

# AN ULTRA-SENSITIVE METHOD FOR DETECTING MOLECULES

Tech ID: 25109 / UC Case 2015-187-0

## PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,107,749	10/23/2018	2015-187

## BRIEF DESCRIPTION

To-date, plasmon detection methods have been utilized in the life sciences, electrochemistry, chemical vapor detection, and food safety. While passive surface plasmon resonators have lead to high-sensitivity detection in real time without further contaminating the environment with labels. Unfortunately, because these systems are passively excited, they are intrinsically limited by a loss of metal, which leads to decreased sensitivity.

Researchers at the University of California, Berkeley have developed a novel method to detect distinct molecules in air under normal conditions to achieve sub-parts per billion detection limits, the lowest limit reported. This device can be used detecting a wide array of molecules including explosives or bio molecular diagnostics utilizing the first instance of active plasmon sensor, free of metal losses and operating deep below the diffraction limit for visible light. This novel detection method has been shown to have superior performance than monitoring the wavelength shift, which is widely used in passive surface plasmon sensors.

## SUGGESTED USES

- » Detection of Food
- » Detection of Explosives
- » Detection of Molecules
- » Detection of gasses.

## ADVANTAGES

- » Higher levels of sensitivity
- » Lower Ohmic loss of metals

## RELATED MATERIALS

## CONTACT

Laleh Shayesteh  
lalehs@berkeley.edu  
tel: 510-642-4537.



## INVENTORS

- » Zhang, Xiang

## OTHER INFORMATION

### CATEGORIZED AS

- » **Agriculture & Animal Science**
- » Devices
- » **Biotechnology**
- » Food
- » Health
- » **Environment**
- » Sensing
- » **Engineering**
- » Engineering
- » **Materials & Chemicals**
- » Chemicals
- » **Medical**
- » Research Tools
- » Screening
- » **Nanotechnology**
- » Tools and Devices
- » **Research Tools**
- » Screening Assays
- » **Security and Defense**
- » Food and Environment

» [Screening/Imaging](#)

» **Sensors & Instrumentation**

» [Analytical](#)

» [Biosensors](#)

» [Environmental Sensors](#)

**RELATED CASES**

2015-187-0



**University of California, Berkeley Office of Technology Licensing**

2150 Shattuck Avenue, Suite 510, Berkeley, CA 94704

Tel: 510.643.7201 | Fax: 510.642.4566

<https://ipira.berkeley.edu/> | [otl-feedback@lists.berkeley.edu](mailto:otl-feedback@lists.berkeley.edu)

© 2015 - 2018, The Regents of the University of California

[Terms of use](#) | [Privacy Notice](#)