Tiny, Flexible Sensor Gauges

Tech ID: 22771 / UC Case 2012-869-0

ABSTRACT

Miniature, flexible, and transparent droplet-based pressure sensing device.

FULL DESCRIPTION

There is a need for an accurate, flexible, and fast pressure sensor for miniaturized applications. Utilizing the ultrasensitive and elastic properties of a liquid droplet is an attractive option, but presents its own challenges in controlling the droplet, returning it to its original shape, and overcoming evaporation problems. Researchers at the University of California, Davis have integrated a droplet into a flexible polymer structure, to create a miniature, transparent and flexible pressure sensor that is insensitive to evaporation.

APPLICATIONS

The miniature sensor has a multitude of applications including measurement of blood pressure, intraocular pressure monitoring, tactile sensing, and microfluidic sensing.

FEATURES/BENEFITS

- Mechanical flexibility
- Fast response time
- Optically transparent
- Ultrahigh sensitivity and resolution
- Simple fabrication
- Insensitive to evaporation and thermal noise

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,739,679	08/22/2017	2012-869
United States Of America	Issued Patent	9,459,171	10/04/2016	2012-869
United States Of America	Issued Patent	9,170,166	10/27/2015	2012-869

RELATED MATERIALS

- Futurity - online article; "Tiny, flexible sensors gauge pressure" - 03/28/2012

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OTHER INFORMATION

KEYWORDS

Tactile sensing, flexible sensors, PDMS

CATEGORIZED AS

- **Medical**
  - Devices
  - Other
  - Screening
- **Sensors & Instrumentation**
  - Biosensors
  - Medical

RELATED CASES

2012-869-0

▶ Nie, Xing, Brandt, and Pan; "Droplet-based interfacial capacitive sensing" - Lab Chip, 2012, 12, 1110-1118 - 12/19/2011

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