

# Rotational Rheometers





## Principle

Application of a shear rate range (in steady mode) or a strain frequency (in dynamic mode) and measurement of the correspondent resistance of the material to flow to determine viscosity and viscoelastic properties ( $\eta$ ,  $G'$ ,  $G''$  and  $\tan \delta$ ) respectively.

## Capabilities

- Measurement of viscosity in a wide range of shear rates (0.01 - 1000 s<sup>-1</sup>) and temperatures.
- Frequency sweep tests for viscoelastic materials.
- Time sweep test to evaluate stability.
- Temperature sweep test for screening crosslinking temperature, gelation point, ...
- Dynamic Mechanical Analyses (DMA) for phase transitions and modulus variation with temperature.

## Assets

	Asset	Details
	<b>RFS III Rheometrics</b>	Strain controlled rheometer with high sensitivity for low viscosities.  Geometries: parallel plates, cone & plate, concentric cylinders.  Temperatures: -20 to +60 °C.
	<b>RMS 800</b>	Strain controlled rheometer to measure viscoelasticity of polymer melts  Geometries: parallel plates.  T from +30 to +400 °C.
	<b>Anton Paar MCR502</b>	Stress controlled rheometer for steady and dynamic measures from fluids to polymer melts.  Geometries: parallel plates, cone & plate, concentric cylinders.  Dynamic Mechanical Analysis with torsional geometry.  T from -150 to +500 °C.
	<b>Ares Rheometrics</b>	Strain controlled rheometer for steady and dynamic measures from fluids to polymer melts.  Geometries: parallel plates, cone & plate, concentric cylinders.  Dynamic Mechanical Analysis with torsional geometry.  T from -150 to +400 °C.