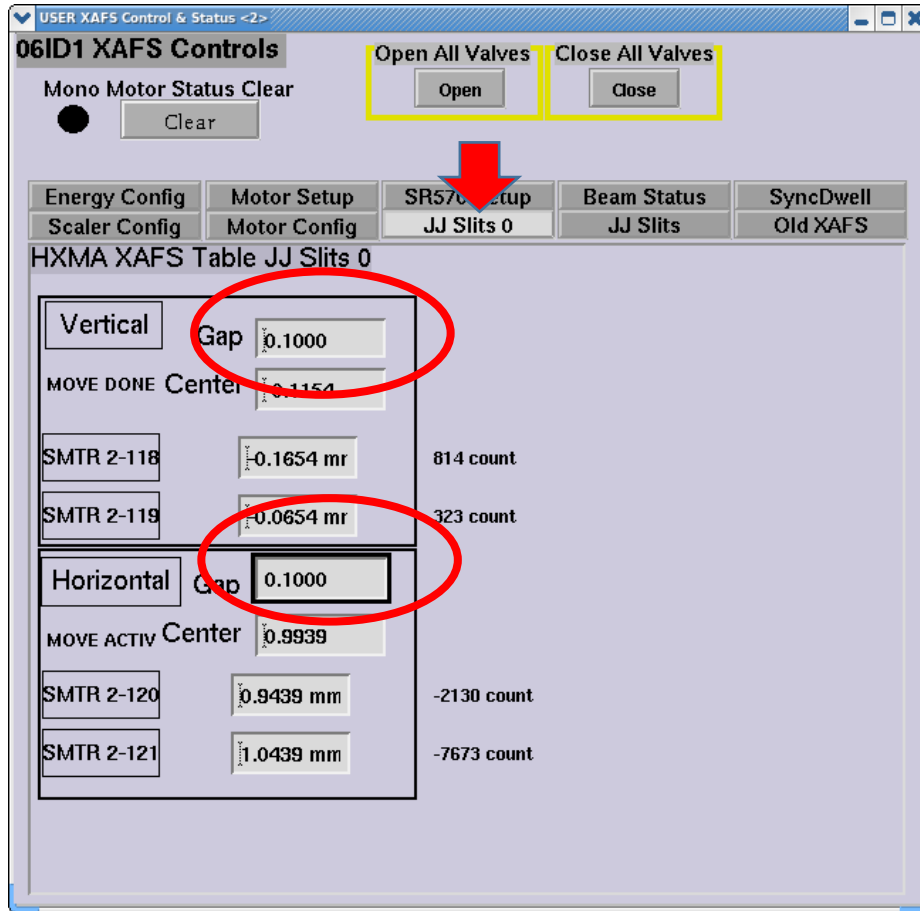


XAFS Data Collection by using 32 Element Ge Detector Fluorescence mode

- ROI setup

1. Narrow the slits to 0.1 x 0.1mm to ensure detector doesn't get oversaturated



2. Removed the lead tapped cover, set reference sample at proper detecting position (vertical and horizontal) and sample nominal 45 degree verse the incident X-ray beam.



3. Close the experiment Hutch
4. Set “Delta Energy” above the edge (i.e 50 eV), hit “enter” after setting

USER XAFS Control & Status <2>

06ID1 XAFS Controls

Mono Motor Status Clear Clear

Open All Valves Close All Valves

Energy Config	Motor Setup	SR570 Setup	Beam Status	SyncDwell
Scaler Config	Motor Config	JJ Slits 0	JJ Slits	Old XAFS

HXMA Energy Summary

E0	11867.000 eV	Mono	16.079 dgr	Energy Tracking	Don't Track
+ Delta Energy	50.000 eV	X1	L2 Y 17.661 mm		Track
= Abs. Energy	11917.000 eV	XTAL 2 Z	62.731 mm		Don't Track
					Track

Encoder Feedback: 11982.403
Setpoint Feedback: 11979.883
k: 3.6226

Stop MONO Motors

5. Selecting “Acquisition” on the software interface. Click “Erase&Start” button to get a spectrum.

Set the “label” for the target element, “Low bound” and “High Bound”, respectively, to define ROI window for that specific element. Don’t forget to hit “Enter”.

You can zoom in for the corresponding peak by dragging a square around the area you want to enlarge

The screenshot shows the 'Multi-Element Detector Controls' software interface. The 'Acquisition' tab is selected. The 'Erase&Start' button is highlighted with a red arrow. A spectrum plot shows a peak at approximately 1000, which is circled in red. A table at the bottom shows ROI settings for element 1, with 'Low Bound' at 1029 and 'High Bound' at 1067, also circled in red.

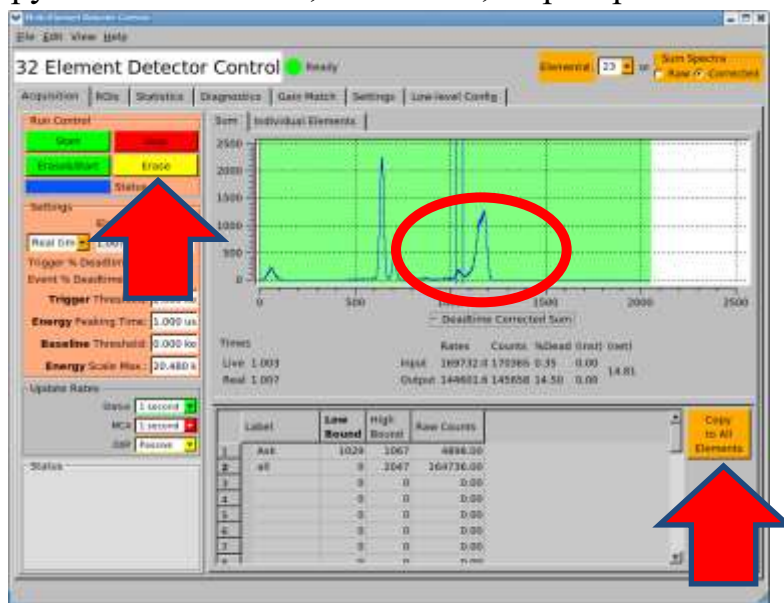
Element	Label	Low Bound	High Bound	Raw Counts
1	Ask	1029	1067	500132.00
2	all	0	2047	846664.00
3		0	0	0.00
4		0	0	0.00
5		0	0	0.00
6		0	0	0.00
7		0	0	0.00
8		0	0	0.00

- Set “Delta Energy” below the edge (i.e -50 eV) to make sure the peak is the right one that we want, hit “enter” after setting.



- Click “Erase&Start” button, the peak should disappeared. Notice that at energy lower than E0, the single for the corresponding peak if not completely disappeared, it will at least dramatically depress. If there is still some residual signal within ROI region, it should be introduced by either high harmonic or the fluorescence of filter material (if solar slits are used in the experiment).

Click “Copy to All Elements”, if it works, skip steps 8 &9.



- Select “1 ROI, All elements” option in “ROI” interface, and click the button “Copy #1 to All”, (if new setup does not bring to number #1, enter “label”, “low bound” and “high bound” numbers in number #1, then copy to all)

The screenshot shows the '32 Element Detector Control' software. The 'ROI # for All Elements' table is displayed with the following data:

Label	Low Bound	High Bound	Raw Counts	Net Counts	nAvg*	Preset**	Preset
Ask	1028	1071	9020.00	6013.00	0	N	0.00
Fe k	1103	1144	457.00	-237.00	0	N	0.00
Fe k	1103	1144	297.00	-24.00	0	N	0.00
Fe k	1103	1144	488.00	-186.00	0	N	0.00
Fe k	1103	1144	602.00	-301.00	0	N	0.00
Fe k	1103	1144	731.00	-382.00	0	N	0.00
Fe k	1103	1144	847.00	-78.00	0	N	0.00
Fe k	1103	1144	875.00	-533.00	0	N	0.00
Fe k	1103	1144	424.00	-228.00	0	N	0.00
Fe k	1103	1144	365.00	-287.00	0	N	0.00
Fe k	1103	1144	392.00	-281.00	0	N	0.00
Fe k	1103	1144	452.00	-326.00	0	N	0.00
Fe k	1103	1144	711.00	-624.00	0	N	0.00
Fe k	1103	1144	706.00	-282.00	0	N	0.00

The 'Copy #1 to All' button is highlighted with a red arrow. Below the table, the 'Sum of ROI Counts from Each Element' section shows:

Label	Raw Counts	Net Counts
1	27272.00	0.00
2	35064.00	0.00

- Then all the 32 elements will have the same setting of “label”, “low bound” and “high bound”

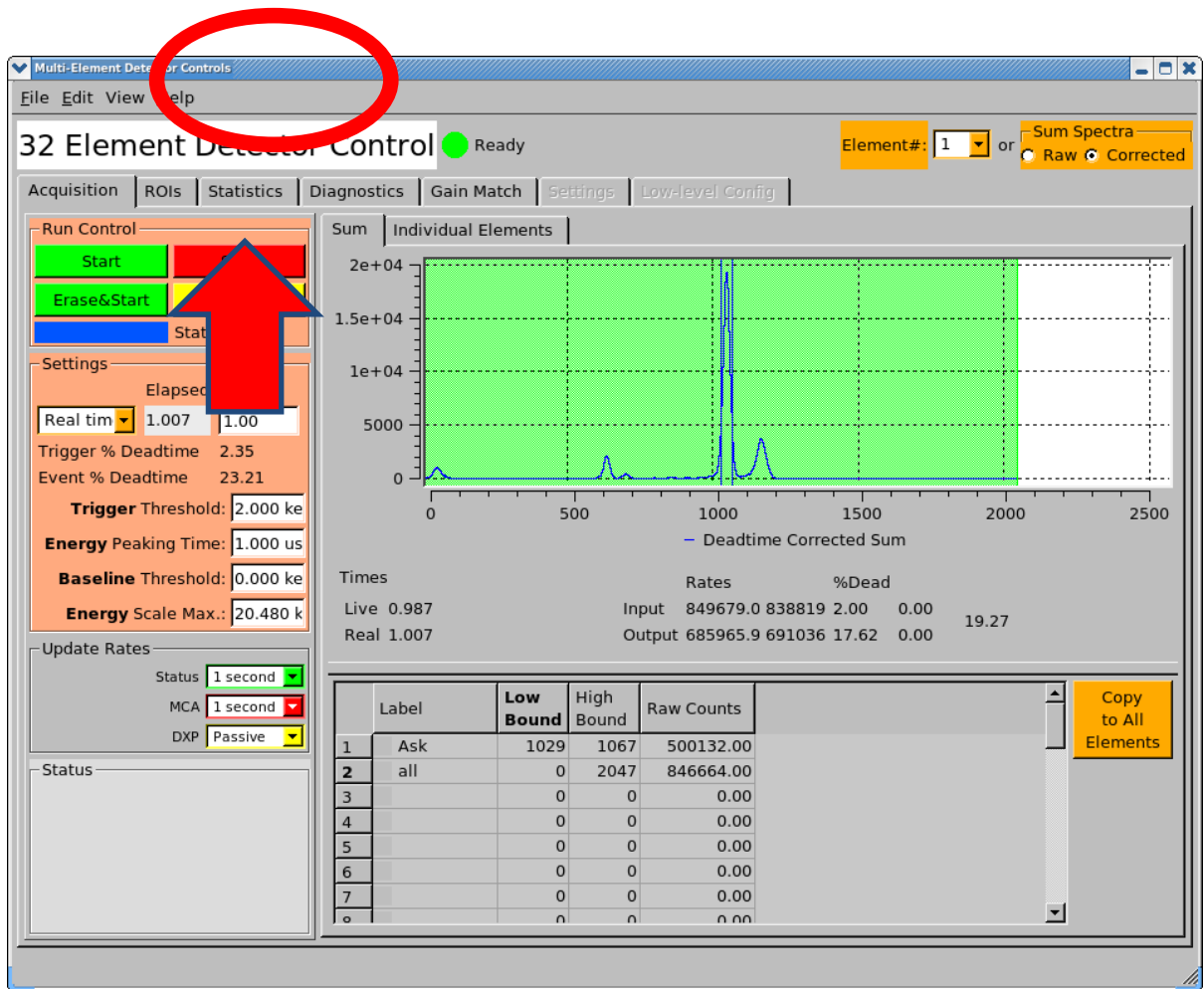
The screenshot shows the '32 Element Detector Control' software after the 'Copy #1 to All' operation. The 'ROI # for All Elements' table now shows all 32 elements with the same settings as the first element:

Label	Low Bound	High Bound	Raw Counts	Net Counts	nAvg*	Preset**	Preset
1 Ask	1028	1071	9020.00	6013.00	0	N	0.00
2 Ask	1028	1071	12023.00	8304.00	0	N	0.00
3 Ask	1028	1071	13230.00	9115.00	0	N	0.00
4 Ask	1028	1071	14630.00	10119.00	0	N	0.00
5 Ask	1028	1071	15724.00	11125.00	0	N	0.00
6 Ask	1028	1071	15314.00	9637.00	0	N	0.00
7 Ask	1028	1071	14113.00	9052.00	0	N	0.00
8 Ask	1028	1071	13790.00	10992.00	0	N	0.00
9 Ask	1028	1071	10991.00	8028.00	0	N	0.00
10 Ask	1028	1071	9359.00	7028.00	0	N	0.00
11 Ask	1028	1071	15104.00	10187.00	0	N	0.00
12 Ask	1028	1071	16888.00	12927.00	0	N	0.00
13 Ask	1028	1071	16113.00	9798.00	0	N	0.00
14 Ask	1028	1071	16480.00	11573.00	0	N	0.00

The 'Sum of ROI Counts from Each Element' section now shows two rows:

Label	Raw Counts	Net Counts
1	27272.00	0.00
2	35064.00	0.00

The 'Elapsed Time: 1.003' is displayed at the bottom left.

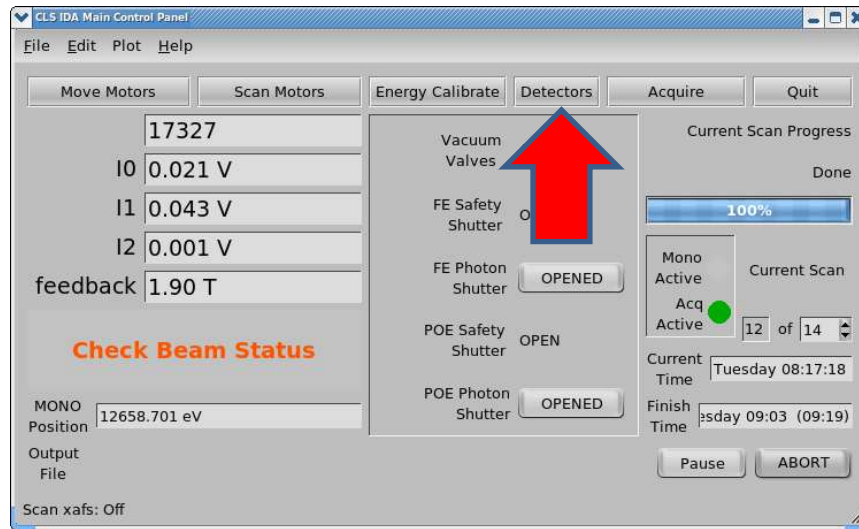


10. Select “1 Roi, All elements” in “Roi” interface, and click “Copy #1 to All” to repeat the procedure of 10 and 11.

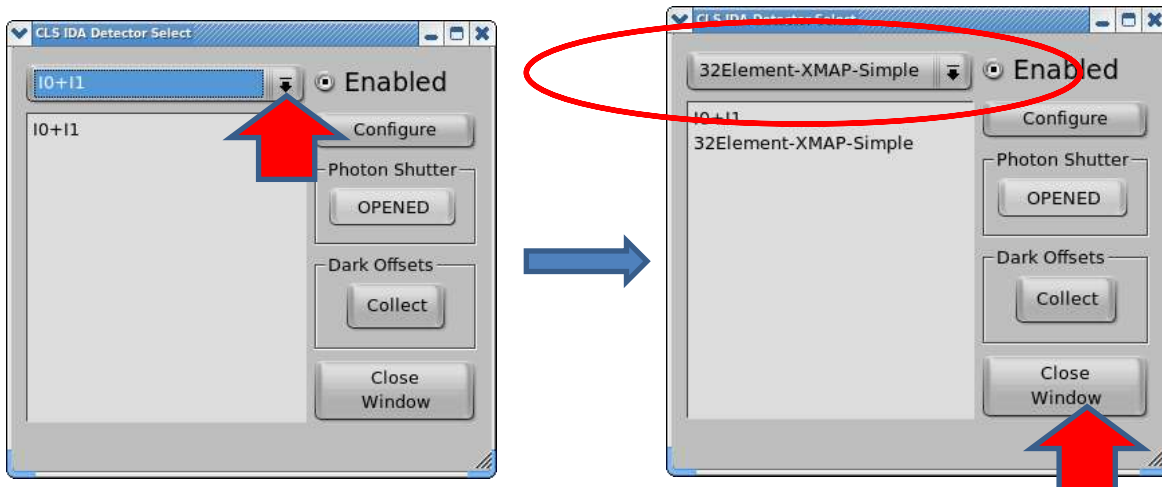
Setup at IDA

Setup communication between IDA and 32 element Ge detector

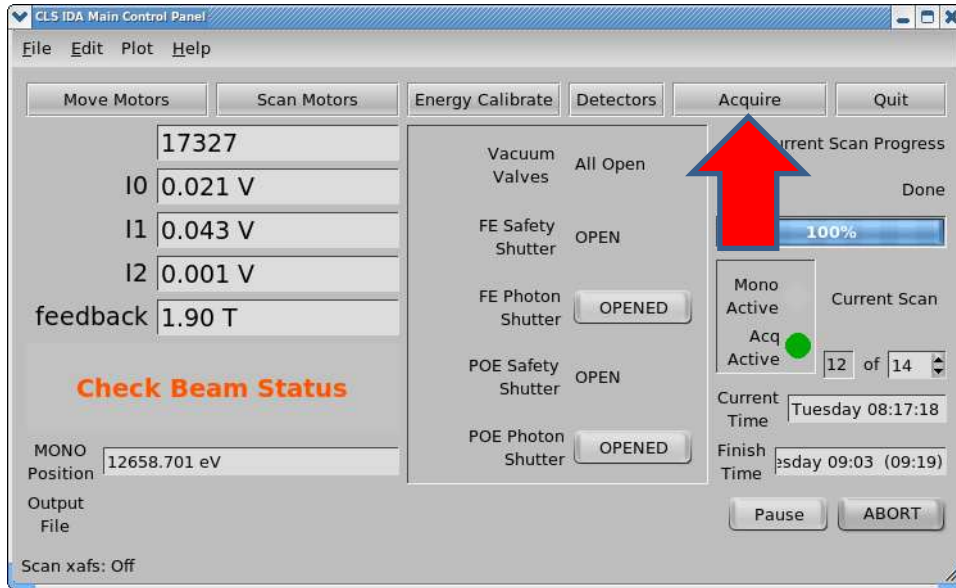
1. Click “Detectors” in IDA Panel



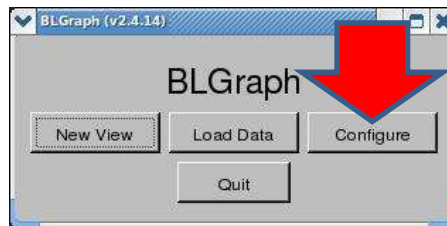
2. Enabled “ 32 Element-XMAP-Simple” from drop down menu, and then close this window by click “Close Window”



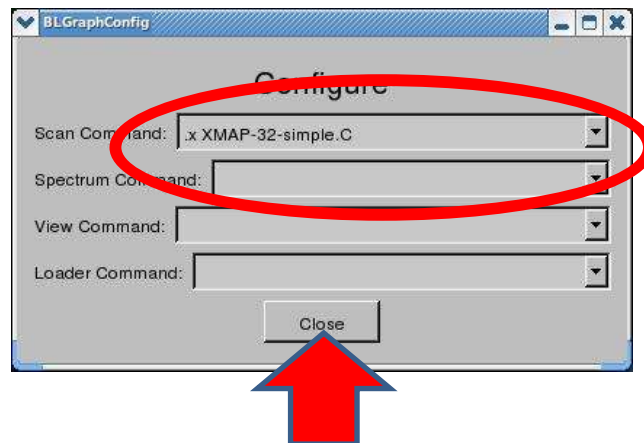
3. Setup the data display when using 32 Ge detector for data collection, Click “Acquire” in IDA Panel



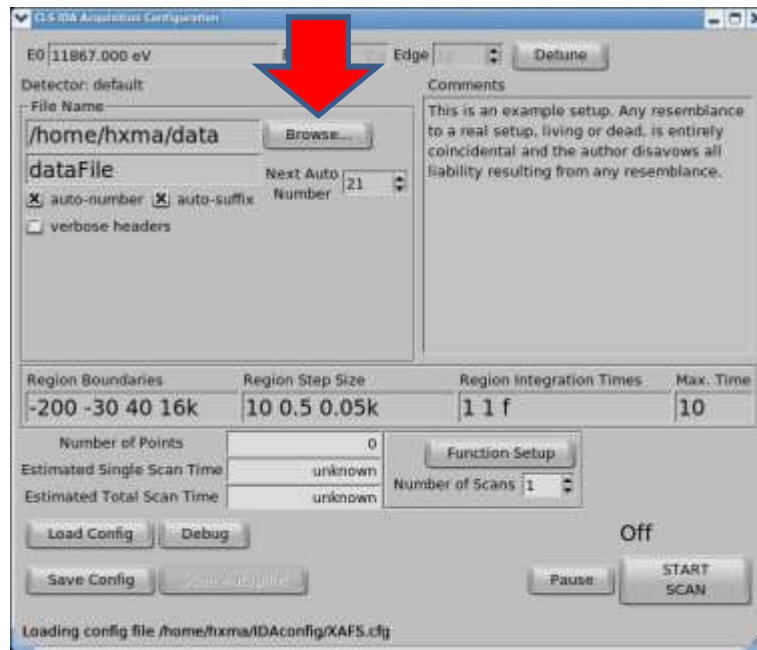
4. Two panel are brought out, “BLGraph” and “CLS IDA Acquisition Configuration”
Go to “BLGraph” and click “Configure”



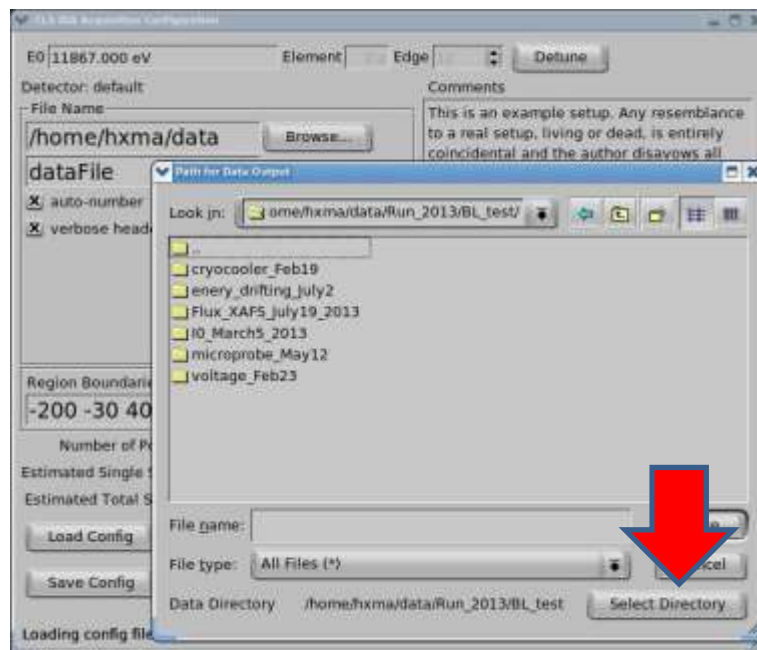
5. Selected “ x.XMAP-32-simple.C ” from Scan Command and click “Close” to close this window



- Now go to “CLS IDA Acquisition Configuration” tab, Click “Browse” to save your data



- Choose path under /hxma/data/Run2013/BL_TEST, and click “Select Directory”
You can create your own file folder under Run2013



8. Create your sample's name, and and hit enter.
Select "verbose headers"; Set numbers of Scans; Set proper XAFS data collection configuration, save the configuration to a file if wanted; Click "Start Scan"

