



# Single-Point Kelvin Probe System

KP020

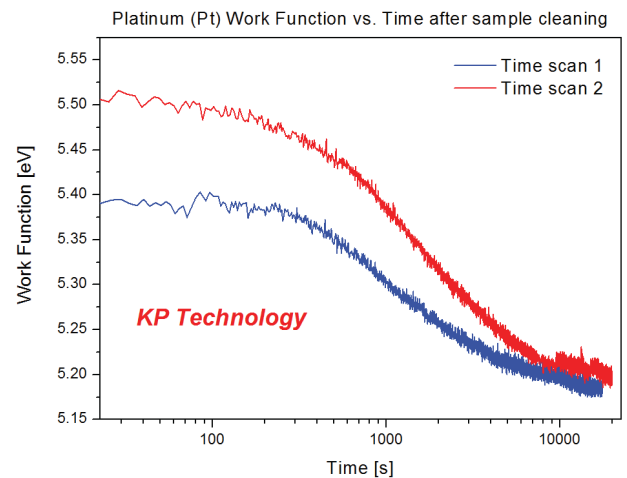
## System Description

Our single-point Kelvin probe (KP020) system is the introductory system to the KP Technology Ltd range. The off-null signal detection method allows very high quality measurements of the work function ( $\Phi$ ), otherwise known as the Volta potential ( $\Delta\psi$ ), and Fermi level of materials.

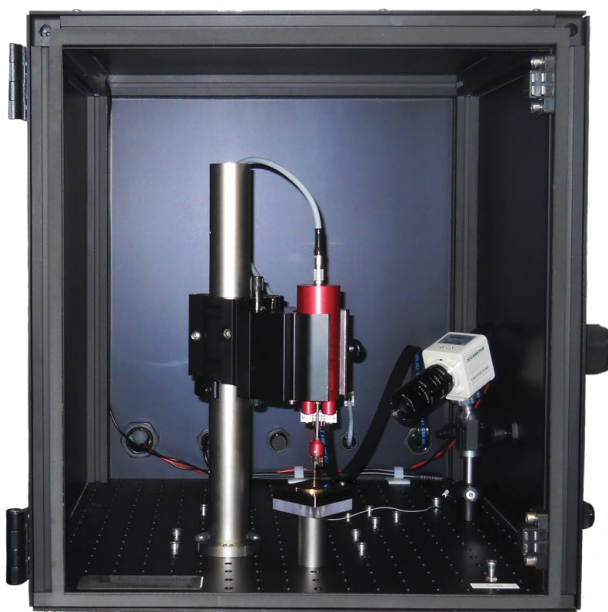
The economical system enables users to quickly record non-scanning data and the dedicated software allows full digital control of all parameters to match the exact requirements of the sample under investigation. The recorded data is easily exportable to analysis software.

For rapid events, the KP020 can record work function at a rate of over 300 work function measurements per minute, or alternatively, the system will track slow work function evolution over a number of days.

There is an in-built height regulation feature to control the tip to sample spacing during measurements which gives rise to stable, reliable and repeatable data.



Platinum work function over time after cleaning



Single-point Kelvin probe KP020 pictured with optical/Faraday enclosure and PC

## Features

- Work function measurement by Kelvin probe
- Work function resolution of 1-3 meV
- Modular system for upgrades and add-ons
- Economical, entry system
- USB version plug-and-play
- Off-null signal detection system

## Applications

- Organic and non-organic semiconductors
- Metals and metal alloys
- Thin Films and surface oxides
- Nanotechnology
- Corrosion
- Solar cells and organic photovoltaics



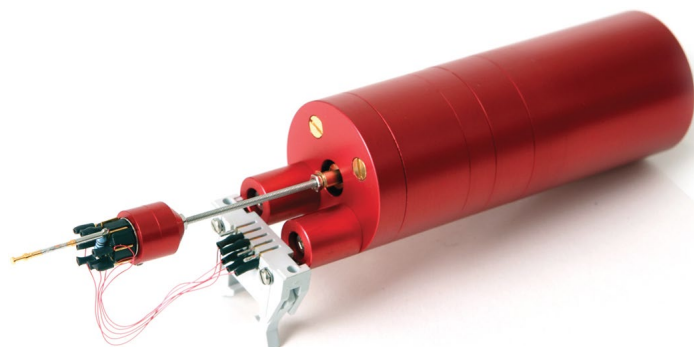
# Single-Point Kelvin Probe System

KP020

System Specifications	KP020
Tip material/diameter	Standard 2 mm gold tip (other materials/sizes available on request)
Work function resolution	1-3 meV
Probe translation	25 mm manual translator
Visualisation	Single-point work function / contact potential difference measurement
Oscilloscope	Digital TFT oscilloscope for real time signal
Test sample	Gold/aluminium sample
Control supplied	PC control with dedicated software for full digital control of all parameters
Height regulation	Through DC probe adjustments
Detection system	Off-null with parasitic capacity rejection
Enclosure	450 mm x 450 mm optical/Faraday enclosure included
Optical system	Colour camera with zoom lens and monitor
Warranty	12 months

## Upgrades and Add-Ons

- Scanning Kelvin Probe system
- Relative humidity control and nitrogen environmental chamber
- Ambient Pressure Photoemission Spectroscopy
- Sample heater to 250°C
- Surface Photovoltage Spectroscopy (400-1000nm)
- Surface Photovoltage (QTH or LED)



*The KP Technology Ltd 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 ( $\Phi$ ) 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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KP Technology Ltd is the proud winner of the  
Queens Award for Enterprise:  
International Trade 2013

