SCALABLE AND HIGH-PERFORMANCE PRESSURE SENSORS FOR WEARABLE ELECTRONICS

Tech ID: 29987 / UC Case 2019-071-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20220146340	05/12/2022	2019-071

BRIEF DESCRIPTION

This invention are flexible pressure sensors with high sensitivity, broad working range and good scalability are highly desired for the next-generation of wearable electronic devices. Embodiments include large-area compliant and cost-effective processes to fabricate high-performance pressure sensors using mesh-molded periodic microstructures and printed side-by-side electrodes.

SUGGESTED USES

Wearable human-interactive devices can improve our quality of life and health. Flexible pressure sensors, as an important element of human-interactive devices, are of great interest and have a wide range of applications such as continuous health monitoring, personal diagnostics, robotics, prostheses, etc.

ADVANTAGES

These fabricated pressure sensors advantageously exhibit low operating voltage (e.g., 1 V), high sensitivity (e.g., 23.87 kPa^{-1}), low detection limit (e.g., 7.4 Pa), fast response/recovery time (e.g., 25/20 ms), and excellent reliability (e.g., over 10,000 cycles). Additionally, the sensors show broad working range (e.g., 7.4~1,000,000 Pa), high tunability, large-scale production feasibility, and significant advantage in creating sensor arrays with self-defined patterns.

RELATED MATERIALS

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Printed All-Organic Reflectance Oximeter Array
- Biodegradable Potentiometric Sensor to Measure Ion Concentration in Soil
- Pulse Oximeter Using Ambient Light
- Oxygen Sensor Using Zinc Air Battery Chemistry
- Simultaneous Doctor Blading Of Different Colored Organic Light Emitting Diodes
- Organic Multi-Channel Optoelectronic Sensors For Smart Wristbands
- Printed Organic Leds And Photodetector For A Flexible Reflectance Measurement-Based Blood Oximeter

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OTHER INFORMATION

KEYWORDS

flexible biosensors

CATEGORIZED AS

» **Sensors & Instrumentation**

» Biosensors

» Medical

RELATED CASES

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