KSV SPR 200

Surface Plasmon Resonance

Can a different approach to SPR improve your surface science research?

Surface Plasmon Resonance has been established as a powerful method to monitor label-free biomolecular interactions in liquids. However, today SPR can deliver well beyond kinetics and equilibrium constants: you can expect more from SPR with KSV SPR 200.

KSV SPR 200, the versatile SPR system for surface science

Applications

With KSV SPR 200, in addition to traditional biophysical interaction phenomena, you can also characterize optical constants and thicknesses of nanoscale strutures. KSV SPR 200 allows you to measure:

- Nanoscale film properties
- Surface-molecular interactions
- Physics and material sciences
- Bio-material films
- Gas sensors

SPR and Nanoscale films

With KSV SPR 200, an incident beam of p-polarized light strikes an electrically conducting gold layer at the interface of a glass sensor (high Refractive Index) and an external medium with low RI (gas or liquid).

At a given angle, the excitation by light of surface plasmons existing at the interface generates a “resonance” of these surface plasmons, resulting in a reduced intensity of the reflected light.

A slight change at the interface (e.g. a change in refractive index or nanoscale film thickness) will lead to a change in SPR signal, allowing precise measurements of nanoscale film properties as well as surface molecular interactions.

Main features

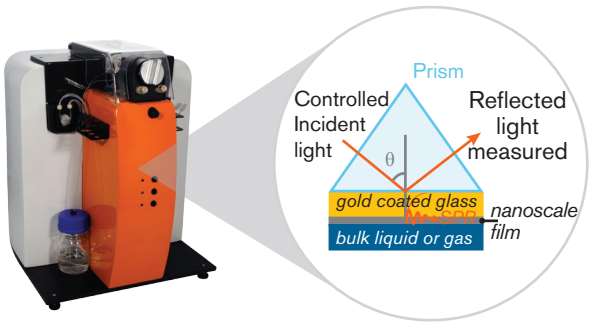
Broad application possibilities
- Highly sensitive measurements (1pg/mm^2)
- 2 channel flow cell for simultaneous analysis

Wide angular scan range (40–78°)
- Enables analysis in gas and liquid
- Allows quality check of user-modified surfaces

Quick and easy exchange of surfaces
- Innovative sensor-plate holder
- Designed for easy “drop-in” placement in instrument

Contamination free measurements
- Optical gel index matching
- Unique sensor-plate configuration

High performace liquid handling
- High performance sample injection/recovery
- Easy exchange of solutions



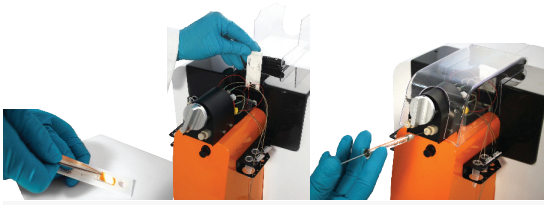
Instruments for nanoscale research

www.ksvltd.com

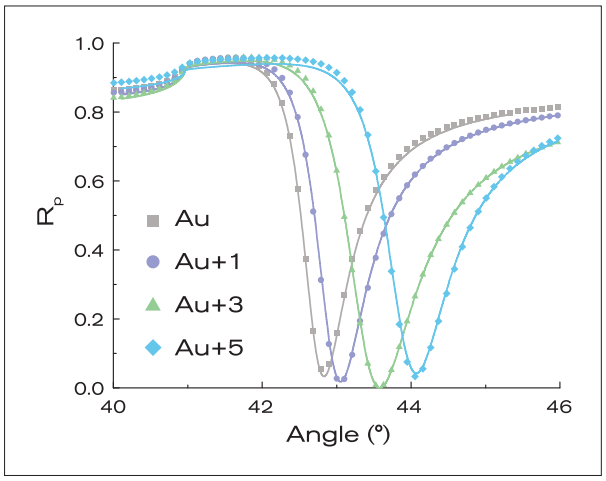
KSV provides scientific instruments for characterization of nanoscale films and surface-molecular interactions. KSV is also a pioneer in nanocale film deposition.

Application examples

The unprecedented versatility of KSV's SPR 200 means that it is able to provide essential results across a very wide range of applications. Within these applications, demanding researchers are given full control over experimental parameters and the flexibility to ensure they meet their research goals.



More about the KSV SPR 200 at
www.ksvltd.com/spr

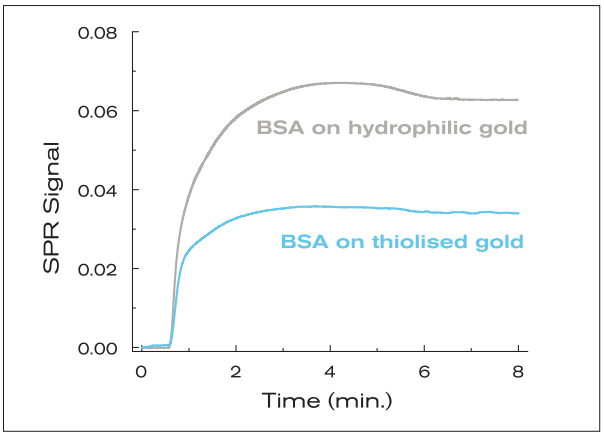


SPR intensity versus angle curves measured in air for an increasing number of LB layers of Stearic Acid on gold.

Example1: Langmuir-Blodgett film characterization in air

Creating ordered single or multiple layers of molecules has a multitude of technology applications, such as biosensors and nanoelectronics. In this example, Langmuir-Blodgett (LB) deposition was used to deposit single and multiple layers of stearic acid on gold. By measuring the full SPR intensity versus angle curves in air, the layer thickness after successive depositions could be quickly and easily confirmed. In this case, the film thickness increased linearly with the number of layers.

Visit website for full Application Note.



Change in SPR signal during BSA adsorption to hydrophilic and hydrophobic gold.

Example 2: Albumin adsorption

A typical application in biomaterials research is the adsorption of protein to tailored surfaces. In this case, the KSV SPR 200 is used to follow the adsorption of 0.1 mg/mL Bovine Serum Albumin (BSA) onto a gold surface before and after self-assembly of an alkanethiol. The results show that hydrophobization of the gold halved the amount of albumin adsorbed. The layer thickness and adsorbed amount can be determined in each case, by fitting the measured data with theory.

Visit website for full Application Note.

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