PAT-1

SINTERFACE

Technologies

Profile Analysis Tensiometer PAT-1

Tensiometry

- BPA-1P
- BPA-1S
- DVA-1
- **PAT-1**
- PAT-2P
- STA-1
- DPA-1

2D-Rheology

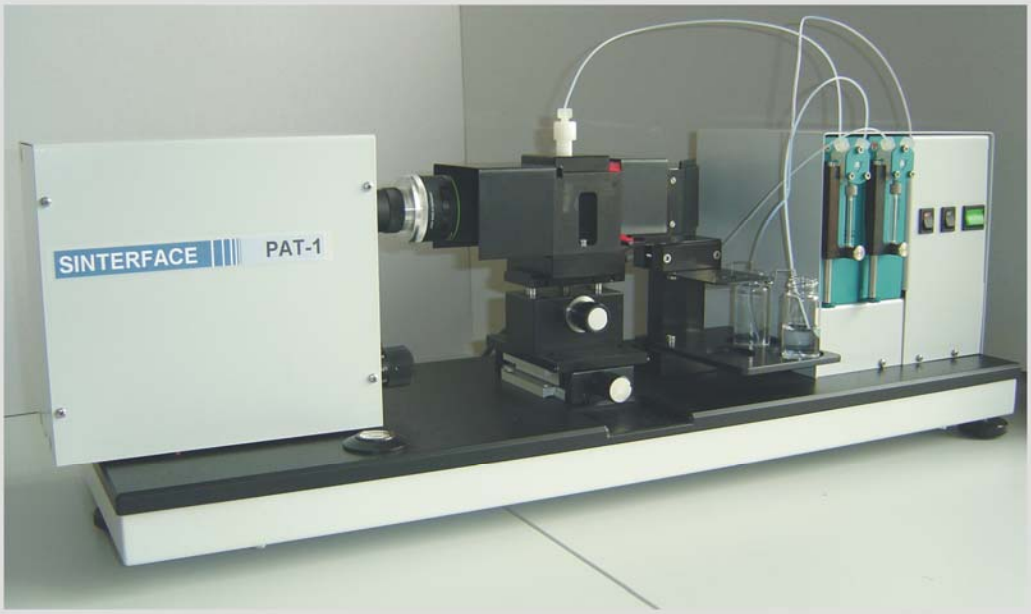
- ODBA-1
- ISR-1

Foams

- FA-1S

Emulsions

- DBMM-1



Most modern method to measure the surface and interfacial tension of liquids

High end instrument

Modular extension for different applications

Principle is based on the analysis of the shape of pendent and sessile drops or buoyant and captive bubbles
Well suited to determine the contact angle of liquids on solid surface
Instrument is driven by a modern Windows software

Instrumental parts

basic platform on which all parts are safely mounted
computer controlled dosing system
adjustable temperature controlled measuring cell
(low temperature range 10 to 80 °C, high temperature range 10 to 350 °C)
CCD-camera with fixed objectives
high-performance frame grabber installed in the PC
cold back lighting with continuously adjustable intensity

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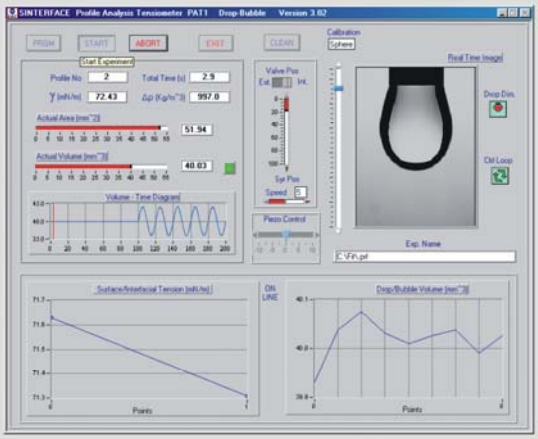
The instrument allows the following measurements

surface and interfacial tension of liquids
static and dynamic contact angle according to the sessile drop method
surface rheological studies to measure the dilational elasticity and viscosity
capillary pressure measurements for iso-dense liquid/liquid systems
direct drop-drop, bubble-bubble, and drop-bubble interactions with a special micro manipulator (extra equipment DBMM-1)



Main features of the software

on-line interfacial tension/contact angle calculation
calculation of the surface free energy of solids according to the equation of state by Li and Neumann
control of the dosing system for accurate changes of a drop or bubble (transient or harmonic changes)
control of a piezo system(additional equipment) for active and very accurate control loop to keep constant either volume or area of drop or bubble
smooth oscillations with piezo system
harmonic and transient relaxation experiments
calculation of the dilation rheological parameters from relaxation measurements via Fourier analysis

Technical Data:

Range of surface and interfacial tension	1 to 1000 mN/m; resolution: ± 0.1 mN/m
Range of contact angle measurement	10° to 180° accuracy ±0.3°
Optics	fixed objective CCD-camera, max. resolution of 768 x 576 pixels optical distortion: < 0.05 %
Frame grabber	NI high-quality digitising board transfer rate: 25 images per second
Software	Windows software (free update over 1 year after purchase)
Measuring options: - pendent drop, buoyant bubble	surface / interfacial tension dilational elasticity and viscosity
- sessile drop	contact angle, surface tension
- drop and bubble oscillation	0.001 to 1 Hz
Size of device (L x W x H)	700 x 240 x 240 mm (standard)
Weight	12 kg
Power supply	100 … 240 AC; 50 … 60 Hz; 55 W
Extra accessories	adjustable temperature controlled cell second automatically controlled dosing system coaxial double capillary for drop exchange liquid exchange cell piezo control unit special contact angle cell capillary pressure cell high temperature cell

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