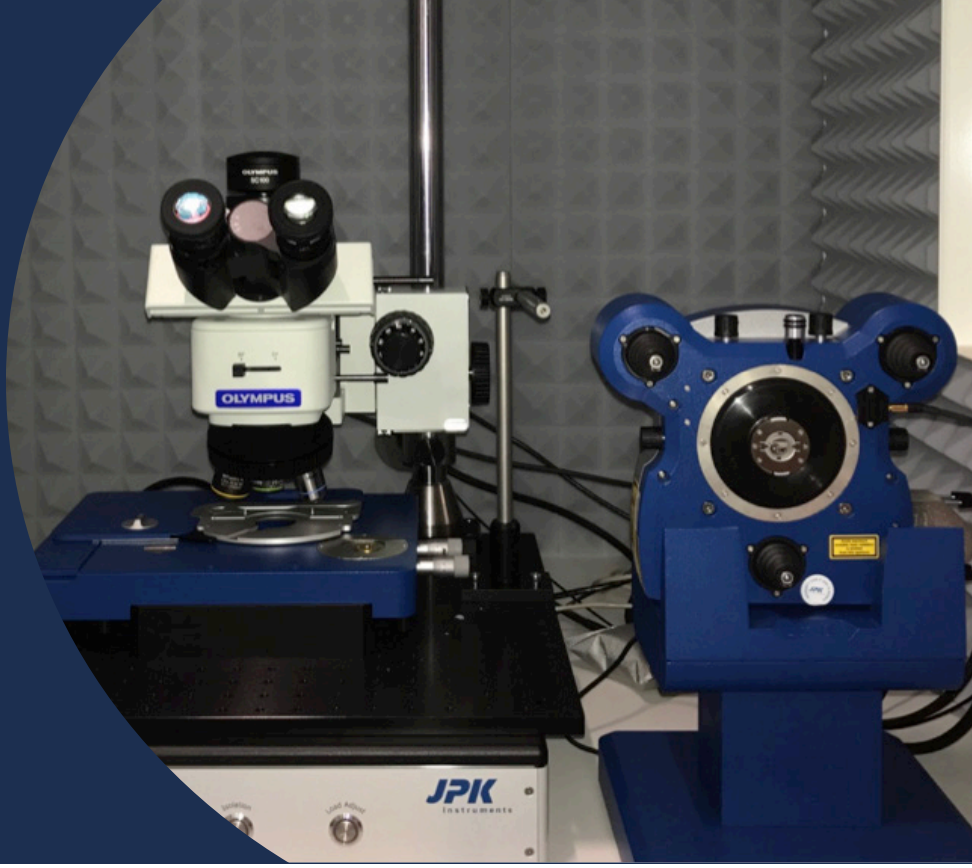
MANCHESTER 1824
The University of Manchester

AFM WITH ELECTROCHEMICAL SCANNING CAPABILITY



Atomic force microscopy (AFM) gives subnanometer resolution of surfaces, giving information on their structure and physical properties, including morphology and mechanical behaviour. AFM is a particularly powerful tool for analysing 2D materials and a fast scan option allows rapid exploration of a large sample. A whole range of forces can be used to investigate the sample surface including friction, magnetic, electrostatics, and electric current. The AFM can also be operated in liquid environments, and under heating or cooling.

This AFM has an electrochemical module to image the nanoscale structures of electrochemical reactions on an electrode surface. Both EC-AFM and EC-STM modes are available where the electrode is applied to the sample and both the sample and tip respectively. Applications include energy storage materials and electrocatalysts.

JPK NanoWizard® 4 NanoScience AFM

- Up to 70 Hz line rate with 100 µm x 100 µm scan size in closed loop
- Motorized stage with >20 mm travel in x and y
- Quantitative imaging mode, contact mode inc lateral force and advanced AC modes
- Olympus BXFM upright reflected light microscope
- Electrochemistry option (Electrolyte perfusion, gas purging, 20x20 mm2 sample size)
- Fast scan module (>70 Hz for up to 2 µm)
- Heating cooling stage (0 – 80 °C)
- Advanced force spectroscopy module
- Conductive AFM module (±10V, ±100 nA, ± 10 nA)
- Kelvin probe module
- Scanning transmission microscopy module
- Hyperdrive™ fluid imaging package