

## Microdiffraction procedure for the H-7600

- 1) Align HR mode for routine imaging
- 2) Set condenser aperture to #2 or #3 and adjust the position mechanically to minimize any swing of illumination as you go through crossover.
- 3) Switch to F-ZOOM mode and set spot size to desired probe size based upon the particle/feature that you would like micro-diff information from
- 4) Bring beam to crossover and move the beam to the center viewing screen crosshair using BH and adjust CS (condenser stigmators) to make the beam shape as round as possible.
- 5) Place particle/feature of interest on the center crosshair and select F-Diff mode.
- 6) Insert CCD and change camera length to optimize the display of the diff pattern.
- 7) Adjust gain on AMT to optimize pattern observation prior to saving the data.

### Notes:

-If using spot size 1 (20nm probe size) the illumination may be too low to see what particle you are selecting. Align and use Spot size 5 to observe and then switch to spot size 1 for micro-diff.

-In addition you can insert the CCD and expand the illumination in F-Diff mode to see which particle/feature you are condensing the beam spot on but the illumination area will be small

## Darkfield Imaging for the H-7600

- 1) Align HR mode and using the lens mode set adjust HR-1 & HR-2 for the same BD conditions (open BD control and switch between HR-1 and HR-2 and most likely you will just match the HR-2 BH & BT settings to those in HR-1).
- 2) Insert the Selected area aperture and remove the Objective aperture.
- 3) Depress the Diff button for diffraction observation
- 4) Select PA in the BD control window and use the multi-functional knobs to set the (000) spot at the center crosshair on the viewing screen.
- 5) Using BT, tilt the beam in HR-2 to bring the desired reflection/spot that you want to obtain the image information from to the center of the viewing screen crosshair.
- 6) Switch between HR-2 and HR-1 to confirm that beam is tilting correctly between the two modes.
- 7) Insert Objective aperture #4 (10um) and center the aperture mechanically at the viewing screen crosshair.
- 8) Remove the Selected area aperture and now you can select between HR-1 (brightfield) and HR-2 (darkfield) imaging.