

Edinburgh Complex Fluids Partnership

Equipment and capabilities

Technique	Instrument details	Notes
Dynamic Light Scattering	Malvern ALV/LSE-5004	Particle size distribution
Laser diffraction particle size analyser	Beckman Coulter LS 13 320	
Scanning Electron Microscopy	Jeol JSM-6010PLUS/LV Zeiss Crossbeam 550 w/ Quorum Technologies PP3010T	Capability to perform cryogenic Focus Ion Beam SEM imaging. Range of detectors including the Inlens, SESI, ESB and EDS to maximise output information, including chemical analysis, from the sample
Differential Dynamic Microscopy		Sizing of particles, particularly powerful for polydispersed systems
Zeta Potential	Malvern Zetasizer Nano	Average surface charge of colloids
Optical Tensiometer	Krüss EasyDrop model FM40Mk2	Surface tension information
Oscillating Drop Tensiometer	Krüss DSA100R	Surface tension information
Langmuir Trough		Surface pressure information
Oscillatory and Flow Rheology	TA Discovery-HR2 TA AR-2000 TA Ares G2 Anton Paar MCR 301 Anton Paar MCR 302	Storage and loss moduli information. Shear stress and viscosity information. Including Double Wall Ring Geometry for interfacial rheology. Simultaneous imaging and rheological data of sample under shear
Extensional Rheology	HAAKE™ CaBER™ 1	
Mechanical Testing	Universal testing analyser	
Optical Tweezers		Microrheological information
Atomic Force Microscopy		Microrheological information, surface mapping
Confocal Microscopy	Leica SP8 Zeiss LSM700 coupled to Zeiss Observer.Z1 inverted microscope	With up to 3 simultaneous fluorescently tagged components to observe dynamics.

Potentiostat		
Rheo-imaging		Track the motion individual colloids whilst under shear, whilst simultaneously collecting rheology data
Differential Scanning Calorimeter	TA Discovery 2500	Gain insight to the thermal behaviour of the sample
Isothermal Calorimetry	TA	Understand binding interactions, e.g. protein interactions
Diffusing Wave Spectroscopy		Track the early stages of particle aggregation, creaming, sedimentation and coarsening of emulsions and foams
Quartz Crystal Microbalance		Understand behaviour of molecular adsorption onto surfaces
Turbidostat		Measuring cell density
Other light microscopes	Olympus BX50	With environmental box and automated stage. Imaging of biofilms and aggregate size and shape distribution analysis
Raspberry Pi Imaging Setup	Raspberry Pi Model 3B	
Density meter	Anton Paar DMA 4500	
Liposome extruder	tt Scientific Nanosizer	
Multi-wavelength fluorescence excitation system	CoolLED precisExcite	
Fluorescence spectrophotometer	Cary Eclipse	
Spin coater	Cammax Precima	