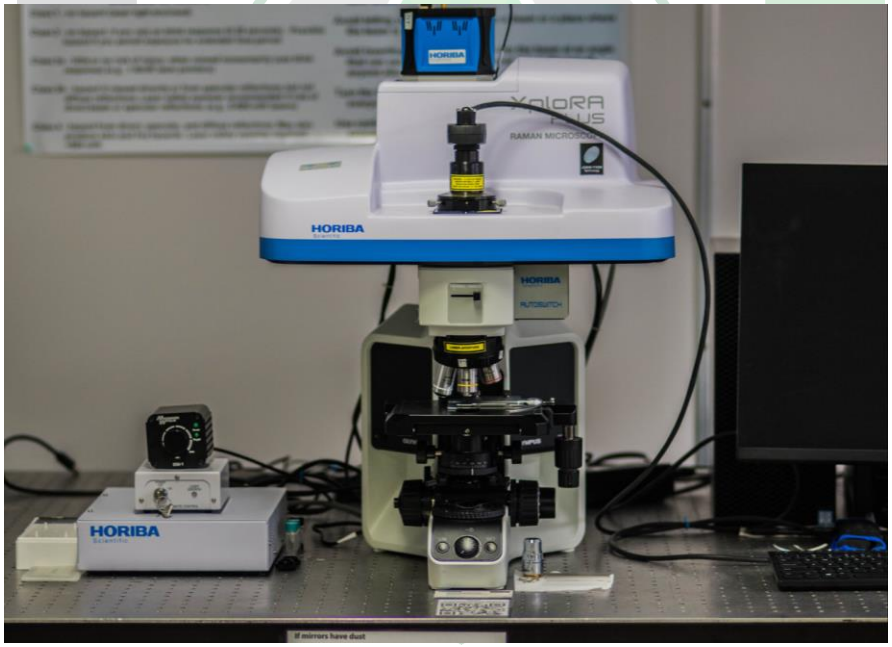
Acquiring Raman Spectra with Horiba XploRA Spectrometer



Created by: Annette Colón, Edwin Caballero

Manager: Samuel Hernández-Rivera

SOP-01	Annette Colón Edwin Caballero		University of Puerto Rico at Mayagüez
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Revised:			Approved by:

RAMAN SPECTROMETER SETUP

	1. Press the power button to turn on the XploRA spectrometer.
	2. Turn on the Laser remote control.
	3. Turn on the white light power.
	4. Ensure that all parts are properly connected and arranged as shown in the provided image.
	5. Open the LabSpec6 program.
	6. Navigate to the main interface of the LabSpec6 program.
	7. Calibrate the spectrometer if necessary (AutoCal button is red = calibrate).
	8. Adjust the laser power and wavelength settings as needed for the specific experiment.
	9. Perform the Raman spectroscopy measurements on the sample(s) of interest.
	10. Save and store the acquired data in the appropriate file format and location.
	11. Turn off the laser remote control.
	12. Turn off the white light power.
	13. Close the LabSpec6 program.
	14. Turn off the XploRA spectrometer by pressing its power (I/O) button.

CALIBRATING SPECTROMETER

	1. Obtain the silicon standard sample.
	2. Place the standard below the 10X optical objective.
	3. Change the mode from Raman to Viewing.
	4. Name the sample in the Acquisition tab > Acquisition parameters > Title box.
	5. Start video acquisition to see the standard with the objective lens.
	6. Place the border between the standard sample and the sample slide on the white light source.
	7. Focus the standard by changing its height.
	8. Move the substrate and center the pointer on a dark spot.
	9. Change from 10X to an objective of 100X.
	10. Focus the 100X objective by changing its height.
	11. Press the AutoCal button.
	12. Select All lasers and gratings.
	13. Select that the 100X objective and reference are placed.
	14. Wait for AutoCal to finish. AutoCal with change from RED to GREEN when it is done.
	15. Check if the spectrometer has been calibrated. If the AutoCal button appears red, repeat the calibration process.

ACQUIRING SAMPLE SPECTRUM

	1. Place 10X objective on the revolver of the Raman spectrometer.
	2. Place sample below the optical lens.
	3. Change mode from Raman to Viewing.
	4. Change name of the sample in the Acquisition tab > Acquisition parameters > Title box.
	5. Start video acquisition to see the sample with the objective lens.
	6. Place the border between the sample and the sample slide on the white light source.
	7. Focus the sample by changing the height.
	8. Move substrate and center pointer on the sample.
	9. Stop video acquisition by clicking on the "STOP ALL" icon.
	10. Save the acquired image by left clicking the floppy disk icon.
	11. Find the desired place to save the image.
	12. Save image in .jpg format.
	13. Click on "Spectra" tab.
	14. Change the name of the sample in the Acquisition tab > Acquisition parameters > Title box.
	15. Change the acquisition parameters for the spectrum to 1 second of excitation time (ET) and 3 accumulations in the Acquisition tab > Acquisition parameters > Title box.
	16. Acquire Raman spectrum by clicking on the "Start spectrum acquisition".
	17. Calculate the amount of exposure time needed for the highest peak of the spectrum (e.g., 600 counts/s) to reach the maximum intensity counts without saturation (60,000 (count)).
	18. Change the acquisition parameters for the spectrum to 100 seconds of excitation time (ET) and 3 accumulations in the Acquisition tab > Acquisition parameters > Title box.
	19. Acquire Raman spectrum by clicking on the "Start spectrum acquisition".
	20. Save sample by clicking on the floppy disk icon.
	21. Save spectrum in LabSpec 6 (.l6s), GRAMS (.spc), and text (.txt) file individually.
	22. Delete spectrum by clicking on the trash can icon.

TURNING OFF SPECTROMETER

	1. Open LabSpec 6 program.
	2. Change the acquisition parameters for the spectrum to 1 second of excitation time (ET) and 3 accumulations in the Acquisition tab > Acquisition parameters > Title box.
	3. Acquire Raman spectrum by clicking on the “Start spectrum acquisition”.
	4. Close the LabSpec 6 program.
	5. Turn off the white light power.
	6. Turn off Laser remote control.
	7. Turn off XploRA spectrometer by pressing its power (I/O) button.
	8. Leave the spectrometer on.