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A Platinum Nanowire Ethylene Gas Sensor

Tech ID: 33724 / UC Case 2023-778-0

BRIEF DESCRIPTION

This technology leverages an innovative mechanism of ethylene detection to introduce a portable device that allows for the rapid and continuous monitoring of the gaseous chemical using platinum nanowires.

FULL DESCRIPTION

Researchers at UC Irvine have developed a compact and versatile device that detects ethylene gas and its analogues by capitalizing on platinum nanowires that measure deviations in electrical resistance. Using this novel mechanism of detection, the device provides real-time concentrations of ethylene, a colorless, odorless, and flammable gas, in a fast and continuous manner. Compared to competing methods of ethylene detection, this technology affords superior portability and availability due to its lower power requirements.

SUGGESTED USES

- » Monitoring flammable gas levels in factory settings.
- » Regulating plant hormone levels in fruit and vegetable ripening process.

ADVANTAGES

- » Reduced power requirements which allow for its compact size.
- » Improved portability, including easy installment and simple operation.
- » Real-time and continuous detection due to its chemiresistive nature.
- » Quantifies the concentrations of detected gas with high sensitivity and specificity.
- » Operates in a wide temperature range.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

CATEGORIZED AS

- » **Sensors & Instrumentation**
 - » Analytical
 - » Environmental Sensors
- » **Materials & Chemicals**
 - » Agricultural

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