



Insplorion

Acoulyte

Introduction



- Simultaneous real-time measurements with Insplorion's NanoPlasmonic Sensing (NPS) and Q-Sense Quartz Crystal Microbalance (QCM-D).
- Complementary information to help study complex processes under identical experimental conditions, and on the same surface.
- Measure changes in wet (acoustic) and dry (optical) mass.
- Measure diffusion processes and obtain depth profiling.
- The Acoulyte module fits directly onto the standard Q-Sense window module in either the Q-Sense Analyzer (E4) or Explorer (E1) instrument.

Words from our users

"The integration of NPS sensors with acoustic sensor techniques for simultaneous measurements on the same sensing surface enables unparalleled capabilities for probing the hydration and non-hydration mass properties of biological and biomaterial systems."

Prof. Nam-Joon Cho

Nanyang Technological University, Singapore

"With the Insplorion Acoulyte we now have a powerful tool to obtain complementary information, at the same time, about the diffusivity and the quantitative amount of molecules loaded in our membrane host structures based on metal-organic frameworks."

Prof. Dr. Christof Wöll

Karlsruher Institut für Technologie, Germany

Insplorion™

Sahlgrenska Science Park

Medicinaregatan 8A

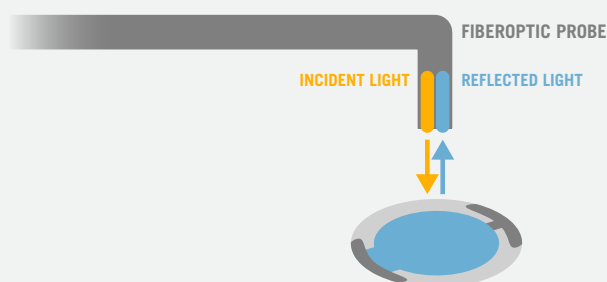
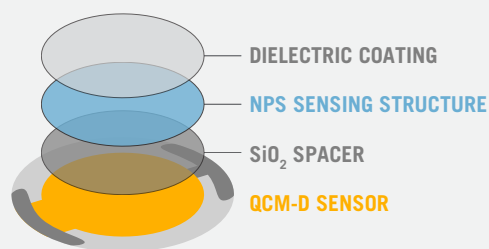
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NanoPlasmonic Sensing (NPS)

In NanoPlasmonic Sensing (NPS), the localized surface plasmon resonance (LSPR) of a nanostructured sensor is used to probe minute changes in refractive index related to optical (dry) mass close to (< 30 nm from) the sensor surface. This enables extremely sensitive detection of processes occurring at the sensor/sample interface.



Acoulyte product offer

The Acoulyte can be easily combined with a Q-Sense Analyzer (E4) or Explorer (E1) instrument when equipped with the standard Q-Sense window module. The Acoulyte product offer contains everything you need to add NPS to your QCM-D setup: the Acoulyte module with fiber optic probe, the Insplorion Optics Unit and the Insplorer software for data acquisition and analysis.

If you would like to learn more about Insplorion's technology, products or applications, contact Insplorion at info@insplorion.com or by phone +46 (0)31 380 26 95.

Please also visit our web page:
www.insplorion.com

	Measured quantity	Sensing depth
NPS	Dry mass	< 30 nm
QCM-D	Wet mass and viscoelasticity	> 300 nm
Acoulyte	Dry mass, wet mass and viscoelasticity	Enables depth profiling

Quartz Crystal Microbalance with Dissipation monitoring (QCM-D)

Quartz crystal microbalance with dissipation monitoring (QCM-D) utilises an oscillating quartz disc to measure the wet mass and viscoelasticity of thin films on the disc surface. The sensing depth of QCM-D is generally larger (>300 nm) than that of NPS (< 30 nm), enabling depth profiling and diffusion measurements.

NPS + QCM-D = Acoulyte

Acoulyte sensors are QCM-D sensors with an NPS sensing structure.

A fiber optic probe is used to irradiate the surface of the acoulyte sensor and collect the reflected light, enabling combined and simultaneous NPS and QCM-D measurements.

"The Insplorion Acoulyte is based on an exciting technology. It complements our Q-Sense offering and further expands the range of powerful surface analysis options available to our customers."

Johan Westman,
Vice President, Analytical Instruments,
Biolin Scientific



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