

## Section 7. VUV Source

7.1 Multi-Gas Ultra-High Flux VUV Source

7.2 Focused VUV Source

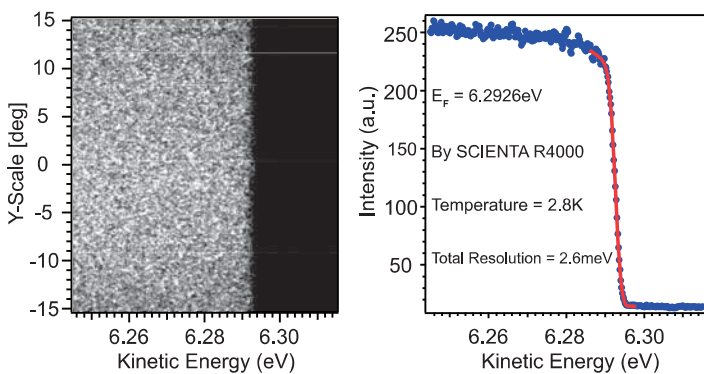
# Section 7. VUV Sources

## Description

The new FERMI BL-1000 is an ultra-high efficiency UV source based on revolutionary local field plasma mechanism, integrated with latest solid RF source technology. Providing orders of magnitude higher efficiency than traditional plasma-base UV sources. BL-1000 is an electrode-free and ignite-free universal UV source, which can work with various gases and gas mixture. Providing broad applications, such as photoemission spectroscopy, mass spectroscopy, atomic absorption spectroscopy *etc.*

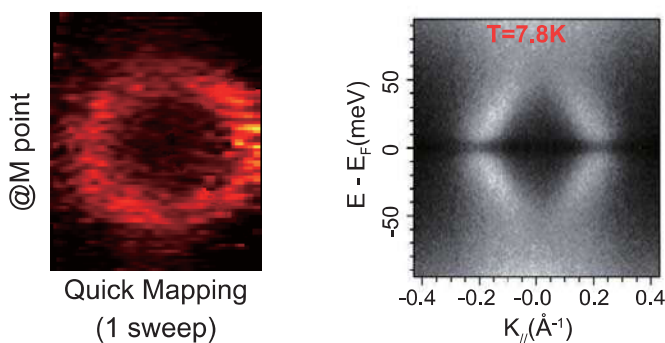


## Gold Thin Film Test @ Kr(10.65eV)



Courtesy of Prof. H. Ding's system in IOP, CAS

## FeSe Thin Film Test @ He(21.2eV)



Courtesy of Prof. D.L. FENG's system in Fudan University

## Specification

- **Multiple Working Gases**  
He, Ne, Ar, Kr, Xe, ...
- **Photon Energy**  
8.4eV - 40.8eV (30nm - 147nm)
- **Photon Flux**
  - Total VUV Flux:  $>1 \times 10^{14}$  Photons/sec
  - $> 10^{12}$  Photons/sec @  $1 \text{mm}^2$  sample with appropriate monochromator and capillary
- **Resolution**  
< 1meV@Xe(8.43eV)
- **Power Supply**  
Compact solid RF source driven by 24V/200 W power source
- **UHV Compatible All Metal Seals**

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### Description

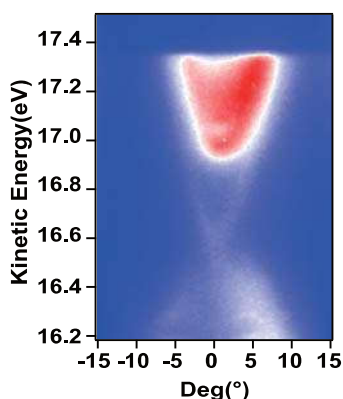
FIUV BL-1010s is a specially designed high brilliance multi-gas VUV source with three-stage differential chamber and UHV valve isolated focusing capillary. It can be operated with a wide variety of different gases (He, Ne, Ar, Kr, Xe ...) with small spot output and little working pressure increment.

### Specification

- Total VUV Flux:  $>3 \times 10^{13}$  photons/sec
- Spot size:  $\sim 0.5$ mm
- Line Width:  $<1$ meV @Xe(8.43eV)
- Three-Stage differential pumping
- High efficiency focus and transfer capillary
- Full Set RF Generator, cable and power supply
- Compulsory air cooling and water cooling
- All-metal-sealed source with UHV compatible

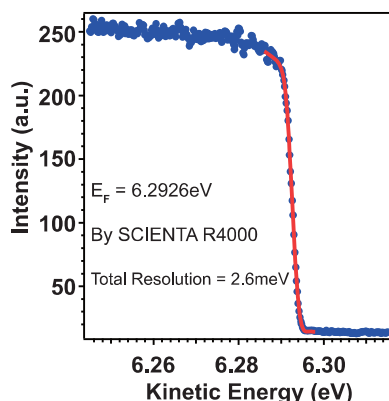
### Test Spectrum

He(21.2eV):  
Bi<sub>2</sub>Se<sub>3</sub>@5.6K



Courtesy of Prof. Yihua Wang's system in Fudan University

Kr(10.65eV):  
Gold Film@2.8K



Courtesy of Prof. H. Ding's system in IOP, CAS

### Option: Supporting Frame

- Retractable mechanism
  - 75mm Linear Translator
- Alignment Mechanism
  - Tilt mechanism:  $\pm 3^\circ$