**Apreo SEM Basic Operation**

Please wear gloves when changing stages

1. Make file on Support computer, First Name & initial of last name (if you do not already have one)
   1. Remove images on computer within 2 months
   2. This PC🡪 shared data([\\192.168.0.6](file://192.168.0.6)) (Y:) 🡪Apreo USERS images
2. Vent to open chamber - check that EDAX probe is not inserted before you vent
   1. Beam Control tab🡪Vent🡪Yes
3. Place stubs (samples) on stage
4. Select Vacuum level:
   1. High Vacuum – conductive samples
   2. Low Vacuum – non-conductive samples
5. Close chamber door –click on “Pump”, when asked; select “No Accessories”
6. Raise sample to proper working distance
   1. Manually move stage up by holding mouse track ball; OR
   2. Navigation Tab🡪 Set Z to 35 – 40 mm (depending on sample size) 🡪Go to
   3. Watch carefully to avoid sample hitting column, keep mouse over STOP button to stop quickly if needed
7. Menu bar 🡪Stage🡪Nav-Cam photo
8. To move to sample🡪 Double click on sample image in Nav-Cam photo
9. Select Accelerating Voltage & Lowest magnification
10. Wait for Vacuum status icon to turn green (both chambers)
11. Icon Menu bar🡪 Select Mode 1
12. Upper left quadrant info bar🡪 Select detector, ETD
13. Beam Control Tab 🡪 “Beam On” – turns yellow when ready
14. Pause icon to start scanning
15. F5 – toggle between 4 quad and 1 quad view
16. Adjust scan “Dwell” (scan speed)
17. Photos/Imaging
    1. Check scanning resolution for photos, larger resolution = larger file size
    2. Choose magnification for imaging
    3. Increase mag
    4. Click on Reduced Area (focus box), focus image
    5. Menu bar 🡪Link
    6. Click outside the box to return to normal view
    7. Return to lower/selected photo magnification
    8. Click on Camera icon to take Photo
18. End of Session
    1. Home Stage
    2. Beam off
    3. Vent 🡪 Yes
    4. Remove samples
    5. **Push door shut, select “High Vacuum”, click on “Pump” wait to be sure chamber has pumped out and is under vacuum before you leave**

**Other Operations**

Backscatter detector

Warnings: Be sure all samples are same height or you will damage the detector

Retract Detector before venting or removing samples

1. Place samples on stage and pump out
2. Find area of interest, **Focus & Link** 🡪 you **cannot insert detector until** you have Focused & Linked
3. Select detector setting tab
4. Detector 🡪 choose “ABS” or “CBS”
5. Unpause chamber view quadrant
6. Click on “Insert”
7. Select top left quadrant
8. Retractable detector Confirmation 🡪 YES (may or may not require confirmation)
9. Try “ABS” and “CBS”, change active areas on each detector (by clicking on them in the icon) to show your sample info