Method For Rapid In Situ Detection Of Ammonia

Tech ID: 32326 / UC Case 2020-658-0

BRIEF DESCRIPTION

This invention, a simple and robust method for ammonia detection, offers high-speed in situ quantification of ammonia concentrations with high sensitivity. The ammonia detection system does not require complex instrumentation, analysis, or labeling, which would allow for widespread adoption in chemistry-based fields and surrounding disciplines.

SUGGESTED USES

• High-speed, in situ detection of ammonia concentration

FEATURES/BENEFITS

• Real-time readings: capacity for fast, real-time chemical characterization in situ.

• Cleanliness: ammonia detection is extremely localized, preventing contamination from environment.

• Reusability: system can be used multiple times.

• Simplicity: Raman substrates are commercially available – would not have to rely on complex manufacturing.

TECHNOLOGY DESCRIPTION

The researchers at the University of California, Irvine invented a surface-enhanced Raman non-contact technique, which operates without having to alter the sample and allows for high speed in situ ammonia detection. Unlike other ammonia tests, this UCI technology offers a reusable approach and minimizes contamination from the environment.

STATE OF DEVELOPMENT

Prototype has been developed and validated for efficacy, achieving a sensitivity of 10 ppm with a 1 second integration time.

PATENT STATUS

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Published Application	WO 2021/226347	11/11/2021	2020-658

Additional Patent Pending

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OTHER INFORMATION

CATEGORIZED AS

- **Environment**
  - Sensing
- **Materials & Chemicals**
  - Other
- **Research Tools**
  - Screening Assays
- **Sensors & Instrumentation**

» Environmental Sensors

» Process Control

RELATED CASES

2020-658-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Method For Liquid-To-Solid Phase Separation Of Uranium And Uranyl Contaminant From Various Solutions
- Novel Light-Matter Interaction in Semiconductors
- Acid-Free Synthesis of Electrocatalyst Technology
- Microporous Layer/Catalyst Layer Integration For Electrolyzers

UCI Beall Applied Innovation

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