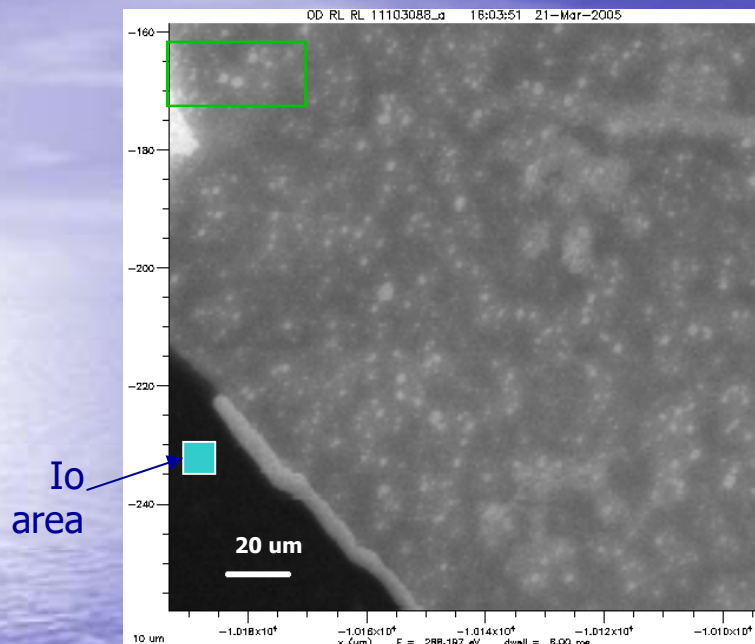
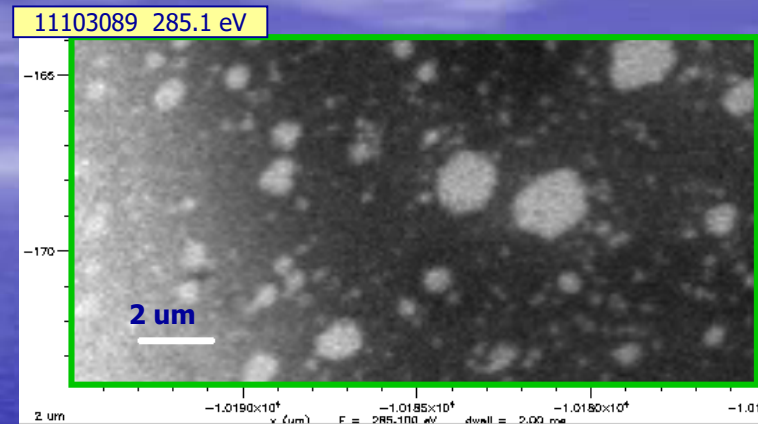


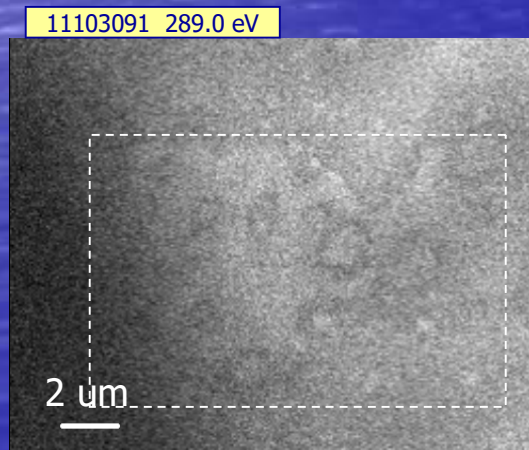
D) Image sequence (& damage check)



Area selected for stack measurement



the bright area to the left is known to be a protein deposit so we wanted to be able to get a clear Fg spectral signature to check the analysis in the more dilute regions

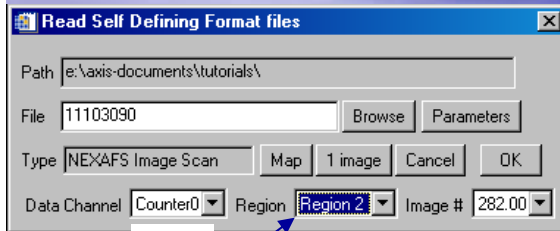


DAMAGE CHECK

image larger than region of stack at damage sensitive energy (289 eV σ^*_{C-O} of ether)

little sign of damage (usually polyether matrix bleaches due to mass loss)

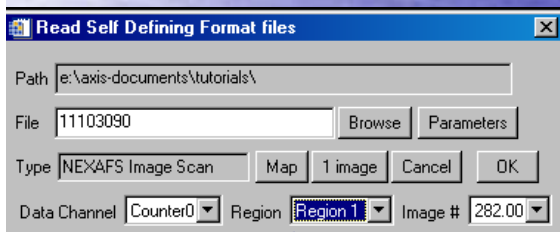
C1s stack - read-in and convert to OD



I_o

in stack_analyze

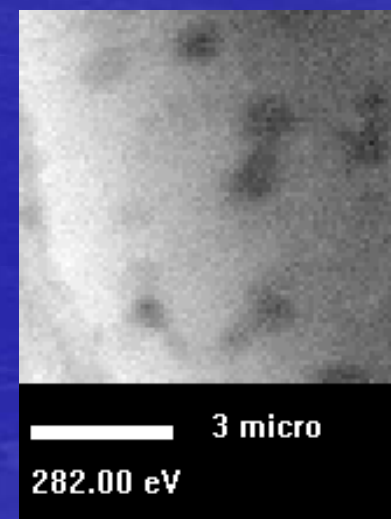
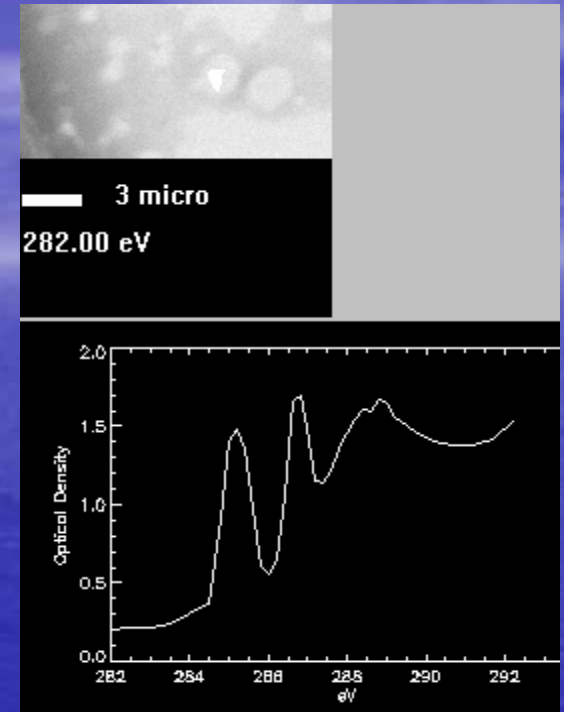
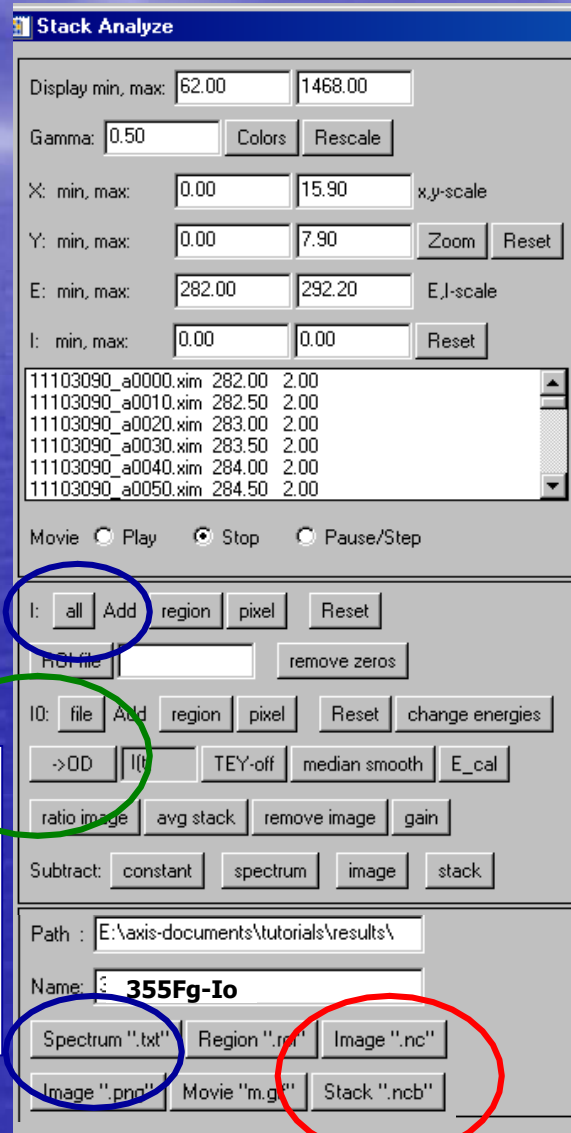
- 1) I: all
- 2) save I_o spectrum



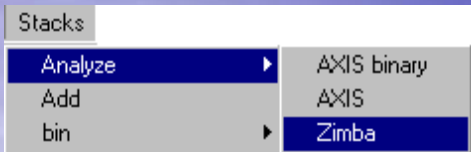
I

in stack_analyze

- 1) define I_o as file from region 2
- 2) convert to OD
- 3) type file name
- 4) save converted stack

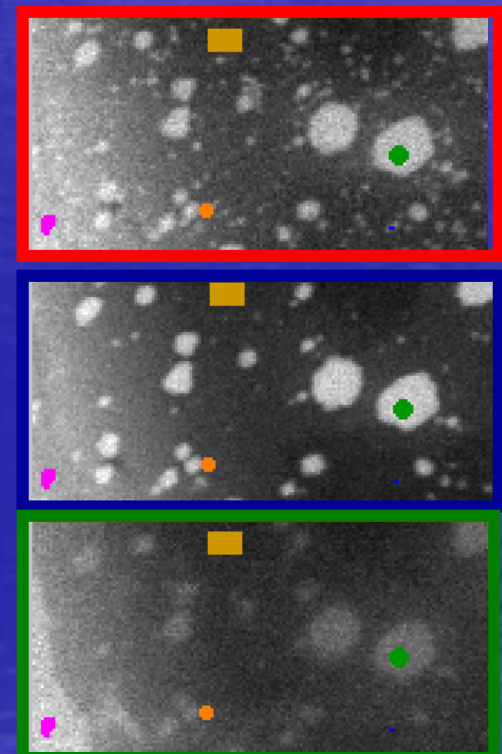
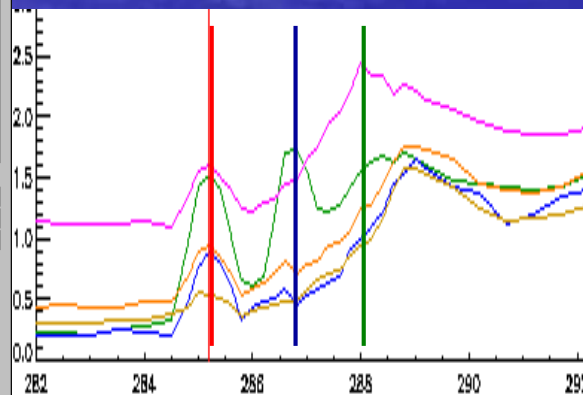
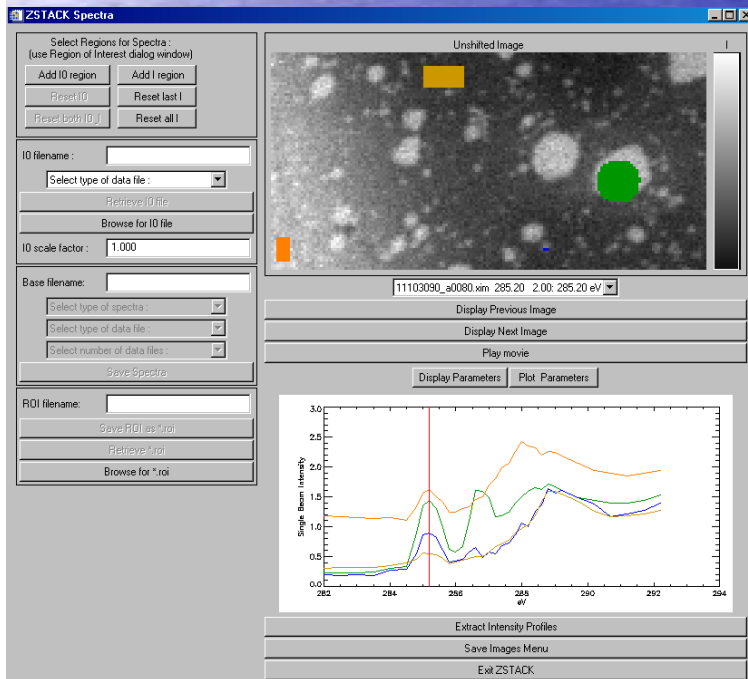
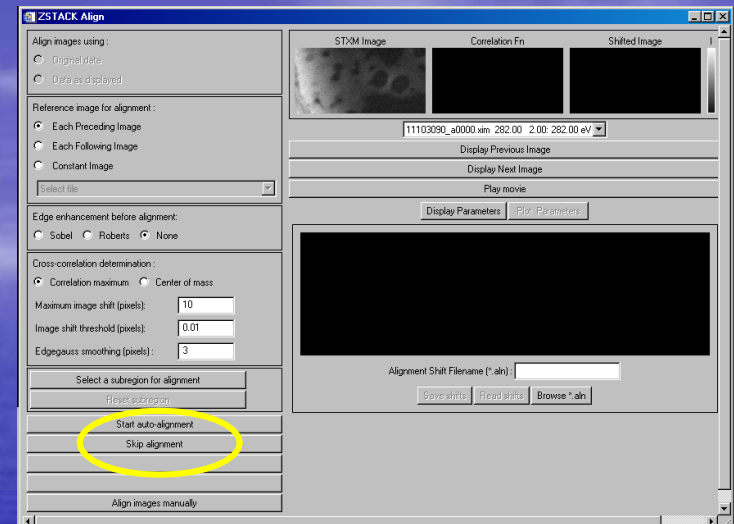
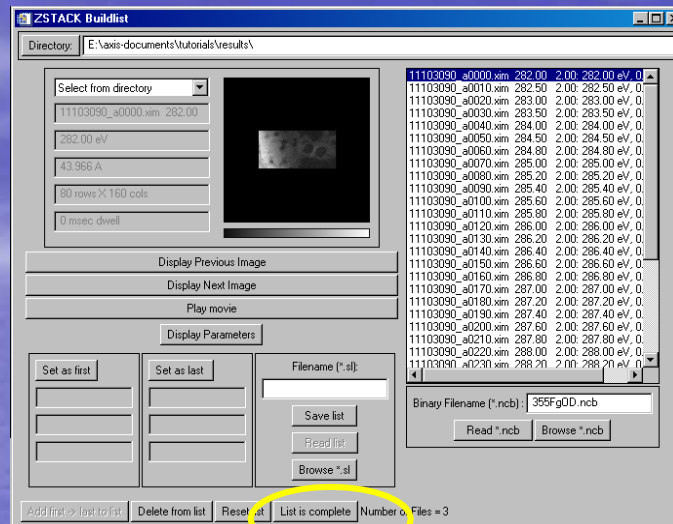


C1s stack - viewing spectra of regions



Zstack
sub menu

written by Carl Zimba



Useful subsidiary Zstack features

17sep170 : 281.21 eV 4.00 msec: 281.20 eV, 0.

Display Previous Image

Display Next Image

Play movie

Display Parameters Plot Parameters

ZSTACK Display Parameters

Image zoom factor:

Movie delay (sec per frame):

Closeup image zoom factor:

Profile image zoom factor:

Display image intensity using:

Absolute Percentage

Display minimum:

Display maximum:

Display Gamma:

Scale image intensity using:

Intensity range of each image

Intensity range of entire image stack

Display images as:

Original data

Images / current image

-log (images/current image)

Images - current image

Images / IO spectrum

-log (images / IO spectrum) [Absorbance]

Images - IO spectrum

Current stack - reference stack

Reference spectrum:

Scale factor:

Reference image:

Scale factor:

Reference stack:

Scale factor:

ZSTACK Plot Parameters

Image zoom factor:

Movie delay (sec per frame):

Spectrum Offset:

Display spectra as:

Single beam

% Transmittance

Absorbance

Plot Scaling:

X Range: Autoscale

Minimum:

Maximum:

Y Range: Autoscale

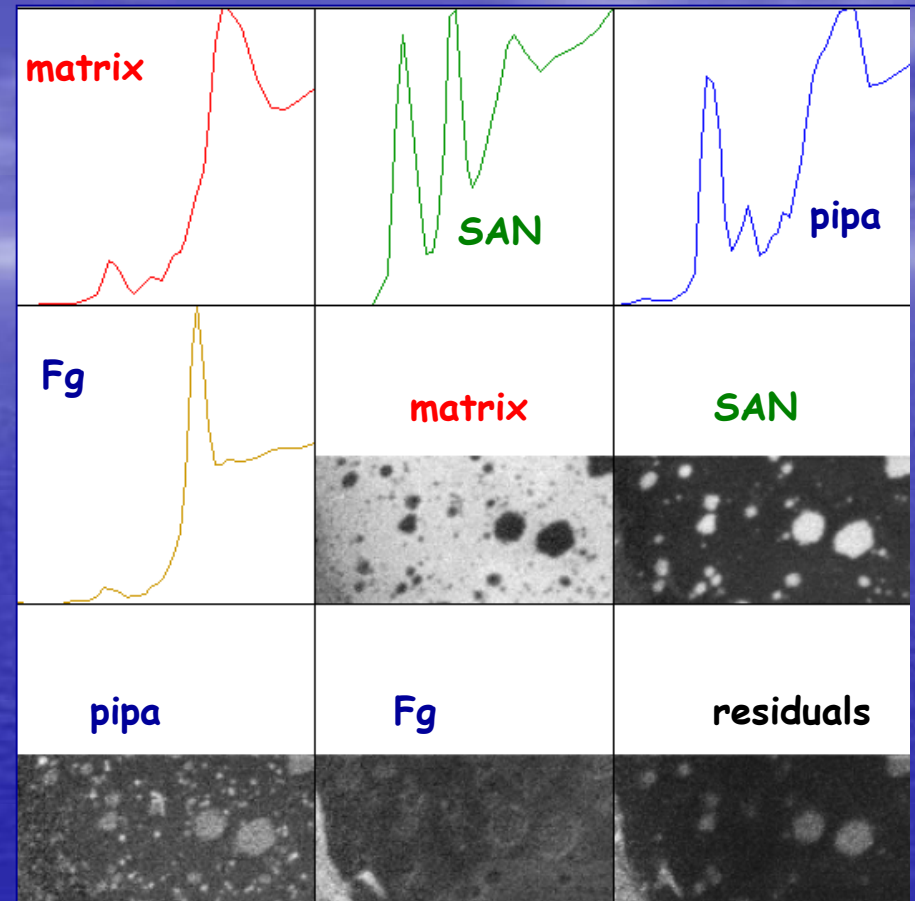
Minimum:

Maximum:

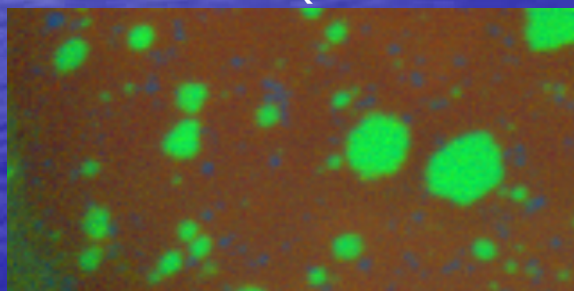
C 1s stack: chemical maps

CONCEPT:

- * a stack is a set of 10^4 - 10^5 spectra (one at each pixel)
- * we FIT the spectrum at each pixel to reference spectra of known constituents
- * the fit coefficients at each pixel form a **COMPONENT MAP**
- * if the reference spectra are on an absolute intensity scale (OD1 = response of 1 nm of pure material) then the grey scale of each map is a quantitative measure of the thickness distribution of that component
- * we can display the spatial correlation of the components using an RGB color **COMPOSITE MAP**



not rescaled (absolute nm)



un-clipped data

126 298 114



clipped, rescaled (RELATIVE)

