

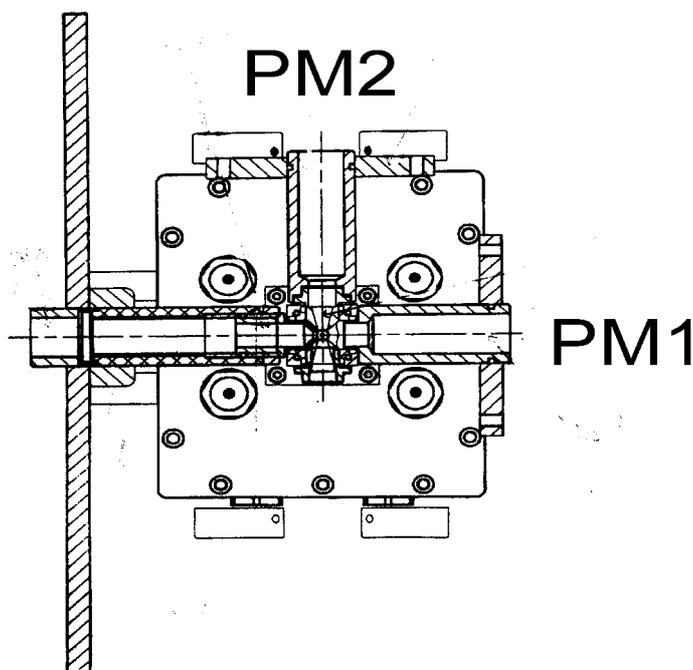
STOPPED-FLOW CD, IMPROVEMENTS IN INTERFACING BIO-LOGIC SFM

Several improvements have been achieved as experience is progressing.

First of all the original 90° mount with beam deviation by prism has been revised. New mount (Bio-Logic p/n 047-61/2) is in line, without any beam deviation. The main drawback of the new approach is that you must put the unit at the end of a table/bench, while with 90° mount the installation in the middle of a lab bench was possible. But the new approach is marginally cheaper and you avoid the optical aberrations caused by the 90° prism, since, regardless a careful selection, small aberrations were always present.

A full manual showing way to connect the all things together is now supplied.

The mount (see picture: top view with SFM-400) can be permanent, i.e. the inlet tubing with focusing lens can be replaced by a straight tube without any lens, so conventional sampling can be carried on in standard sample compartment simply removing the stopped-flow cuvette and fitting adapter tube without lens.



The stopped-flow cell holder can be replaced with:

-045-06X standard thermostatable cell holder with stirring facility (it's an expensive toy)

with this you can easily carry on melting experiments on rectangular steady state cells using the RTE-111D Neslab bath and Jasco temperature control software

-045-01 Titration accessory with which you can perform either titration or melting experiments with the Neslab bath

Additionally if you order also a spare 21961 PM holder for Jasco PM you can fit neatly a second PM tube for fluorescence (PM2 in the drawing) or directly flange on it the new Jasco FMO-427 emission monochromator, both for stopped-flow or steady state measurements with standard rectangular cells.

Last: with the adapter tube with lens fitted you can operate with standard semimicro steady state cells, saving sample volume in 10 mm path experiments if you can tolerate birefringence of the cuvette.

In these ways you basically use the SFM as sampling point for any sort of measurements (of course not with cylindrical cells, but you can always fit them into std Jasco sample compartment) saving money for the purchase of other accessories and sparing the boring time to replace them.

It probably pays to add a few additional comments to select the proper Bio-Logic stopped flow for protein folding experiments:

1. be sure that SFM is supplied with HDS mixer, which is strongly recommended
2. be sure that SFM is supplied with FC-20 cell (2mm path for transmission and fluorescence)
3. in case of μ SFM-20 you may consider the 950-12/1 1ml syringe kit. Variable mixing ratio is a built in feature of the system, ratio up to 1:10 are easy to obtain. But if you may be interested in ratio down to 1:100 it's wise to consider this smaller syringe
4. as special order Bio-Logic can supply (it's not so cheap) possibility to thermostat the two syringes at different temperature (cell will be thermostatted as one of the two syringes). Some people seems very interested in this opportunity even if two baths are necessary
5. keep in mind that if your system will include the SFM and the Neslab bath with the Jasco software your PC will need three RS-232C ports, since one is already allocated for the main unit
6. for melting experiments in the aromatic region you may well consider the addition of a 10mm path cell for the SFM (054-60 TC-100/10F) , you'll save sample and dead time is also better
7. very shortly Bio-Logic will release a new 32bit version of their BioKine software. This package will be able to read directly Jasco .jws files and give full kinetics data manipulation facilities (basically missing with the standard Jasco software). On the other hand Jasco J-800 driver progressed a lot and data acquisition together with SFM through Spectra Manager™ is now much more refined. Bio-Logic is also working on their own full software (alternative to Spectra Manager™) to control the J-800 and this may find application in a few specialistic cases.
8. What's said above will apply for SFM-J800 combination, but what about earlier Jasco models?
 - J-700: no problem hardware-wise since adapter for SFM is the same (only triggering cable connections are different). Simultaneous fluorescence detection will need simple hardware modifications (any service engineer can do), but if you want to collect more than two data at the same time (typical case CD, DC and fluorescence) you need Bio-Logic BioKine and their PC A/D board.
 - J-600: as J-700, but adapter must be modified (directly by Bio-Logic or in your workshop)
 - J-500: here modified adapter and BioKine with PC A/D board is the way to go