Next Generation Disposable Sensor Technology for Diagnostics

Nanoflex
Electrode Excellence

Healthcare and Diagnostics

Point-of-care diagnostics require easy-to-use devices with a high degree of measurement certainty. A DIAMON™ Sensor gives the biosensing community an ideal platform to vastly improve current measurement techniques. The ultra-high sensitivity, high signal-to-noise ratio and increased speed of response obtained with NanoFlex's nano-band electrodes offer many innovative opportunities. DIAMON™ Sensors can often use the same chemistries and footprint to provide a simple replacement for current sensors.

- ✓ **1000 x more sensitive than traditional sensors**
- ✓ **Improved signal-to-noise ratio**
- ✓ **Typically provides a wider linear range**
- ✓ **Fast response time**
- ✓ **Less biofouling and skin irritation – extends device lifetimes**

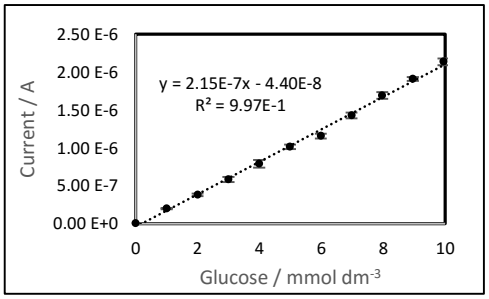
Biomarker detection – a comparison

Improved Sensitivity

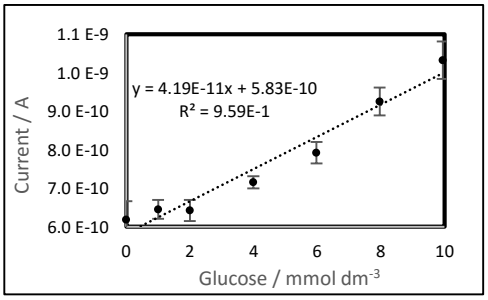
Limit of Detection of H_2O_2 using a **DIAMON™ Sensor**

Limit of Detection of H_2O_2 using a traditional sensor

Improved Accuracy



*Glucose calibration curve using **DIAMON™ Sensor***



Glucose calibration curve using conventional electrode technology

A Platform Technology for Enzyme Electrodes

The extremely high sensitivity of the structure allows for the size of the device to be reduced significantly without sacrificing resolution. The flexible electrodes are made using tried and trusted manufacturing techniques on Platinum or Gold, enabling a range of enzyme systems to be used and analytes to be targeted e.g. Glucose or Lactate. The enhanced mass transport can also remove the need for membranes on the electrode surface to e.g. limit oxygen diffusion. This allows applications in dip-stick, finger prick, implantable and other continuous monitoring to become a reality.

*2, 4 and 14 µM **Lactate** additions*

*Three 200nM **Glucose** additions on a **DIAMON™***

Interested? - Please Turn Over

Providing greater measurement certainty

Who works with NanoFlex?

Our customers tend to be diagnostic companies with the highest demands in terms of measurement performance and reproducibility.

Why do NanoFlex customers access our technology?

NanoFlex technology offers very high performance and reproducibility taking the uncertainty out of electrochemical measurement with architectures which are compatible with existing materials and processes used in the mass manufacture of disposable diagnostic devices. This minimizes the risk of adoption and disruption to work flow.

What is available to NanoFlex customers?

Platinum and gold nanoband electrochemical electrodes. Platinum provides access to a wide variety of oxidases and peroxidases widely used in the diagnostics industry. Very little platinum is required resulting in very cost effective measurement solutions.

Gold offers compatibility with a wide range of existing biochemistries enabling a very broad range of chemistries on the NanoFlex electrode platform.

How do NanoFlex customers assess the technology benefits?

NanoFlex technology can be incorporated into a wide range of existing electrochemical sensor architectures and formats.

Rapid prototyping offers timely and economic trialing of NanoFlex technology. Working with NanoFlex, test devices can be quickly produced to the customer's specification for trialing and validation.

Research grade electrodes are also available for customer's early stage in-house development.

What are the overall benefits that NanoFlex customers enjoy?

- Measurement confidence – time after time.
- Low adoption risks – many existing chemistries are directly compatible.
- Low cost, high volume manufacture – uses materials and processes common to the current disposable diagnostics market.
- The fastest access to next generation biosensors for a wide range of diagnostic applications.

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