ORD procedure

Installation of Prism:

- Open Nitrogen valve as usual
- Open lid and unscrew the carrousel panel by loosening the 2 screws in opposite corners
- Gently lift carrousel panel and put it to the side, away from the detector
- Unscrew light detector and slightly pull it back
- Take ORD prism and carefully mount it on the light detector
- Secure prism by tightening grub screw visible on top with Allen key (number 1.5)
- Put carrousel back in place and secure screws
- Adjust position of light detector so lens of prism almost touches carrousel
- Secure light detector in place checking alignment
- Switch on the system as usual (water bath, Peltier temperature controller, Chirascan system)
- Switch lamp on (provided that more than 20 min have passed since you turned on the Nitrogen valve)
- Start the software

Zero Setting:

- Select “Optical Rotation” in drop down list on Signal window
- Put the cuvette containing the intended background solvent (water) in carrousel
- By clicking on “Live Signal” small blue window/button, check that the signal is actually in the frame, if the signal isn’t in the frame, see below*
- Select “Kinetics” in Sequencer window
- Select the wavelength you want (usually 589.4 nm)
- Open chamber lid and put a piece of card in the sensor
- Press “Acquire”, and using the “fine adjuster” bring the live signal to 0 or as close as possible
- Close the lid and check that the signal is stable

Calibrating:

- Fill a cuvette with a solution of sucrose (supplied by Dr Pantos’s group – in Dr Carbery’s group fridge) (a 100 mg/ml solution in a 10 mm pathlength cuvette will give an optical rotation of 663 mdeg)
- Select “Kinetics” in Sequencer window or make no changes if already in that mode
- Open the chamber lid and put a piece of card in the sensor
- Press “Acquire”, and using the “fine adjuster” bring the live signal to 663 mdeg or as close as possible
- The difference you get may impact your results, so keep it in mind
- When satisfied that signal is stable, close lid and wait for stabilization again.
- Repeat procedure if needed
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Now the instrument is ready to measure ORD spectra.

*If Live Signal not in the window:

- Loosen coarse rotation locking screw
- Rotate the analyser housing (gradated ring) of the prism until the signal is visible in live window
- Tighten the coarse screw
- Make fine adjustments as explained above

Removal of Prism:

- Stop all experiments
- Open lid and unscrew the carrousel panel by loosening the 2 screws in opposite corners
- Gently lift carrousel panel and put it to the side, away from the detector
- Loosen detector
- Unsecure prism by loosening grub screw visible on top with Allen key (number 1.5)
- Gently take prism off
- Put carrousel back in place and secure screws
- Adjust position of light detector so its end almost touches carrousel
- Secure light detector in place checking alignment
- Check that the detector's end doesn't touch the carrousel by selecting each position of the Peltier controller box. If it does, then readjust it so that doesn't happen.
- Close lid

Follow Chirascan switching off procedure

FPC 02/16