BIODEGRADABLE POTENTIOMETRIC SENSOR TO MEASURE ION CONCENTRATION IN SOIL

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

PATENT STATUS

| Country | Туре | 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 |
| China | Published Application | CN118339450A | 07/01/2024 | 2022-008 |
| India | Published Application | 202447018466 | 03/24/2024 | 2022-008 |

Additional Patent Pending

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:

- \gg can be produced at scale

- » are simple to fabricate
- » are environmentally friendly

RELATED MATERIALS

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

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INVENTORS

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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

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