PHI 5000

VersaProbe

Scanning ESCA Microprobe
Presenting the PHI 5000 VersaProbe

A VERSATILE MULTI-TECHNIQUE PLATFORM FOR HIGH PERFORMANCE XPS

The PHI 5000 VersaProbe is a multi-technique surface analysis instrument based on PHI’s highly successful scanning x-ray microprobe technology. This technology provides high performance micro-area spectroscopy, chemical imaging, and secondary electron imaging with a raster scanned 10 µm diameter x-ray beam. The x-ray beam size can be computer controlled from less than 10 µm diameter to 100 µm diameter for high sensitivity.

PHI’s patented dual beam charge neutralization method provides effortless analysis of insulating samples using a combination of low energy ions and electrons.

The integral floating column argon ion gun provides an impressive sputter depth profiling capability for inorganic thin film structures. The optional C₆₀ ion gun provides a unique and powerful sputter depth profiling capability for many organic materials.

A fully automated five axis sample manipulator facilitates the automatic analysis of multiple samples and provides Zalar Rotation™ capabilities for argon or optional C₆₀ sputter depth profiling.

PHI SUMMITT, the software user interface for the VersaProbe provides an easy-to-use platform for multi-technique instrument control. Data interpretation and manipulation is performed with MultiPak, PHI’s advanced electron spectroscopy data reduction software package.

ADVANCED FEATURES

- PHI’s patented x-ray microprobe technology and high sensitivity spectrometer provide high performance micro-area spectroscopy and imaging
- Secondary electron and chemical imaging
- High sensitivity micro-area spectroscopy
- High performance thin film analysis
- Versatile multi-technique platform
Spectra obtained from a 20 µm area on a human hair (SXI shown above) before and after C_{60} sputtering. The hydrophobic surface was removed revealing the underlying hydrophilic chemistry. Using C_{60} ions the carbon chemistry was preserved. With traditional argon ion sputtering the chemistry would have been destroyed.
VersaProbe’s Capabilities

**STANDARD**
- Raster scanned, micro-focused x-ray beam
- X-ray induced secondary electron imaging
- Dual beam charge neutralization
- Macro-area XPS
- Micro-area XPS
- Chemical state imaging
- Angle dependent XPS
- Floating column argon ion gun
- Zalar Rotation
- Five axis automated sample manipulator
- 25 mm and 60 mm sample handling

**OPTIONS**
- 10 keV C₆₀ ion gun
- Dual anode, non-monochromatic x-ray source
- UV light source
- 95 mm sample handling
- Hot / cold sample handling

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