

Peak fitting for MCA spectrum

Data files:

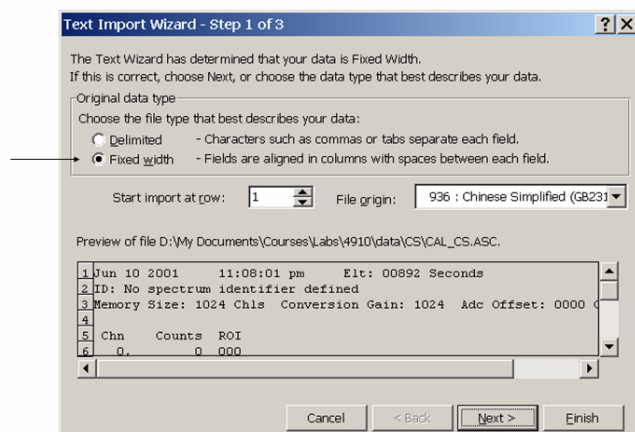
The raw data files generated by our MCA should be exported in ASCII codes.

They are text files.

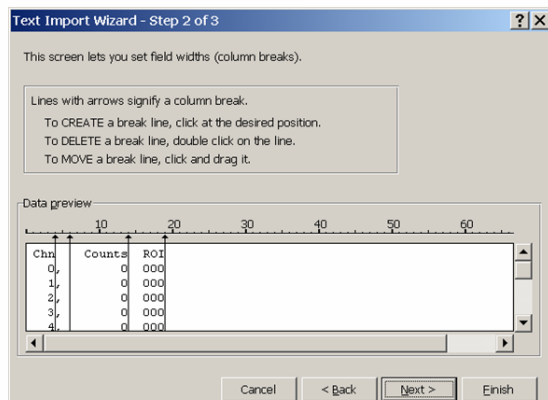
Step 1: Import data file (e.g. Cs137.asc) to Excel

(1) Open data file in **Excel**.

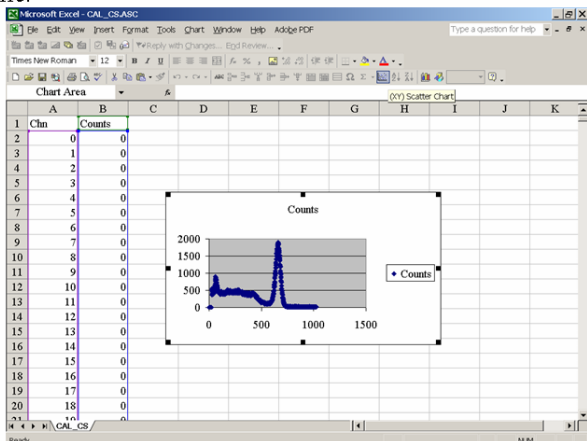
Select **Fixed width**:



(2) Adjust (move or create) **break lines** at appropriate positions. Make sure that data do not include “,”. Then click **Finish**.

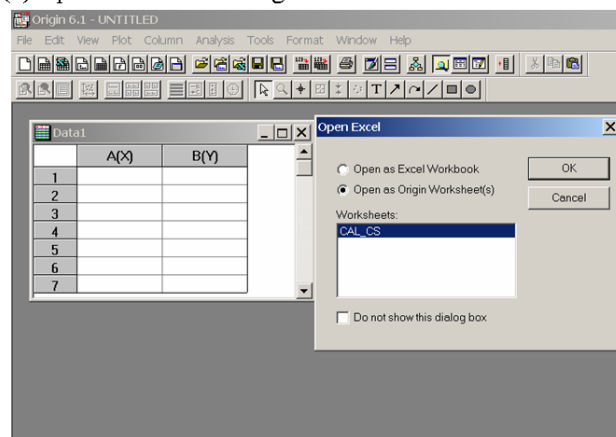


(3) Clean up other information, plot graph & save as Excel file.

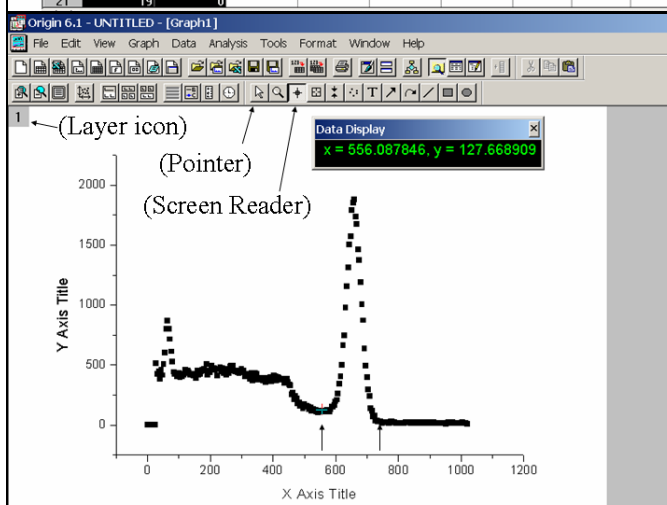
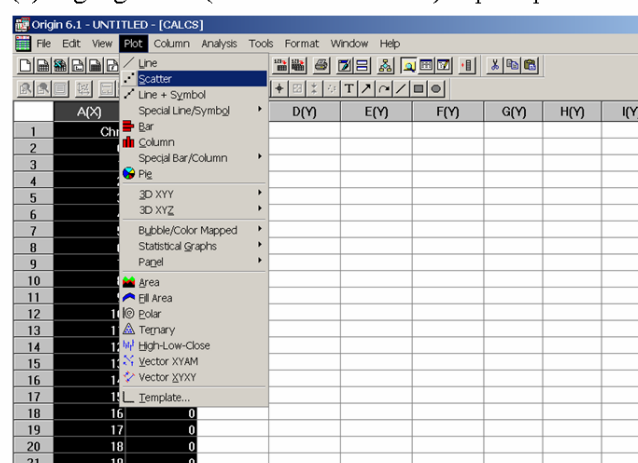


Step 2: Start **Origin 6.1** program & open your **Excel** file.

(1) Open Excel file as Origin worksheet.

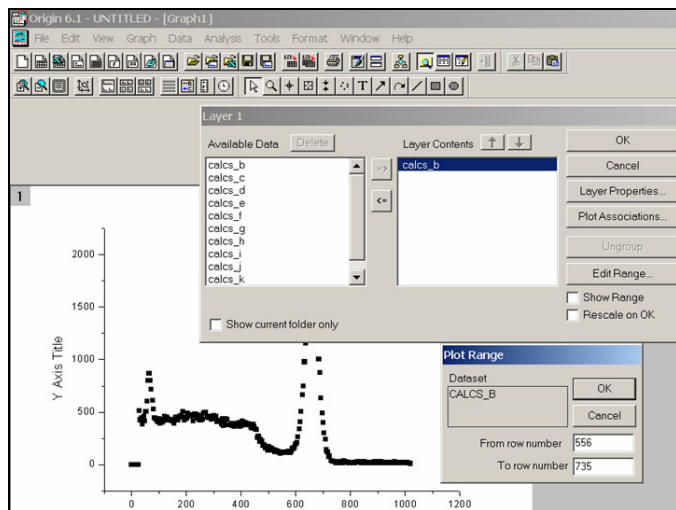


(2) Highlight data (the first two columns) & plot spectrum:

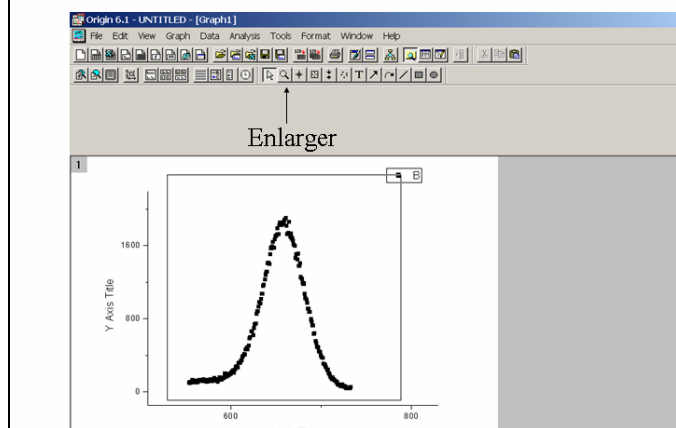


Step 3: Select suitable region for peak fitting

- (1) To locate the peak region, click **Screen Reader** icon (shown in the last graph).
- (2) Use mouse to locate the left & right boundaries of the peak. Write down the channel numbers (556 & 735 in the last graph).
- (3) Click **Pointer** (shown in last graph) & then double click the layer icon (a small square on the left hand corner of the plot (shown in the last graph)).
- (4) Highlight the data layer in **Layer Contents** for the graph and select **Edit Range**.
- (5) Input **From row number** (the left boundary channel number) and **To row number** (the right boundary channel number) as shown in the next graph.

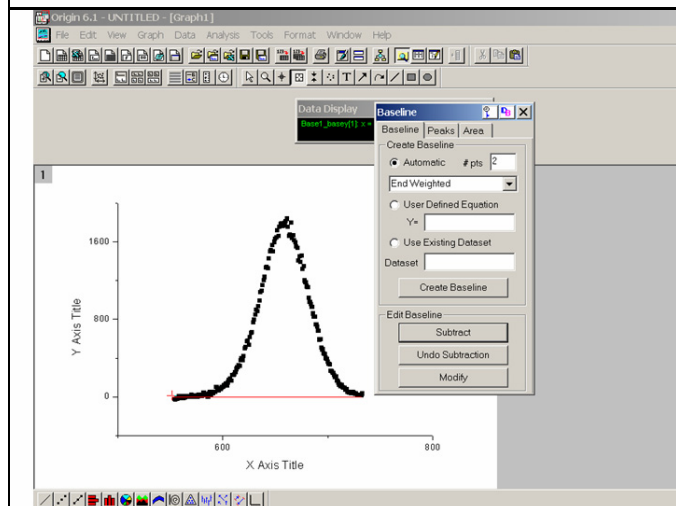


(6) Click Enlarger icon & then use mouse to drag the graph to enlarge the graph for a better view.



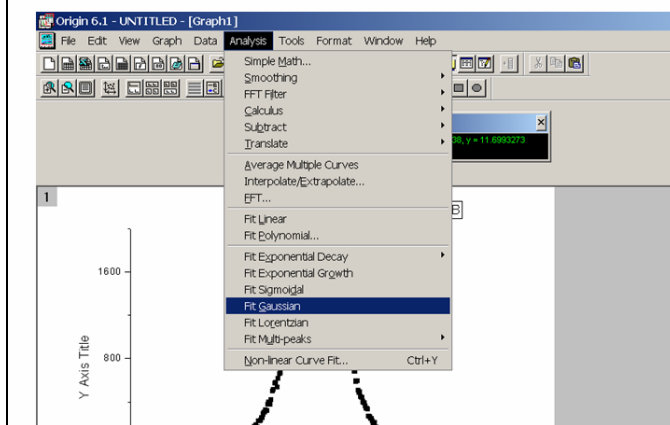
Step 4: Add a base line under your chosen peak in order to remove the background under the peak.

- (1) Select **Tool & Baseline**.
- (2) Click **Automatic** & input 2 in the box # pts.
Then click **Create Baseline**.
- (3) If the baseline is not satisfactory, click **Modify**. Use mouse to adjust the baseline for better alignment.
- (4) Click **Subtract**.
- (5) You can further **Modify** for a better look.



Step 5: Fit the peak by a Gaussian function

(1) Select **Analysis & Fit Gaussian**.



(2) The results are tabulated & you find:

- (a) peak area
- (b) peak center
- (c) peak width

