

Tensiometry

BPA-1P

BPA-1S

DVA-1

PAT-1

PAT-2P

STA-1

STA-2

DPA-1

2D-Rheology

ODBA-1

ISR-1

Foams

FA-1S

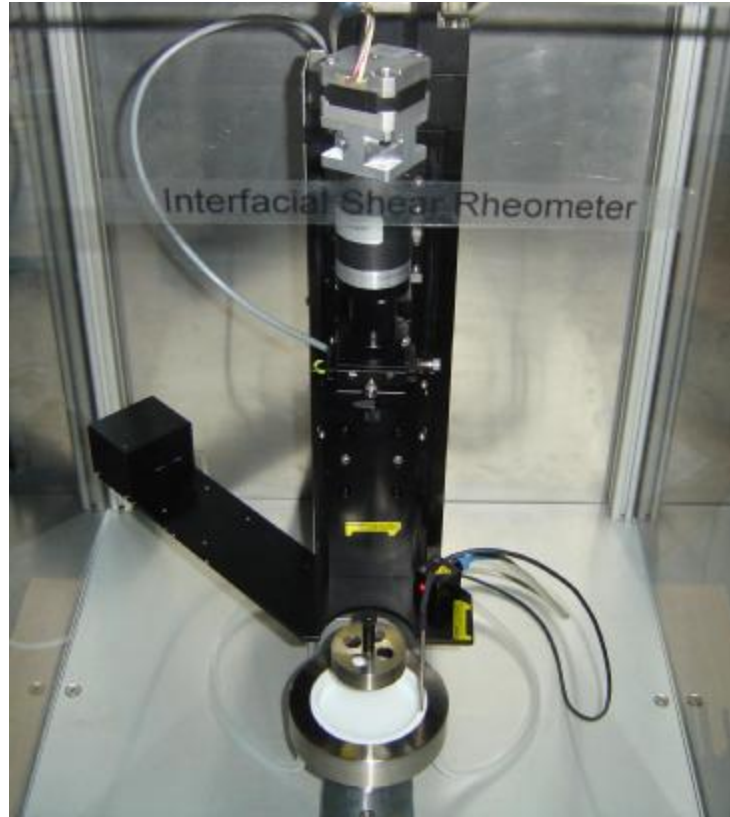
TFA-1

Emulsions

DBMM-1

Fluid Dynamics

Interfacial Shear Rheometer ISA-1



Measures interfacial shear rheology after torsion pendulum principle

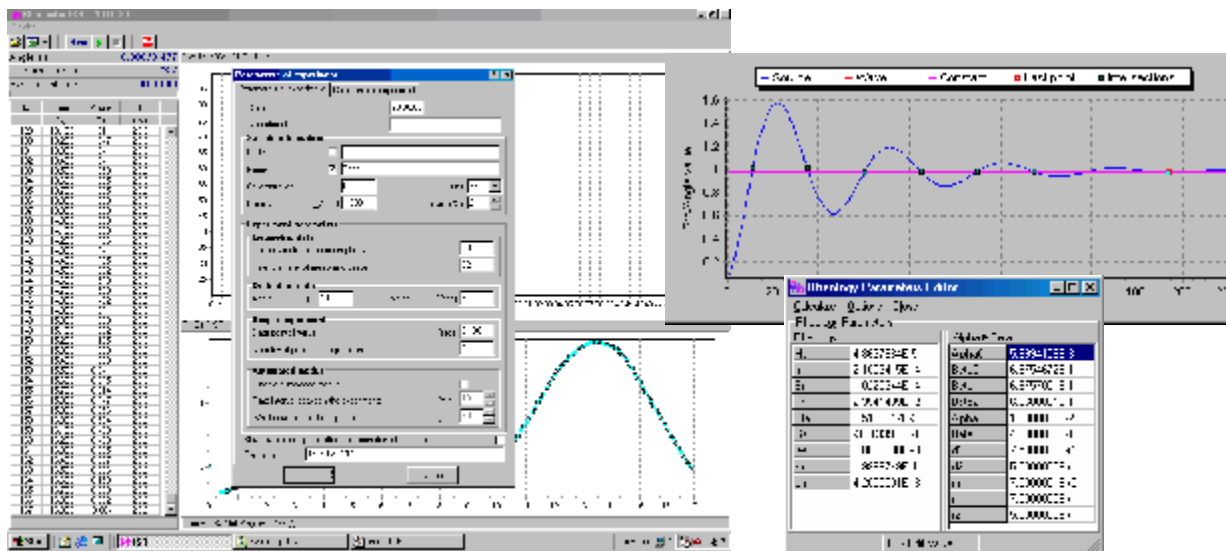
This instrument allows measuring the interfacial shear elasticity and viscosity of layers between two fluids (liquid/liquid or liquid/gas). The main principle is a torsion pendulum. Different measuring bodies are used to work at liquid surfaces or at interfaces between two immiscible liquids. The Interfacial Shear Rheometer (ISR-1) allows unique shear rheological experiments. The instrument is suitable for studies of adsorption layers (GIBBS-layers) and spread layers (LANGMUIR-layers).

Instrument parts

- mechanical and electronical unit
- temperature controlled measuring cell
- data acquisition via RS-232

The instrument allows the following measurements

- frequency range between 0.2 and 0.02 Hz (depending on the measuring body and the torsion wire used)
- shear elasticity and viscosity of a surface layer
- time resolution about 1 minute
- time dependencies over hours of interfacial age
- surface shear viscosity range 1 $\mu\text{Ns/m}$ to 100 mNs/m
- surface shear elasticity range 1 μPam to 100 mPam
- temperature control in the range 10 to 50 $^{\circ}\text{C}$



Fields of Application

Surfactant science
Ink jet printing
Coating technology
Foam and emulsion technology
Detergency

Pharmacy
Cosmetics
Food technology
Medicine and biology
Ecology

Technical Data

Range of interfacial shear viscosity:	1 $\mu\text{Ns/m}$ to 100 mNs/m
Range of interfacial shear elasticity:	1 μPam to 100 mPam
Range of frequency:	0.2 - 0.02 Hz
Angular resolution of torsion head:	0.01 $^{\circ}$
Angular resolution of position sensor:	0.01 $^{\circ}$
Data acquisition:	via RS 232
Software:	WINDOWS [®] software
Measuring option:	adsorbed and spread layers at liquid/gas and liquid/liquid interfaces
Size of device (LxWxH)	500x500x700
Weight:	50 kg
Power supply:	100 ... 240 AC; 50 ... 60 Hz; 110 W
Extra accessories	measuring body (disc) for liquid/liquid interfaces