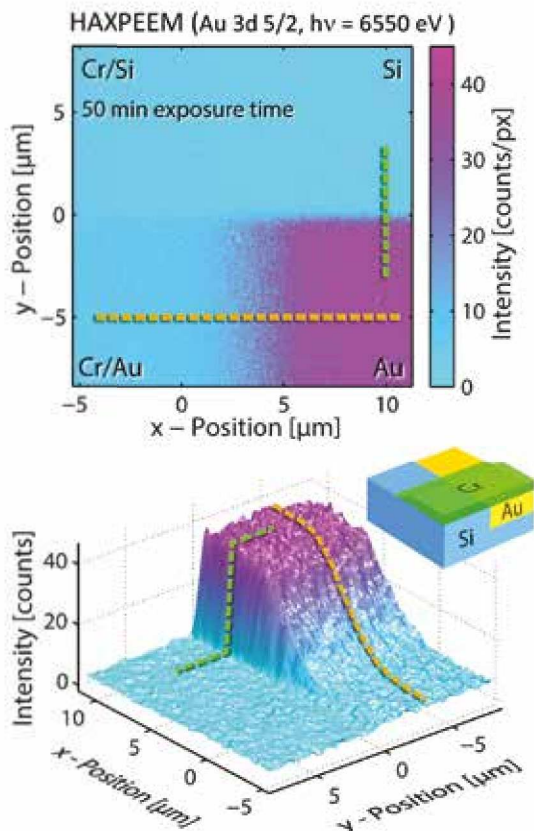


HAXPEEM

3D-HAXPES UP TO 10 keV

- Imaging HAXPES (3D-HAXPES)
- High Resolution Energy filtered PEEM
- Momentum Microscopy / μ -ARPES
- Small Area Spectroscopy
- Energy Range from 0 to 10 keV
- Aberration Compensated Imaging Double Sphere Filter (patented)
- Based on the NanoESCA III Design
- High Transmission
- True 2D Event Counting

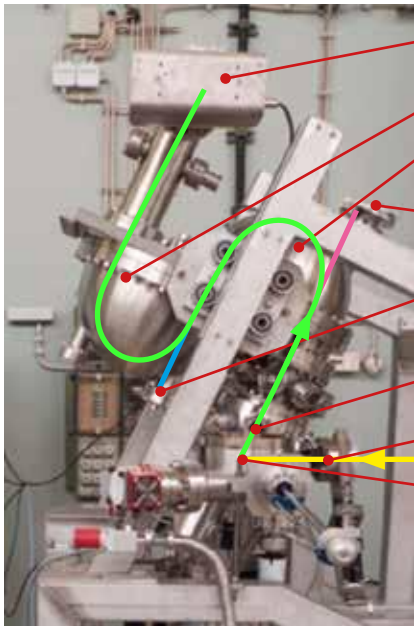


Ref.: M.Patt, C. Wiemann, N. Weber, M. Escher, A. Gloskovskii, W. Drube, M. Merkel, C. M. Schneider, Rev. Sci. Instrum., **85**, 1137 (2014)



Brochure

HAXPEEM: Essentials



- imaging detector (energy filtered)
- 2nd hemisphere
- 1st hemisphere
- imaging detector (PEEM image)
- channeltron detector
- path of photo electrons
- synchrotron light
- sample position

Field of view (FoV)

Real space 6 ... 800 μm
 k-space $> \pm 3.0 \text{ \AA}^{-1}$

Lateral resolution

NanoESCA III mode $< 40 \text{ nm}$ (20 nm achieved)
 HAXPEEM @ 6.5 keV $< 500 \text{ nm}$ (410 nm achieved)

k-space resolution

0.05 \AA^{-1} (0.008 \AA^{-1} achieved)

Kinetic energy range

NanoESCA III mode 0 ... 200 eV (0 ... 1600 eV opt.)
 HAXPEEM mode 0 ... 10 keV

Energy resolution

NanoESCA III $< 25 \text{ meV}$ @ 0 ... 200 eV
 $< 50 \text{ meV}$ @ 0 ... 1.6 keV
 HAXPEEM $< 100 \text{ meV}$ @ 0 ... 10 keV

1st dedicated HAXPEEM up to 10 keV operated @ PETRA III, Hamburg

- Manually driven iris field aperture** FoV range 0...200 μm
- Piezo driven contrast aperture (CA)** 5 aperture sizes, x/y adjustable
- Position read out for IS stage and CA** accuracy 10 μm
- 2D event counting for single electron detection** 2×10^5 counts/sec max. count rate
- Integrated x/y sample stage (IS stage)** piezo driven, x/y: $\pm 4 \text{ mm}$ (option)
- LHe cooled sample stage** On request

