**Princeton Instruments Acton LS 785 Raman System**

1. Plug-in and switch on the CCD camera. Connect the camera to the computer via USB port.
2. At the *Devices tab*, under *Available Devices*, drag the spectrometer, CCD Camera and light source to the *Experiment Devices* Area. At the *Experiment Devices Area*, link the CCD camera and the light source to the appropriate port of the spectrometer.
3. Let camera cool down to -70 deg C (locked). Current temperature is shown at the bottom left of the software

**Calibration**

1. Mount Ne/Ar lamp at the entrance port of the spectrometer. Connect lamp to the computer via USB port.
2. Set micrometer slit to ~ 5 microns
3. At the *Common Acquisition settings* tab, set exposure time to 100ms
4. At the *Sensor Readout Region* tab, choose *Full sensor*
5. At the *Trigger/Shutter tab*, choose *Always open*
6. At the *Spectrometer* tab, center the wavelength at the desired region. Can also change the units at this tab
7. Adjust the wavelength and focus micrometers to the appropriate settings
8. Click *Run* and optimize entrance slit width to get a better spectrum, then click *Stop*
9. At the Spectrometer tab, click *Display Reference Spectrum*
10. Click *Intellical* and choose the desired *Target Accuracy*
11. After calibration finished, click *Resume calibration* to get a better fit of the reference spectrum and the Data. If satisfied with the calibration, click *Use*

**Obtaining sample spectrum**

1. Mount the fiber holder to the entrance port of the spectrometer
2. Set-up the sample, laser and signal collection
3. Adjust the entrance slit width
4. At the *Trigger/Shutter* tab, change the shutter mode to *Normal*
5. At the *Sensor Readout Region Tab*, *Select Regions of Interest* then select *Edit ROI*
6. Click *Acquire Reference image*. Select the region of the image by adjusting the size of the green boundary
7. Change the value of the *Bin H* to the value of the Height of the ROI selected
8. Click *Close*
9. At the *Save Data File* tab, specify the destination folder and the file name. Other naming options are also shown
10. At the *Trigger/Shutter* tab, change the shutter mode to *Always open*
11. At the *Common Acquisition Settings Tab*, enter the desired exposure time, number of frames and exposures per frame
12. Click *Run* to obtain a spectrum. This will run in continuous mode and optimization of the system can be done at this point to get a better spectrum. Optimization can be done by adjusting the entrance slit width, focus micrometer, wavelength micrometer or the laser probe.
13. Click *Acquire*. After acquisition, the file automatically saves to the specified destination folder.

**Closing the system**

1. Close the software.
2. Unplug the camera