

PTI Felix 32 Spectrofluorimeter

(revised 5/14/2013 by Carol Bayles)

1. Turn on the lamp FIRST
 - a. Lamp Power button on, Press Ignite, hear lamp click ON, see ~65Watts
 - b. Record time in Log Book
2. Wait 10 seconds, then turn on
 - a. Motor driver
 - b. Bryte box
3. Set slit width. There are 3 slits and shutters: at lamp, behind sample compartment, before Em monochromator
 - a. Set slits (note that 1 full turn = 2 nm)
 - b. Open 3 shutters or keep ex shutter closed until ready
4. Start PTI Felix Software
 - a. user = your name; password = pti (lower case) or use wrz2, pti
5. Acquisition → New Acquisition (or Open Saved Acquisition)
 - a. Choose mode (generally Emission or Excitation Scan)
 - b. Choose Config HW = 'QM4'
 - c. Excitation and Emission wavelengths (must be > 10 nm apart)
 - d. Typical integration time ~0.3 s
6. Click 'More' → click on 'Real Time Correction'
 - a. Click Enabled
 - b. Uncheck 'XCOR'
 - c. Correct for both Excitation and Emission
 - d. Click 'Reference Source Gain'
 - e. Type in the excitation wavelength and click 'Go To'
 - f. Adjust the gain to obtain about 1.0V which should be a gain of 2.5-3.5
 - g. OK, OK
7. RUN
 - a. If you want to run a buffer first, just run it like another sample and subtract it manually (Don't check background or use)
 - b. Insert sample
 - c. Acquire Prep, Start
 - d. Rclick on a data set and choose Toggle visibility if needed
8. Datasets appear on left, click to choose
 - a. D1 is raw data
 - b. XCorr is the correction factor for lamp (should be near 1.0)
 - c. Corr D1 is your data corrected for the lamp fluctuations
 - d. Right click to rename

9. Math

- a. Toolbar-Math-Peak finder
- b. Integral, to use total area, drag over graph to choose end points
- c. Normalize, etc

10. Save / Export data

- a. Right click on actual graph, chose Export Dialog
- b. Choose .txt only, name and Browse location
- c. Export all data or selected data, and labels
 - i. Style = list, Delim = Tab, current precision
 - ii. Note that all data puts all data listed in Legend in one file. you may want to Select data and put each sample in its own file

Notes:

Corrections to Data

During setup, use Both corrections. The Em correction corrects emission for wavelength effects on the monochromators. If you check it, it does it in the background. This is good.

The Ex correction uses the other 'detector' to correct for lamp fluctuations and ratios the data. We suggest adjusting Gain to get a Voltage of 1.0 to make your corrected data have the same magnitude as the raw data. You will need a gain of ~2.75 at 488nm. Don't change this once you start or you cannot compare your data.

This is the XCorr data.

D1 data is raw, uncorrected data.

Corr D1 is corrected by ratio of D1/XCorr. This is the best data.

(Compared to the SLM: $D1=C$, $XCorr=B$, $Corr D1=C/B$)

Background (buffer)

This should be subtracted manually if desired. The Use function is confusing and is better not to use it at this time.

Calendar for scheduling

Google calendar

B38 PTI Fluorometer

Fee

\$10/hr