Biosensing Instrument

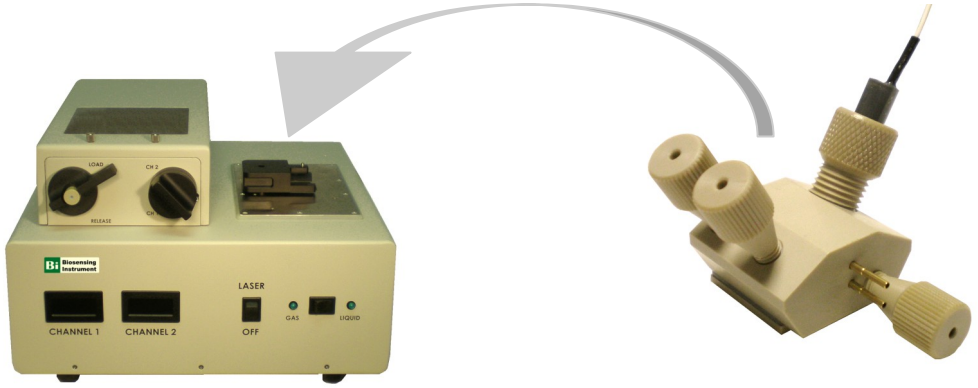
1 West Elliot Road #111, Tempe, Arizona 85284
Tel: 1.480.491.2777 Fax; 1.866.897.8741
Email: Info2BI@BiosensingUSA.com
Website: www.BiosensingUSA.com

Ultra Sensitive Surface Plasmon Resonance (SPR) Instrument with Built-in Versatility

EC-DualFlow™

Dual Channel Electrochemical Flow-Through SPR

Biosensing Instrument Inc. introduces an innovative Dual Channel Electrochemical Flow-through SPR option—**EC-DualFlow™**. This technology provides users with novel capabilities to study molecular binding processes and conformational changes of biomolecules under the influence of applied electrochemical potentials at different flow rates. Its small channel volume facilitates rapid sample exchange and fast kinetic studies, and also drastically reduces consumption of valuable bio-logical samples. The dual-channel allows users to perform serial downstream analysis, control experiments, and develop new applications.



EC-DualFlow™ Analysis Module

Key Features

- ☑ Dual channel electrochemical SPR with flow control
- ☑ Small internal sample volume
- ☑ Modular design provides users with maximum flexibility
- ☑ Wide dynamic range and high sensitivity for both large and small molecules
- ☑ Broad response time for slow (hours) and fast (< ms) kinetic processes

Performance Characteristics:

- ***Dual Channel, Electrochemical and Flow Control:*** Two Independent electrochemically controlled channels together with a wide range of flow rates make this system uniquely versatile for cutting-edge EC-SPR applications. A user can apply an external potential to one fluidic channel, while leaving the other fluidic channel (upstream, downstream, or in parallel) available for standard SPR analysis. Alternatively, the user can simultaneously apply the same or different potentials to the two channels.

- ***Small Internal Volume:*** Such a small volume conserves expensive reagents and valuable samples and enables researchers to carry out rapid sample injection and investigations of fast kinetic processes. Moreover, it provides the flexibility of achieving thin-layer cell performance at a slow flow rate and steady-state voltammetric behaviors at a high flow rate.

- ***Biocompatible****:* The cell body and fluidic channels are constructed with biocompatible materials. Such biocompatibility eliminates sample carryovers and memory effects, affording continuous and undisrupted sample injections and analyses.

- ***Easy to Use and Simple to Maintain:*** The micro-fluidic cell and EC electrodes are uniquely integrated into the cell body with high precision making it easy to use, clean and maintain. This integrated EC-SPR flow system conveniently mounts to all BI-SPR instruments for high performance EC-SPR analysis.

Applications:

BI's **EC-DualFlow™** SPR technology opens the door to many previously impossible experiments. Users can now induce an electrochemical process in one channel so that its reaction products can be captured and/or studied downstream in the second channel. Other applications include:

- Electrochemical SPR studies of redox-labeled biomolecules
- Redox-enhanced and –impeded biomolecular interactions (e.g., protein-protein, protein-DNA, and protein-drug interactions)
- Electric field-controlled binding and dissociation processes
- Electric field assisted DNA hybridization and melting
- Electrical field- and redox-induced conformational changes of immobilized proteins and other molecules
- Simultaneous electrochemical and SPR analysis of anodic stripping
- Electrochemical deposition and stripping in flowing solution streams
- Development of high-throughput electrochemical biosensors
- Real-time monitoring of influx/efflux of ions within redox thin films