EDAX EBSD

EBSD - Start Up

1. Open the **'IR'** camera program to view specimen movement. (F4)
2. Tilt specimen holder to a total of 70°

   Note: Avoid using carbon tape to secure specimen
3. Focus the sample (With SEM software) so that **WD** is at a height of 15mm.
4. Open **'TSL OIM Data Collection'** program.
5. Insert the EBSD **'Camera'** (camera pull down menu)

   Note: Caution – Make sure the detector does not hit the holder.

Camera Adjustment
(Instrument Console)

6. Select a **'Binning'** image resolution. (4x4 is recommended for most samples)
7. Close the IR camera
8. From the **'Image Processing'** tab select **'Image Processing Mode'** (Standard or Enhanced)

<u>Standard</u>

   a. Unclick **'Background Subtraction'** (No check mark)
   b. Adjust the **'Gain'** and **'Exposure'**

      Note: 100 fps – EBSD, 30 fps –EDS/EBSD
   c. Press the **'Capture Bkd'** button.
   d. From the **'Inage Processing'** tab select the **'Background Subtraction'** (Red check mark will appear)

<u>Enhanced</u>

   a. Click 'On' (Red check mark will appear – Affect will be seen immediately in the live camera window above)
   b. Press **'Modify'** to change enhanced image processing mode.

Collecting a Scan

9. On main toolbar select the correct WD ('*' will appear if calibrated) from the pull down menu
10. Click **'Ext XY'** icon to get SEM control back.
11. Select the imaging detector (SED or FSD)
12. Go to the **'Phase page'** tab
13. Press the **'Load'** button to select the phase(s) of interest.
14. Go to the **'Interactive page'** tab
15. Press the **'Capture'** button to see EM image.

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16. Click on EM image (green X will appear)
17. Press **'Index'** button and verify quality of diffraction pattern. (Ideal: CI = 1.0, fit = 0.0, Minimum: CI = 0.1)
18. Go to the 'Scan" tab.
19. Draw a Box (scan properties will pop-up)
20. Set all properties (File directory, scan dimensions, step size etc.)

    Note: EDS/Chemistry is set up from the chemistry tab in the 'Scan Properties'
21. Start Scan

EBSD - Shut Down

22. Retract the EBSD 'Camera' (camera pull down menu)
23. Click **'Exit'** from the file pull down menu to close program.

Analysis (Clean Up)

24. From the desk top click on **'TSL OIM Analysis'** ion
25. Open your file
26. Select **'Clean Up'** from the right click on the mouse
27. Check off **'Grain CI Standardization'** and press **'OK'**
28. Select **'Clean Up'** from the right click on the mouse
29. Check off 'Grain Dilation' with single iteration and press 'OK'
30. Select 'Clean Up' from the right click on the mouse.
31. Check off **'Neighbor Phase Correlation'** and press **'OK'**. (If more than one phase are selected)