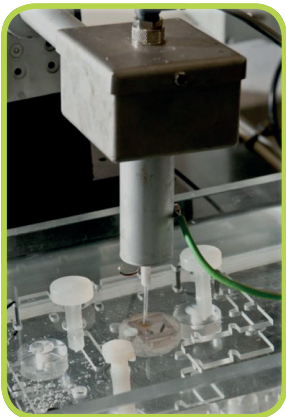


Scanning Vibrating Electrode Technique (SVET)

The SVET detects the potential gradients ohmically produced by local currents that emanate from actively corroding surfaces immersed in an electrolyte. Calibration then enables quantification of localised cathodic and anodic activity. The SVET utilises a vibrating electrode which typically comprises of a 125µm platinum microdisc set in glass.

This microtip electrode can be used in two modes:

- (i) as a profilometer tip to measure surface topography
- (ii) to quantify local current density under immersed conditions. Currents can occur naturally from corrosion or the current can be externally controlled via a galvanostat.



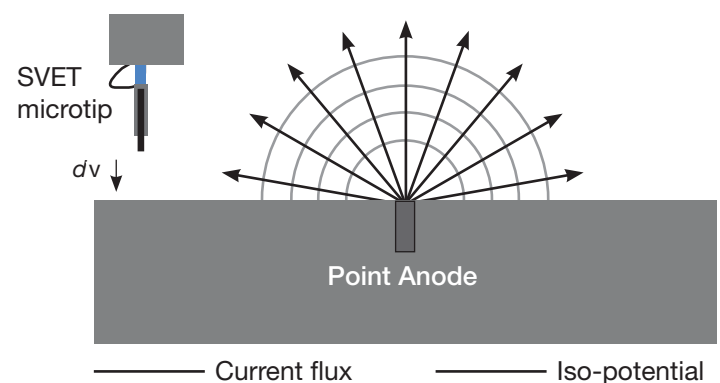
A shielded electromagnetic driver vibrates the microtip in the Z-direction perpendicular to the surface. The signal is measured via a Lock-In Amplifier. Sophisticated software developed specifically for SVET enables height profiling and in-depth analysis of measured and recorded voltages, current maps, anode and cathode relationships as well as intensities and life times.

Key Features and Specification

- ▲ Dual purpose microtip
 - ▲ 3D surface topography measurements
 - ▲ Detecting corrosion current
- ▲ Scan area: 50mm x-axis, 50mm y-axis, 50mm z-axis
- ▲ Spatial resolution 100µm
- ▲ Computer controlled Galvanostat range $\pm 100\mu\text{A}$
- ▲ Lockin Amplifier
 - ▲ Amtek Signal Recovery 7265
 - ▲ Low noise $13\text{fA}/\sqrt{\text{Hz}}$
- ▲ Carefully selected and designed components
 - ▲ Stable signal detection
 - ▲ High resolution
 - ▲ Repeatable experiment

Applications

Study of corrosion; bimetallic effects, time-lapse experiments – observing the current density distribution over time, highlights and enables visualisation of active and passive area. Specific tailored aqueous environments can be explored, corrosion inhibitor studies and more.



Enquiries
regarding:

- ▲ Purchase
- ▲ Contractual work
- ▲ Use of equipment
- ▲ Training

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