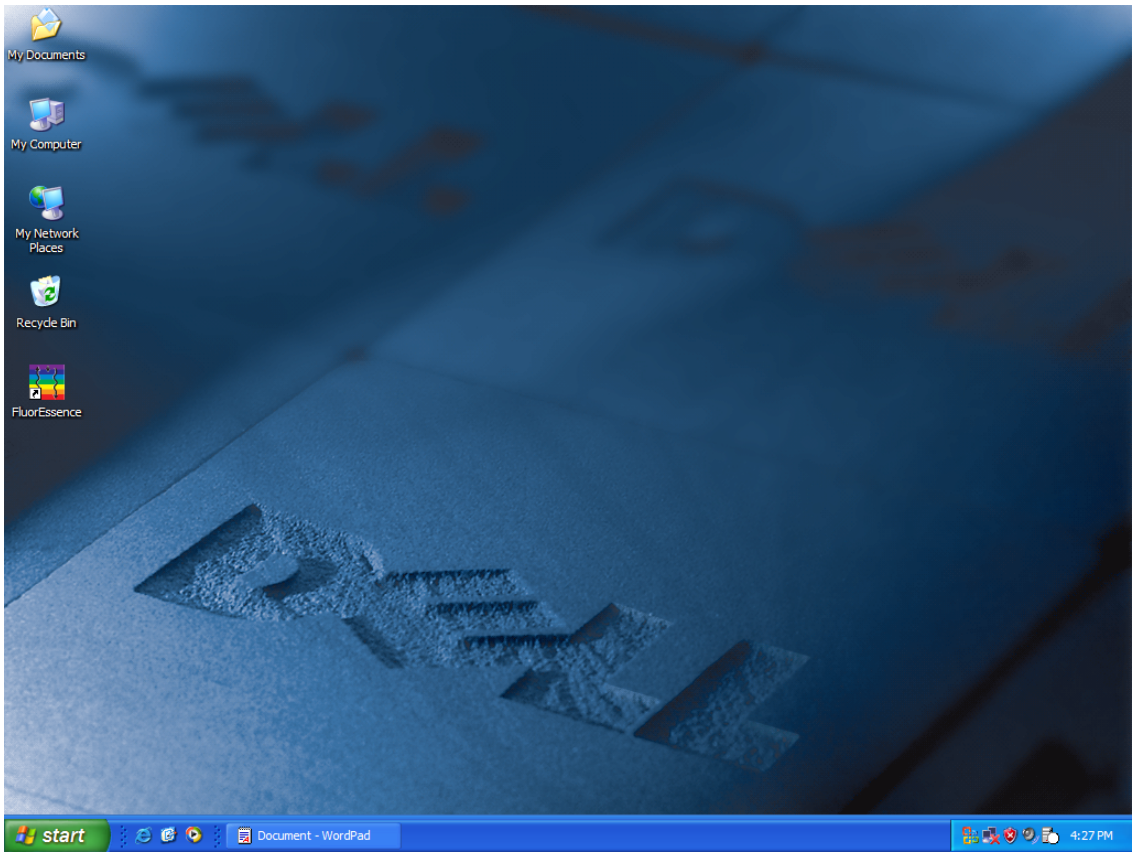
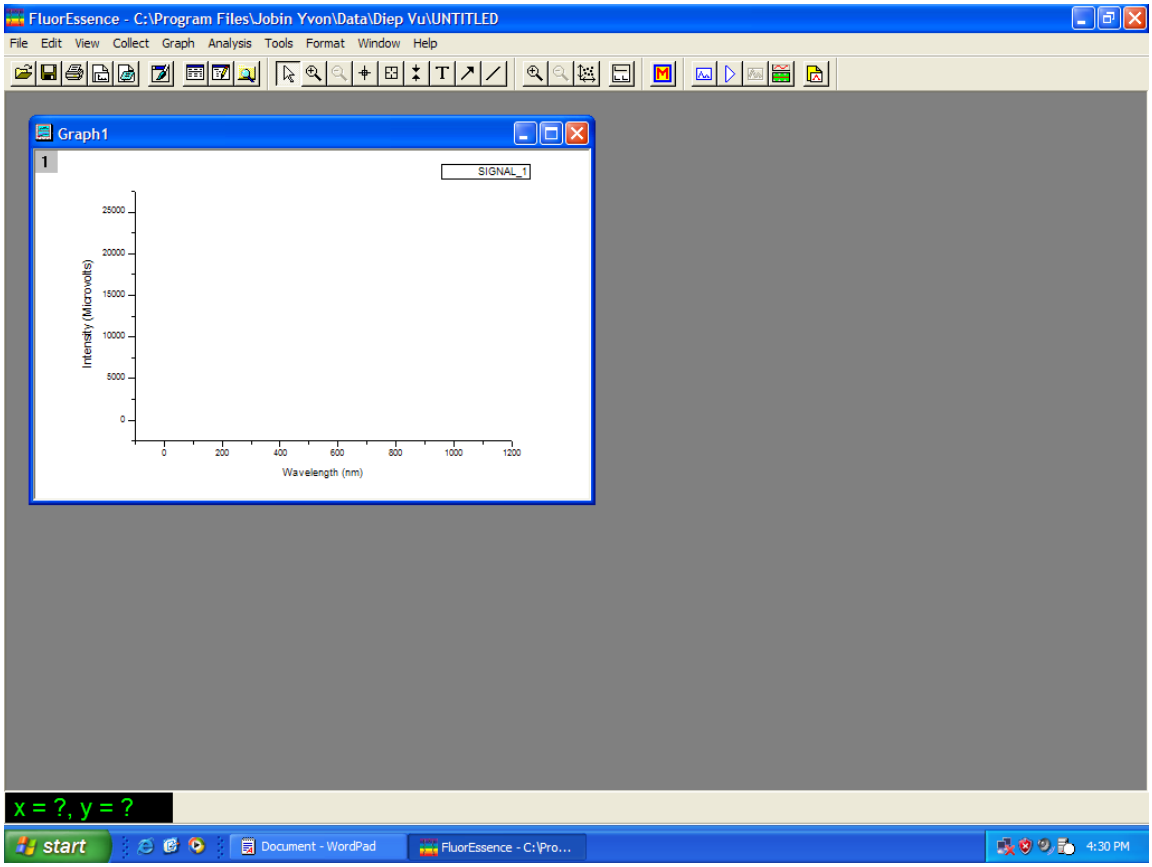
Fluorescence Spectroscopy

Fluorolog Operations.

1. Turn on the Host Computer, Dell Optiplex GX620
2. Windows opening Screen
3. Select FluoroEsssence

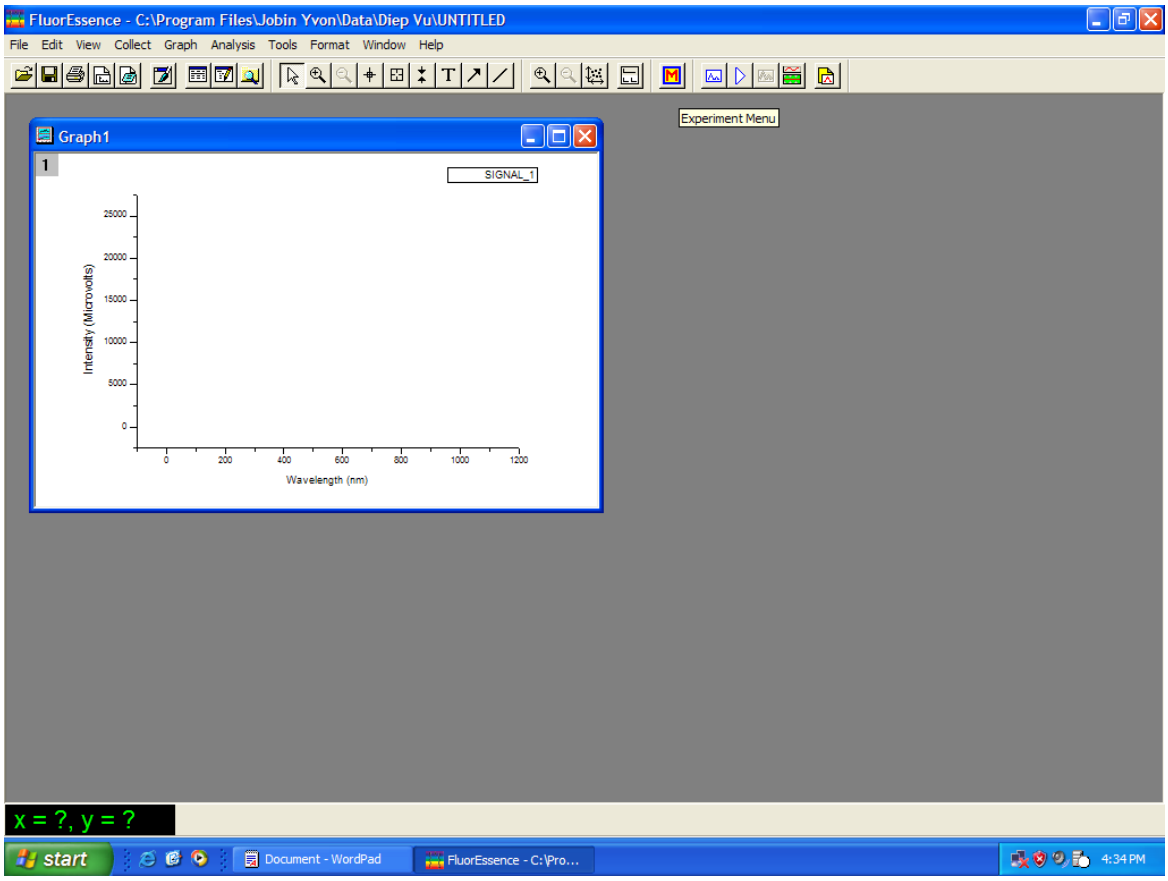


4. Opening Screen for FluoroEsssence Window



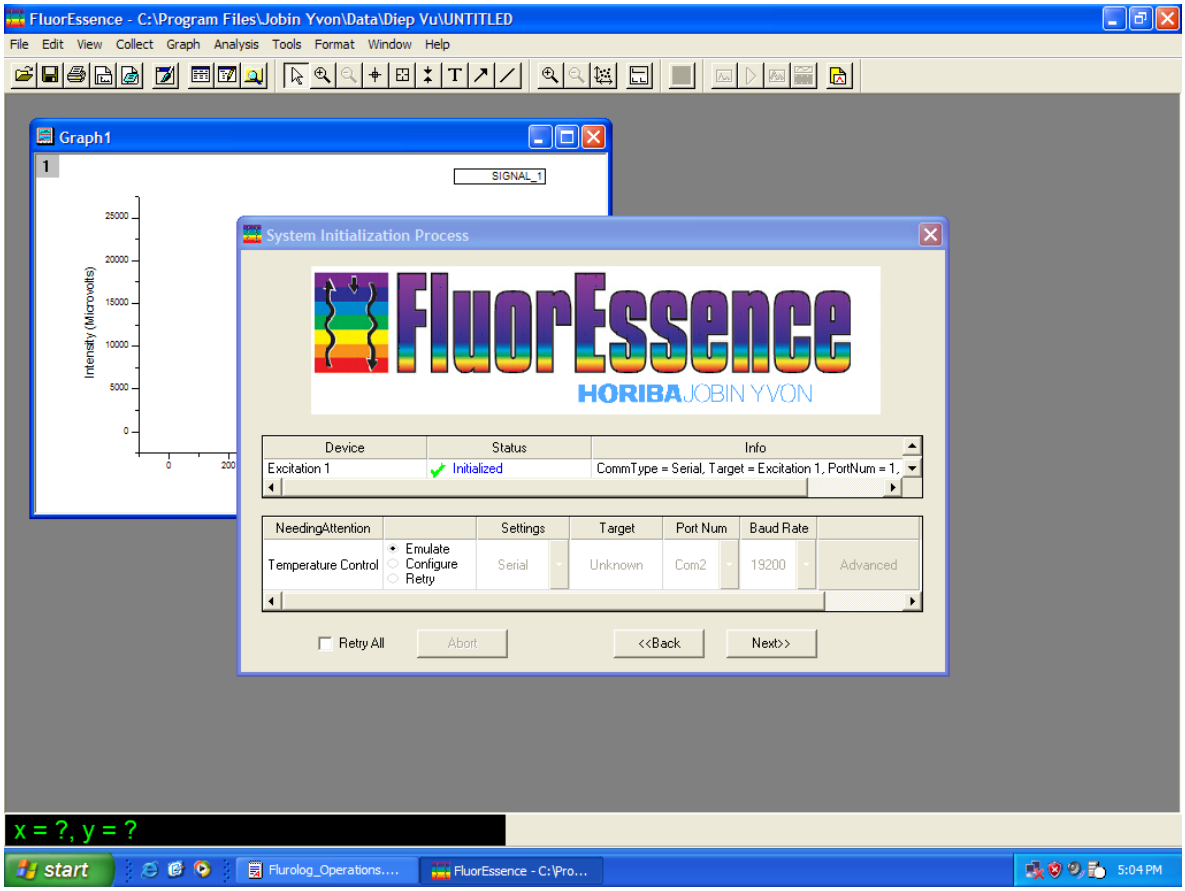
Excitation Calibration Check

5. Close the lid of the Sample compartment
6. On the main FluoroEsssence toolbar, select the Experiment Menu



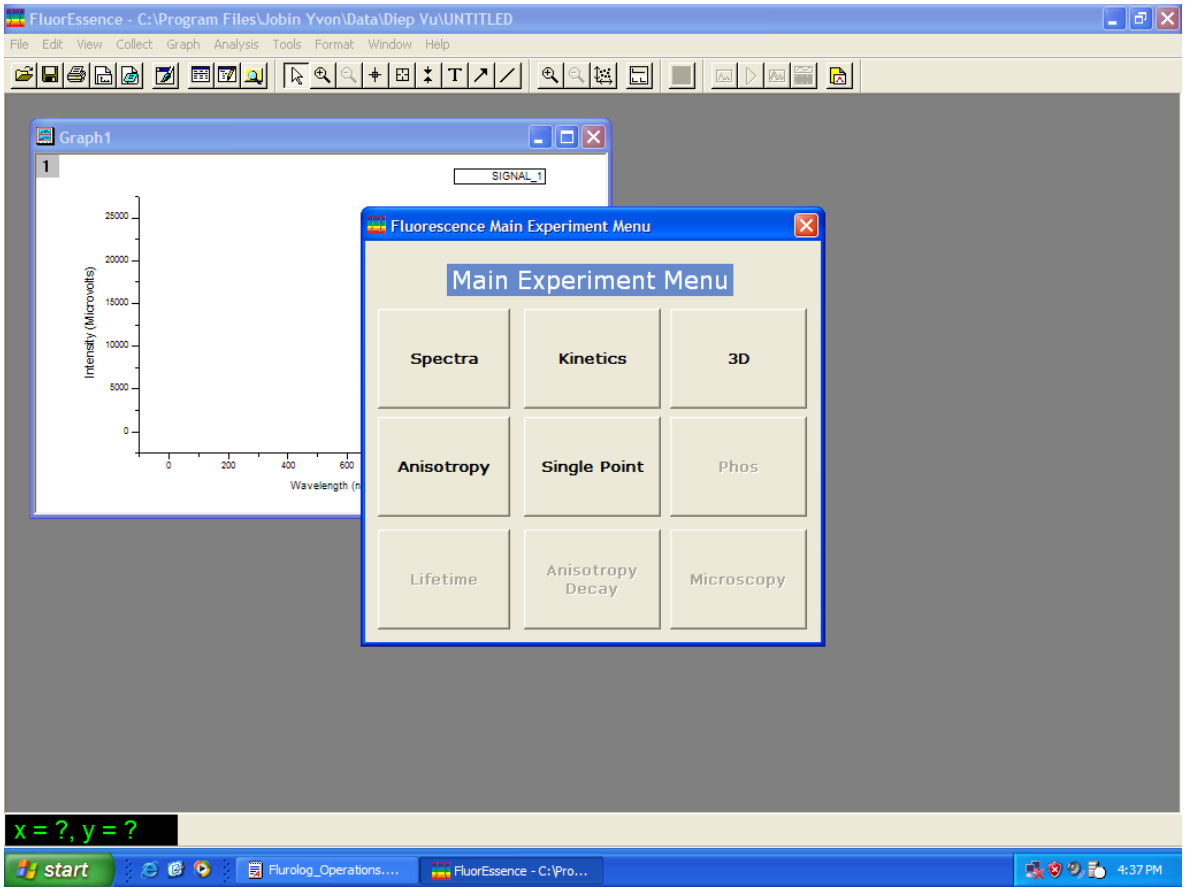
System initialization screen.

7.Click on next

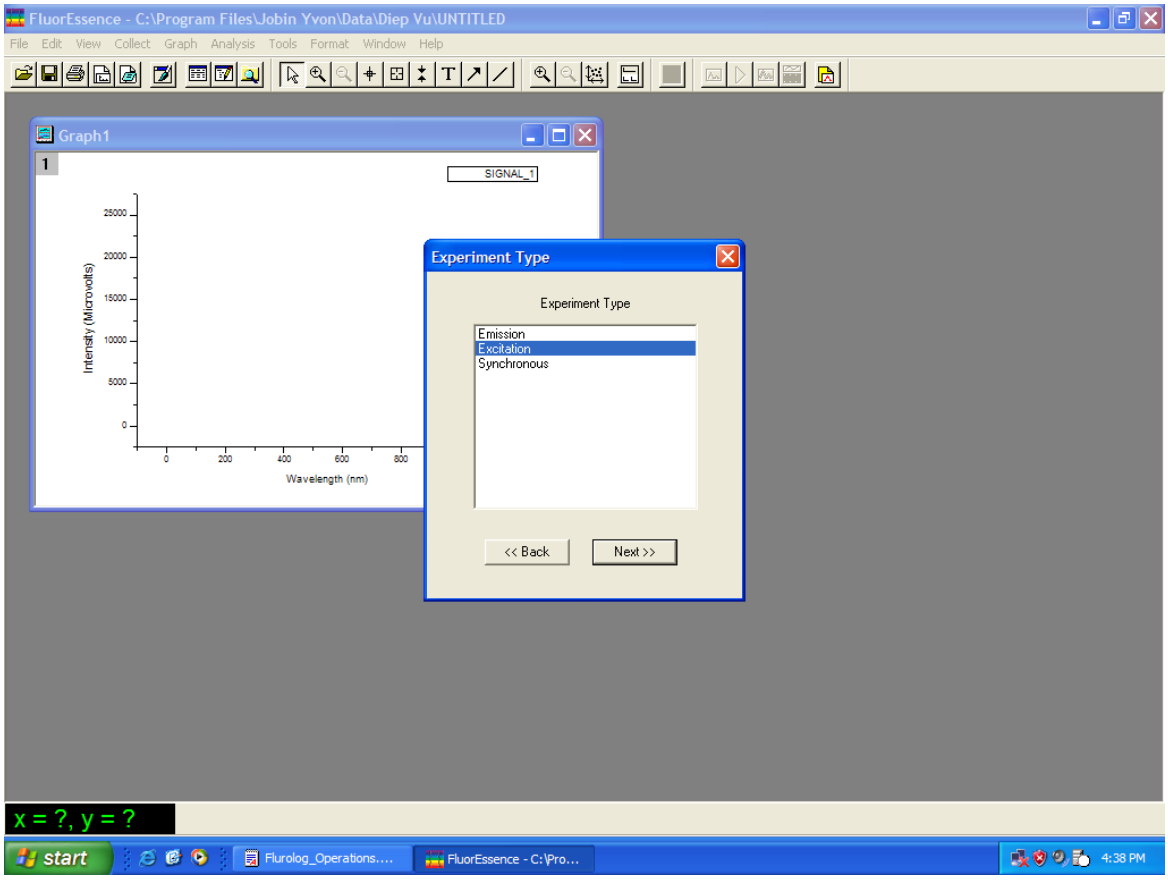


The Fluorescence Main Experiment Menu

8. Select Spectra



9. Choose Excitation then click on Next.



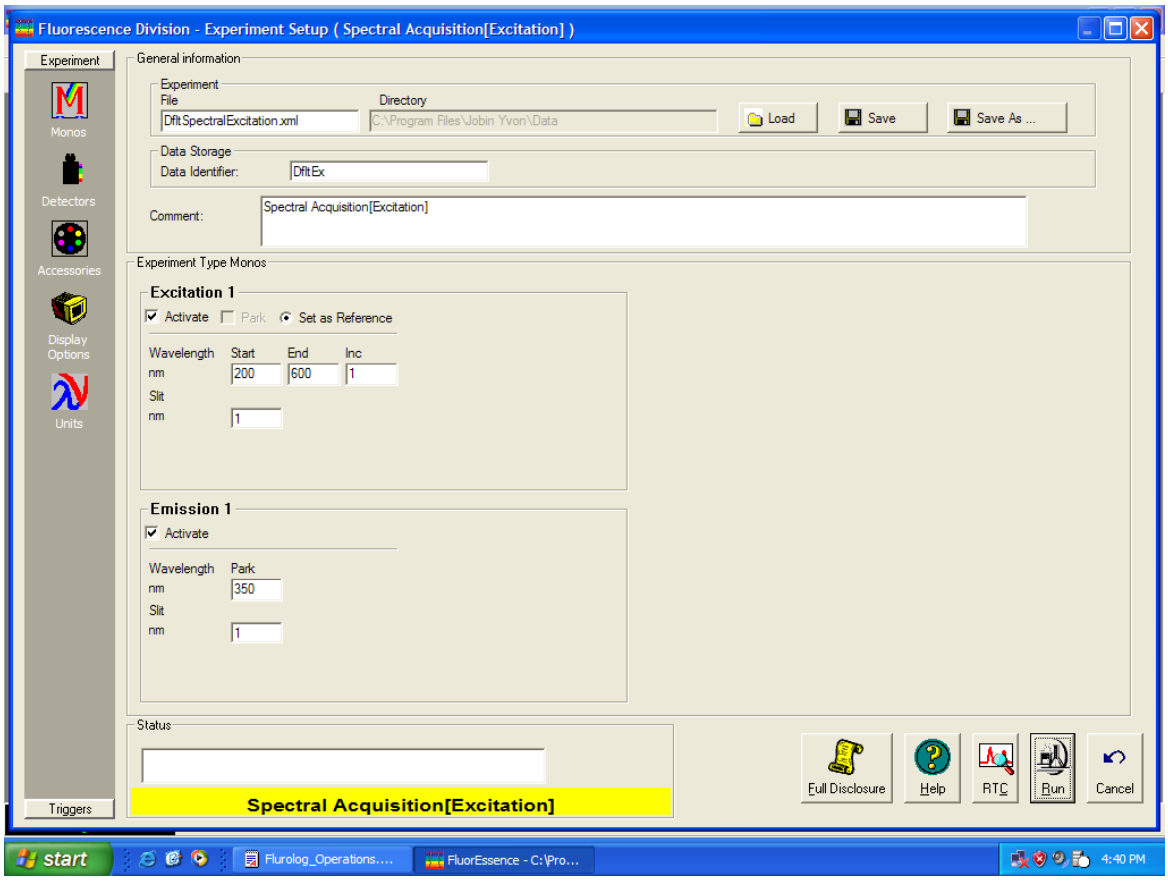
11. Choose the default parameters or adjust to-

Monochromator (1200 groove / nm)	initial wavelength	Final wavelength	Increment	Slit (bandpass)
Excitation	200 nm	600 nm	1 nm	1 nm
Emission	350 nm	-	-	1 nm

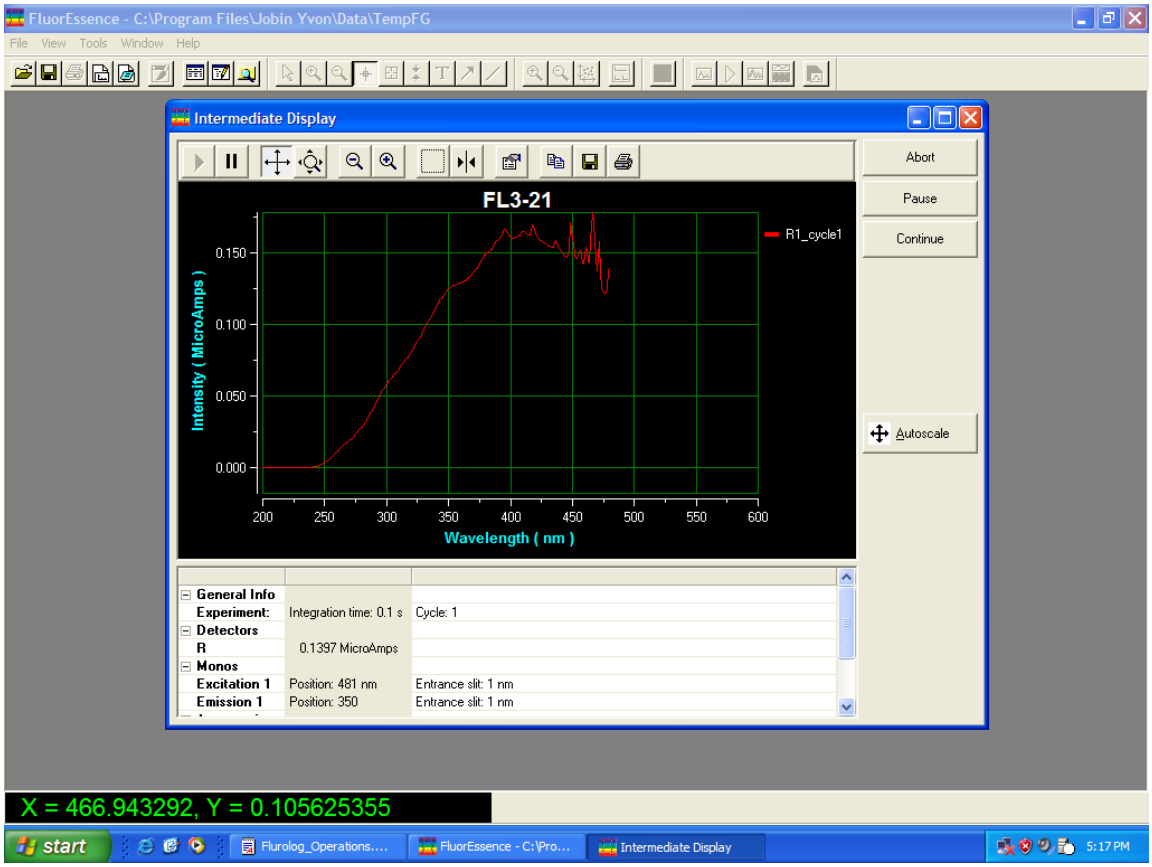
Default detector parameters for xenon-lamp scan

Detector (Signal)	Integration	Units
Signal (SI)	100 ms	CPS
Reference (RI)	100 ms	mA

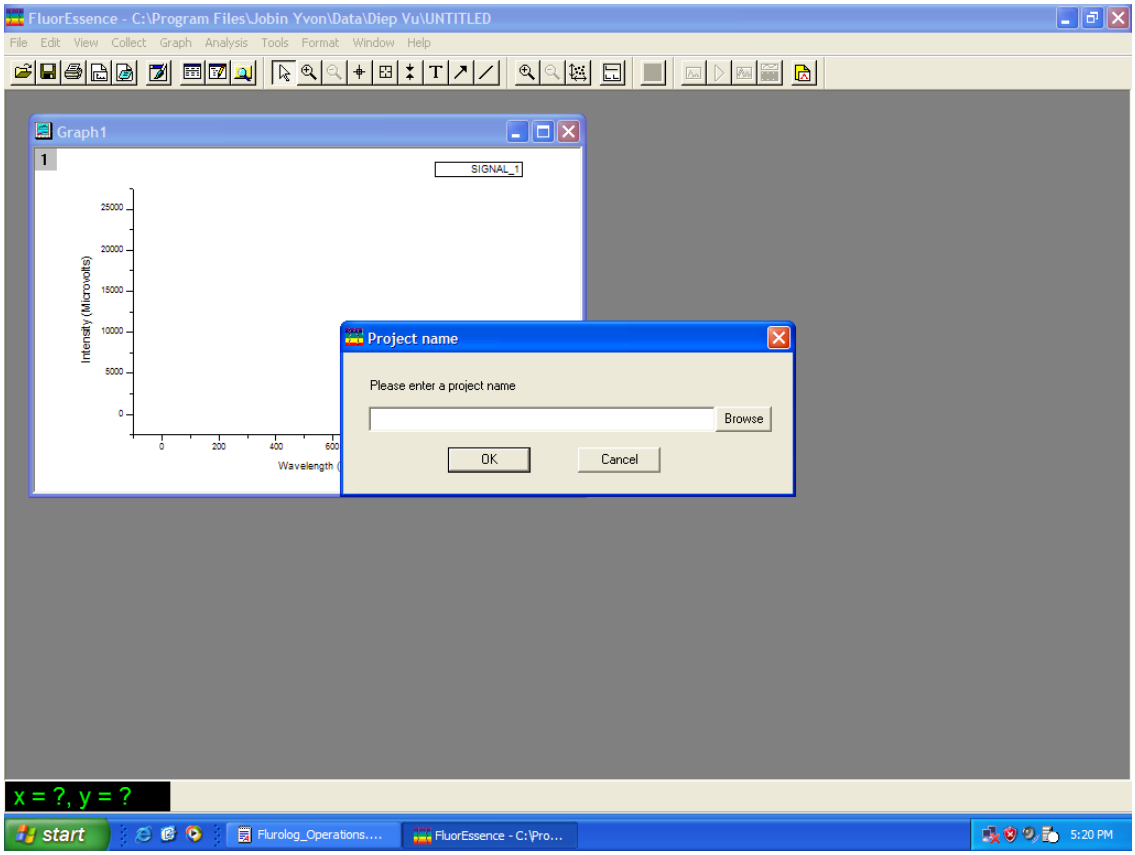
Click on Run



The Fluorolog will do an excitation scan on the xenon lamp.



After the scan is complete, the computer will prompt for a file name

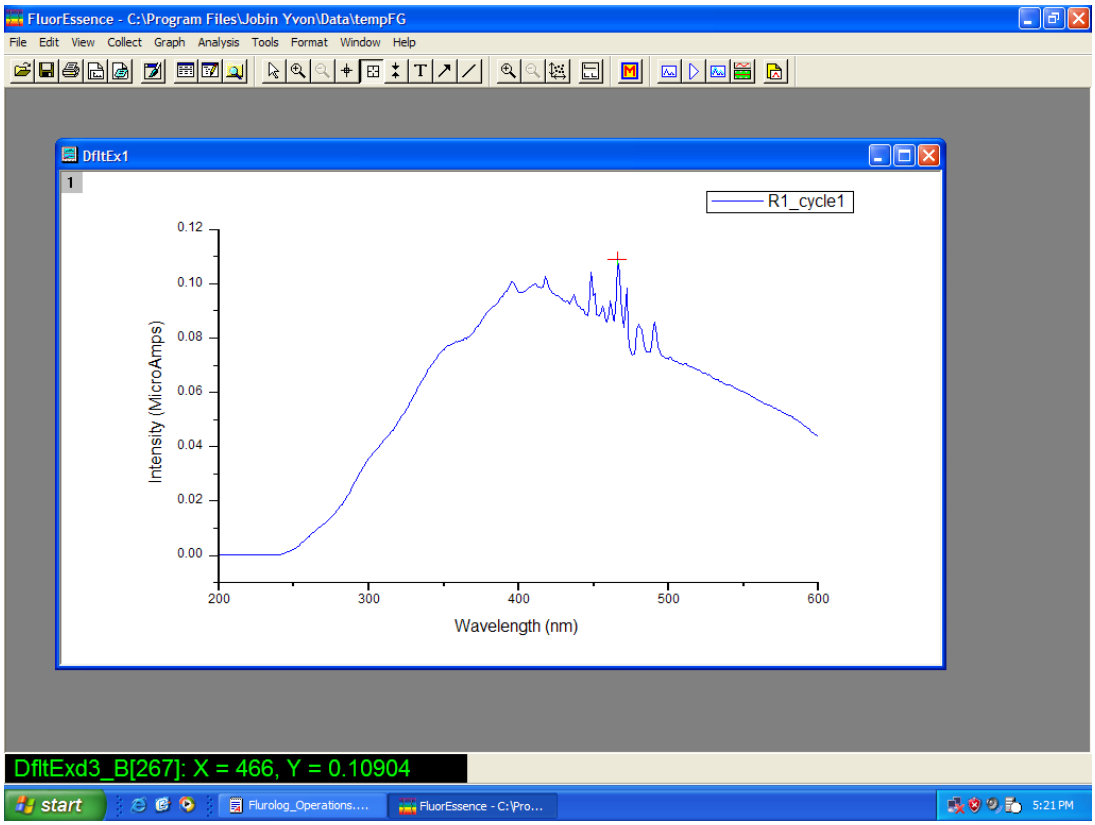


The screen will display the uncalibrated FluoroMax lamp spectrum.

The main peak should be at 467 nm.

Use the data reader to inspect the signal.

You can grab the bottom right corner of the spectra to enlarge the graph.



If the main peak is 467 +/- 1 then proceed to calibrate the emission.

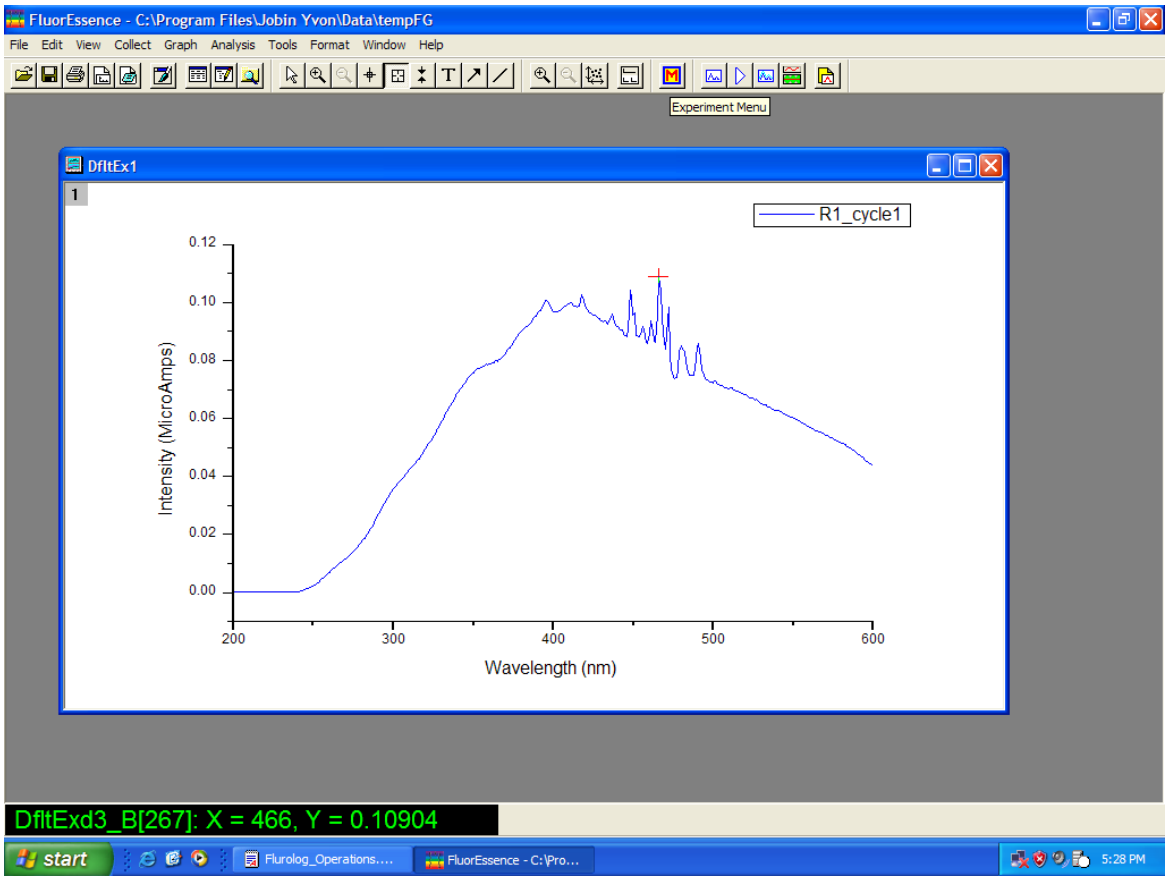
If not then you must proceed to calibrate the excitation monochromator.

Go to the instruction manual for this procedure.

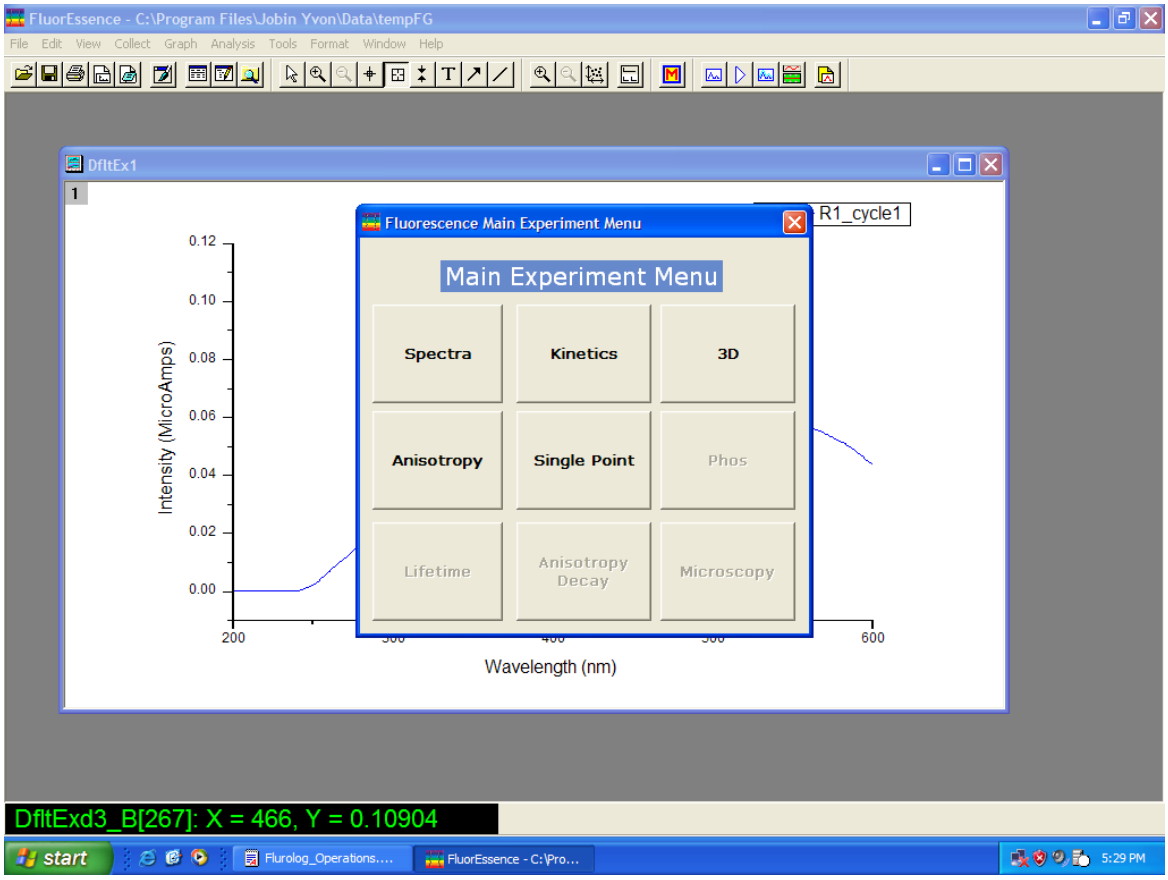
Emission Calibration

Insert water sample in to the compartment.

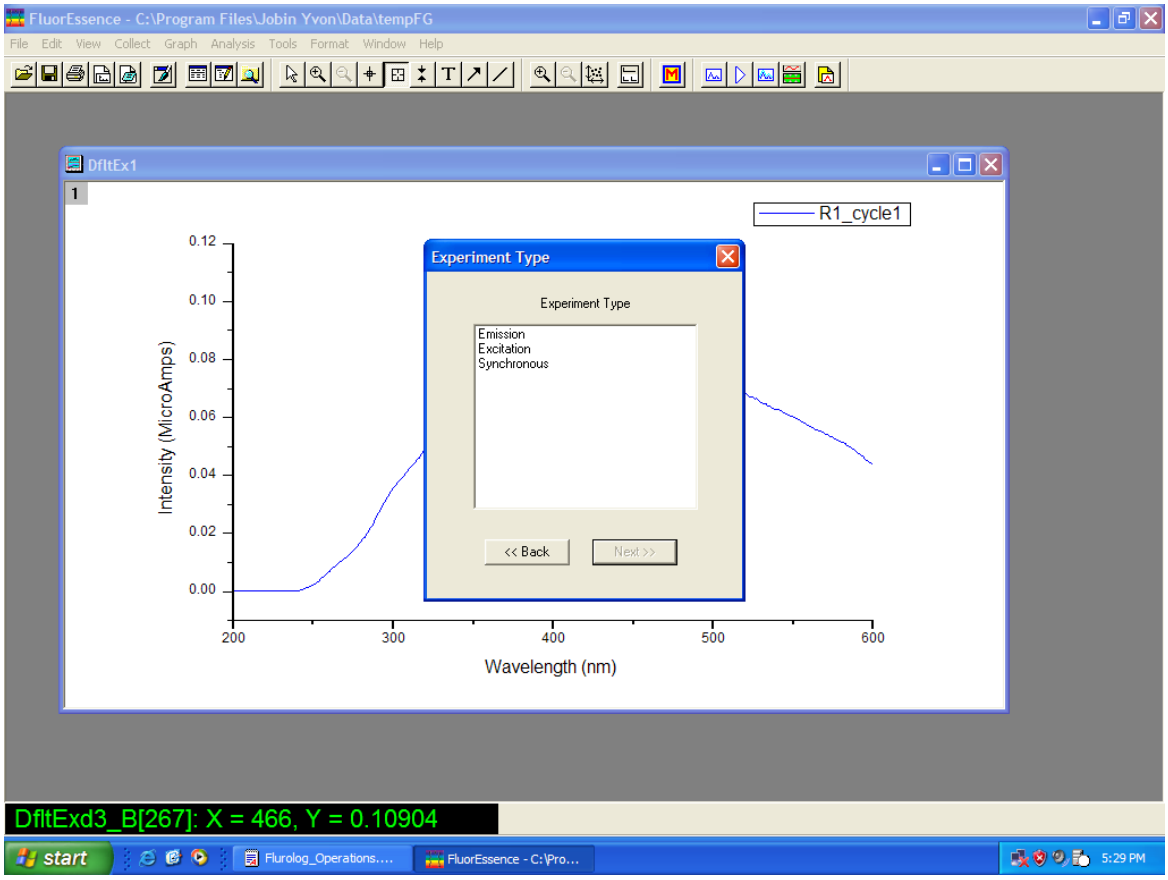
Close the lid and select the FluoroEsssence key in the toolbar



Choose Spectra



Select Emission and then Next



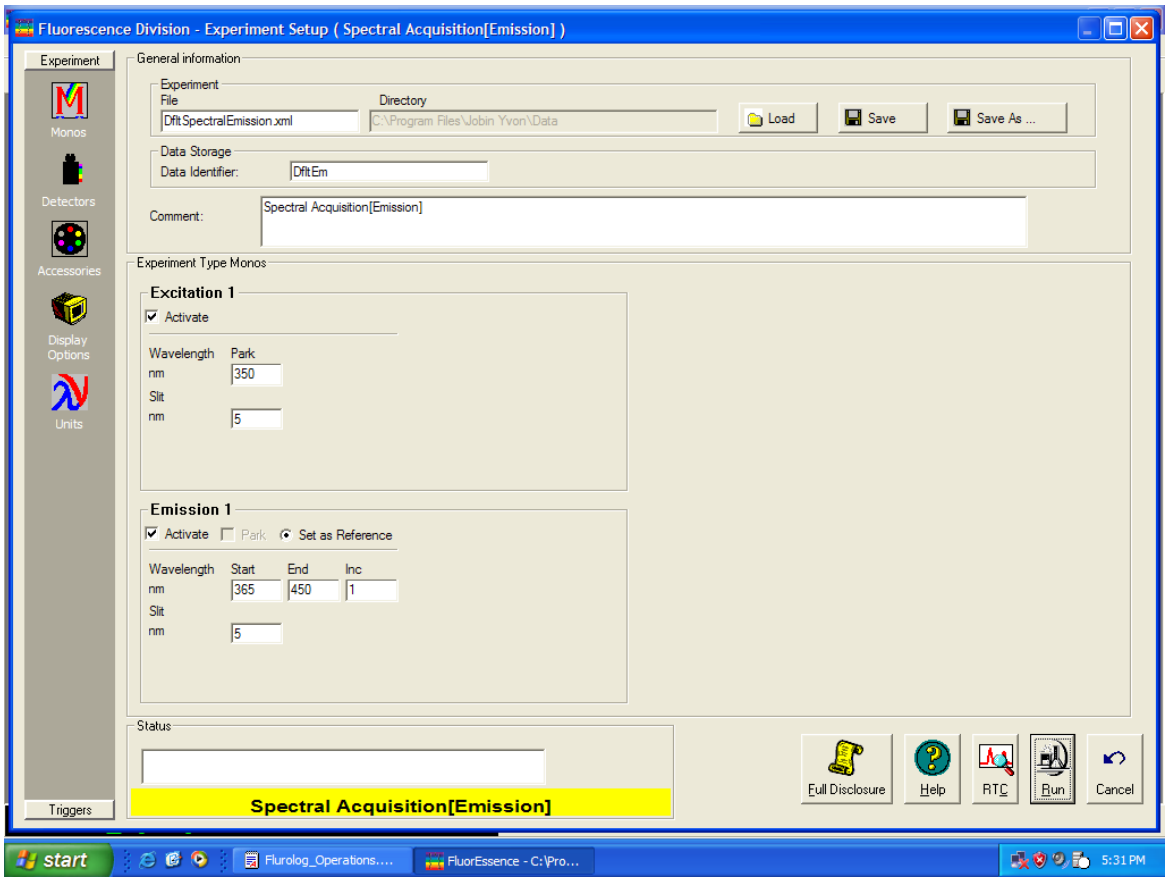
Choose the default parameters for the water-Raman scan:

Monochromator parameters for the water-Raman scan:

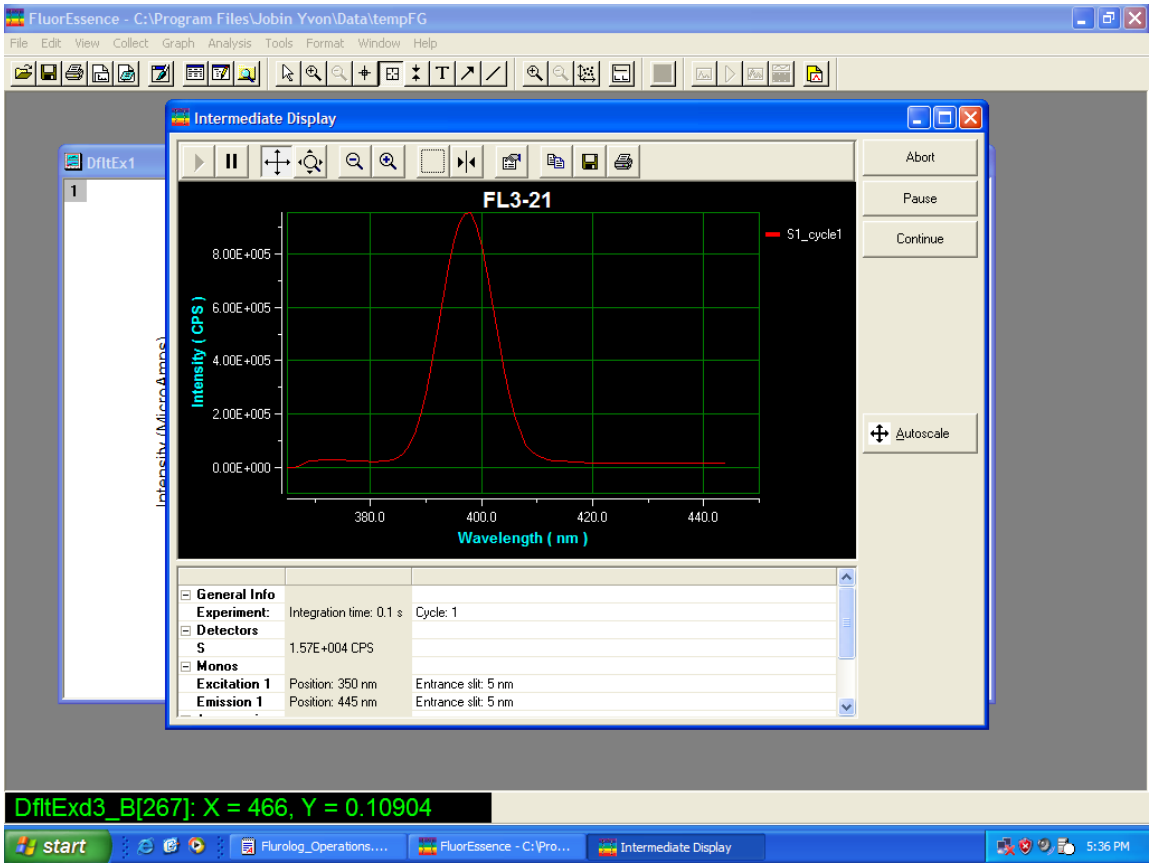
Monochromator (1200 groove / nm)	initial wavelength	Final wavelength	Increment	Slit (bandpass)
Excitation	350nm	-	-	5 nm
Emission	365nm	450nm	1 nm	5 nm

Default detector parameters for xenon-lamp scan

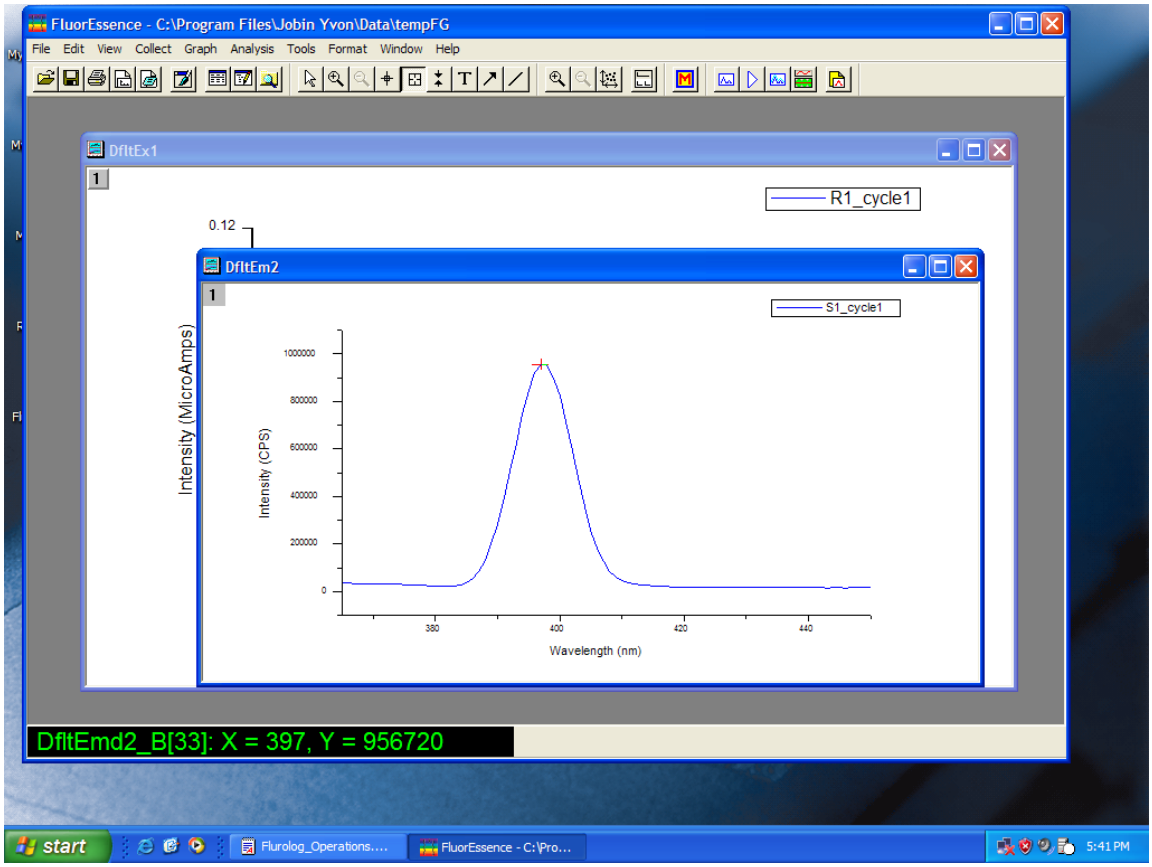
Detector (Signal)	Integration	Units
Signal (SI)	100 ms	CPS
Reference (RI)	100 ms	mA



Click on Run


FluorEssence - C:\Program Files\Jobin Yvon\Data\tempFG
File Edit View Collect Graph Analysis Tools Format Window Help
Intermediate Display
DfltEx1
1
FL3-21
S1_cycle1
8.00E+005
6.00E+005
4.00E+005
2.00E+005
0.00E+000
Intensity (CPS)
380.0
400.0
420.0
440.0
Wavelength (nm)
Abort
Pause
Continue
Autoscale
General Info
Experiment: Integration time: 0.1 s Cycle: 1
Detectors
S 1.57E+004 CPS
Monos
Excitation 1 Position: 350 nm Entrance slit: 5 nm
Emission 1 Position: 445 nm Entrance slit: 5 nm
DfltExd3_B[267]: X = 466, Y = 0.10904
start
Flurolog_Operations....
FluorEssence - C:\Pro...
Intermediate Display
5:36 PM

After the scan the screen will display the spectrum and you can use the data reader to inspect the wavelength max.



If the water-Raman peak is not at 397 nm, calibrate the emission monochromator.

Refer to the instrument lab manual for this procedure.

If everything checks, you are now ready to use the instrument for your experiment.