

**HIGH RESOLUTION FIELD EMISSION SCANNING ELECTRON MICROSCOPE:
HITACHI S-4800 SETUP FOR EDX**

1. Put specimen into chamber
2. Switch on monitor for EDX
3. Open program “Esprit” on desktop
4. Lower Stage to 15mm.
5. Wind EDX detector into place.
6. Set Vacc and Ie to desired value.
 - a. Vacc should be twice that of the activation energy of element you are detecting.
 - b. Ie is chosen to obtain desired count rate. 4
7. Setup column:
8. Set probe current to high.
9. Set focus mode to UHR.
10. Set condenser lens #1 to 1.
11. Set WD to 15 mm.
12. Set objective aperture to 1 (largest aperture).
13. Keep dead time (time analyzing pulse) below 30%.
14. Always use live time counting.

WHEN DONE WITH EDX, ALWAYS RETURN SETTINGS BACK TO DEFAULT

1. Setup column
 - a. Set probe current to normal
 - b. Set focus mode to UHR.
 - c. Set condenser lens #1 to 5.
 - d. Set WD to 8 mm.
2. Set objective aperture to 2.
3. Remove EDX detector from sample chamber.
4. Move stage working distance to 8 mm.

	Basic Set Up	EDX
Probe Current	Normal	High
Focus Mode	UHR	UHR
Condenser Lens1	5	1
Objective Aperture	2	1
Working Distance	8	15
EDX detector	Out	In
Starting kV	1	2xenergy
Starting emission current	10	20

Notes: In Program (Esprit on desktop)

Click on Objects at the top and “Objects” LHS.

Choose the rectangle and draw area of interest by point and drag with the mouse.

Acquire: Live Time 200s (probably only need 100 seconds)

Working Distance of 15 mm gives better Xray results than 8 or shorter.