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## 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

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