

MOF-CNC Modular Sensor Embedded on 3D Printed Platforms

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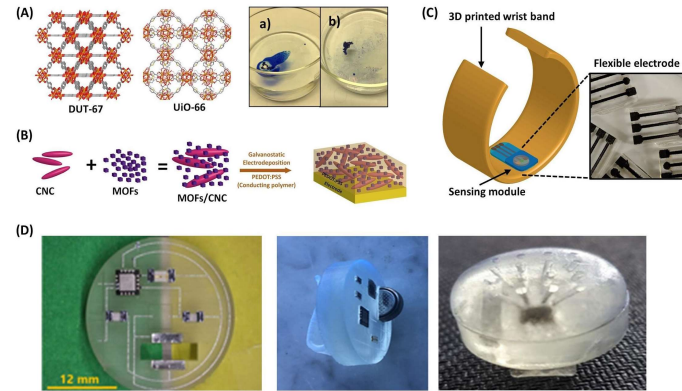
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MOF-CNC modular sensor



Components for the MOF-CNC modular sensor. (A) DUT-67 & UiO-66 MOFs for oil absorption, (B) Schematic diagram of galvanostatic electro polymerization, (C) Illustration of wearable personal exposure device and photo of the flexible electrodes, (D) Microelectronics embedded in the 3D printed substrate.

Description

- Effective measurement of heavy metals and volatile organic compounds (VOCs).
- Metal-organic frameworks and cellulose nanocrystals (MOF-CNC) modular sensors incorporated with the customized 3D printed substance.
- Embedded impedance analyzer and wireless communication module.
- Additive Manufacturing and 3D printing technologies.
- The technology and system are proven at lab scale.

Requirement(s) Benefits

- Naval Medical Research Unit- Dayton (NAMRU-D) may benefit from the research project.
- Enhancement with the current ADMETE funded project by the Air Force for microelectronics in Ohio.
- Further research collaboration with the division of Biological and Physiological Monitoring and Modeling at ONR to further develop novel sensing devices for clinical-grade equipment for human health.

Airspace Management

Command & Control

Comms

Power & Energy Storage

Propulsion

Sensors & Awareness

Other