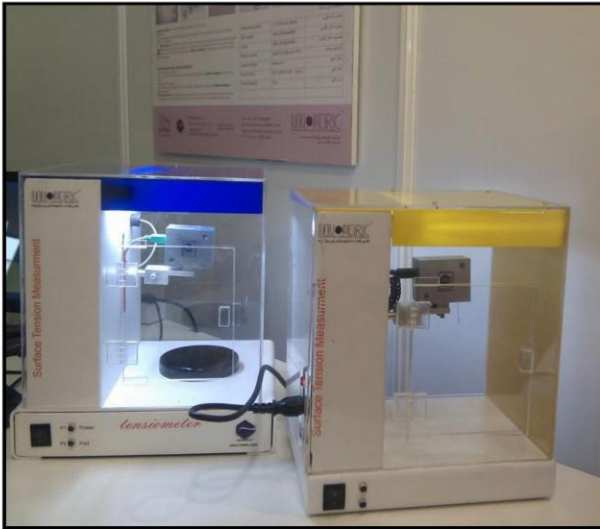
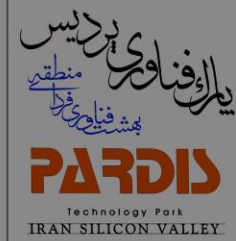


LIQUID SURFACE TENSION & CONTACT ANGLE MEASUREMENT

دستگاه اندازه گیری کشش سطحی مایعات و زاویه تماس



Liquid surface tension measurement

شرکت نانومتری پژوه سری جدیدی از دستگاه اندازه گیری کشش سطحی مایعات بر مبنای روش Wilhelms Plate با قابلیت های ویژه عرضه می نماید. دستگاه بصورت رومیزی Bench-top و ماژول شده Compact طراحی و ساخته شده و جهت اندازه گیری کشش سطحی مایع بکار گرفته می شود.

کاربردهای ویژه دستگاه: Applications

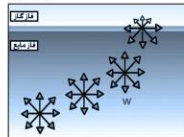
- اندازه گیری خاصیت چسبش جوهر و رنگ
- اندازه گیری خواص چسبش مواد
- خواص و پایداری امولسیون ها و کف
- خواص تر شونده رنگدانه و پودر ها
- بهینه سازی پوشش در رهاش کنترل شده دارو
- سازگاری بیولوژیکی فلزات و پلیمرها از لحاظ تر شونده
- Biocompatibility of metals and plastics with regard to wettability
- بهینه سازی سطح ساختارهای میکروسکوپی
- شناسایی و تعیین خواص میکرو امولسیون ها

این دستگاه برای سنجش کشش سطحی مایعات و نیز فشار سطحی (تغییرات کشش سطحی) به کار میرود. که در صنایع و زمینه های مختلف علوم مثل مکانیک، شیمی، فیزیک و... دستگاه شناخته شده ای است.

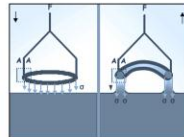
The interaction of particles at the surface of the liquid makes the surface behave as if it was an elastic membrane, thus supporting an insect that is heavier than water



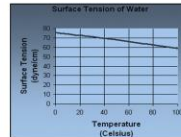
Free body diagram of DuNoy's ring. The force required to separate the ring from the surface is that required to overcome the surface tension of the water adhered to the ring as it is lifted.



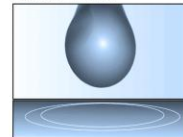
Surface tension is caused by the effects of intermolecular forces at the interface. Surface tension depends on the nature of the liquid, the surrounding environment and temperature. Liq.



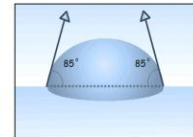
When compared to many other liquids at room temperature, water exhibits a relatively large value for surface tension-roughly about three times as great



Surface tension forces tend to minimize energy levels at the surface of the liquid. This results in a tendency for water droplets to be spherical. The typical teardrop shape is due to gravity effects, as is the flat surface of a liquid in contact with air



This figure shows a water droplet on a solid surface. When cohesive forces are large in relation to adhesive forces, contact angles tend to be large.



Surface tension is a characteristic property of a liquid

Definition: Perpendicular force acting on the unit length of the surface of a liquid is called "SURFACE TENSION"

Surface tension is an effect within the surface layer of a liquid that causes the layer to behave as an elastic sheet. Thus, the surface of any liquid behaves as if it was covered by a stretched membrane. **Surface tension** is measured in units of force per unit length

FACTORS AFFECTING SURFACE TENSION

Inter molecular forces

If force of attraction between molecules is high then **surface tension** will also be high

Hydrogen bonding

Liquids that have H-bond such as water, have high values of **surface tension**

Temperature

Surface tension of a liquid decreases with the increase in temperature because an increase in temperature, reduces force of attraction between molecules

مشخصات فنی دستگاه

Measuring system	Laser Beam اشعه لیزر	اساس اندازه گیری
Arm length	Adjustable قابل تنظیم	محدوده اندازه گیری
clamp	Adjustable قابل تنظیم	حساسیت اندازه گیری
Motion control	Signal to USB port of PC	خروجی سیستم
Supply voltage	About 5 V	ولتاژ منبع
Overall sizes	(75 -120-30 mm) w-h-d	ابعاد کلی
Overall weight	70 g	وزن کلی



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