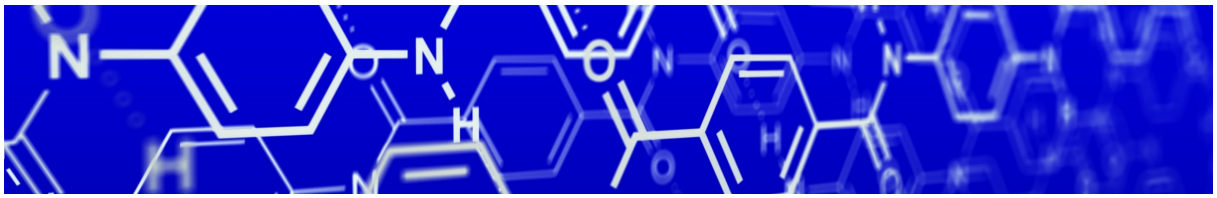
Characterization methods for polymers

Norlab have a complementary range of solutions for the characterization of functionalized polymers:

- Chromatographic and field-flow fractionation techniques, which play an important role in determining the composition and molecular weight distributions of polymers
- Spectroscopic techniques, such as infrared and Raman, for molecular and structural characterization
- To monitor critical parameters in processes involving dispersions or emulsions, dynamic light scattering (DLS) for particle size, electrophoretic light scattering (ELS) for zeta potential, non-invasive NMR liquid relaxation technology for particle dispersibility studies, the MultiScan MS 20 dispersion stability analyzer which analyses light transmitted through and scattered back by the sample
- Optical contact angle measurements systems to study the wetting behaviour of treated and untreated polymer film surfaces



Parameter	Method	Instrument
Adhesion force	Dynamic contact angle measurement	Dynamic contact angle measuring devices and tensiometers
Analysis of through-pores of filters and membranes	Porometry, gas-liquid expulsion method	Capillary flow porometer
Analysis of through-pores of filters and membranes	Porometry, liquid-liquid expulsion method	Liquid-Liquid Porometer
Analysis of through-pores of filters and membranes	Porometry, combination of gas-liquid and liquid-liquid expulsion methods	Ultra nano porometer
BET surface area and pore analysis	Gas adsorption	3P micro series 3P meso series 3P sync series 3P surface DX
Density, solids	Gas pycnometry	3P densi 100
Dispersion stability	Analysis of the transmission and backscattering behaviour	MultiScan MS 20 dispersion stability analysis system
Effectiveness of surface treatment on polymer films	Optical contact angle measurement	Optical contact angle systems
Molecular weight	Size Exclusion Chromatography (SEC)	Postnova SEC platform
Molecular structure and chemistry of layered materials	Raman and Raman Microscopy	Nanobase Raman spectroscopy instruments
Organic synthesis	Microwave reactor	Biotage organic synthesis instruments
Particle dispersibility studies	Non-invasive NMR liquid relaxation technology	MagnoMeter XRS
Particle shape	Image analysis	BeVision D2 Bettersizer S3 Plus

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Particle size, nanometer range	Dynamic light scattering	BeNano series
Particle size, powders	Laser diffraction	Bettersizer S3 Plus Bettersizer S3 Bettersizer 2600 Bettersizer ST
Polymer identification	Infrared spectroscopy	Jasco FTIR spectrometers
Pore volume and size distribution	Mercury intrusion porosimetry	Contract analysis Please ask for a quote
Separation, characterization and fractionation of polymers	Field-Flow Fractionation	Postnova FFF platform
Solids concentration of suspensions	Non-invasive NMR liquid relaxation technology	MagnoMeter XRS
Surface energy of solid	Optical contact angle measurement	Optical contact angle systems
Surface tension of liquid	Optical contact angle measurement	Optical contact angle systems
Tap density	Tap volumetry	BeDensi T Series
Temperature dependency of adhesion	Optical contact angle measurement	Optical contact angle systems
Viscoelastic behaviour and stress relaxation of an interface	Interfacial rheology	DataPhysics SVT 25 spinning drop video tensiometer
Viscosity, dynamic	Rotational viscometers	proRheo inline viscometers proRheo laboratory viscometers proRheo low shear viscometers
Water uptake and release	Dynamic vapor sorption (DVS)	3P graviSorb series
Wettability of solid surfaces	Optical contact angle measurement	Optical contact angle systems
Wetted surface area of suspensions	Non-invasive NMR liquid relaxation technology	MagnoMeter XRS
Zeta potential, macroscopic solid samples	Bidirectional oscillating streaming potential method	DataPhysics ZPA 20 zeta potential analyzer
Zeta potential, nanoparticles	Electrophoretic light scattering (ELS)	BeNano series