

Single Point Kelvin Probe System

KP020

The **Kelvin Probe** is a non-contact, non-destructive vibrating capacitor device used to measure the work function (wf) of conducting materials or surface potential of semiconductor or insulating surfaces. The wf of a surface is typically defined by the topmost 1-3 layers of atoms or molecules, so the **Kelvin Probe** is one of the most sensitive surface analysis techniques available. **KP Technology** Systems offer very high wf resolution of 1-3 meV, currently the highest achieved by any commercial device.

The KP020 comes with everything needed to produce reliable, repeatable results, due to the unique features provided by the 'Baikie System'. It is the ideal **Kelvin Probe** system for researchers that do not need a scanning function. In any one measurement the KP020 will record up to 40,000 data points.

This system can also be used in a controlled atmosphere using our Relative Humidity Chambers or can be used with any of our Surface Photovoltage options.



"We found that the KP Technology Kelvin probe is a well engineered instrument with a clever design. Most of all, we are very happy with the excellent support that we have been experiencing."

Dr H.J. Richter
Seagate Research Labs
USA

THE BAIKIE SYSTEM

All KP Technology Systems are based upon unique features developed by Professor Iain Baikie. These features are unsurpassed by any other company.

- Highest work function/surface potential resolution of 1 - 3 meV (standard)
- Voice Coil driver provides very high rejection of driver talkover noise compared with piezoelectric systems
- Off null signal detection system for improved resolution - Our Signal-to-Noise (S/N) features remain unsurpassed in the field
- Height regulation feature to control the tip to sample spacing during measurements and scans which allows for stable, reliable and repeatable data
- Full digital control of all Kelvin Probe parameters
- Quick change probe tip allowing user selectable spatial resolution

WHAT IS INCLUDED?

- Kelvin Probe Head Unit with Integral Tip Amplifier & Tip
- Optical Grade Breadboard
- Optical Kelvin Probe Mount with 25.4 mm Manual Translator
- Sample Holder with Gold/Aluminium Calibration Sample
- Digital Control Unit
- Dell PC with Monitor
- Data Acquisition System (Preinstalled in PC)
- Ambient Kelvin Probe Software (on CD and Preinstalled on PC)
- NI-DAQ Software (on CD and Preinstalled on PC)
- Faraday Screen
- Spare Tip Amplifier
- Power Supply Unit
- Associated System Cables and Manuals
- Additional Tip
- 12 Month Warranty

SOFTWARE FEATURES

User digital control of probe amplitude, probe frequency, mean spacing, and tip potential. Automatic measurement of Kelvin Probe signal and work function averaging. Export of data to Excel compatible spreadsheets. Software features tip tracking control during scanning and real-time 2D reporting of sample work function and sample height topographies.

ADDITIONAL INFORMATION

- Height Control - 25.4 mm (Manual)
- Tracking System - Automatic hold of tip to sample spacing
- Visualisation - 2D maps of surface potential
- Other Options – KP010
- Can be used with Surface Photovoltage options

