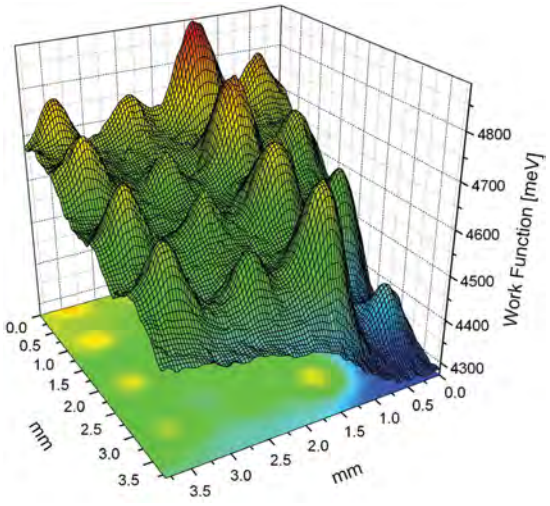
Scanning Kelvin Probe Systems

SKP5050, ASKP100100, ASKP200250, ASKP350350

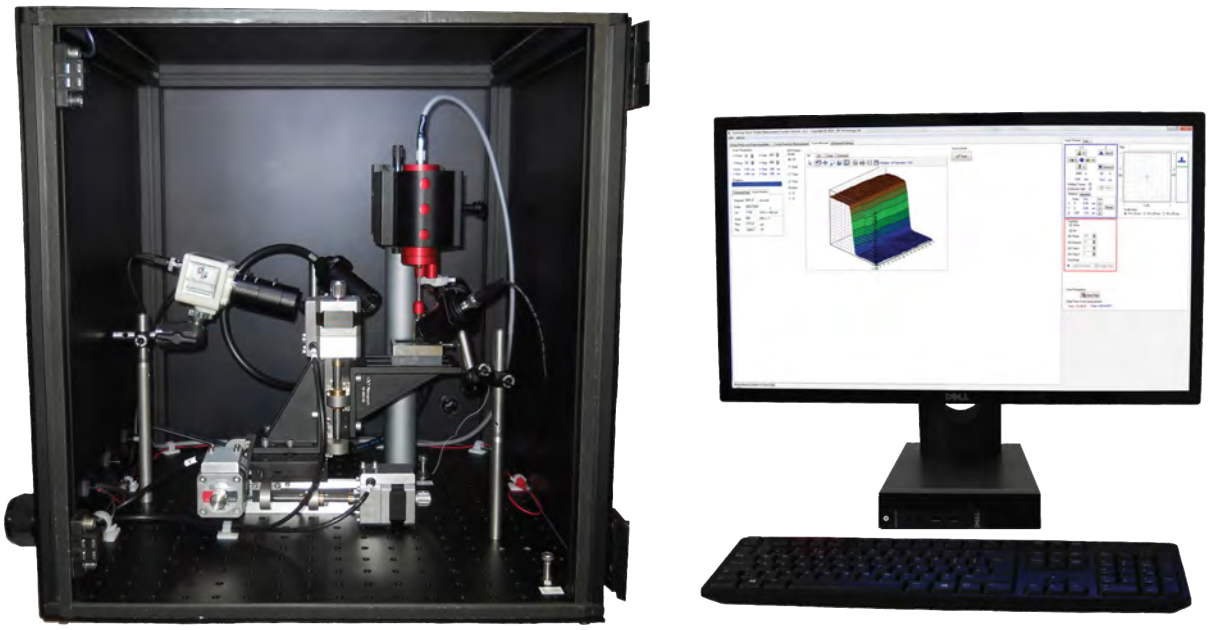
System Description

Our large range of Scanning Kelvin Probes give the user full access to 2D and 3D work function plots of samples ranging in size from 50 mm to 350 mm. With work function resolution of 1-3 meV, and the spatial resolution of the probe tip diameter, the Scanning Kelvin Probe gives reliable, repeatable measurements for work function (Φ), contact potential difference (CPD) and Volta potential (Δψ) measurements.

Effects of corrosion can be measured across a surface with high precision e.g. coating uniformity and performance. A Faraday and optical enclosure shields all of our scanning systems from unwanted fast changing environmental conditions, electromagnetic interference and provides the perfect platform for our Ambient Pressure Photoemission Spectroscopy (APS) and Surface Photovoltage add-on modules.



Silicon substrate modified by a layer of small 'bumps'. Sample is scanned using SKP5050 advanced 2D and 3D techniques



Scanning Kelvin Probe SKP5050 pictured inside standard optical enclosure with PC and software

Features

- Work function measurement by Kelvin probe
- Work function resolution of 1-3 meV
- Scanning area from 50 mm to 350 mm
- Scanning resolution equal to tip diameter
- Automatic height regulation
- Tip diameter 2.00 mm or 0.05 mm (SKP5050)

Applications

- Organic and non-organic semiconductors
- Metals and metal alloys
- Thin films and surface oxides
- Solar cells and photovoltaics
- Corrosion and nanotechnology
- Quality control

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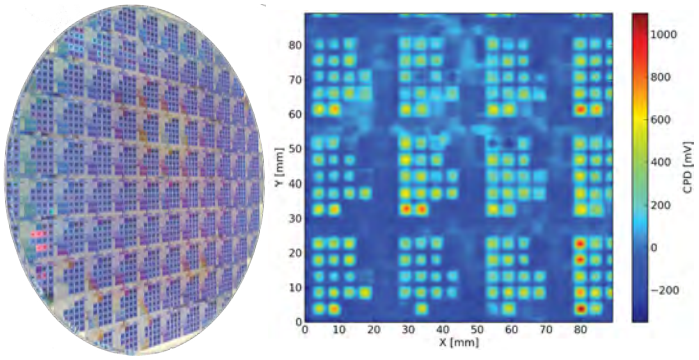
System Specifications

	SKP5050	ASKP100100	ASKP200250	ASKP350350
Tip material / diameter	Standard 2 mm gold tip (0.05 mm available on request)			
Work function resolution	1-3 meV			
Sample scan size	50 x 50 mm	100 x 100 mm	200 x 250 mm	350 x 350 mm
3D sample area	Square	Square	Square	Square & Circular
Height control (auto)	25 mm	50 mm	50 mm	50 mm
Visualisation	3D maps of surface potential			
Optical system	Colour camera with zoom lens and monitor			
Oscilloscope	Digital TFT oscilloscope for real time signal			
Test sample	Gold and aluminium test sample			
Faraday enclosure base (mm)	450 x 450	450 x 450	450 x 450	450 x 600
Control supplied	PC control with dedicated software for full digital control of all parameters			
Detection system	Off-null with parasitic capacity rejection			
Warranty	12 months			

Upgrades and Add-Ons

- Ambient Pressure Photoemission Spectroscopy (APS)
- Surface Photovoltage Spectroscopy (400-1000 nm)
- Surface Photovoltage (QTH or LED)
- Sample heater to 250°C
- Relative humidity control and/or nitrogen environmental chamber
- Tips in gold or stainless steel: 0.05 mm to 2.00 mm



12" silicon wafer measured using the ASKP350350 Scanning Kelvin Probe

The Company

KP Technology Ltd was founded with the aim of bringing to the market new surface research tools. These tools have featured in over 250 peer-reviewed client publications in the last 3 years. KP Technology Ltd also performs a significant amount of material research and training consultancy, mostly based upon the work function (Φ) or surface potential evaluation of client samples. KP Technology Ltd holds international patents on their Ambient Pressure Photoemission Spectroscopy (APS) system for measuring absolute workfunction. Along with a strong research and development division and over 500 systems shipped worldwide, this has placed KP Technology Ltd as the leading supplier of Kelvin probes in the world.

Contact

For quotation requests, further information or to discuss any research or particular measurements, please feel free to contact us:

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Or visit our website
www.kelvinprobe.com

KP Technology Ltd is the proud winner of the Queens Award for Enterprise: International Trade 2013