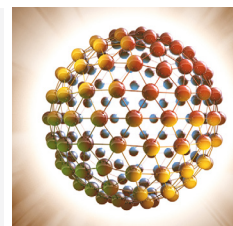
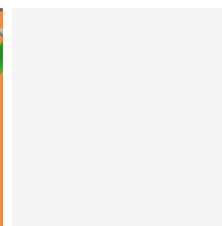
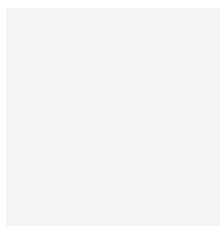
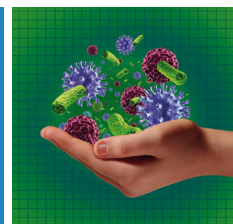
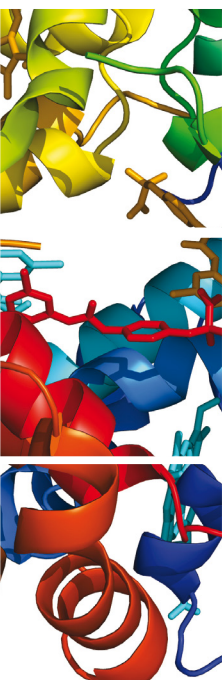


OpenPlex

Multiplex Label-Free Interaction Analysis



Open Research Platform
for Kinetics & Affinity
Measurements

OpenPlex



Get information about:

- Kinetics
- Affinity
- Specificity
- Concentration
- Relative binding

OpenPlex is the ideal solution for the development of label-free multiplexed bioassays and biomolecules detection. It uses Surface Plasmon Resonance imaging to track the real-time binding of molecules on multiple spotted areas located on a sensor chip. Typical applications include biosensor development, pathogen detection, water monitoring, nanotechnology and surface characterization.

Flexible

OpenPlex is a cost-effective solution without compromise. It combines the throughput of SPR imaging with the versatility of an open configuration. **Different flow cell accessories** are available, and easily interchangeable to broaden your research areas.

Easy to Use

OpenPlex is a **fully manual** instrument and is simple to operate. It can be easily used in laboratory classes to introduce SPR imaging to students.

Robust

Microfluidics-free liquid handling based on PEEK tubes allows **the analysis of concentrated or complex samples**, such as cells, bacteria, serum or plasma – No risk of blocking the fluidics system.

Powerful Software

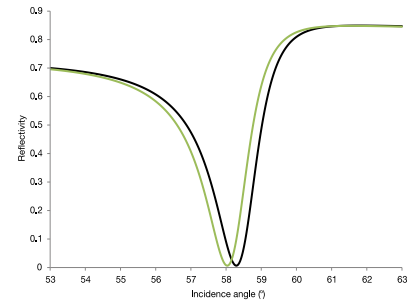
OpenPlex is delivered with an intuitive SPRi software suite that can be used from measurement acquisition to analysis of the results and **instant data reporting** exported into Word or Excel files.

Open Research Platform for Fast and Easy Kinetic Interaction Monitoring

SPRi Technology for Real-Time Label-Free Biomolecular Interactions

OpenPlex uses Surface Plasmon Resonance imaging (SPRi) to follow label-free binding events in real-time.

SPR **measures modifications of the refractive index** located at the surface of a sensor chip, which can be correlated to mass variations. Binding events create local changes of the refractive index, and therefore changes of reflectivity (ΔR) of the incident light at a fixed angle. Thanks to the imaging capability, **multiple interactions can be monitored simultaneously**.



Plasmon Curves

Multiplexing: Performance and Speed Combined

The imaging configuration of OpenPlex dramatically enhances the throughput of conventional SPR.

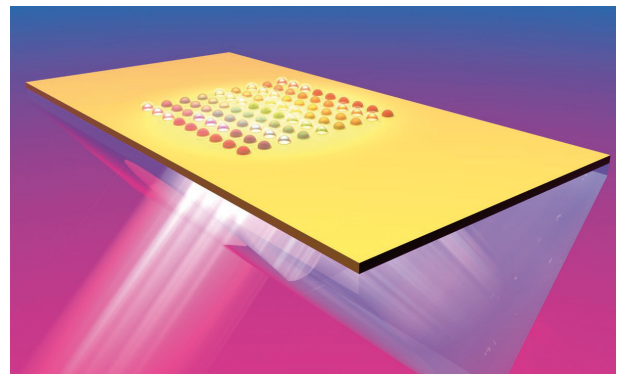
Ligand molecules are immobilized in an array format onto the sensor chip surface and are screened against the interacting partner in the sample solution.

Running **hundreds of molecules** in one biochip without labeling will shorten your time-to-result significantly!



"We are able to generate consistent results that enable us to identify full binding coefficients for multiple candidate aptamer sequences simultaneously. The instrument [...] has become one of the most essential tools that we have."

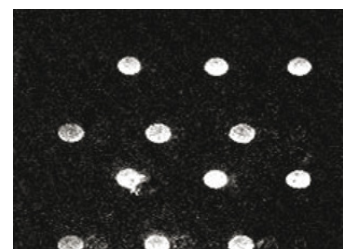
Dr. G. Penner, NeoVentures Biotechnologies, Canada



Biochip with up to 20 x 20 spots

Instant Information about Molecular Interactions From Real-Time Display of Spots

Binding events are followed in real-time on the kinetic curve (sensorgram) and also on the SPRi difference image. White areas on the SPRi difference image correspond to areas where binding has occurred – giving a clear **Yes/No answer to molecule detection**.



SPRi difference image of the sensor chip after interaction

Gain a Deep Insight into your Molecule Interaction Analysis

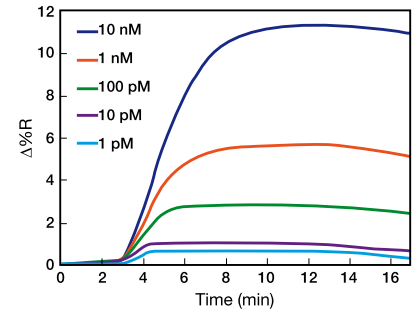
Biosensor Development - Biomolecule Detection

Gold nanostructures or quantum dots can increase OpenPlex sensitivity for detecting biomolecules. Here, the combination of nanotechnologies and SPRi allows the detection of bacterial RNA (picomolar concentrations).



"...an essential tool [...] for the characterization of sophisticated ultrasensitive diagnostic platforms integrated with either nanomaterials, modified gold nanostructures or microfluidics"

Prof. Maryam Tabrizian, McGill University, Canada



Detection of 16srRNA from *Legionella pneumophila* using quantum-dot enhancement

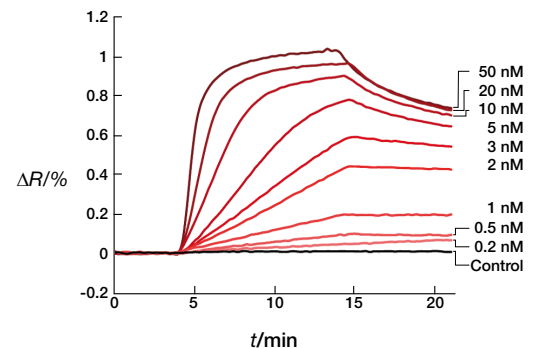
Courtesy of Maryam Tabrizian, McGill University, Canada

Binding Analysis

OpenPlex can measure affinity and kinetic rates involving various types of biomolecules including DNA, RNA, proteins, peptides, antibodies, oligosaccharides, and more.

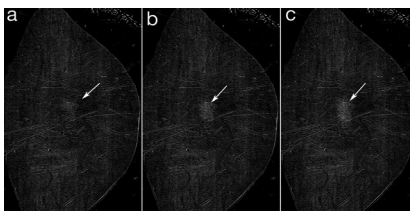
Sensorgrams obtained for various concentrations of a protein binding to its aptamer immobilized on the sensor chip.

Courtesy of Yoann Roupioz, CEA Grenoble, France



Biofilm Dynamics Monitoring

The unique imaging capability of SPRi brings you the image function so **you can see** in real-time any modification occurring on the sensor chip surface. For example, biofilm dynamics can be analyzed from different surface coatings simultaneously.



Images of *E. coli* biofilm formation taken at (a) 405 min; (b) 409 min; (c) 420 min

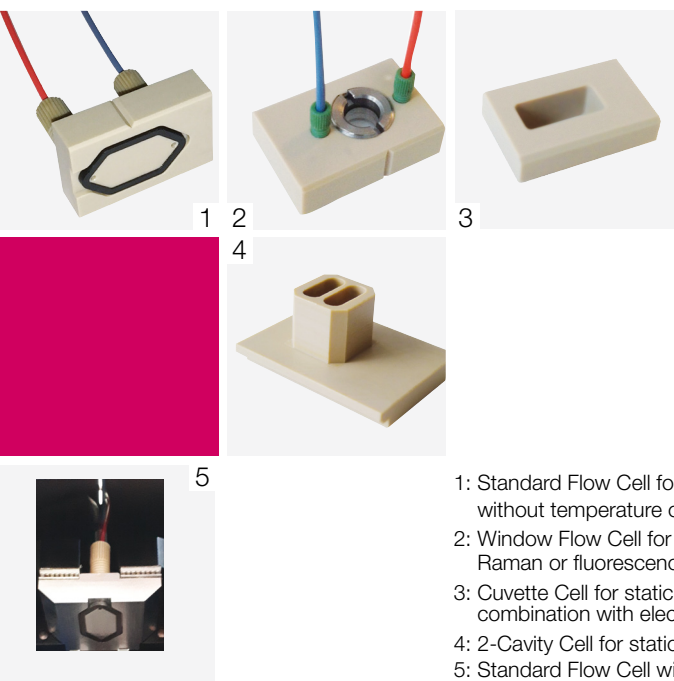
Courtesy of Ed Goluch, Northeastern University, USA



"The accessibility of the hardware and the flexibility of the software [...] allow us to stretch the limits of what can be studied with SPRi. We have been able to modify the flow cell to study bacterial cells and biofilms in unique geometries."

Dr. E. D. Goluch, Northeastern University, USA

Get The Most Out of Your Instrument



Simplicity and Flexibility Combined

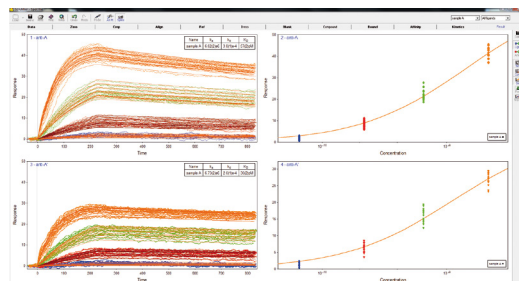
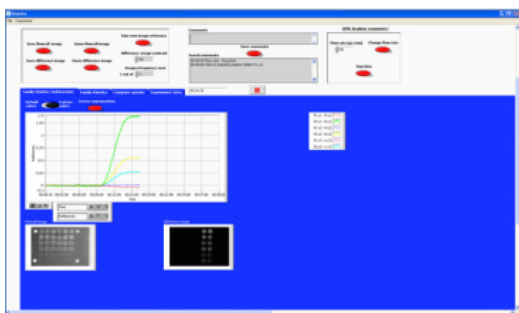
OpenPlex can work with different optional flow cells to give you more flexibility. Two possibilities are offered: one flow cell with temperature control and other with different configurations, which can be used to work in a static mode (no flow) or to combine SPRi with other techniques such as Fluorescence or Electrochemistry.

- Different fluidic cell configurations
- Coupling with other techniques
- Quick data analysis
- Instant data reporting
- Affinity determination

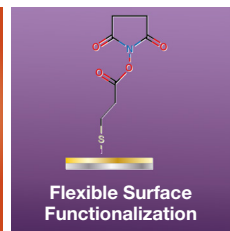
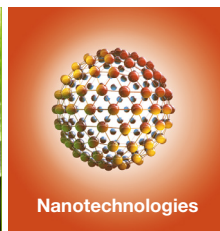
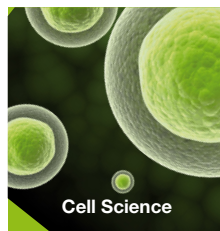
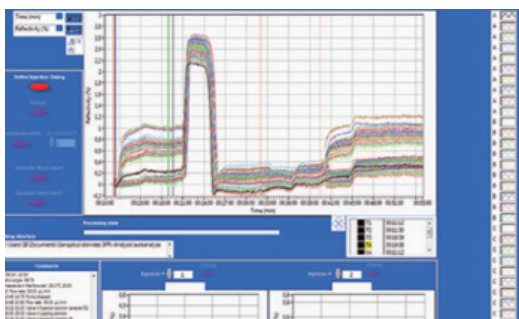
SPRi Software Suite

The powerful software suite of OpenPlex allows you to acquire data, analyze results and generate reports automatically.

- **SPRi-View:** Intuitive instrument control software for ease-of-use that guides you through all the different steps of the measurement
- **ScrubberGen (optional):** Advanced analysis to fit data and determine kinetic parameters



- **SPRi-Analysis:** Quantitative and report analysis to track all your experiments



Discover the Label-Free Platform From HORIBA Scientific

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