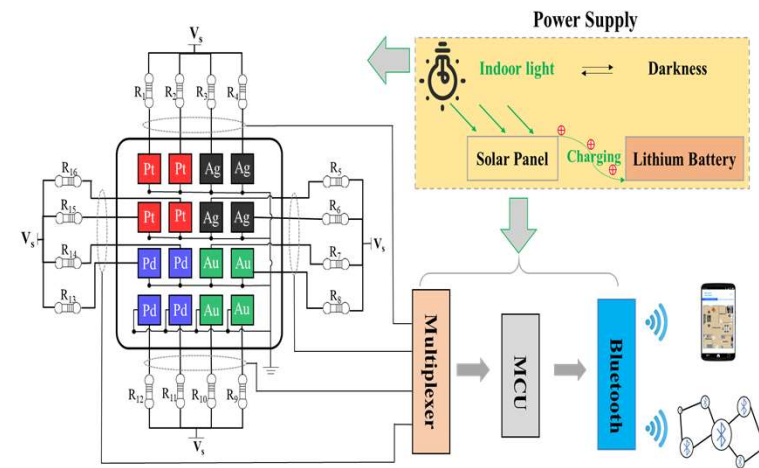


Fig 2. Block diagram of self-power sensor system



Intellectual Properties

- US Patent Appl. No. 62/762295; China Patent Appl. No. 201910362014.0
- US Patent Appl. No. 16/947238; China Patent Appl. No. TBC

1. "Gas Sensors Market by Gas Type (Oxygen, Carbon Monoxide, Carbon Dioxide, Ammonia, Chlorine, Hydrogen Sulfide, Nitrogen Oxide, Volatile Organic Compounds, Hydrocarbons), Technology, Application, Geography - Global Forecast 2024", published by MarketsandMarkets in November 2019