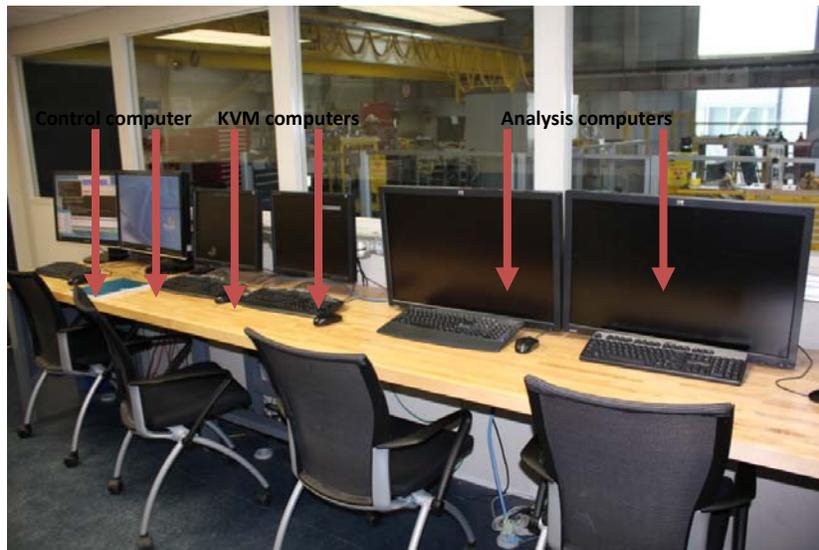


POWGEN User Manual to Data Acquisition:

DAS: Data Acquisition System (DAS) consists of a set of computers and electronics controlling the acquisition and storage of data collected in each instrument at SNS.

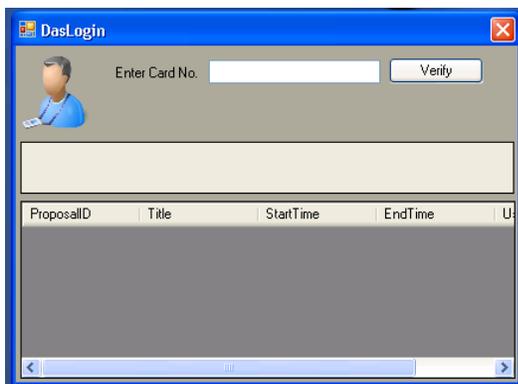
The control computer is the main computer and most of the work for setting up runs occurs on this computer. The two monitors at the leftmost side of the hutch are connected to the control computer. The next two are connected to a series of computers (KVM) which include the file server, preprocessor and other ancillary controls. The final two monitors on the right hand side are not a part of DAS and belong to the analysis computer (data reduction) which will be discussed in a separate document.



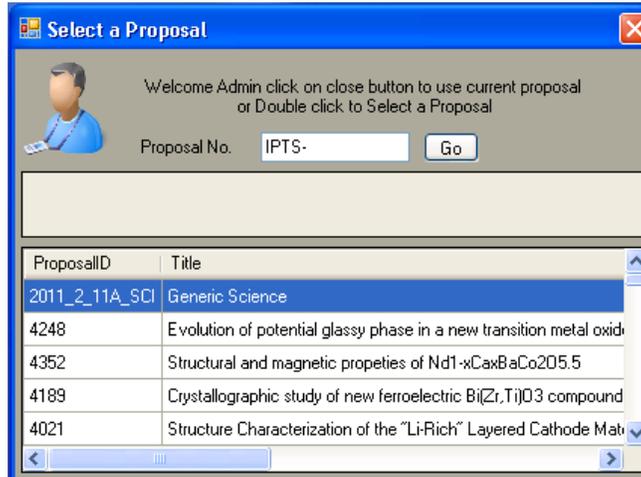
The left figure shows the screen on the control computer. Following is a quick guide to starting your experiment.

1) DasLogin:

Click on DasLogin and enter 50 in the Enter Card No. field and hit Verify.



You will then see the window get populated. Enter your IPTS Number and hit Go. This should change the IPTS # in both dcomclient and PyDas. **This step is very crucial as this determines where your data end up after it has been collected. IPTS # can also be specified inside the script (described below).**

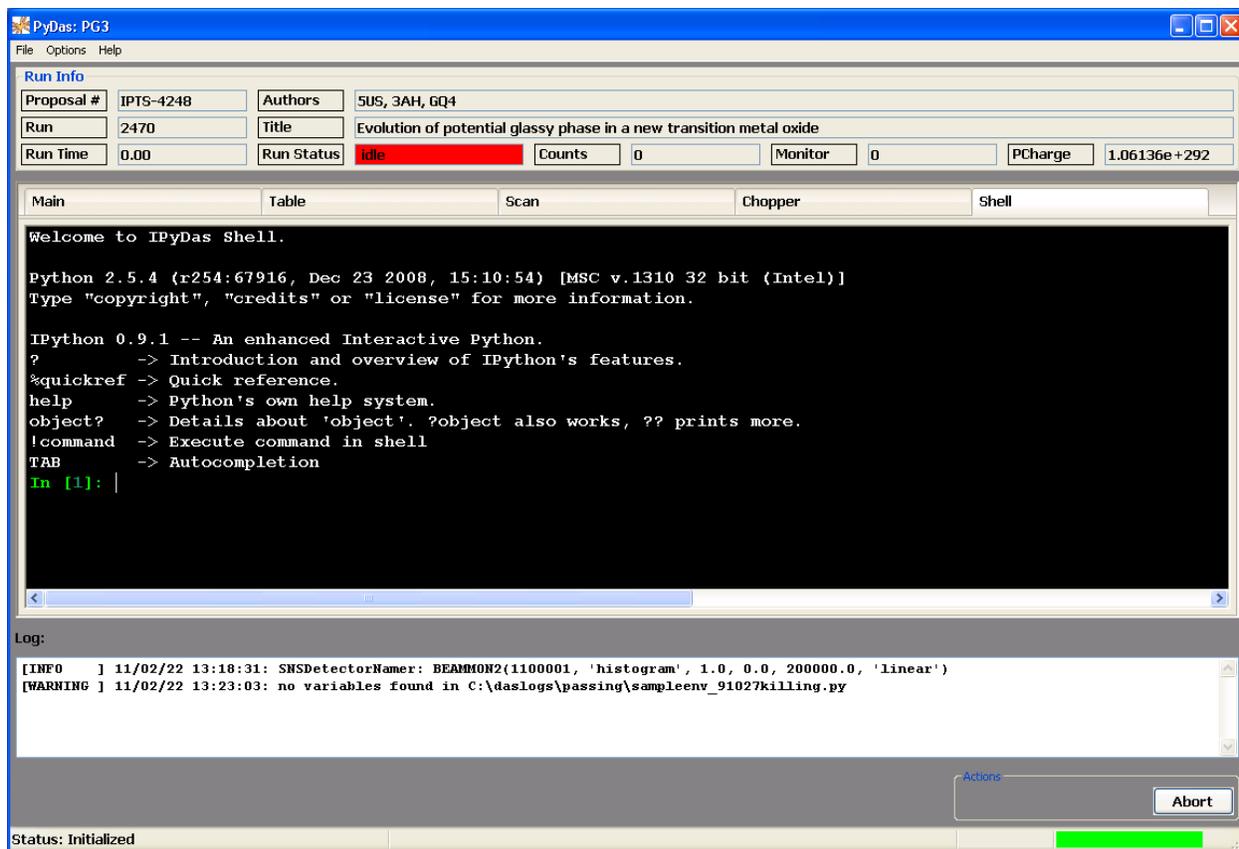


2) Creating a scan:

Data collection is set up using a comma separated text file where all the information is specified. Users can start with an existing file and modify the file. **Before scans can be set up all samples have to be checked into the ITEMS database as the unique id generated for each sample is needed for starting the data collection.**

Following are the headers for the this table along with an example

- Proposal: IPTS-2767 ## Proposal Number
- SampleName: (Li7)-Fe-(B11)-O3 ## Sample formula, the format should be the same as the one used for activation calculation.
- Mass: 5 ## Mass in grams
- ItemsID : 3491 ## ITEMS ID
- ferns: 12 ## slot in ferns where the sample is loaded
- Speed1: 60 ##Bandwidth chopper 1 speed
- Speed2: 60 ##Bandwidth chopper 2 speed
- Speed3: 60 ##Bandwidth chopper 3 speed
- Wavelength: 2.665 ##Center Wavelength
- vGuide: HIRESOLUTION or HIINTENSITY ##Choose the setting for the changeable guide position
- S1HWidth:10 ##Width of horizontal sleets in mm



The execution of the scans is done by typing the following command.

1. ferns_scan(filename='xxxx.csv',stabilize_time=n,retrieve=True/False)
2. euro_scan(filename='xxxx.csv',stabilize_time=n)
3. cryo_scan(filename='xxxx.csv',stabilize_time=n)
4. ILL_scan(filename='xxxx.csv',stabilize_time=n)

One has to make sure they are in the directory where the csv file resides or specify the full path for the file. To find out the current location type 'pwd' at the command prompt.

Once a scans file has been created, next step is to test it for syntax error. This is done by choosing Options->Simulation. This will turn the color bar at the right corner in the bottom of the GUI to magenta with SIMULATION written on top. Once all syntax have been checked switch Option->Real Mode to execute scans and start collecting data. Note that the scans are not done dynamically so once the scans have been read, one cannot change them. In order to change the course of the experiment, the users have to create a second file from the point where they want to change variables. To stop what is currently running type 'CTRL C' (or Abort, right corner of PyDAS) at the command prompt. Stop the current run on dcomclient and make sure it is saved. Then start the new scan. If dcomclient is running that is if the file has not been saved it will generate an error and remind the user to save the run first.

Caution while using FERNs: An abrupt abort while FERNs is running can cause the loss of sample position especially if the changer is in the process of changing a sample. We recommend that users wait until it

has reached the specified position and started collecting data before Aborting. If retrieve is True once the run is save the sample will be taken out of position and returned to carousal. If it is False then it is left in the current position. Subsequent scripts should take this into account.

For more detail of the various applications and the DAS software refer to the Powgen