

General Information

Equipment:

- **11 CW-Diode Lasers**

Laser Wavelength (nm)	Manufacturer	Max. Operating Power (mW)
355	Cobolt	25
405	Innovative Photonics Solutions	50
457	Cobolt	50
491	Cobolt	50
515	Cobolt	100
532	Cobolt	150
561	Cobolt	150
594	Cobolt	100
660	Cobolt	100
785	Innovative Photonics Solutions	100
830	Innovative Photonics Solutions	100

- **Princeton Instruments TriVista Triple Spectrometer (allows additive or subtractive mode measurements to be performed)**
 - **Optional single-monochromator use is possible (see Additional Equipment for more information)**
- **Pixis 400-Princeton Instruments CCD detector**
- **Oxford OptistatCF2 Dynamic (flow-through) cryostat to run samples with LN₂ or LHe**
 - **Users are responsible for providing their own cryogenics or making the proper arrangements in advanced.**

ADDITIONAL EQUIPMENT:

- **Hg-Ag lamp (for wavelength calibrations)**
- **Table is set up with both aluminum and silver mirrors for high efficiency reflection from NIR to UV**
- **Neutral density filters**
- **Power meter**
- **Nitrile gloves**
- **Cryogenic equipment & related PPE**

- **Eye protection**
 - **If handling chemicals, users need to bring their own lab coats & safety glasses (and other PPE if necessary)**
 - **If working with UV lasers, users are reminded to bring their own UVEX safety lab glasses if they have them, however, standard ND filter goggles will work as well**
- **Semrock Long-Pass Cut-off/Notch filters: (for single-monochromator use)**

<u>Model</u>	<u>Wavelength</u>	<u>Filter Type</u>
RazorEdge	355	LP-Edge
Stopline	405	Notch
RazorEdge	458	LP-Edge
BrightLine	496	LP-Edge
BrightLine	515	LP-Edge
RazorEdge	532	LP-Edge
StopLine	594	Notch
RazorEdge	664	LP-Edge
EdgeBasic	785	LP-Edge
EdgeBasic	830	LP-Edge

- **If we do not have a filter for the experiment or laser wavelength you need, you will need to provide one for the experiment.**

Samples

- **Room temperature set up has a variable sample holder to accommodate cuvettes and plate/surface samples**
 - **Users are expected to provide their own cuvettes/sample container**
 - **We do not have motorized stages, rotating sample holders or flow cells for sample movement**
 - **Other stages/holders may need to be provided/designed by user which can replace the standard sample holder**
- **Cryostat set-up requires specially-machined sample cells to run either frozen solutions or mulls. The cryostat sample cells are not designed to hold liquids (non-frozen solutions). Contact Neidig group for cell design or additional information**
- **No hazardous waste is accumulated in this facility - all users must promptly remove samples & waste at the end of the day**

- If planning on preparing samples in the instrument room, you will need lab coats, safety glasses, any solvents, pipettes & pipette bulbs, waste containers/beakers, etc. Please plan accordingly.
- Samples are *not* to be prepared on the table. If preparation is needed, the fume hood will be available and the sample can then be transferred to the table.

Data Report/Software

- S&I Triple Raman System software for spectrometer method development and set-up
- WinSpec is available for collecting data & minor data processing

Users will leave with ascii files of their data, additional software manipulation may be necessary.

Experiments

- All users must show evidence of completing the annual UR Laser Safety Training course (provided by EH&S) before being allowed to use the instrument. Additional hands-on instrument training will also be required.
- All users are expected to collect their own data, however minor-assistance is available from other researchers if their schedules permit.
- Experiments should be expected to take several hours and/or several repeated attempts - BUT DON'T GIVE UP! 😊
- For new users, bringing a literature article(s) that demonstrates similar experimental results/systems to what you are trying to measure can help to plan experiments.

Scheduling Time

- **All users must be trained by current students/PIs in charge of instrument before being allowed running on their own. Training/assistance may be necessary over several attempts at data collection, please plan accordingly & give us plenty of advanced warning.**
- **All requests for Raman time, if training/assistance is required, must be received a minimum of 1 week in advance**
- **All requests for cryostat use must be received a minimum of 1 week in advance**