



## **Ion-Selective Electrode (ISE) Fluorous Sensing Membranes**

Innovative fluorinated sensing membranes Ion-Selective Electrodes (ISEs) used in liquid and gas chemical sensing applications. The membrane technology delivers an eight times improvement in selectivity and sensitivity and is significantly less prone to bio-fouling making it more robust.

### **IP Summary:**

Many applications use Ion-Selective Electrodes (ISEs) to sense chemical composition in liquids and gases. Examples; clinical chemistry, wastewater testing and treatment, and food and beverage preparation. This innovative technology features a membrane with a high concentration of fluorine that imparts a very low polarity. As a result of its fluorinated nature, the membranes have very high chemical selectivity, are less prone to different ions (sensitivity) and are resistant to bio-fouling. Traditional ISE sensors do not provide the level of sensitivity and selectivity to deliver the increasing high standards for testing needed in today's and tomorrow's testing and process control. Additionally, sensors used in clinical chemistry, where you are sensing in biological samples like blood, foul due to the degrading of the current membranes caused by various biological components present in the sample. The result of these deficiencies is a need to repeat measurements (more time and money) and the need to replace the sensors due to bio-fouling (more money and time). Companies that supply diagnostic and measurement equipment (Honeywell, Thermo Scientific, Roche, Abbot, Schlumberger, etc), will benefit by incorporating this technology into their equipment, delivering more accurate, repeatable and robust solutions to end user customers.

### **Technical Merit:**

Every year over 200 million measurements of human blood samples are performed in clinical laboratories in the USA alone. In addition to blood, other tests are performed that generate over one billion measurements per year in the US clinical market. For conventional sensors bio-fouling causes "drift" and requires frequently replacement of conventional sensors at great cost. Additionally the reduction in bio-fouling opens up the opportunity for implantable sensors that provide real-time, en-vivo measurement of chemicals. This technology opens up completely new patient monitoring and treatment control solutions.

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# Office for Technology Commercialization

## Patent Landscape:

US Patent Application; Chemical Sensor 11/915,551

EP Patent Application; Chemical Sensor 06784476.1

## Publications / References:

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