

Surface Analysis Newsletter

Introduction to Ultra-Fast XPS

June 2016

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Ultra Fast XPS

NEW: PULSE XPS system

NEW: NEO Control System

Ultra-Fast XPS with ASPECT analyser



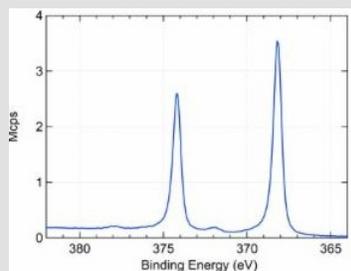
Fast analysis typically >5x faster than older solutions.

Survey spectrum in 2sec.

Monitoring of multiple peaks in real time.

Snapshot mode with 128 multi-channel detector.

Bi-polar, 3.5KeV analyser for UPS, XPS, AES and ISS modes.



>3.5Mcps for the Ag3d peak at a resolution of 0.6eV. Acquired at 35mm W.D. at the magic angle (54.7deg) between MECS source and ASPECT analyser.

Welcome

MANTIS-SIGMA is excited to present our new advanced range of UHV Surface Analysis tools from *SIGMA Surface Science*. In this newsletter we present our latest tools and unique research modes for Electron Spectroscopy. We are happy to make our demo instruments available for collaborative research publications, as part of our applications program. Please feel free to contact [Dr Christian Kaiser](#).

PULSE: Time Resolved XPS

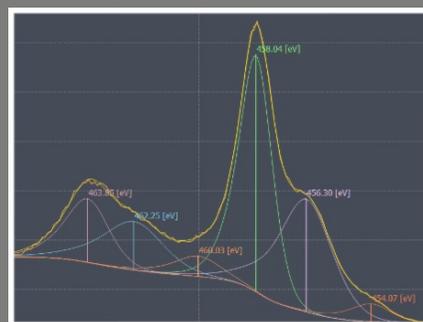
The PULSE system is a compact XPS system and is available as a specialist time-resolved XPS variant.

Based on the *ASPECT* analyser with a true-counting multichannel detector, the PULSE system has the ultimate sensitivity, fast detector read-out and spectrometer electronics with short voltage settling times, essential for time-resolved XPS. The system is available with the latest generation of monochromated (MECS) and dual anode (LAX) x-ray sources and a range of additional ESCA sources dependent on experimental requirements.



NEO Control System

Performing at speed, the NEO control suite employs acquisition modes that set analyser energies in the millisecond range and can acquire tens of thousands of spectra per second. Whether you want to scan large energy ranges in a short time or perform many subsequent narrow spectrum acquisitions, the combination of *ASPECT* and NEO helps deliver results in seconds, making a critical difference in time dependent studies or high throughput fundamental research.



The built-in results data browser is designed for large varied data sets, allowing the user to retrieve, review, manage, or analyse any acquired data and its associated information instantly. Data can be

Quick Links

[SIGMA Website](#)
[MANTIS Website](#)

[ESCA \(XPS, UPS, AES, ISS\)](#)

[Low Temperature SPM](#)

[Thin Film \(PVD, MBE, PLD\)](#)

ESCA Movie Links

[ASPECT and NEO Showcase](#)

[NEO Software - Fast](#)

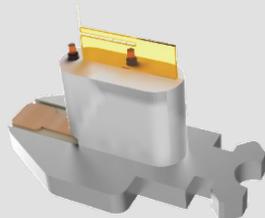
[NEO Software - Powerful](#)

[NEO Software - Sophisticated](#)



Find us on

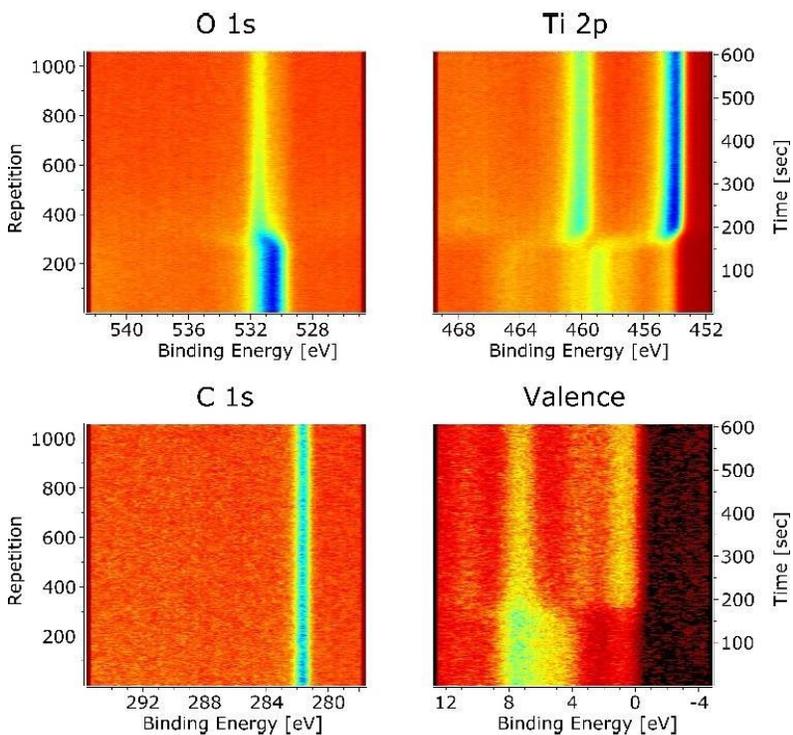
Next Edition: **gPlus® NC-AFM**



processed within the NEO control environment or with a link to CasaXPS.

ASPECT-NEO: Results Gallery

Thermal reduction of titanium oxides was analysed by time-resolved XPS using snapshot acquisition of multiple peaks with the ultra-fast ASPECT analyser. Multi-peak monitoring was used to measure the spectral changes of O1s, Ti2p, C1s and the valence band. The sample temperature was ramped from 550K to 900K within two minutes.



The above is a color coded intensity representation of O1s, Ti2p, C1s and valence band as a function of time while the temperature was increased. Each acquisition cycle took 570 ms, with 500 ms detection time and the analysis completed within 10 minutes.

If you would like to know at which Conference events we will be exhibiting and

Events

presenting please view our Calendar page. [Click Here](#)

