



# ***GDOES and XPS measurements: elemental footprint and layer thickness (IAP)***

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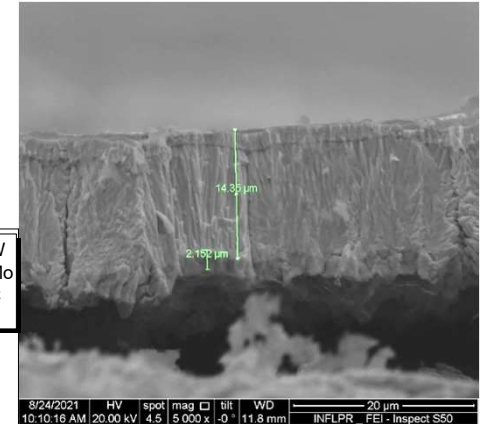
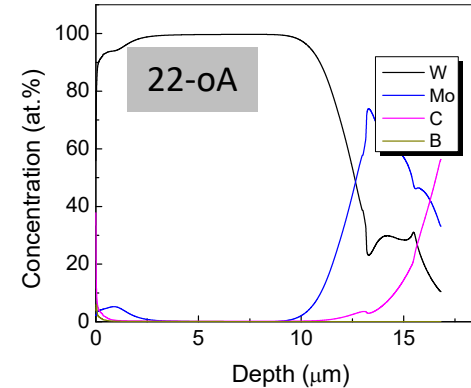
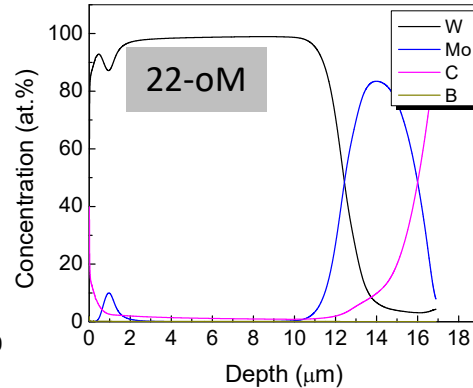
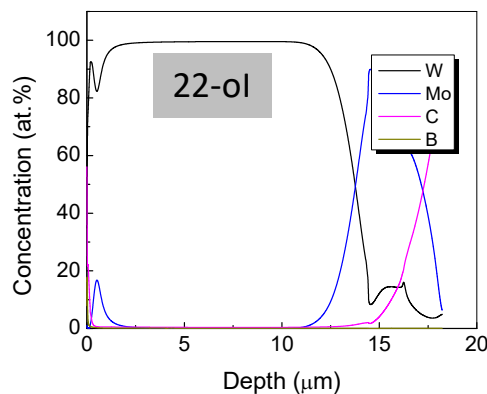
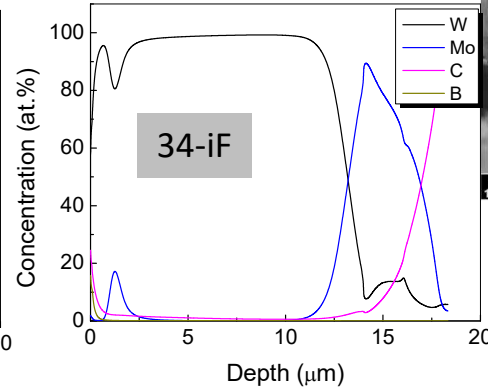
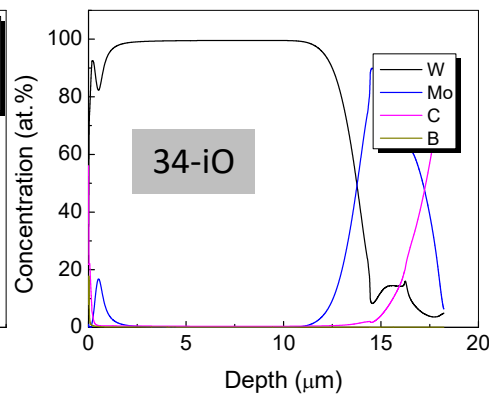
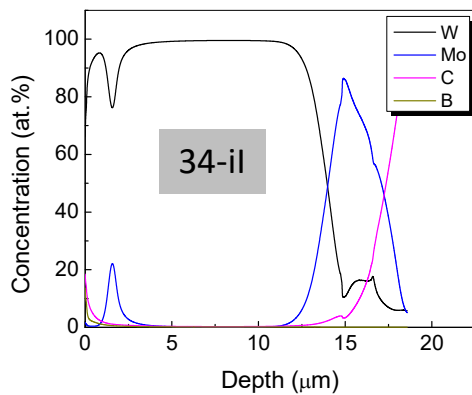
## GDOES measurements:



6 cored samples were analyzed by **GDOES** (Glow Discharge Optical Emission Spectrometry):  
C3-34iI; C3-34iO; C3-34iF and C3-22oI; C3-22oM; C322oA

### Results:

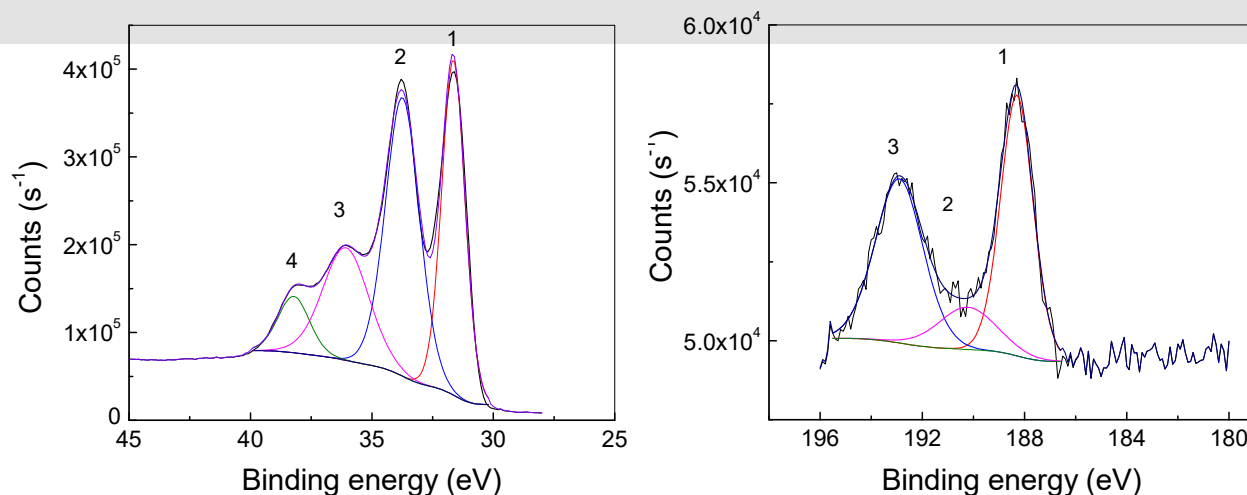
- a Mo/W/Mo/W layout observed (the outer Mo layer of  $\sim 0.5\mu\text{m}$ , the outer W layer of  $\sim 1.5\mu\text{m}$ )
- B identified on the surface of the cored samples



SEM of a Mo/W marker  
exposed to WEST plasma

GDOES depth profiles of the  
analyzed samples

## XPS measurements and summary:



*W 4f detailed spectrum (a) and respectively B1s detailed spectrum for the sample C3-34iO (b)*

### XPS measurements:

- W metallic W 4f<sub>7/2</sub> and W 4f<sub>5/2</sub> transitions (31.5 eV and 33.6eV) along with oxide W components (36eV and 38.2eV)
- B1s transition has 3 components: pure B (component 1 at 188.3eV), B sub-oxide (component 2 at 190.2eV) and oxide at 192.9eV)

### Summary:

Sample id	XPS measurements				GDOES measurement	Position of second Mo to surface
	W (at.%)	C (at.%)	O (at.%)	B (at.%)	B (at.%)	
C3-34il	16.78	24.62	36.78	21.82	13.72	1.2
C3-34iO	24.48	26.99	33.23	15.3	17.7	0.35
C3-34iF	16.92	33.91	39.28	9.89	15.65	0.9
C3-22ol	29.32	13.01	53.14	4.54	5.61	0.6
C3-22oM	50.73	14.53	33.91	0.82	1.42	0.65
C3-22oA	51.03	19.64	22.1	7.23	5.91	0



Thank you!