Drift-Free, Self-Calibrated Interrogation Method For Electrochemical Sensors Based On Electron Transfer Kinetics

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BRIEF DESCRIPTION

A new method using chronoamperometry in place of voltammetry to obtain data from electrochemical sensors, including electrochemical biosensors.

BACKGROUND

Current electrochemical sensing approaches rely on binding-induced changes in electron transfer kinetics and commonly use voltammetric approaches. However, recently there has been an interest in using chronoamperometric interrogation for electrochemical sensing, as opposed to voltammetric approaches. The use of chronoamperometrics is expected to produce significant improvements and advances.

DESCRIPTION

Researchers at the University of California, Santa Barbara have developed a new method using chronoamperometry in place of voltammetry to obtain data from electrochemical sensors, including electrochemical biosensors, reliant on binding-induced changes in electron transfer rates to produce an output signal. This method offers many advantages including calibration-free, drift-resistant operation, vastly improved measurement time resolution, improved signal-to-noise ratios, and improved signal gain.

ADVANTAGES

- No need for prior calibration of individual sensors
- Offers improved long-term sensor performance
- Improved measurement time resolution
- Improved signal averaging and signal-to-noise ratios
- Improved signal gain

APPLICATIONS

- Electrochemical biosensors
- Chemical sensors

PATENT STATUS

Patent Pending

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OTHER INFORMATION

KEYWORDS

chronoamperometry, voltammetry, electrochemical sensing, biosensors, electrochemistry, indansens

CATEGORIZED AS

- **Biotechnology**
  - Other
- **Sensors & Instrumentation**
  - Biosensors
  - Scientific/Research

RELATED CASES

2017-248-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Drift-Free and Calibration-Free Measurement of Analytes
- Electronic Detection Of Molecular Targets, Including Proteins, Oligonucleotides And Other Small Molecules
- Fluorescent and Electrochemical DNA-Based Switches for Antibody Detection
- Electronic Detection Of Molecular Targets, Including Proteins, Oligonucleotides And Other Small Molecules
- Dual-Labeled E-AB Platform for Continuous, Real-Time Monitoring of Small Molecules

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