Use of Renishaw inVia Raman spectrometer in lab F19 – a short guide

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The following notes are just reminders. A training session is required to use the system without supervision. Some measurements might require different procedures. Please contact Dr Chris Howard (c.howard@ucl.ac.uk) or Szymon Bartuś (s.bartus.16@ucl.ac.uk) in case of questions.

Turning on the system

- write your name and details in the spectrometer logbook
- turn on the equipment first, then the software – otherwise an error message will show (saying that the software can't detect the spectrometer)
- equipment to turn on (in any order): spectrometer, stage controller, laser(s), computer
- spectrometer software: WiRE 3.4
- the lasers will produce a stable beam only after some time from turning them on (as they will heat up) – for the 785 laser this is 30 min, while for the 488/514 laser this is 5 min. Hence, for very important or accurate measurements it is better to wait and then calibrate and start recording spectra.
- however, if you are not going to use a laser for a long time, turn it on only when you need it (especially the 488/514 argon laser, which has a short service life)
- calibrate the spectrometer using the autocalibration function at the beginning of each session and after changing configuration (laser/lenses/grating)

Sample handling

- a risk assessment (RA) must be filed and approved on RiskNET for handing of all harmful samples (the RA can be for the whole experiment, not just for handing near the spectrometer)
- harmful samples should ideally be sealed for the measurements and must be sealed for transport to/out of the lab and for storage
- if handling a harmful powder sample is unavoidable, do it on the sample prep table on the left of spectrometer, after measurements put the powder sample back in a vial or other sealed container (and use any PPE required)
- clean up any powder spills immediately – you can use tissues (with water or IPA if needed) – dispose them to the yellow bin
- you should especially avoid spills in the microscope enclosure (most people use it without gloves)
- if the sample requires handling in gloves, take them off before touching anything else, especially the computer keyboard and mouse; dispose all gloves to the yellow bins (the cleaners don't like lab gloves in the general waste, even if they are clean)
- sample storage: preferably in other labs, but for short term storage you can use the shelf (as long as the sample is safe to store there, sealed and labelled with contents and owner's name)

Turning off and leaving the system

- turn off the software, then the equipment (laser(s), spectrometer, stage)
- the correct way to turn off the 488/514 laser is to turn the key on the remote to 0, wait for the cooling fan to stop and then turn the power switch off (on the laser housing) – this is to cool down the laser
- turn off the computer
- logbook entry – make sure it has all details and you listed any problems encountered
- in case of problems or malfunctions, email Dr Chris Howard (c.howard@ucl.ac.uk) or Szymon Bartuś (s.bartus.16@ucl.ac.uk)
- collect your samples from the table, clean any spills or other dirt