Flexthrough: A Recirculation Mechanism In Point Of Care CD Microfluidic Using Elastic Membrane

Tech ID: 32461 / UC Case 2021-768-0

BRIEF DESCRIPTION

Researchers from the University of California, Irvine have developed a new method and device to efficiently mix and analyze liquid samples on CD-based point of care devices.

SUGGESTED USES

·Point of care diagnostic device

·Lab-on-a-chip devices

·Liquid sample analysis: medical and laboratory settings

FEATURES/BENEFITS

·Current methods to analyze liquid samples do not recycle samples, while this method mixes the sample to use the full sample volume for analysis.

·Sample mixing improves the detection sensitivity for the device.

·Because the samples are thoroughly mixed, smaller sample volumes are needed for analysis.

TECHNOLOGY DESCRIPTION

Point of care diagnosis is performed by analyzing patient samples bedside using portable devices. While this method of diagnosis minimizes the need for laboratory analysis, it is hindered by device detection limits. Current device methods to mix samples are ineffective.

The researchers at UCI have created a device that recirculates liquid samples, resulting in homogenous mixing, output signal amplification, and lowers sample volume requirements.

STATE OF DEVELOPMENT

A prototype of this device has been developed and used to test the mechanism in proof-of-concept studies.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	12472497	11/18/2025	2021-768

CONTACT

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INVENTORS

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OTHER INFORMATION

CATEGORIZED AS

» **Medical**
» Devices
» Diagnostics
» **Sensors & Instrumentation**
» Biosensors
» Medical

RELATED CASES

2021-768-0, 2021-781-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Fabricating Crystallinity Unique Carbon Nanowires (~5nm) with Ultrahigh Electrical Conductivity
- FlexThrough: a recirculation mechanism for point of care, centrifugal disk-based microfluidic devices

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