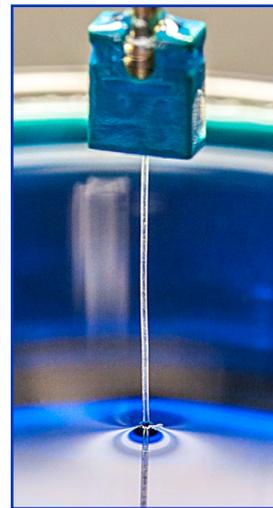
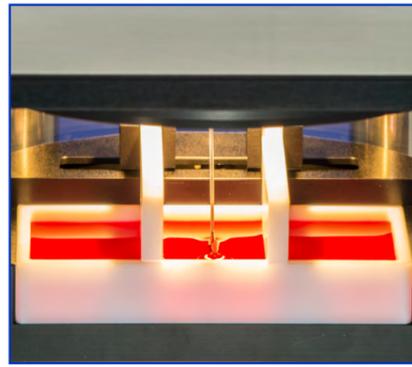


DCAT 21SF

The dynamic contact angle measuring instrument and tensiometer for single fibres





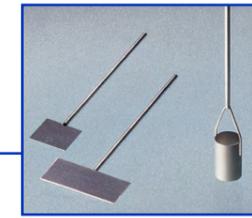
Langmuir trough module LTM with Langmuir trough LT-S



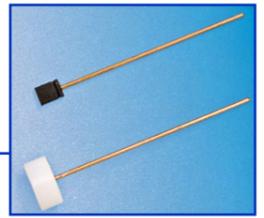
holders for powders PUR 11



plate holder PSH 11



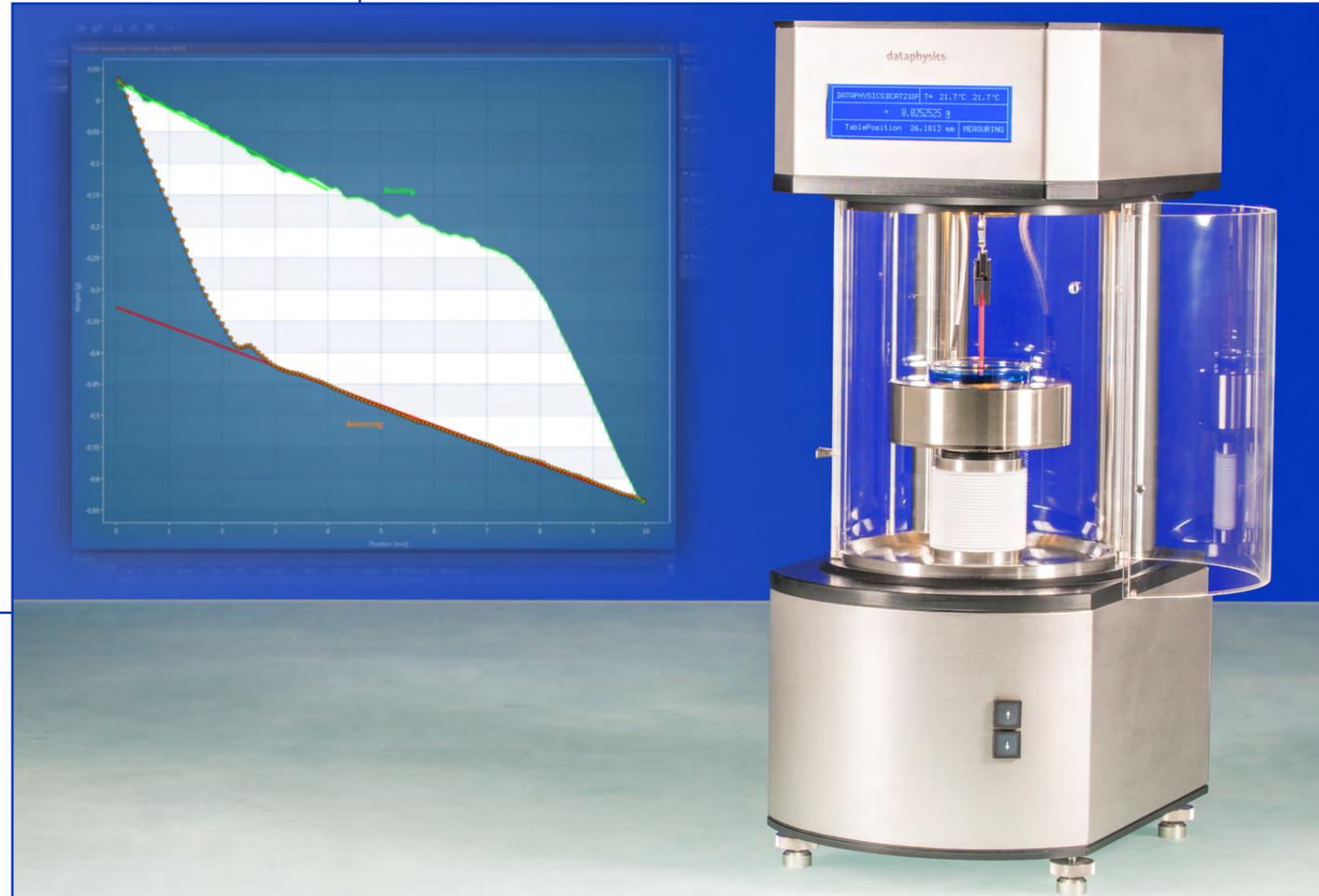
Wilhelmy plates PT 11/9 and cylindrical plate PT 10



single fibre holder FH 12 and FH 13

The dynamic contact angle measuring instrument and tensiometer **DCAT 21SF** is a special variant of the successful DCAT 21. It includes a balance with even higher accuracy to provide a resolution of up to 0.1 µg during measurements with single fibres.

Please note that the high resolution balance requires a vibration free environment.



DCAT 21SF

Software for efficient work

The newly developed, Windows® based, **DCATSoftware** is available in various discretely usable modules, and is operable traditionally, using mouse and keyboard, or on multi-touch notebooks/pads by finger/pen. The available software modules for the DCAT 21SF are:

DCATS 31 — surface/interfacial tension

- determination of the surface and interfacial tension according to the Du Noüy ring and the Wilhelmy plate method

DCATS 32 — dynamic contact angle

- determination of the dynamic contact angle of solids (e.g. plates, films, rods and single fibres)
- sorption measurements on powders and fibre bundles
- analysis of the surface free energy of solids as well as its components according to nine different theories

DCATS 33 — CMC

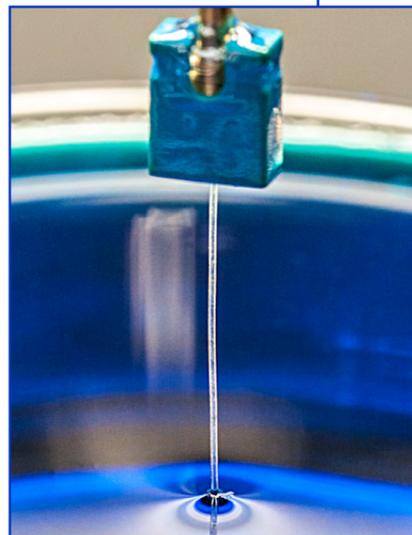
- automated determination of the critical micelle formation concentration (CMC) of surfactants, using the dosing unit LDU x/x for additive and subtractive dosing

DCATS 34 — liquid density

- determination of the density of liquids

DCATS 38 — surface pressure

- determination of the surface pressure of a monolayer during its compression and relaxation in the Langmuir trough module LTM
- kinetic measurements under isobaric or isochoric conditions to analyse dynamic processes in a monolayer in the LTM
- interfacial rheological analysis of viscoelastic monolayers in the LTM



Measurement at a single fibre with the single fibre holder FH 12

Main features of the DCAT 21SF

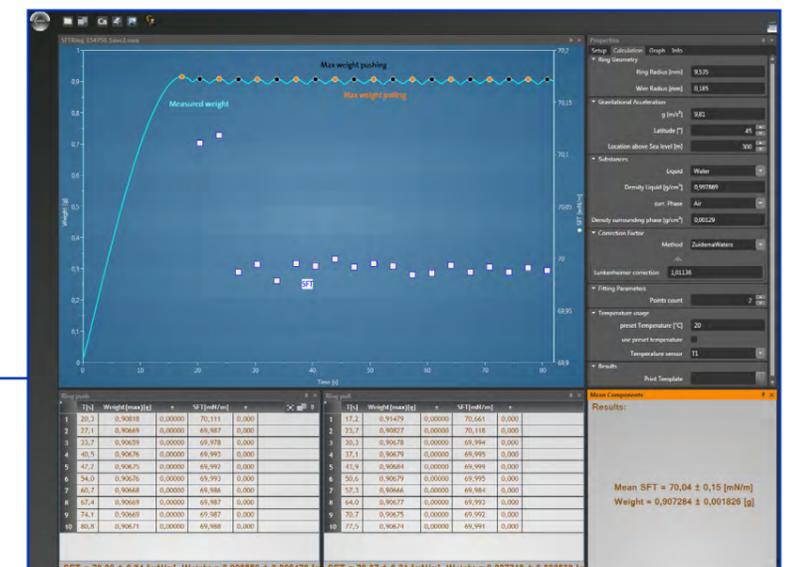
- high-precision electrodynamic compensation weighing system, designed for measurements with single fibres, with automatic calibration and max. resolution of 0.1 µg
- software controlled, motor-driven height positioning of the sample receptacles with variable speed
- automatic coupling lock for the balance
- illuminated sample chamber with inert gas or vapor inlet
- integrated magnetic stirrer
- digital thermometer with connections for two Pt 100 temperature sensors
- display for weighing data, temperature and device information
- expandable with special accessory Langmuir through module



sample vessels GS 70/50 and cover plates CP 50/70



density determination set DIS 11 and Du Noüy rings RG 11/10



DCATS 31 — determination of the surface tension with the Du Noüy ring method

Technical data

Measuring range for surface and interfacial tensions:	• 1 ... 1000 mN/m; ± 0.0001 mN/m resolution
Measuring range for contact angles:	• 0 ... 180°; ± 0.01° resolution
Measuring range for densities:	• 0.50 ... 2.50 g/cm ³ ; ± 0.002 g/cm ³ resolution
Weighing range:	• 1 µg... 10 g; 0.1 µg resolution
Measuring value range:	• up to 50 weighing values per second
Traversing range and speed for sample table:	• 105 mm • 0.7 µm/s ... 500 mm/s
Travel resolution:	• 0.1 µm
Balance calibration:	• automatic internal
Automatic stirrer:	• integrated, software controlled
Temperature measurement and range:	• -10 ... 130 °C (liquid temperature control unit TV xx) • 2 x Pt 100 inputs for -60 ... +450 °C (Pt 100 as option); ± 0.01 K resolution; precision 1/3 DIN IEC 751 (±0.03%), Class B
Dimensions (L x W x H):	• 360 x 230 x 575 mm
Weight:	• 25 kg
Power supply:	• 100 ... 240 VAC; 50 ... 60 Hz; 70 W

Standards

The high degree of accuracy of the DCAT devices complies with all related international standards, for example:

- **ISO 6295** Petroleum products -- Mineral oils -- Determination of interfacial tension of oil against water -- Ring method
- **ISO 6889** Surface active agents; Determination of interfacial tension by drawing up liquid films
- **ASTM D971** Standard Test Method for Interfacial Tension of Oil Against Water by the Ring Method
- **ASTM D1417** Standard Test Methods for Rubber Latices-Synthetic
- **DIN EN 14210** Surface active agents - Determination of interfacial tension of solutions of surface active agents by the stirrup or ring method
- **ASTM D1331** Standard Test Methods for Surface and Interfacial Tension of Solutions of Paints, Solvents, Solutions of Surface-Active Agents, and Related Materials
- **ISO 304** Surface active agents; Determination of surface tension by drawing up liquid films
- **DIN ISO 1409** Plastics/rubber - Polymer dispersions and rubber latices (natural and synthetic) - Determination of surface tension by the ring method
- **OECD 115** OECD Guidelines for the Testing of Chemicals: Surface Tension of Aqueous Solutions

Accessories (excerpt)

liquid temperature control unit for sample vessels with diameters of 50 mm (**TV 50**) and 70 mm (**TV 70**) with integrated Pt100 probe; available as a non-magnetic version **TV 70NM** with a removable microelectronic stirrer • automatic dosing and refill system **LDU xx** • sample vessels made of glass **GS xx** and PTFE **GS xxP** as well as cover plates **CP xx** • Du Noüy rings **RG 11/10** • Aligning tool **R-AT** • Wilhelmy plates **PT 11/9** • cylindrical plate **PT 10** • density determination set for liquids **DIS 11** • kit for measurement of powder samples **PUR 11** • single fibre holder **FH 12** and **FH 13** • plate holder **PSH 11** • filter papers for PUR 11 **FP 11** and FH 11 **FP 12** • glue for FH 12 and FH 13 **Glue FH 12** • Langmuir trough module **LTM** • Langmuir troughs **LT-S/LT-I** • Ioniser for sample chamber **MCI 12**

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

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