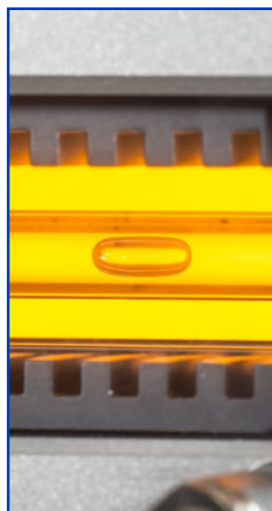
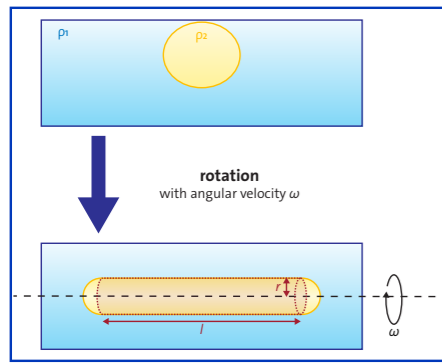


SVT 20N

Spinning drop Video Tensiometer

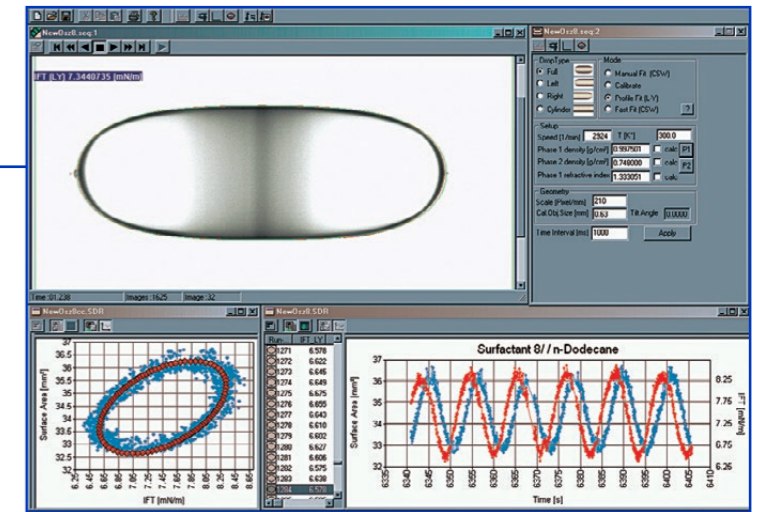




spinning drop principle

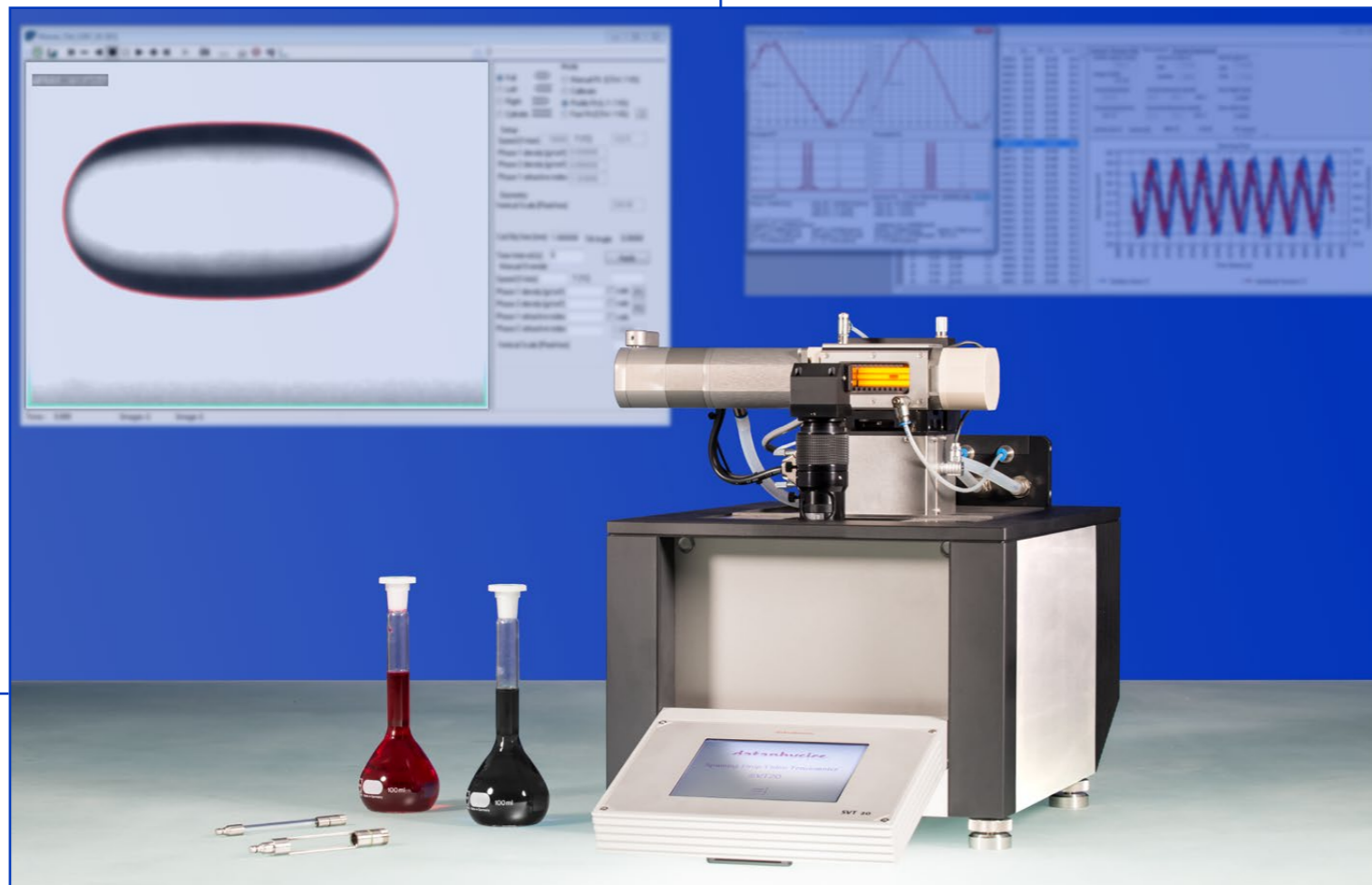


holders for disposable glass capillaries FEC-D/B and FEC-D as well as fast exchange capillary FEC 622-400-HT



SVTS 20 and SVTS 21 — determination of the interfacial dilatational elasticity

The spinning drop video tensiometer **SVT 20N** is a special-purpose optical instrument for measuring extremely low interfacial tensions. This measuring technique offers unrivalled possibilities for the analysis of surfactant effectiveness in the development of emulsions or in the enhanced oil recovery.



SVT 20N with temperature controlled measuring cell MC-TPC 180

Software for efficient work

The **SVTS** software supports you in the use of the SVT 20N by easily specifying measurement procedures and in collecting and evaluating data. The software is designed as a modular program for the use under Microsoft Windows®. The available software modules for the SVT 20N are:

SVTS 20 — interfacial tension

- video based measurement and presentation of the time and temperature dependent interfacial tension based on spinning drop contours according to various methods (i.a. Young-Laplace method)
- control of the rotational speed, the inclination of the measuring cell and the camera position including the automatic calibration of the magnification of the drop and an automatic “drop hold” function
- automatic compensation of density and refractive index as well as of temperature dependent changes
- statistics and measurement error analysis
- liquids database

SVTS 21 — oscillation

- relaxation analysis with predefined speed increments and sinusoidal speed variations
- analysis of fast relaxational oscillations and elongations of drops
- determination of dilatational interfacial elasticity of visco-elastic and viscoplastic materials

SVTS 22 — membrane covered drops

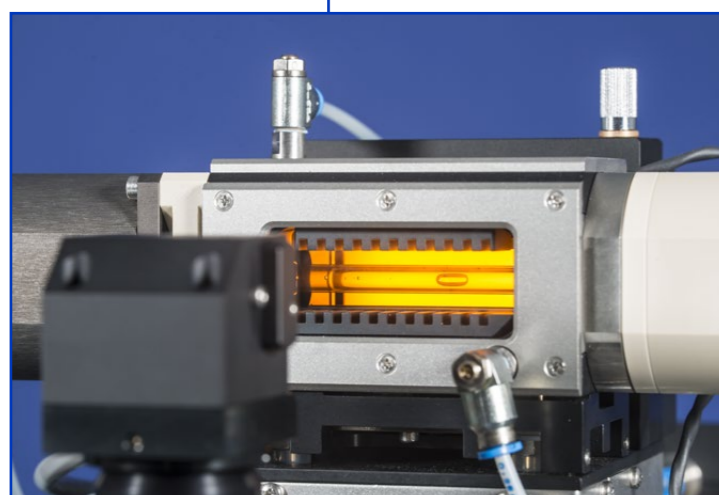
- determination of deformation and elasticity parameters of membrane covered or encapsulated spinning drops with contours deviating from corresponding Young-Laplace shapes
- calculation of the effective deformation in relation to spherical or ellipsoidal rest or reference contours
- calculation of centrifugal stresses as a measure of the membrane or capsule loads
- calculation of membrane capsule elasticity parameters from the effective deformation and the centrifugal stress
- volume calculation by numerical integration over arbitrary, even strongly deformed but still axis-symmetric drop contours

Main features of the SVT 20N:

- high-performance 6-fold zoom with integrated continuous fine focus and adjustable observation angle
- video measuring system (max. 123 frames/s)
- precise, fast and easy to use capillary exchange system
- measuring cell with automatic, software controlled position and tilt adjustment
- LED lighting with software controlled adjustable intensity and strobe frequency
- integrated touch screen for controlling basic functions
- automatic calibration function for correcting optical distortions caused by the capillaries (cylindrical lens effects)

Optional complements and accessories

- liquid/gas-temperature controlled measuring cell MC-TFC 130; temperature range -10 ... 130 °C
- peltier/gas-temperature controlled measuring cell MC-TPC 180; temperature range -30 ... 180 °C; ±0.1 K resolution; heat up and cool down rate of ±1 K/s
- fast-exchangeable special high-temperature glass capillaries FEC 622/400-HT (for up to 180 °C)
- holder FEC-D for disposable glass capillaries DGC-T or DGC-M
- calibration standard DCS-SVT



spinning drop in a peltier/gas-temperature controlled measuring cell MC-TPC 180



integrated touch screen

Technical data

Interfacial tension measuring range:	• $1 \cdot 10^{-6}$... $2 \cdot 10^3$ mN/m
Rotational-speed range:	• 0 ... 20 000 rev/min
Rotational-speed resolution:	• ± 0.001 rev/min
Rotational-speed stability in long term experiments:	• ± 0.5 rev/min
Rotational-speed changes:	• oscillation period: $0.5 \text{ s} \dots \infty$; max. acceleration: 500 rev/s^2
Tilting range:	• $\pm 10^\circ$, resolution $\pm 0.0023^\circ$
Optics and image processing system:	<ul style="list-style-type: none"> • stroboscopic and permanent LED-lighting with software controlled intensity and strobe frequency • USB-CCIR camera, max. resolution 768 x 576 Pixel, max. frame rate 123 frames/s • 6-fold zoom lens (0.7 ... 4.5-fold magnification) with integrated fine focus ($\pm 6 \text{ mm}$)
Measuring cell variants:	<ul style="list-style-type: none"> • liquid/gas-temperature controlled measuring cell MC-TFC 130 (temperature range $-10 \dots 130 \text{ }^\circ\text{C}$) • peltier/gas-temperature controlled measuring cell MC-TPC 180 (temperature range $-30 \dots 180 \text{ }^\circ\text{C}$)
Dimensions (L [mm] x W [mm] x H [mm]):	<ul style="list-style-type: none"> • 420 x 290 x 370 (SVT 20N) • 300 x 120 x 210 (power supply)
Weight:	<ul style="list-style-type: none"> • 25 kg (SVT 20N) • 10 kg (power supply)
Power supply:	• 100 ... 240 V AC; 50 ... 60 Hz; 180 W

Accessories (excerpt)

liquid/gas-temperature controlled measuring chamber **MC-TFC 130** • peltier/gas-temperature controlled measuring chamber **MC-TPC 180** • fast-exchangeable high-temperature glass capillaries (up to $180 \text{ }^\circ\text{C}$) **FEC 644/400-HT** • holder **FEC-D** for disposable glass capillaries **DGC-T** or **DGC-M** • optical calibration standard **DCS-SVT** • dosing syringes **DS xx** • dosing needles **SNS xx** • dosing tubes **DT xx** • refrigerated/heating circulators

**For more information please contact us.
We will find a tailor-made solution to your
surface chemistry requirements and
will be pleased to provide a quotation,
obligation-free, for your instrument system.**

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