CorrectStd©

A Utility for Correcting JEOL EDS Standard Data

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Introduction

During EDS standardization on the JEOL 8200, the EDS spectrum is stored, not just the peak intensity. This allows for deconvoluting the unknown spectrum when peak overlaps occur. It is therefore important to use standards that do not have overlapping peaks. However as most probe operators know, many materials require standards of similar composition to the unknown in order to get good results, and yet complicated mineral standards typically have many overlapping peaks on an EDS system. A solution to this problem is to use pure standards for the initial standardization, but if the expected results are not obtained on secondary mineral standards, then correct the standard intensity data. On the JEOL 8900 this was possible through the Quantitative Analysis > Check Data function. However since the spectra are now stored on the 8200, not just the peak intensity, this is no longer possible. *CorrectStd* is a utility program to overcome this problem. *CorrectStd* allows the user to correct the standard intensities when suitable standards of similar composition cannot be used due to peak overlaps.

Installation

Installation instructions:
1) Copy the file *CorrStd.tar* to your user directory.
2) Open a terminal window and uncompress the file.
    > tar -xvf CorrStd.tar
This will extract two file: *runCorrectStd.sh* and *CorrectStd.jar*
3) Open the File Manager window and move (Selected > Move to ...) the file
    runCorrectStd.sh to the directory: /usr/local/bin
4) Now change to the directory /opt
5) Create a new directory (File >> New Folder) in the /opt directory called "McSAssoc"
6) Move *CorrectStd.jar* into /opt/McSAssoc
7) Add the program to the EPMA menu:
    a) Go to the main EPMA menu and select:
        > Initialize > Soft Config > Util Menu
        A file will open up.
    b) Add the following line to the bottom of the file.

        T   :CorrectStd   : /usr/local/bin/runCorrectStd.sh: 3:

    c) Now go to File > Save(needed) and save the file.
    d) Close the window.
    e) Go to main EPMA menu > Configure > Update Menu ...
8) The program should now be ready to run. Go to the Utility menu and at the bottom should be the new item "CorrectStd". Select it and the program should run.

Operation
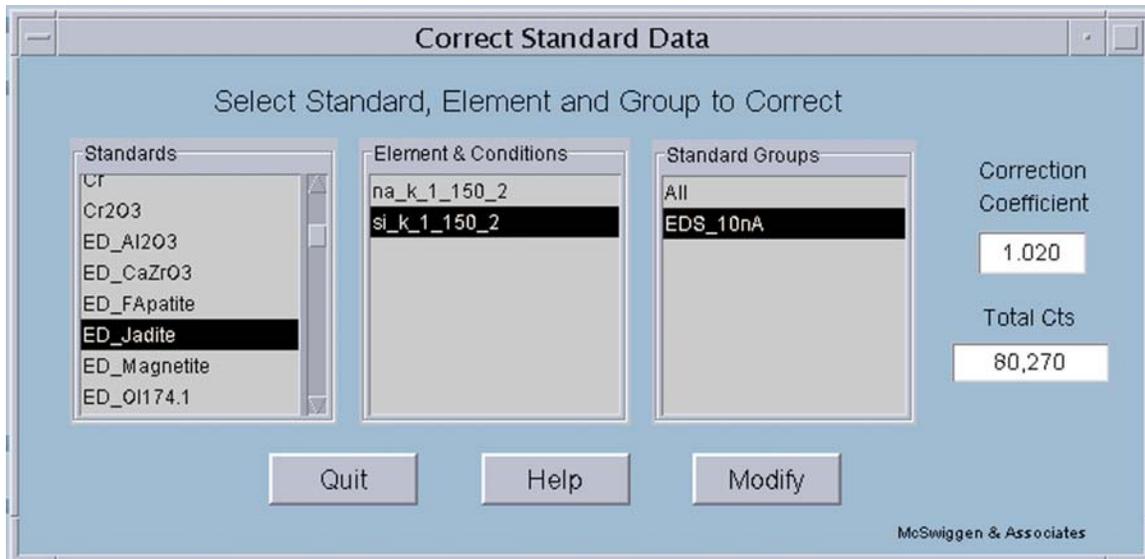
When *CorrectStd* opens it will automatically load the entire list of standards from the user's directory. The user then selects the standard of interest and all of the elements that have been standardized on using the EDS will be displayed.

If an element has been standardized multiple times, using different operating conditions, each will be listed. Select the element and desired operating condition, and the program will display the various Groups that the user has created for that standard. Once the user has selected the Group, the program will read in the standard data for that element and display the total X-ray counts from its ROI in the "Total Cts" window. Enter the desired correction coefficient to be used to adjust the data and click on the Modify button.

The program modifies the data by adjusting the peak intensity by the fraction given by the correction coefficient, but it does not change the intensity of the background. After the EDS data has been adjusted, a new total will be calculated and displayed. This "Total Cts" value is only used to show the user the magnitude of change that has taken place. The Modify button will now be disabled (to eliminate the possibility of multiple clicking) until either a new element is selected or reselected. A new standard or element can be selected and process repeated.

FAQs

Question:
What does the nomenclature **al_k_1_150_2** mean?

Answer:
This is the directory name for a set of standard data, where
al = element
k = X-ray line
1 = 0.1 ev/channel
150 = 15.0 kV accelerating voltage
2 = aperture number