Standard Operating Procedure for EDAX Spectrum

1. Start up microscope as normal (turn on monitors, enter user name and password)
2. Double click the RemCon icon to connect to EDAX software
3. Fill dewar with LN2 and wait for 1 hour to cool detector (if the light is red, if green, detector is already cooled)
4. Insert sample into chamber and pump down
5. Open EDAX Genesis Software on EDAX computer (if line keeps scrolling, make sure that RemCon is open on microscope computer)
6. Set-up microscope conditions to 15mm WD and kV and probe current to set DT to 20-40%, which is located at the bottom of the monitor
7. Click on the Spectrum Tab for basic EDS spectrum collection, peak identification, and quantitative analysis
8. Select an amp time that keeps the DT between 20-40%
9. Set a preset collection time to stop the spectrum collection automatically
10. Collect spectrum by clicking “Collect” button
11. By clicking on the spectra, then clicking on the arrow keys on the menu bar, you can expand or contract areas of interest
12. Click the Peak ID button for an automatic peak identification
13. The HPD button is used for peak identification confirmation. When the HPD button is clicked, a theoretical spectrum is drawn on the collected spectrum based on the identified peaks and the collection parameters
14. You can type in a spectrum label with up to 216 Characters in the space above the spectrum
15. For standardless quantification results, click the “Quantify” button. The results will use an automatic background subtraction.
16. The spectrum and quantification results can be printed on one page by clicking on the print button available in the results dialogue box.
17. The spectrum can be saved by clicking on the disk icon or under File Save

Abbreviations
HPD
CPS
DT
Cnts
FS
Det
Res

Troubleshooting

1. You should select an accelerating voltage that is approximately 2x the highest peak energy for that sample.
2. Check that the interaction volume is not larger than the spot you are looking at
3. Check that WD is at 15mm for optimal x-ray signal collection
4. Count ranges are typically between 900-500 counts per second

Calibration