Solid Contact Electrochemical Sensor

Technology #20140304

Low-cost Ion Selective Electrode with Solid Contact

A new type of solid-contact ion-selective electrode (ISE) introduces low-cost colloid-imprinted mesoporous (CIM) carbon material as the solid contact. The CIM carbon, which is inexpensive and easy to manufacture, acts as an intermediate layer between a gold electrode and an ionophore-doped ISE membrane. The CIM carbon’s open and interconnected pore texture offers significantly higher capacitance than current technology.

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<th>MN-IP Try and Buy</th>
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<tr>
<td><strong>Try</strong></td>
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<tr>
<td>• Up to twelve month trial license</td>
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<td>• Fee is $10,000 for twelve months</td>
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<td>• Fee is waived for MN companies or if sponsoring $50,000+ research with the University</td>
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<td>• No US patent expenses during trial period</td>
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<td><strong>Buy</strong></td>
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<td>• $15,000 conversion fee (TRY to BUY)</td>
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<td>• Royalty rate of 3% (2% for MN company)</td>
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<td>• Royalty free for first $1M in sales</td>
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Electrochemical Sensor Requires Little Calibration

The new sensor requires minimal calibration. This benefit is due to a redox couple incorporated into the ISE, yielding a standard deviation of $E^\circ$ as low as 0.7 mV. In addition, the CIM carbon’s high purity, hydrophobic characteristics and low number of redox-active functional groups give the ISE excellent potential stability and resistance to light, oxygen, carbon dioxide and water interference.

**BENEFITS AND FEATURES OF SOLID CONTACT ELECTROCHEMICAL SENSOR:**

- Requires minimal calibration
- Excellent resistance to interference from light, oxygen, carbon dioxide and water
- Long-term stability and excellent reproducibility
- Colloid-imprinted mesoporous (CIM) carbon is inexpensive and easy to manufacture
- Open and interconnected CIM carbon pore structure leads to higher capacitance

**Phase of Development** - Prototype Development

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**IP: UM Docket 20140304**

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