

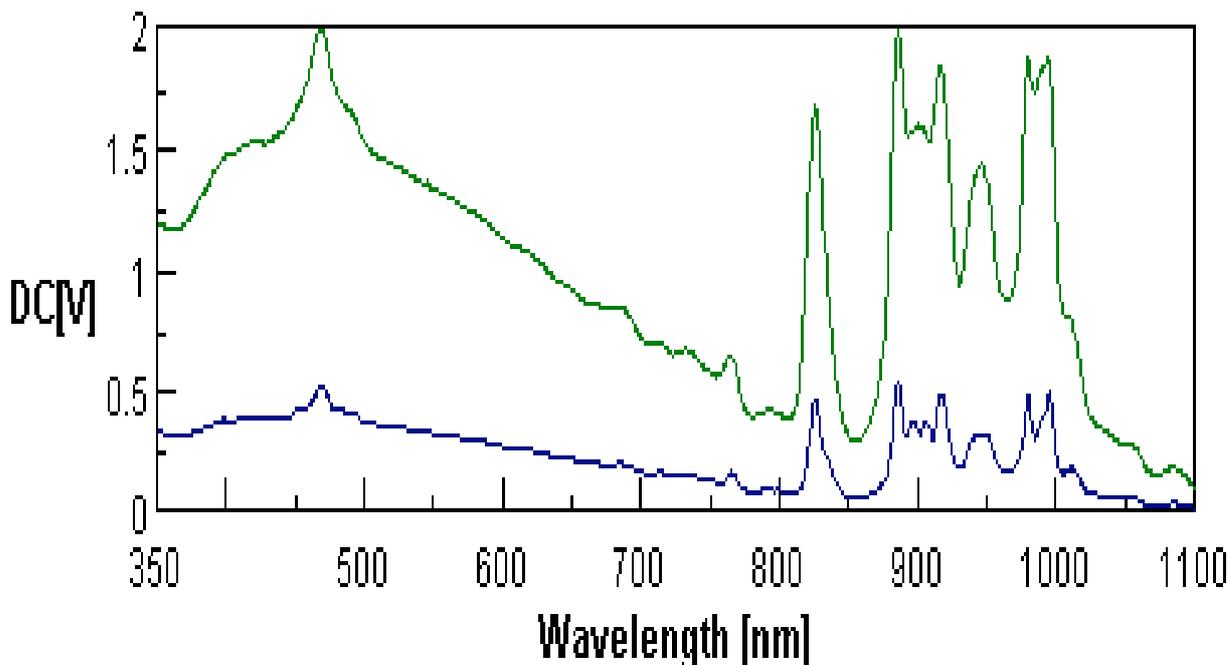
NEAR NIR-CD, SOME DATA

In a previous issue (T.R. 19, July 2000) we talked already about this argument. Since we had recently available one of these accessories, we took the opportunity to perform some tests.

Accessory is based on:

- an housing with a quartz f/2 25.4mm Ø focussing lens
 - a Si diode (Hamamatsu S2386-5K) with 2.4x2.4mm active area
 - a simple FET IC preamplifier with about 5K loading resistor
 - a connector for the standard Jasco signal cable
- Unit screws on in place of standard PM tube in few seconds.

Next picture shows the DC spectra (i.e. the unmodulated component) obtained with 10 and 5 nm SBW:

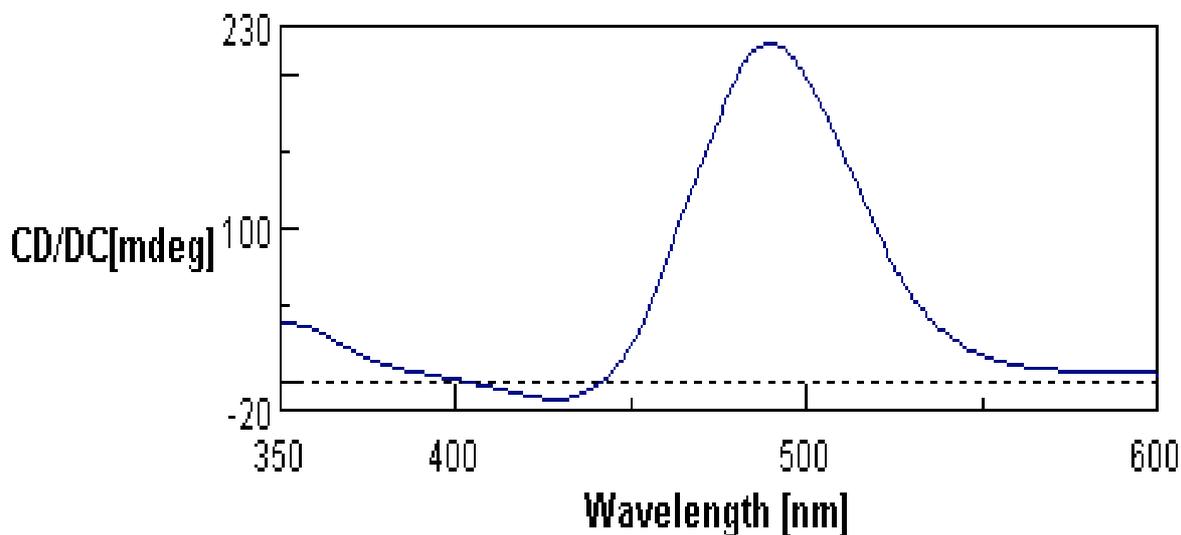


We are *compelled* to use large slits in order to smooth-out the sharp emission lines of the Xe source, particularly above 750nm.

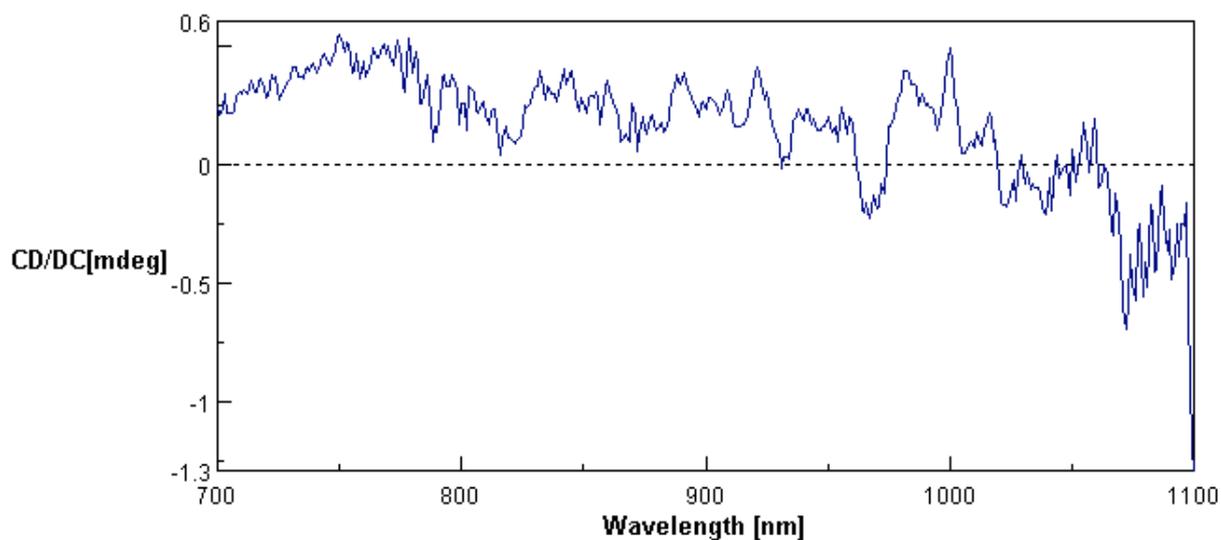
With the Si diode we cannot rely on the automatic AC/DC function available when using PM tubes (i.e. the dynode feedback); here we must collect AC and DC and ratio them (this facility is a standard feature on J-810).

Consequently only using large SBWs we can keep the dynamic range of the DC signal in an acceptable level to perform a proper ratio.

Next picture shows the spectra of a Co sample obtained with this accessory using the AC/DC collecting mode of the J-810 (with older instruments ratio should be performed manually or after separate runs). No baseline correction was applied.



Next picture shows the expanded part of the baseline corrected region above 700nm, where sample has no CD bands, but where emission lines of the Xe source are very strong (see first picture). Using same parameters (10nm SBW, 100nm/min scanning speed, 1sec response in this case) baseline shape is not bad.



As a conclusion we can say that the accessory is a reasonable compromise, when large bandpasses are acceptable for your samples.