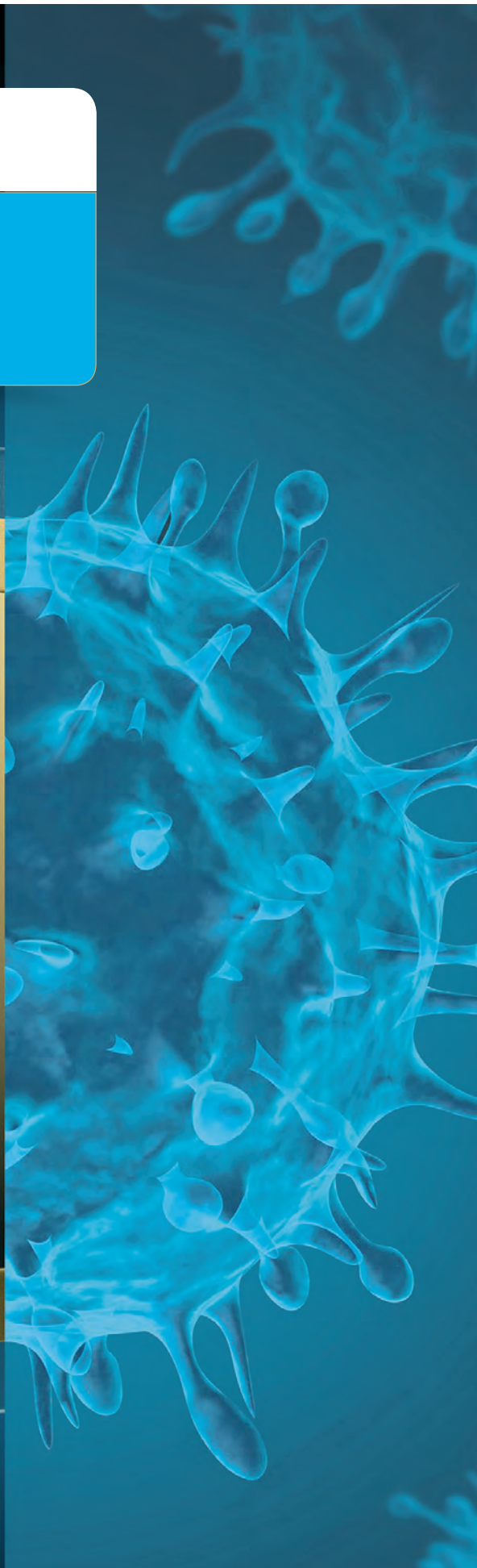




Solution range

Superior accuracy in surface
interaction analysis

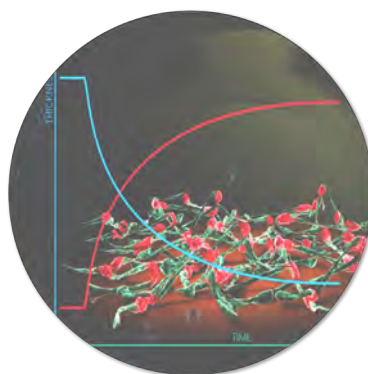


Explore the nanoscale world with Q-Sense

Based on established and powerful quartz crystal microbalance with dissipation (QCM-D) technology, Q-Sense gives you vast exploration and experimentation capabilities - making it easy for you to find answers to the questions that need asking.

Superior accuracy

The real-time analysis of surface-molecule interactions allows you to measure mass and thickness changes and rapid events with nanogram precision. In addition, structural changes and solvent content are also detected - all with accurate outcomes and high reproducibility.



Endless possibilities

Our instruments are designed to enable variable measurement conditions, and a wide variety of samples in liquid or air can be analyzed. We also have the broadest sensor surface offering on the market, enabling you to achieve your real-life conditions.



As easy as it gets

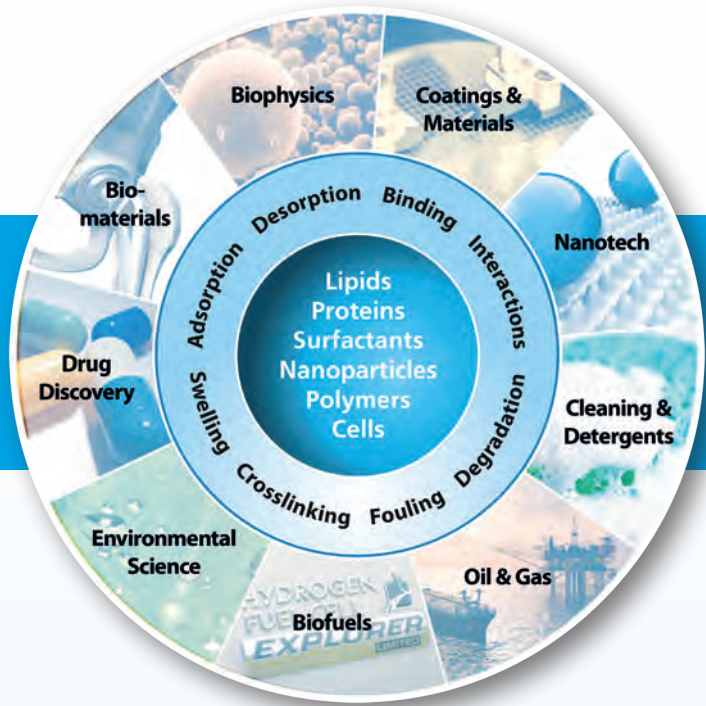
Turn-key instruments, intuitive software and support from our experienced team of experts will ensure you get the most out of your measurements.



Q-Sense - world leader in QCM-D technology

Since 1999, when the first commercial QCM-D instrument was created, Q-Sense has become the world leader in Quartz Crystal Microbalance based instrumentation. Today, Q-Sense systems can be found in over 25 countries worldwide and QCM-D technology is used in thousands of publications.

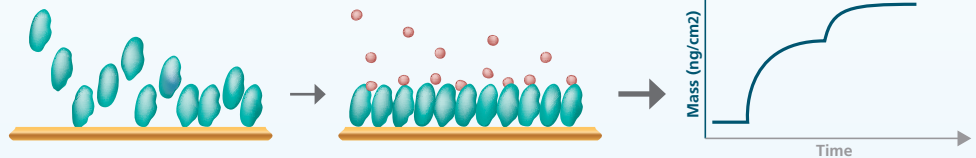
A powerful solution for your lab and application



[Get the full picture] of your molecule-surface interactions

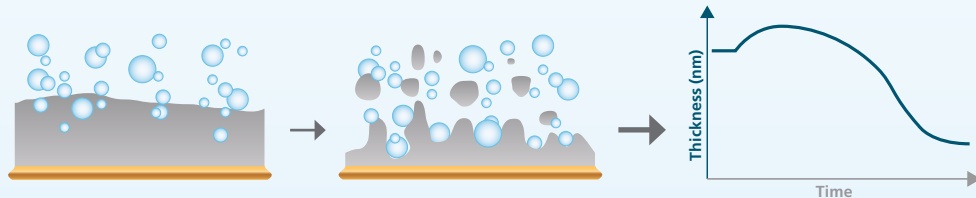
Study surface interactions

- In real-time
- With nanogram precision



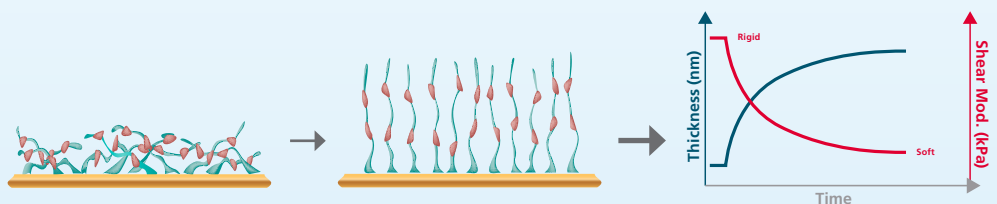
Analyze events such as

- Adsorption/Desorption
- Binding
- Degradation
- Cross-linking
- Swelling/Collapse



Find out

- How much?
- How fast?
- What process?
- What structure?



How it works - in brief

Q-Sense instruments track changes in frequency and dissipation when molecules bind and interact on the oscillating QCM-D sensor. From this information it is possible to quantify mass, thickness, viscosity and shear modulus of the adhering layer.

Progress Together

Engineered to enhance your productivity and profitability, Q-Sense is a full solution range that gives you unrivalled off-the-shelf performance. Besides top-of-the-range instruments, Q-Sense provides the most complete line-up of QCM-D sensors, software, service and support on the market.

Q-Sensors

Your world on a sensor

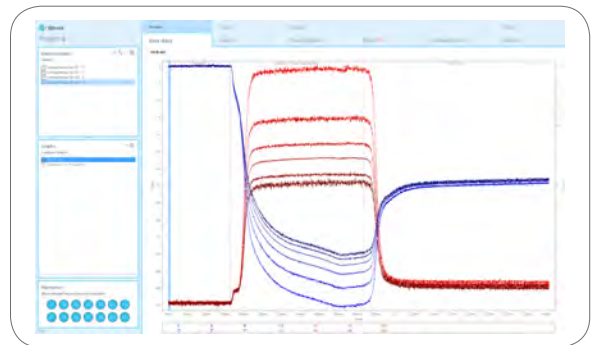
Q-Sense offers the widest range of sensor surface coatings on the market. Whether you are interested in polymers, alloys, basic elements, functionalized surfaces or a number of other materials, we have a solution for you. See the Q-Sensor brochure for the complete offer.



Q-Sense Dfind

Reveal the full potential of your data

Q-Sense Dfind is the reliable and easy-to-use analysis software from Q-Sense. It helps you to quickly and simply extract the information you are looking for, such as mass, thickness, viscoelastic properties and adsorption rates.



Service and support

Your partner throughout the years

We offer service and support solutions to ensure that you and your Q-Sense system perform at your best at all times. At your service, you will have our team of experienced application specialists and certified service engineers.



Q-Sense Initiator

Get up and running with QCM with dissipation monitoring

Q-Sense Initiator focuses on the fundamental functions and qualities of QCM-D analyses. It produces data with superior accuracy, has a robust design and enables a wide range of experimental conditions to suit your basic needs.



High quality data

Rapid data sampling and qualitative components ensure excellent data quality and accurate measurements.

Robust design

Easy to setup and run. Controlled environment conditions thanks to exquisite temperature and liquid flow control.

Wide range of experimental conditions

High chemical compatibility and wide temperature span. Compatible with the entire range of Q-Sensors.

Q-Sense Explorer

Versatile and modular quantification

Q-Sense Explorer is the versatile instrument with endless possibilities. Thanks to a modular design and optional measurement modules, it enables you to extend your measurement conditions and combine measurements with several other technologies.



Endless experiment possibilities

Modular design with several options extends the measurement conditions and gives maximum flexibility.

Combination measurements

The compact chamber together with specialty modules enables simultaneous QCM-D measurements with microscopy, electrochemistry and ellipsometry.

Quantification of film properties

Data collection at high sample rate from 7 harmonics of the fundamental frequency gives maximum input for data analysis and quantification of mass, thickness, viscosity and shear modulus of the adsorbed film.

Explore the versatility with Q-Sense Explorer

Q-Sense Microscopy Explorer

Enables simultaneous QCM-D and microscopy measurements on the same surface. Equipped with a window module to give optical access to the sensor surface which also opens up for light or irradiation sensitive measurements.



Q-Sense Microscopy Explorer

Q-Sense Electrochemistry Explorer

For simultaneous QCM-D and electrochemistry measurements on the same surface. Enables cyclic voltammetry and electrochemical impedance measurements to explore polymer behavior, electrostatic interactions, corrosion etc.



Q-Sense Electrochemistry Explorer

Q-Sense Ellipsometry Explorer

Enables simultaneous QCM-D and ellipsometry measurements on the same surface, which allows for quantification of solvent content in the film. It also gives a refined analysis of the adsorbed film's morphological changes.



Q-Sense Ellipsometry Explorer

Q-Sense Extreme Temperature Explorer

Performs measurements at an extended temperature range of 4-150°C both in flow and stagnant conditions. This package consists of a separate high temperature chamber used together with the Q-Sense Explorer electronics unit.



Q-Sense Extreme Temperature Explorer

Additional modules

Humidity Module

Designed to enable measurements of vapor uptake and release from thin films coated on the sensor.

Open Module

Enables pipetting of sample directly onto the sensor surface as well as evaporation studies.

PTFE Flow Module

Flow module with an interior coating of PTFE. Suitable for measurements sensitive to titanium which is the interior material of the standard flow module.

ALD Holder (Atomic Layer Deposition)

For measurements in vacuum or gas phase.

For more details and specifications, see the Q-Sense modules brochure.



Humidity module



Open module



PTFE flow module



ALD holder

[SOLUTION RANGE]

Q-Sense Analyzer

For fast sample processing at high quality

Q-Sense Analyzer produces high quality data from four measurements in parallel. The smart design with four removable flow modules makes it easy to set up new experiments. Q-Sense Analyzer will quickly become a workhorse in your lab.



Speed things up with Q-Sense Analyzer

Efficient evaluation of parameters

Four measurement modules with separate sample flow enables evaluation of different substrates and/or samples in parallel.

Facilitated data comparison

All measurements performed in the same experiment run with equal time sequence which simplifies comparison between measurements in the data analysis.

Increased throughput

Four measurements in parallel increases throughput and minimizes hands-on time.

Quantification of film properties

Data collection at high sample rate from 7 harmonics of the fundamental frequency gives maximum input for data analysis and quantification of mass, thickness, viscosity and shear modulus of the adsorbed film.



Removable flow modules for facilitated handling



Temperature controlled environment for sensor and sample



Four measurements in parallel with separate sample channels

[SOLUTION RANGE]

Q-Sense Pro

Fully automated for large-scale analysis

Q-Sense Pro is the most advanced QCM instrument on the market with full automation enabling enhanced efficiency and reproducibility. You can easily program your measurements in the software and high precision flow-control ensures effective sample use.



Sense the difference with Q-Sense Pro

Automated measurements

Integrated sample handling and intuitive software. Preprogramming and full automation allows for untended measurements.

High throughput

The 8-sensor module enables 8 measurements to be programmed in advance which reduces hand-on time and increases throughput.

Precise sample handling

Sharp sample exchange and a minimum of 50 μl sample per sensor ensures effective sample use.

High reproducibility

High precision flow-control is ensured by syringe pumps. Programming of automated mixing, including concentration gradients of samples, increases reproducibility.

Evaluation of several parameters in parallel

Syringe pumps that run separately enable 4 channels to be used independently with different samples and measurement sequences.

Quantification of film properties

Data collection at high sample rate from 7 harmonics of the fundamental frequency gives maximum input for data analysis and quantification of mass, thickness, viscosity and shear modulus of the adsorbed film.



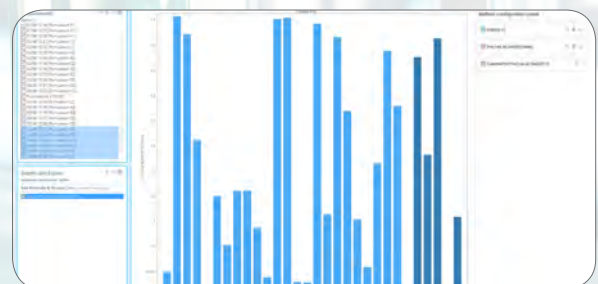
Precise sample handling with 1 μl min. volume



Automated mixing of samples



4 sample channels to be used independently



Easy preprogramming and intuitive data analysis in Q-Sense Dfind

[SPECIFICATIONS]

SENSORS AND SAMPLE HANDLING SYSTEM

	Q-Sense Initiator	Q-Sense Explorer	Q-Sense Analyzer	Q-Sense Pro
Number of sensors	1	1	4	8 (4 parallel in flow)
Volume above each sensor	~ 40 µl	~ 40 µl	~ 40 µl	~ 15 µl
Minimum sample volume	~ 200 µl	~ 200 µl	~ 200 µl	~ 50 µl
Working temperature ± 0.02 °C ^A	20 - 45 °C	15 - 65 °C	15 - 65 °C	4 - 70 °C
Minimum dispense volume	-	-	-	1 µl ^B
Sensors	Gold, SiO ₂ , Ti and other metals, oxides, glass, polymers, etc.			

MEASUREMENT CHARACTERISTICS

	Q-Sense Initiator	Q-Sense Explorer	Q-Sense Analyzer	Q-Sense Pro
Maximum time resolution	~ 4 data points per second ^C	~ 200 data points per second ^D	~ 200 data points per second ^D	~ 200 data points per second ^D
Maximum mass sensitivity in liquid	-	~ 0.5 ng/cm ² ^E	~ 0.5 ng/cm ² ^E	~ 0.5 ng/cm ² ^E
Normal mass sensitivity in liquid	~ 1.8 ng/cm ²	~ 1.8 ng/cm ² ^F	~ 1.8 ng/cm ² ^G	~ 1.8 ng/cm ² ^G
Maximum dissipation sensitivity in liquid	-	~ 0.04 x 10 ⁻⁶ ^E	~ 0.04 x 10 ⁻⁶ ^E	~ 0.04 x 10 ⁻⁶ ^E
Normal dissipation sensitivity in liquid	~ 0.1 x 10 ⁻⁶	~ 0.1 x 10 ⁻⁶ ^F	~ 0.1 x 10 ⁻⁶ ^G	~ 0.1 x 10 ⁻⁶ ^G

SOFTWARE

	Q-Sense Initiator	Q-Sense Explorer	Q-Sense Analyzer	Q-Sense Pro
Analysis software		Q-Sense Dfind	Q-Sense Dfind	Q-Sense Dfind
Output parameters	Frequency, dissipation, Sauerbrey mass	Frequency, dissipation, modeled values of mass, thickness and viscoelasticity.		
Import/export	Excel, BMP, JPG, WMF, GIF, PCX, PNG, TXT			

DIMENSIONS

	Q-Sense Initiator	Q-Sense Explorer	Q-Sense Analyzer	Q-Sense Pro
Electronics unit (HxWxL in cm)	18x36x21	18x36x21	18x36x21	70x67x57
Chamber (HxWxL in cm)	5x10x15	5x10x15	12x23x34	

A The temperature stability depends on variations in how the ambient temperature affects the warming or cooling of the chamber.

B Smallest sample volume to pick up and dispense. Note that the smallest volume needed for measurement is 50 µl.

C Two data points per second for each harmonic.

D One sensor, one frequency.

E Data from one sensor in single frequency mode. One data point collected every 5 seconds. The Sauerbrey relation is assumed to be valid.

F Data from multiple frequency modes (all harmonics). Four data points are collected within 1 second. The Sauerbrey relation is assumed to be valid.

G Data from all sensors in multiple frequency modes (all harmonics) are collected within 1 second. The Sauerbrey relation is assumed to be valid.

All specifications are subject to change without notice.



Biolin Scientific

[Progress Together]

Biolin Scientific AB, Hängpilsgatan 7, Västra Frölunda, Sweden

Phone: +46 31 769 7690, E-mail: info@biolinscientific.com

www.biolinscientific.com

About Us

Biolin Scientific is a leading Nordic instrumentation company with roots in Sweden, Denmark and Finland. Our customers include companies working with pharmaceuticals, energy, chemicals, and advanced materials, as well as academic and governmental research institutes. Our precision instruments help discover better drugs faster, develop better solutions for energy and materials, and perform research at the frontiers of science and technology.