RIT AA-7000: School Of Chemistry and Material Science Rochester Institute of Technology		Doc. No:	UV-19
Standard Operating Procedure		Rev No:	4.00
		Issue date:	9-23-2020
Title: **Shimadzu UV-2600**		Last Reviewed	4-28-2020
		Page:	1 of 3
		By:	Chris Hogan

I. Purpose

To promote the effective use of the Shimadzu UV-Vis 2600 spectrometer in order to obtain an absorbance spectrum of a sample.

II. SCOPE

This SOP is intended for in-group use by trained and certified personnel in the Chemistry Department.

III. RESPONSIBILITIES

The responsibility for this instrument lies with Tom Allston
Room: 08-A157
Voice: 585.475.6034
E-mail: tdasch@rit.edu
School of Chemistry and Materials Science
85 Lomb Memorial Drive
Rochester Institute of Technology, Rochester, NY 14623-5603

IV. Procedure

A. **DEFINITIONS**
   1. Blank solution: Solution having only reagents, used for eliminating absorption by reagents.
   2. STD: Standard solutions
B. **Turning on the UV**
   1. Turn on the UV-Vis 2600 by flipping the small switch on the right side of the instrument.
   2. Turn on the computer, Double click on the "LabSolutions UV-Vis" shortcut on the desktop.
   3. A window should come up. Click the purple "Spectrum" button that is listed under analysis.
   4. In the New window click the "Connect" button to connect the computer to the instrument.
   5. The Instrument should then run through a list of checks to connect to the computer. Once all these checks are completed click the "Ok" button.
C. **Software Operation.**
   1. Once the Instrument is connected to the computer an experiment file should be started if a file does not come up click the "Inst. Control" button to start an experiment file.
   2. To set the parameters of the experiment click the edit button and enter the wavelength, data interval, and scan speed. To input the Wavelength Range (nm) you wish to scan between, enter the highest value in "Start wavelength" and the lower value in "End wavelength
   3. Under the "Advanced" button, the recommended "Slit Width" should be set to 1.0nm, "Value type/Measuring type" should be set to Absorbance. Once parameters have been set, click "Close

RIT	AA-7000: School Of Chemistry and Material Science Rochester Institute of Technology	Doc. No:	UV-19
	Standard Operating Procedure	Rev No:	4.00
		Issue date:	9-23-2020
Title: Shimadzu UV-2600		Last Reviewed	4-28-2020
		Page:	2 of 3
		By:	Chris Hogan

after overwriting parameter file" at the bottom of the window. Parameters can also be set from a preexisting file which can be created by setting your parameters and selecting "Close after creating new parameter file". After selecting "Close after creating new parameter file" select the destination to save your file. To open one of these files, Click the "Read" button and find your parameter file where you saved it.

D. Data Collection

1. Zero the instrument by clicking the Auto Zero button underneath the green "Start" button
2. Create a reference solution containing everything in your sample besides the analyte (or as best that you can). This will be used to baseline the instrument.
   NOTE: The reference solution is placed in the rear-most slot. All solutions should be placed in cuvettes (cuvettes have two clear and two opaque sides), with the clear sides of the cuvettes facing to the left and right. With the reference in the sample holder, close the door and click the option for "Baseline" under the green "Start" button
3. Once the baseline scan is done you will hear the instrument beep. Open the lid and place in your first sample to be analyzed, then again close the lid. To begin analysis, click the green "Start" at the top of the window.
4. Once the baseline scan is done you will hear the instrument beep. Open the lid and place in your first sample to be analyzed, then again close the lid. To begin analysis, click the green "Start" at the top of the window.
5. Now your raw data will be displayed directly below the graph of the spectrum of the window. As long as you do not change any parameters or use a different solvent for your sample you can use the background you have already generated and run more samples by putting in your new sample and hitting the Start button. This will place all of your raw data onto one graph. Remember to save each spectrum as with its own file name and comment.
6. Once the data has been collected, go to "File" along the top toolbar and select the option for "Save As". In the dropdown menu select either "Data" or "Data table". Selecting "Data" will give you a format that opens in the LabSolutions program. Data Table will give you a text file that contains all of your x and y values from your spectrum.
   NOTE: Be sure to save the individual spectra immediately after the run has completed, this will ensure data is saved properly
7. Be sure to also save or move your data to another device that is accessible to you, such as a flash drive or upload it to a cloud storage system such as google drive.

V. Shut Down Procedure

A. remove your sample and blank solution from the UV-Vis
B. disconnect the instrument from the computer using the "disconnect" button at the top right corner of the window.
C. Once the instrument is disconnected exit out of the program and turn off the UV-Vis

RIT	AA-7000: School Of Chemistry and Material Science Rochester Institute of Technology	Doc. No:	UV-19
	Standard Operating Procedure	Rev No:	4.00
		Issue date:	9-23-2020
Title: Shimadzu UV-2600		Last Reviewed	4-28-2020
		Page:	3 of 3
		By:	Chris Hogan

Revision History

Revision Number	Date	Reason	Author
1	9/23/2020	Written Procedure	Chris Hogan
2	4/28/2020	Changed Format	Tom Allston