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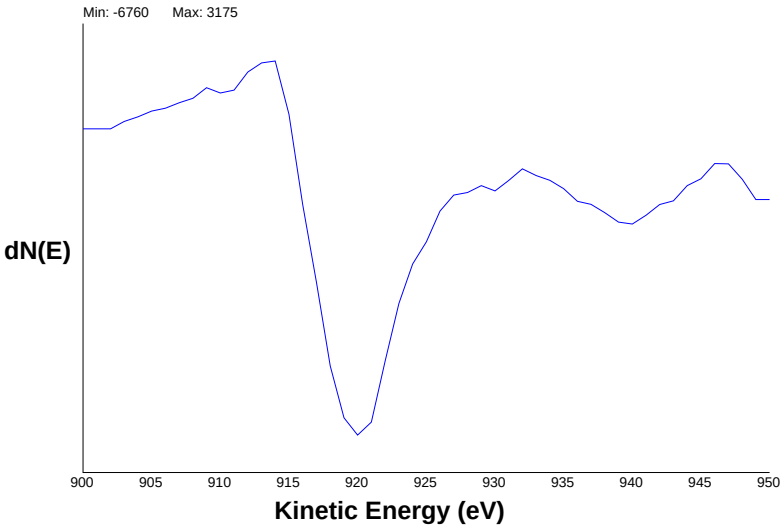
AES Calibration when using a 20-805 Analyzer Control – For a 10-155 or 15-255G Analyzer

Overview

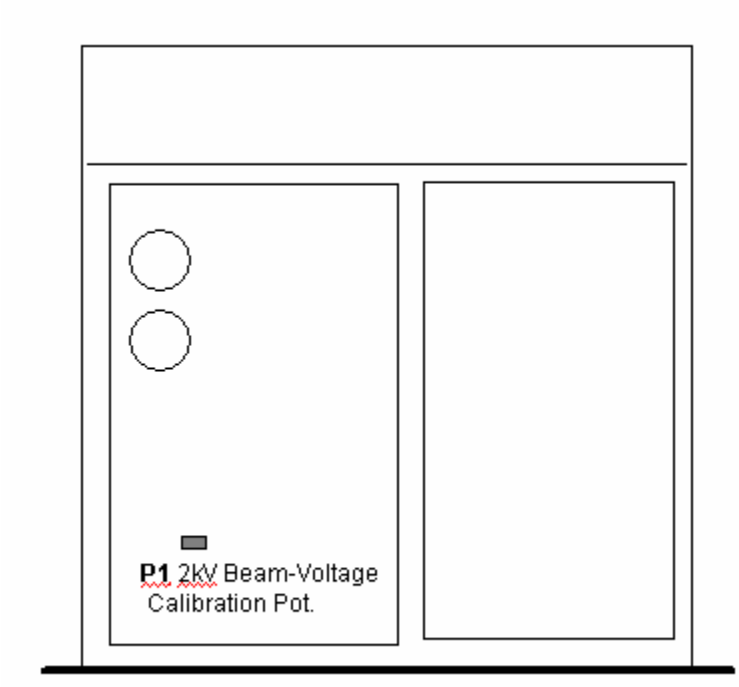
This procedure will calibrate the AES peak energies and 2 kV elastic peak crossover.
Tools needed: Insulated adjustment screwdriver (pot tweaker)
Copper foil or gasket material.

Procedure:

1. Read this entire procedure before starting the calibration.
2. Load a sample of copper foil into the system and set the beam voltage on the 11-010 electron gun control to 2kV.
3. Position the sample to the focal point of the analyzer using the AES Align routine. At this point it does not need to be exactly at 2kV, just make sure that the peak is maximized.
4. Sputter the sample clean**. Note:** If you do not have a sputter ion gun on your system, then scrape the sample with a razor blade or exacto knife before you load it into the system to remove the surface carbon and oxygen.
5. After the sample is clean, re-acquire the elastic peak and re-check that the peak is at maximum counts and beast shape. Do not worry if it is not at 2kV crossover, that will be adjusted later.
6. From this point on, DO NOT MOVE THE SAMPLE!
7. Acquire an alignment from 900 to 960 eV and differentiate the data. The peak should be at 920 differentiated. If not, adjust the scale factor in the AugerScan Hardware Configuration menu a little bit and re-acquire the alignment and check the position. A large scale factor number will move the peak up in eV.



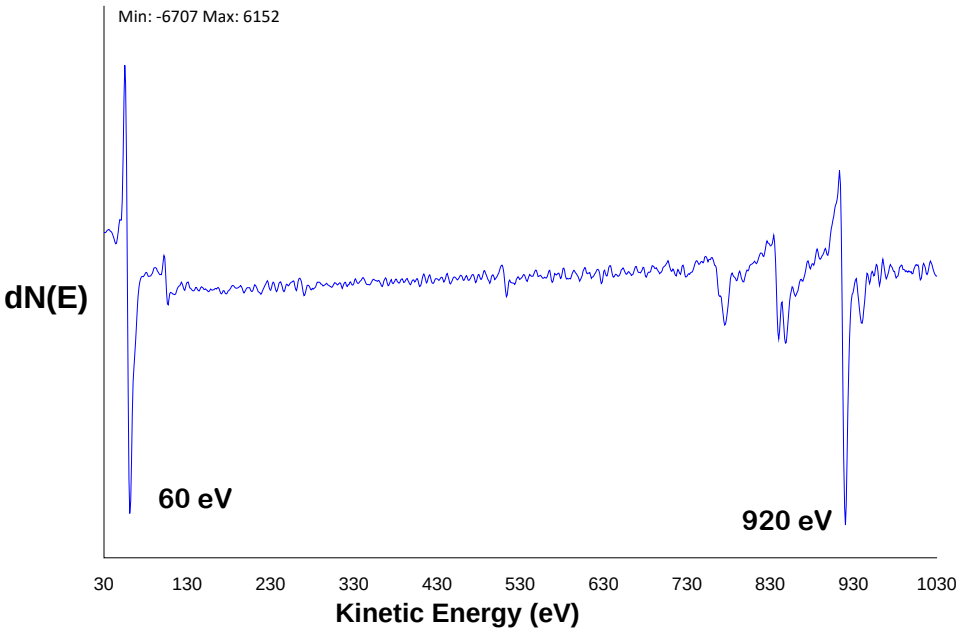
8. Re-peat and adjust the scale factor as necessary until the differentiated copper peak is at 920eV.
9. Change the alignment settings to 2kV default and re-acquire the elastic peak. But, **DO NOT MOVE THE SAMPLE!** If the peak is not at 2kV, then adjust P1 in the 11-010 to move the peak so that it is at 2kV. **CAUTION!** There is high voltage present in the 11-010, do not perform this adjustment unless you are qualified to work on high voltage. Refer servicing to qualified personnel.



Location of P1 in the 11-010 Electron Gun Control is shown above.

10. Once you have the 11-010 adjusted to 2kV, change the beam voltage to 3kV and acquire a survey from 30eV to 1030eV, 1 eV per step, 50 ms per point, and 3 sweeps.

11. When complete, the survey should look like this after it is differentiated:



Calibration Complete!