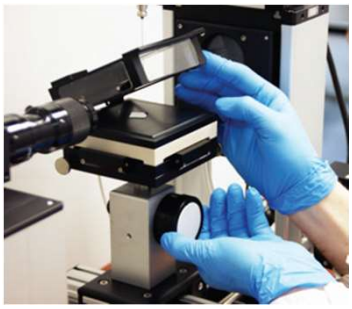
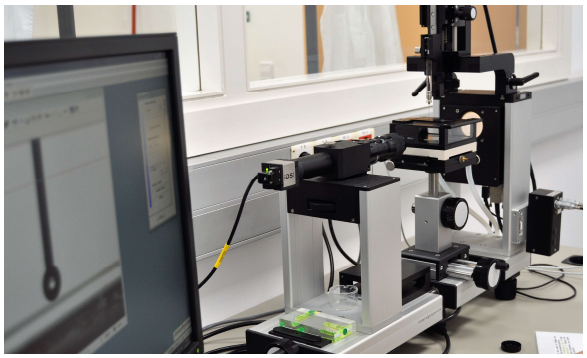
Institute for Bioengineering of Catalonia
MicroFabspace
Core Facilities

Manufacturer
DATAPHYSICS

Model
OCA15Pro



Contact Angle



Contact angle measuring and contour analysis system

The OCA15Pro system combines high resolution optics, exact liquid dosing and precise sample positioning for automated video contact angle metrology and drop shape analysis.

It includes:

- Static and dynamic contact angle measurement according to the Sessile and Captive Drop Method
- Wetting behavior of solid surfaces
- Surface energy of solids surfaces and their components for Work of Adhesion/calculation

Technical specifications

- Maximal sample dimensions (L x W x H): 220 x ∞ x 70 mm
- Traversing range of sample table (L x W x H): 100 x 100 x 50 mm
- Measuring range for contact angles: from 0 ° to 180 ° ± 0.1 °
- Measuring range for surface and interfacial tensions: from 0.01 mN/m to 2000 mN/m ± 0.01 mN/m
- Optics: 6-fold zoom lens (0.7-4.5 magnification) with integrated fine focus (± 6 mm)
- Lighting with software controlled adjustable intensity without hysteresis
- Video system: USB-CCIR camera, resolution 768 x 576 pixel, sample rate 52 images/s, field of view 1,32 x 0,99…8,50 x 6,38 mm
- Image distortion < 0.05%
- Minimum dosing volume: 50nL
- Dosing rate: 0.06 µL/s to 26.4 µL/s
- Temperature chamber (TFC-100Pro) with 2 integrated sensors Pt100
- Temperature range with TFC-100Pro : -10ºC- 100ºC
- Maximal sample dimensions with TFC-100Pro (L x W x H): 93 x 93 x 24 mm
- Triple diffusor TDI 100 of dry gas to eliminate condensation when using TFC-100Pro

Aquest equip ha estat cofinançat en un 50% pel Fons europeu de desenvolupament regional en el marc del Programa operatiu FEDER de Catalunya 2007-2013

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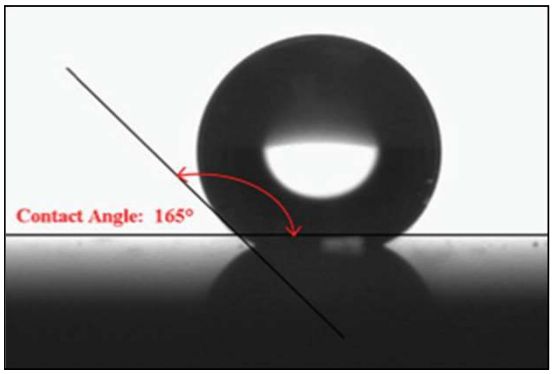
Contact Angle



Available software:

SCA 20 — contact angle

- Video based measurement of the static and dynamic contact angle on plane, convex, and concave surfaces
- Automatic measurement of the contact angle hysteresis
- Image recording at high speed sequences
- Statistics and measurement error analysis

SCA 21 — surface free energy

- Calculation of surface free energies on solids and liquids together with their contributions according to different theories (Fowkes, Wu, extended Fowkes, Zisman, Owens-Wendt, van Oss and Good, Schultz I + II, Neumann's Equation of State) and wetting envelopes representation
- Diagrams of Work of Adhesion /Contact Angle derived from surface free energies

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