

REAL-TIME, SINGLE STEP BIOASSAY WITH ULTRA-HIGH SENSITIVITY

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ABSTRACT

Unfortunately, conventional methods for early stage cancer detection present high levels of background noise and involve time-consuming washing processes and often involve painful biopsy procedures. As a result, the acquisition of meaningful test results can require days of trials, simultaneously increasing a patient's recovery time and medical costs.

The present-day remedy for faster detection and diagnosis has been more lab technicians, more lab equipment, and, consequently, more money.

Fortunately, researchers at the University of California have developed a new technology that may present a cheaper and faster alternative to this remedy. Using an array of novel resonators to functionalize molecular indicators, researchers have been able to reduce the detection volume to nanometers in thickness, effectively reducing the background noise, eliminating the time consuming washing process, and increasing the Raman signal by more than 10 orders of magnitude. The increase in sensitivity makes it possible to sense the biomarkers secreted from single cancer cells.

APPLICATIONS

Early stage cancer detection

Bioassay

Forensic investigation -seminal droplets

ADVANTAGES

Fast detection and diagnosis of complex diseases

Faster patient recovery

Less testing via multiplexed measurements

RELATED MATERIALS

» [Promising new metamaterial could transform ultrasound imaging; Liese Greensfelder; UC Berkeley News](#)

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,685,743	04/01/2014	2006-121

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