

HIGH RESOLUTION FIELD EMISSION  
SCANNING ELECTRON MICROSCOPE: HITACHI S-4800

BEAM ALIGNMENT PROCEDURE

1. Set  $V_{acc}$  and  $I_e$  to desired value.
2. Move stage to desired working distance with Z manual knob on sample chamber.  
The distance is in mm; this is the distance between the pole piece and the sample surface.
3. Under the SEM tab in the software interface, set WD (working distance).
4. Select focus mode UHR.
5. Press F2 on the keyboard while the cursor is over the view window to de-gauss.  
6. Adjust FOCUS/BRIGHTNESS/CONTRAST knobs to best possible.
7. Check that  $I_e$  has not dropped from selected value. If it has, press SET.
8. Click Align button along top row of screen to open align dialog box  
  
Note: In general you want to align the beam at twice the magnification that you will be using for your images.
9. Align beam:
  - a. Click the Beam Align radio button.
  - b. Adjust BRIGHTNESS/CONTRAST knobs to obtain a clear disc. Use STIGMA/ALIGNMENT knobs X and Y to center disc on the target.
10. Align aperture:
  - a. Click the Aperture Align radio button.
  - b. Use STIGMA/ALIGNMENT knobs X and Y

13. Adjust FOCUS knobs for best image

14.