

# Langmuir trough module & Dip coater

For the study of monolayers & their controlled deposition on solid substrates

**dataphysics**  
Understanding Interfaces

## Monolayer characterisation and adjustment with Langmuir trough module

Symmetrically moving barriers vary the size of the surface area occupied by a monolayer of surface-active molecules. Meanwhile, the surface tension is continuously measured with a Wilhelmy plate or rod.

### Measuring options:

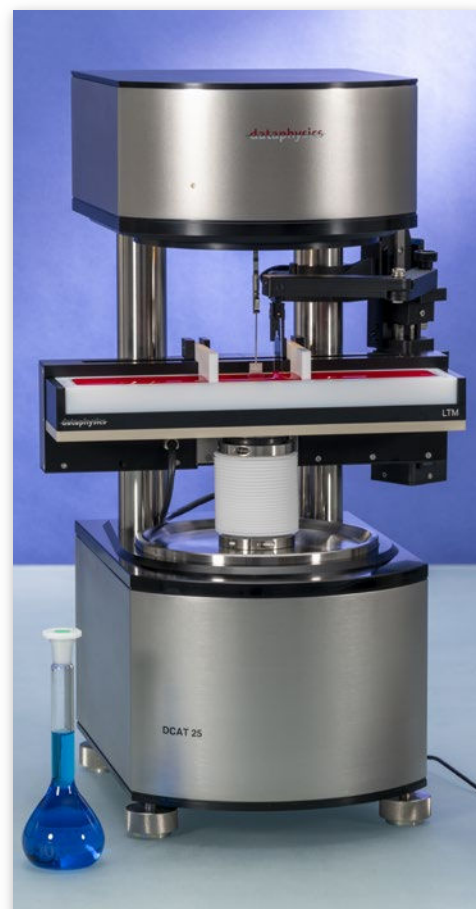
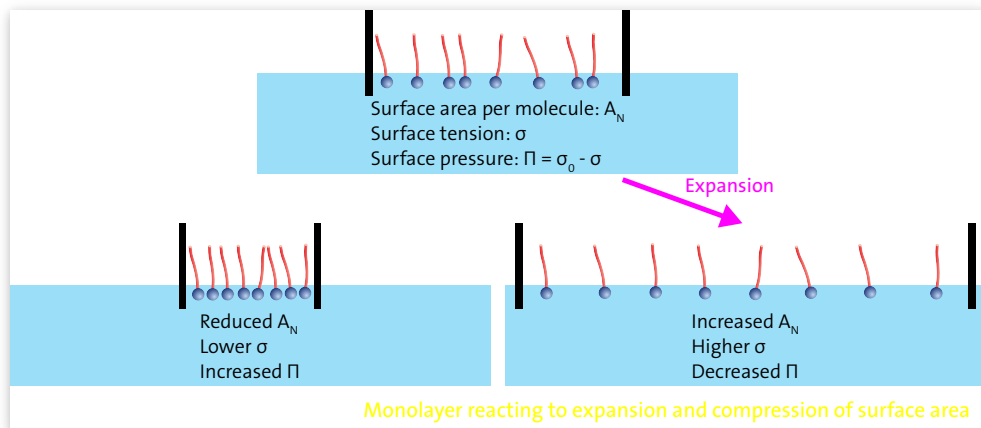
- surface pressure isotherms & dilatation cycles
- isobaric & isochoric study of dynamic processes
- dilatational surface rheology: viscoelasticity & relaxation

### Special features:

- trough & barriers made of inert and easy-to-clean PTFE TFM
- temperature control up to 90 °C
- studying monolayers at liquid-liquid interfaces with a special set of barriers

### Application examples:

- modelling of biomembranes and biomolecular interactions
- fundamental research on surfactants and surface-active nanoparticles
- applied research on dispersing agents and stabilizers for food, cosmetics, petroleum and pharmaceutical industry



Tensiometer DCAT 25  
with Langmuir trough module and dip coater

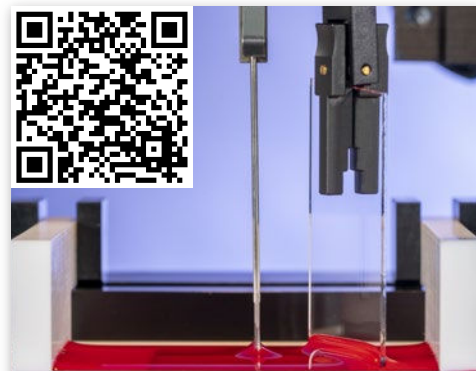
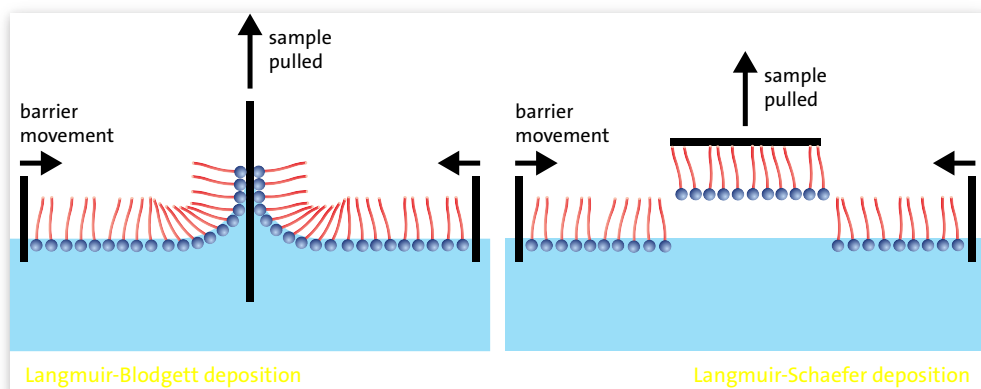
## Monolayer deposition on solid substrate with dip coater LTMr-DIP

A monolayer is transferred from the liquid surface onto a solid substrate by dipping it in or pulling it off the Langmuir trough. Meanwhile the barriers move inwards to keep the surface concentration of the monolayer constant, which is controlled by the continuous surface tension measurement.

### Application examples:

- preparation of supported phospholipid model structures
- development of smart coatings, nanoparticle and nano wire coatings, glass coatings for non-linear optics, etc.

- electronic industry: Research on layer-structured elements, e.g., for fuel and solar cells or semiconductors
- sensor development: e.g. biosensors such as glucose sensors



Monolayer deposition on a glass substrate  
using the Langmuir-Blodgett method  
QR: video on the Langmuir trough module