

FOCUS HIS 14 HD MONO

MONOCHROMATIZED VUV SOURCE

Ultimate UPS, ARPES, PEEM and μ -ARPES



Brochure

Gefördert durch:

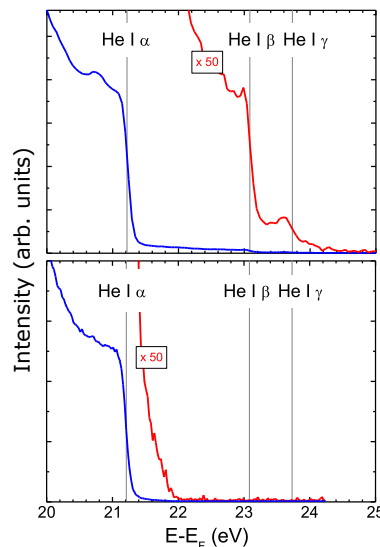


Bundesministerium
für Wirtschaft
und Energie

aufgrund eines Beschlusses
des Deutschen Bundestages

- Dispersive element with 20 % transmission for He I and II
- Photon flux
He I: $> 1 \times 10^{12}$ Photons/s/mm²
He II: $> 2 \times 10^{11}$ Photons/s/mm²
- Spot size $< 300 \mu\text{m}$
($\varnothing 1.7\text{mm}$ light capillary)
- Working distance 6.5 cm
- Ease of operation
- Operating pressure down to 10^{-10} mbar range
(with 3rd pumping stage)

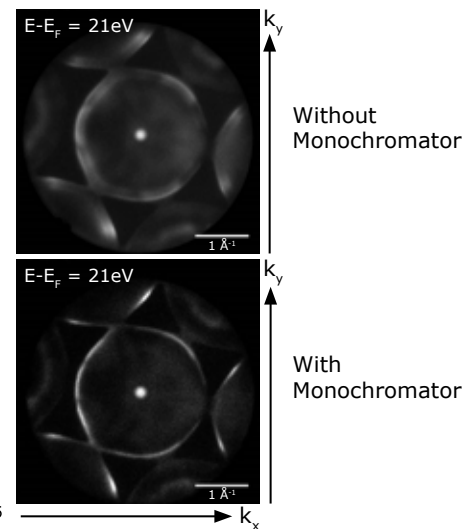
Photo electron spectra of W (100) using FOCUS CSA



Top: Satellites
He I- β and γ present

Bottom: No satellites

Momentum microscopy of Ag (111) using FOCUS IEF-PEEM



Top: Shadow-structure
visible due to He I- β

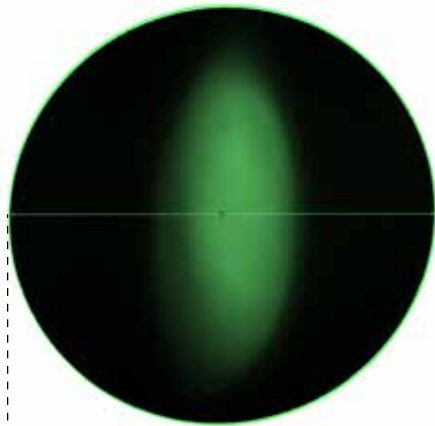
Bottom: Band-structure
due to He I- α solely



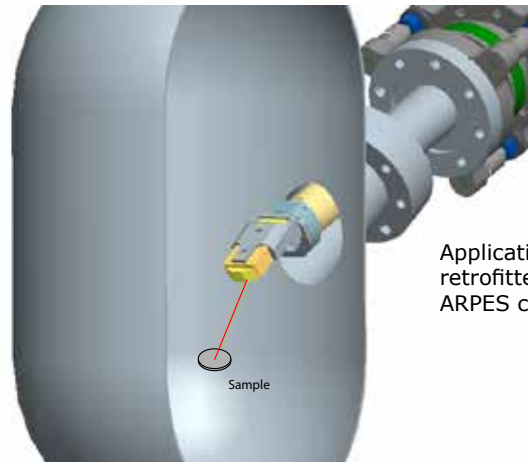
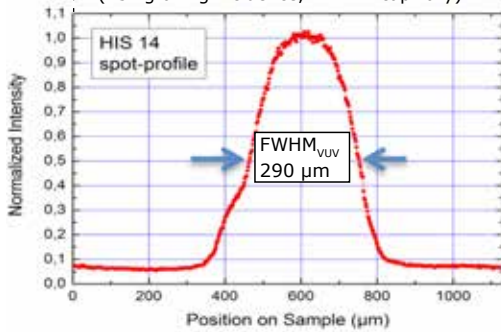
Photo current He I	> 40 nA (photo current with VUV-Diode)
Photo current He II	> 12 nA (photo current with VUV-Diode)
Useful gas discharge lines:	He I, He II
Spot diameter:	< 300 μm (1.7mm capillary)
Photon line width:	< 2 meV (He I radiation)
Source alignment:	CF 63 port aligner
Pumping:	2- or 3-stage differential pumping
Working distance:	Ca. 70 mm (clearance to measurement position)
Mounting flange:	DN 63 CF or larger
Insertion depth:	Customized (to be defined)
Adjustment dispersive element:	Rotary drive and z-shift
Cooling:	Water cooling
Bake out temperature:	150°C
Plasma ignition:	automatic
Capillary (mm) :	0.8 / 1.2 / 1.7 (standard) / 2.2



The VUV source power supply is a fully digital unit with integrated pressure measurement and automated plasma ignition. It delivers up to 1 kV anode voltage, up to 300 mA discharge current and a very stable discharge regulation.



VUV spot imaged with PEEM (25° grazing incidence, 1.7mm capillary)



Application: HIS 14 HD Mono retrofitted to an existing ARPES chamber.

