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# Bi Biosensing Instrument

## High-Performance and Versatile Surface Plasmon Resonance Instruments

Our products are ideal for:

- Life science research
- Electroanalytical applications
- Drug discovery
- Food quality and safety
- Environmental sciences
- Gas- and liquid-phase chemical sensors

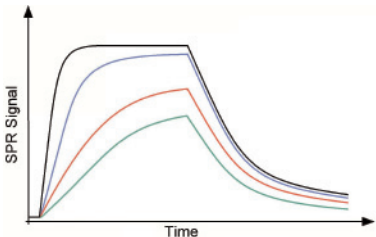


Biosensing Instrument (BI) Incorporated is devoted to providing high-quality Surface Plasmon Resonance (SPR) instruments for creative research. Our instruments offer a sensitive, label-free technology to detect both large and small analytes, and to study slow and fast kinetics. Our unique designs also allow users to easily switch among fluid injection, electrochemical and gas phase detection applications.



### The BI-SPR Technology

SPR detects molecular binding events or conformational changes of molecules by measuring the surface plasmon resonance angle. So a key task of SPR technology is to rapidly and sensitively measure the resonance angle change. To meet different needs of various applications, another important consideration in designing a SPR instrument is flexibility and versatility. BI-SPR uses a unique noise and drift cancellation technology to achieve high sensitivity and fast time response, and modular designs to provide users with maximum versatility and flexibility.



### Biosensing Instrument Inc.

One West Elliot Rd, Suite 111,  
Tempe, AZ 85284  
Phone: 480.491.2777  
Fax: 866.897.8741  
info2bi@BiosensingUSA.com  
www.BiosensingUSA.com

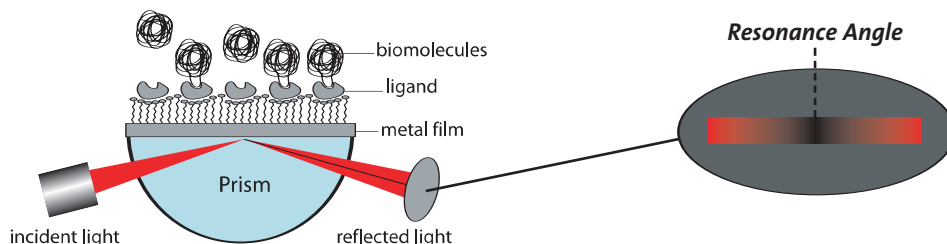


Fig. 1 A key task of SPR Technology is to accurately and rapidly detect the shift in the resonance angle (dark line in the reflected beam).

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A typical application of SPR (Fig. 2) is to study the binding of protein molecules onto the sensor surface. BI-SPR is ideal for users to monitor the entire process involving sensor surface modification, surface activation, and biomolecular immobilization.

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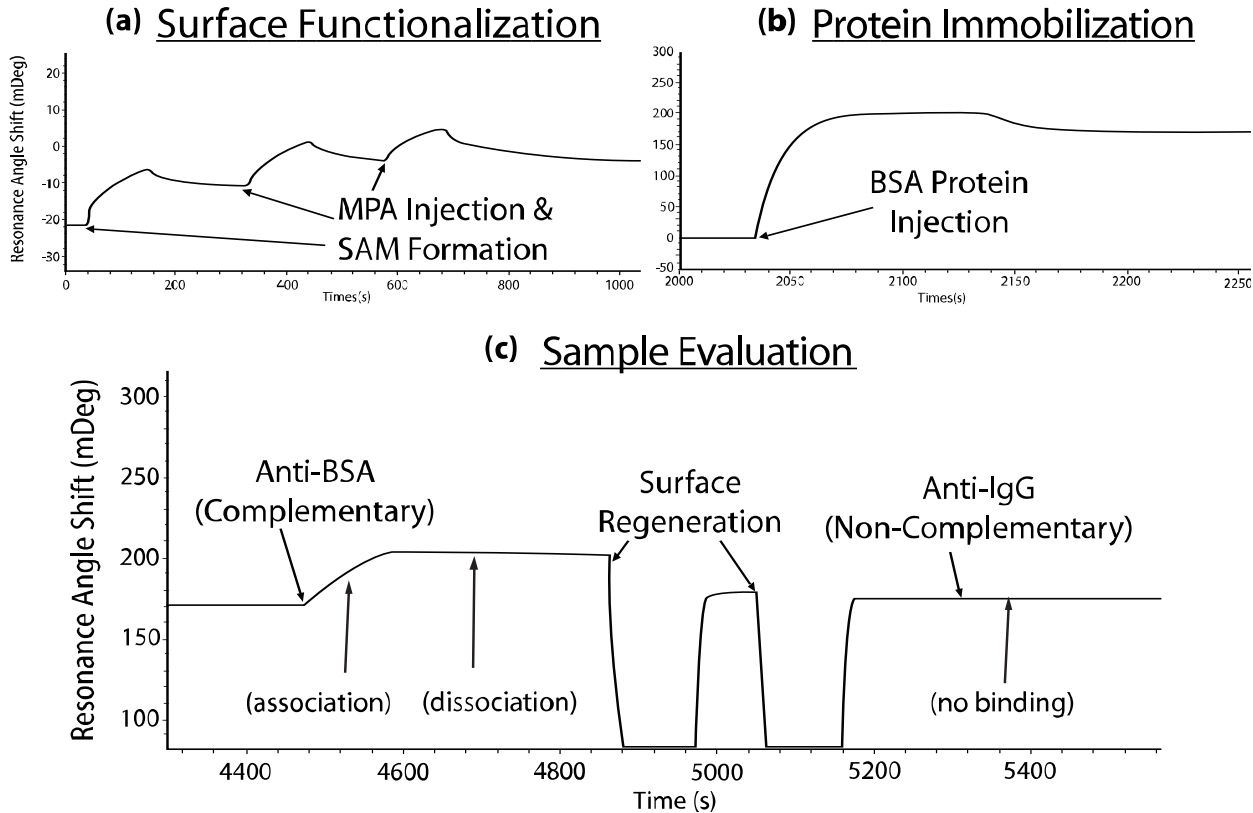


Fig.2 A representative SPR sensorgram.

(a) Three injections of mercaptopropionic acid (MPA) form a functional self-assembled monolayer on the sensor surface. (b) Following surface activation with standard NHS/EDC attachment chemistry (not shown), BSA protein is immobilized onto the sensor surface. (c) Following an injection of ethanol amine to block the remaining active sites (not shown), 50nM anti-BSA complementary protein is injected and can be observed binding to the surface. Two regeneration injections follow to release the anti-BSA protein and renew the surface for further binding tests. Finally, 100nM anti-IgG non-complementary protein is injected, but binding is not observed as expected.

### Instrument Specifications:

Angular resolution:  $<1 \times 10^{-4}$  degree  
 Flow cell configuration: dual channel  
 Injection volume: 10-1000  $\mu$ L  
 Sample loading and injection: manual

Fastest sampling rate: 100,000 point/S  
 Flow cell volume: 6  $\mu$ L  
 Flow rates: 0.02 nL/min-1.2 mL/min  
 Electrochemical cell volume:  $< 1$  mL

### Commitment to Quality and Satisfaction

At Biosensing Instrument we are committed to providing our customers high-performance and versatile instruments. Our customer service and support offers the highest level of satisfaction for innovative researchers.

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