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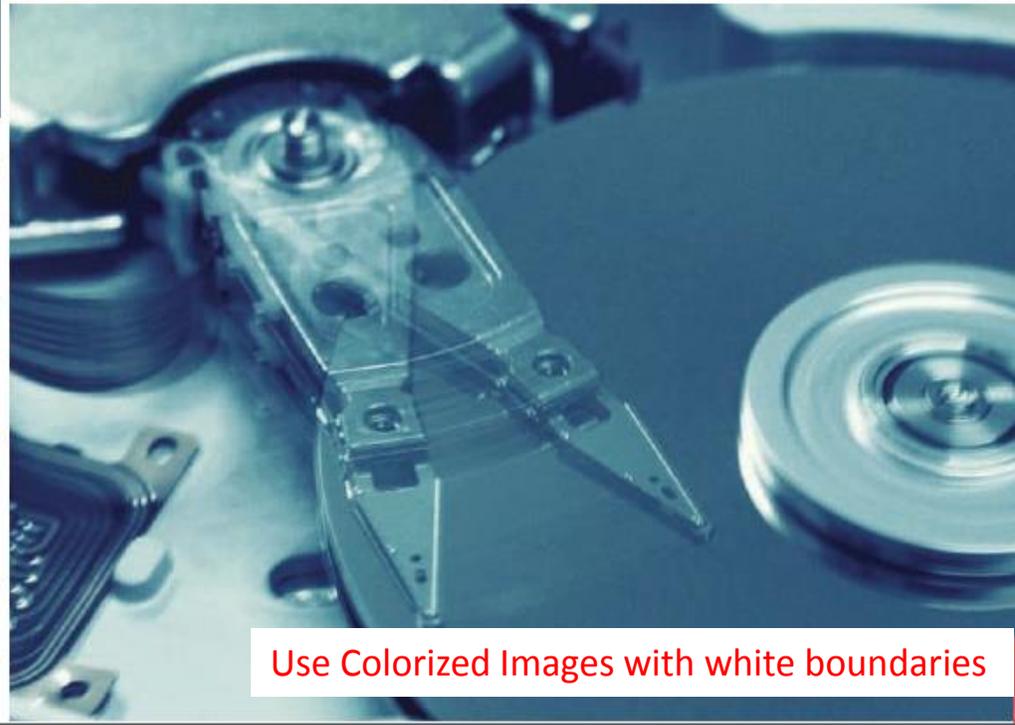
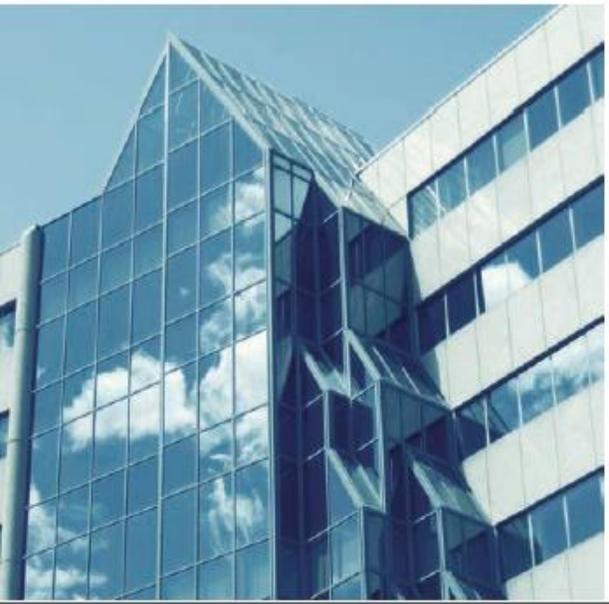
PHI *X-tool*

Scanning XPS Microprobe

High Performance and Revolutionary Ease-of-Use



Replace with
microelectronics photo
from inside cover of
Quanterra II brochure



Use Colorized Images with white boundaries



PHI *X-tool*

Scanning XPS Microprobe

X-ray Photoelectron Spectroscopy (XPS/ESCA) is the most widely used surface analysis technique and has many well established industrial and research applications. XPS provides quantitative elemental and chemical state information from surfaces and thin film structures. XPS is applied to a diverse range of materials applications including: polymers, metals, catalysts, thin films, photovoltaics, batteries, wear coatings, nanomaterials, semiconductor devices, magnetic storage media, display technology, and biomedical devices.

The *X-tool* is designed to make XPS instrumentation accessible to a larger audience. An intuitive touch screen user interface, automatic sample loading, recipe driven analysis, and automatic report generation removes the requirement to be a surface analysis expert to perform XPS measurements.

Based on Physical Electronics' (PHI's) patented scanning XPS microprobe technology, the *X-tool* makes it possible for its users to perform routine small and large area XPS measurements in three easy steps.



Revolutionary Ease-of-Use

In the **automatic mode** of operation, turnkey recipe-driven capabilities are available for routine or repetitive analysis tasks.

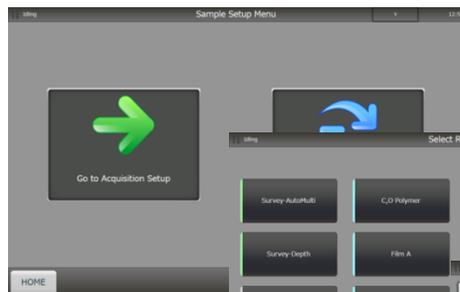
In the **interactive mode** of operation, the user can define conditions and direct an analysis session. Capabilities include: Small and large area spectroscopy, XPS mapping, and sputter depth profiling.

An internal optical microscope and x-ray beam induced secondary electron imaging (SXI) are available to guide the selection of areas for analysis.

If your XPS application is centered around repetitive analysis tasks or the need to make routine XPS capabilities available to a large group of users, the *X-tool* was designed for you.

Auto Analysis

Load Samples



Select Recipes



Define Locations



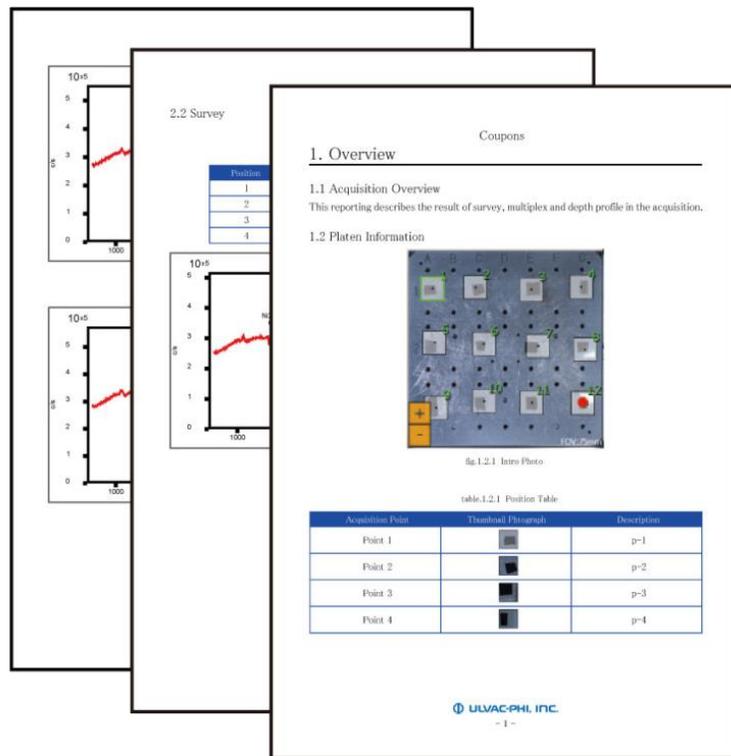
Go



High Productivity

The *X-tool* user interface is designed to make XPS instrumentation accessible to a larger audience, removing the requirement to be a surface analysis expert to successfully use an XPS instrument. An integral part of the design is the ability to automatically perform basic data reduction and generate a report. This capability is available in both the automatic and interactive modes of operation.

Auto Report Generation



Unique Capabilities

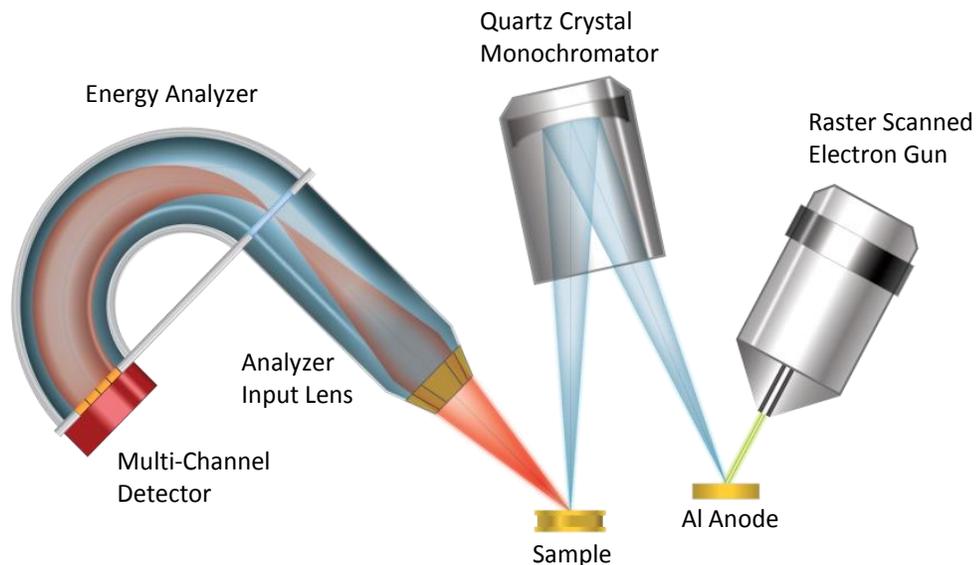
PHI's scanning XPS microprobe instrument platform provides unique and valuable capabilities for the XPS analyst.

Secondary electron images are generated by scanning a focused x-ray beam across the sample. These SXI images have a contrast mechanism that is dominated by photoelectron yield (composition), and therefore often reveal features that are not visible optically or related to topography.

SXI images are generated using the same x-ray source and energy analyzer used for spectroscopy and chemical imaging, providing a high degree of confidence in locating small features for analysis.

The micro-focused x-ray beam defines the analysis area pattern for large area spectroscopy, micro area spectroscopy, and imaging. The same analyzer and detector are used for spectroscopy and imaging, maintaining high sensitivity and a consistent analyzer transmission function (consistent quantification).

The Scanning XPS Microprobe Advantage



PHI's patented scanning XPS microprobe technology delivers a micro-focused, raster scanned, monochromatic x-ray beam to the sample surface providing unique and powerful capabilities to our users.

PHI X-tool

PHI's Scanning XPS Microprobe Technology

High Performance and

Revolutionary Ease-of-Use

Standard Features

- Scanned, micro-focused, monochromatic x-ray beam
- X-ray beam induced secondary electron imaging
- Dual beam charge neutralization
- Large area XPS
- Micro area XPS
- Chemical state imaging
- Thin film analysis
- Floating column argon ion gun
- 75 x 75 mm sample platens
- Recipe driven automatic and interactive analysis modes
- Automatic report generation



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