BIODEGRADABLE POTENTIOMETRIC SENSOR TO MEASURE ION CONCENTRATION IN SOIL

Tech ID: 32471 / UC Case 2022-008-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20240377349	11/14/2024	2022-008
European Patent Office	Published Application	4402465	07/24/2024	2022-008
India	Published Application	202447018466	03/24/2024	2022-008

BRIEF DESCRIPTION

The inventors have developed ion-selective potentiometric sensors for monitoring soil analytes with naturally degradable substrate, conductor, electrode, and encapsulant materials that minimize pollution and ecotoxicity. This novel sensor-creation method uses printing technologies for the measurement of nitrate, ammonium, sodium, calcium, potassium, phosphate, nitrite, and others. Monitoring soil analytes is key to precision agriculture and optimizing the health and growth of plant life.

SUGGESTED USES

These sensors can be used for applications such as, but not limited to, soil health monitoring, agricultural growth predictions, analyte flux measurements, greenhouse gas production, and chemical leeching/runoff.

ADVANTAGES

These soil analysis sensors:

- can be produced at scale
- can selective target ions of interest
- are inexpensive
- are simple to fabricate
- are easy to read
- are environmentally friendly

RELATED MATERIALS

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INVENTORS

- Arias, Ana Claudia

OTHER INFORMATION

KEYWORDS

precision agriculture, flexible electronics, chemical sensors, ion selective membrane, definitive screening design, potentiometric sensors, nitrate sensors, agriculture sensors

CATEGORIZED AS

- **Agriculture & Animal Science**
  - Devices
- **Environment**
  - Sensing
- **Sensors & Instrumentation**
  - Environmental Sensors
- **Materials & Chemicals**
  - Agricultural

RELATED CASES

2022-008-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Printed All-Organic Reflectance Oximeter Array
- Scalable And High-Performance Pressure Sensors For Wearable Electronics
- 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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