

Request Information

Permalink

## Method For Rapid In Situ Detection Of Ammonia

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

### CONTACT

Richard Y. Tun  
tunr@uci.edu  
tel: 949-824-3586.



### INVENTORS

- » Asset, Tristan
- » Atanassov, Plamen
- » Chen, Yechuan
- » Fishman, Dmitry
- » Liu, Yuanchao

### OTHER INFORMATION

#### CATEGORIZED AS

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

## 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.

## RELATED CASES

2020-658-0

## SUGGESTED USES

- » High-speed, in situ detection of ammonia concentration.
- » Environmental monitoring
- » Wastewater treatment
- » Agriculture and aquaculture
- » Food analysis
- » Biomedical research

## FEATURES/BENEFITS

- » Speed: capacity for fast, real-time chemical characterization in situ. with integration time of one second
- » Sensitivity: detection down to 10ppm
- » Cleanliness: extremely localized, preventing contamination from environment.
- » Reusability: substrate can be used multiple times.
- » Simplicity: substrates are commercially available – would not have to rely on complex manufacturing.

## TECHNOLOGY DESCRIPTION

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 in liquids. It has higher sensitivity than “real-time” techniques in liquid such as real-time Ion-Selective Electrodes and is reusable, unlike dry calorimetry.

## 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	Reference for National Filings	WO 2021/226347	11/11/2021	2020-658

Patent Pending

## ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ Acid-Free Synthesis of Electrocatalyst Technology

