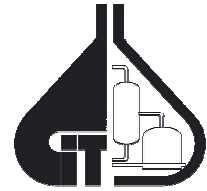


Interfacial Stress Rheometer



The Interfacial Stress Rheometer is a unique instrument that provides an accurate and quantitative method to measure the shear properties of an interface. The method is a major improvement compared with traditional rotational rheometers that lack sensitivity to probe interfacial properties.

Working principle

The ISR applies a controlled stress to an interface by creating a magnetic field onto a magnetized rod causing a displacement. This induces a shearing deformation on the interface. The resulting strain is measured in real time by monitoring the position of the rod onto a CCD detector. The instrument can be operated in 2 different modes : creep compliance where a steady stress is applied and dynamic testing where sinusoidal stresses at variable frequencies are applied.

Instrument specifications

Dynamic moduli lower limit : 0.001 mN/m

Frequency range : 0.05 rad/s to 10 rad/s

Strain range : 0.0003 to 1

Temperature control

A temperature control unit is available: a recirculating fluid bath allows temperatures from 5°C up to 60°C.

Measurement configurations

The instrument is equipped with KSV troughs for insoluble monolayers. Measurements can be performed either at the air/water or oil/water interface.

Software

LabView-based software allows the user to control the applied stress.

Applications

A broad spectrum of measurements can be performed with this instrument: e.g. Examination of phase transitions, prediction of emulsion and foam stability, monitoring surface gelation and network formation in real time, continuous monitoring of adsorption ...

