# Environmental Kelvin Probe Systems

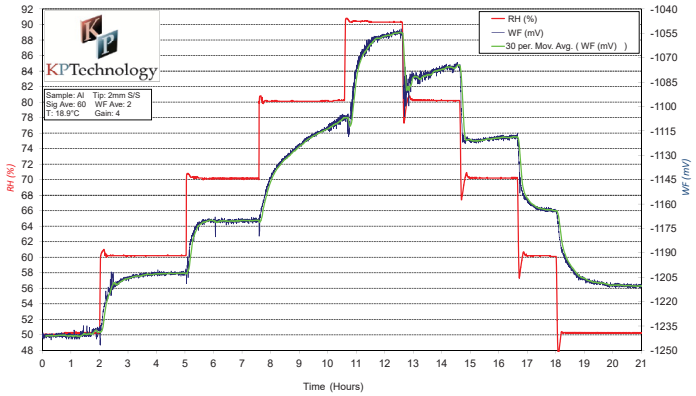
RHC010, RHC020, RHC030, RHC040

## System Description

The Relative Humidity Kelvin Probe (RHC) systems are the ideal solution for monitoring samples in a controlled atmosphere for contact potential difference (CPD)/work function (Φ) measurements. The RHC systems have the ability to automatically control the relative humidity within the chamber from 20% to 85% using the easily programmable software.

As well as RH control, the RHC020 and RHC040 Kelvin probe systems come with the KP Technology Scanning Kelvin Probe platform, perfect for plotting the effect of corrosion over the surface of a sample and providing more insight into corrosion protection and resistance.

The RHC030 and RHC040 come with nitrogen atmosphere control with the ability to go down to <1% oxygen within the system.




*Effect of relative humidity on aluminium sample over time*


*Relative humidity system model: RHC040 with 3-axis scanning capabilities*

## Features

- Work function measurement by Kelvin probe
- Work function resolution of 1-3 meV
- Automatic control of relative humidity
- Atmospheric control to <1% oxygen
- Modular system for upgrades and add-ons

## Applications

- Corrosion e.g protection and resisitance
- Metals and metal alloys
- Thin films and surface oxides
- Organic and non-organic semiconductors
- Solar cells and organic photovoltaics

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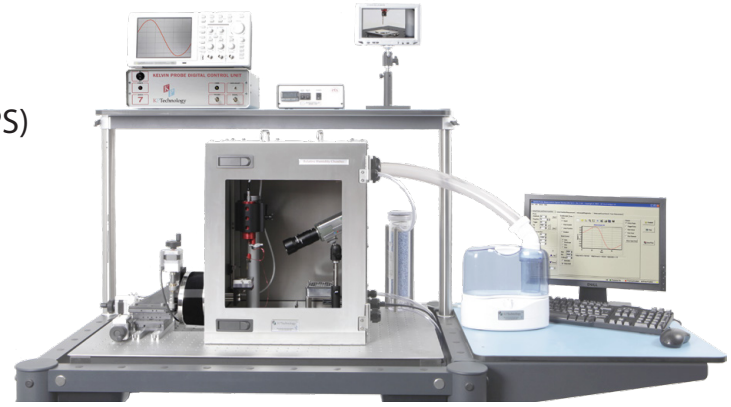
## System Specifications

| | RHC010 | RHC020 | RHC030 | RHC040 |
|---|---|---|---|---|
| Tip material/diameter | 2 mm stainless steel tip | | | |
| Work function resolution | 1-3 meV | | | |
| Sample scanning | Single-Point | 50 mm x 50 mm | Single-Point | 50 mm x 50 mm |
| Relative humidity control | Automatic: 20% to 85% | | | |
| Atmospheric control | RH Only | RH Only | Oxygen to <1% | Oxygen to <1% |
| Optical system | Front window | | Colour camera | |
| Oscilloscope | Digital TFT oscilloscope for real time signal | | | |
| Test sample | Gold and aluminium test sample | | | |
| Breadboard footprint | 900 x 600 mm | | | |
| Control supplied | PC control with dedicated software | | | |
| Detection system | Off-null with parasitic capacity rejection | | | |
| Warranty | 12 months | | | |

## Upgrades and Add-Ons

- Ambient Pressure Photoemission Spectroscopy (APS)
- Surface Photovoltage (QTH or LED)
- Surface Photovoltage Spectroscopy (400-1000 nm)
- Upgrade to Scanning Kelvin Probe System
- Sample Heating to 115˚C



*Relative humidity system model: RHC020 with 3-axis scanning*

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