

## CD & SIMULTANEOUS FLUORESCENCE DETECTION II

In the previous TR N° 8 we discussed shortly about same subject.

There are now some important news:

Jasco announced their new FMO-427 emission monochromator accessory for the J-810 series.

The unit includes a single concave grating monochromator as from the Jasco FP-6500 spectrofluorometer, but with fixed 10nm bandpass slits. Wavelength range is about 200-800nm.

The unit fits neatly the back of the J-810 sample compartment and requires CDF-426 (Peltier CD/fluorescence accessory) to be installed with. As a detector (photomultiplier tube) the one of the CDF-426 will be fitted in.

Full software for control of the accessory and emission spectra recording is included.

In this mode the J-810 becomes an efficient spectrofluorometer, taking into advantage a clean (stray-light free) excitation, due to the double prism monochromator.

The drawback of this unit is that it can only be used for steady-state measurements. If a stopped-flow cell is fitted you may probably use it with some optical fibers, but this requires modifications. One way to do it would be to insert a spacer between sample compartment unit and the FMO assy (i.e. where the fluorescence beam is collimated). A switching mirror can be inserted there allowing either direct collection (steady-state mode) or stopped-flow collection using a bundle linking the SF cell and the spacer with a collimating lens .....

On the same line, recently (together with Jasco Europe), we installed an external monochromator (from Optometrics Inc.) with optical fiber input. This could be quickly switched from steady-state to stopped-flow mode simply repositioning the fiber. The set up is cheaper by sure, however Optometrics system has no scanning capabilities while efficiency is relatively low.

*Are there other alternatives?*

Yes:

-With total fluorescence accessories (such as the CDF-426) if you want to increase selectivity in the emission side you can fit, in place of the long pass filters supplied, proper bandpass filters, as for example available from Omega Optical Inc. ([www.omegafilters.com](http://www.omegafilters.com)), this would pay a lot if you run routine operation.

-If you want to have emission spectral capabilities the alternative to FMO-427 monochromator is the use of flat field polychromators with diode array or CCD detectors. Here there is a huge amount of variants, depending on resolution, speed and sensitivity required. Also prices would vary a lot accordingly.

However the big plus of the FMO-427 is that it's software integrated, so you get data processing capabilities within the standard Spectra Manager™ software.

FMO-427 is NOT, electrically more than optically, compatible with older J versions.

*Top view of the accessory fitted: you need a deep bench space or better use a table!*

