

## SHIMADZU UV-1601 SPECTROPHOTOMETER STANDARD OPERATING PROCEDURE

1. Turn on the power of UV-Vis spectrophotometer.
2. Wait 5-7 minutes for heating the light source.
3. Click on the "Spectrum" icon.
4. From the **Edit** drop-down menu, select **Method**.
  - a. You may use the default parameters or
  - b. Adjust **Wavelength Range** before starting the test. Wavelength range is between 200-1100 nm.
  - c. **Recording Range** can be changed at any time. It is recommended to set **Scan Speed** to fast and **Sample Interval** to Auto.
  - d. You can also choose whether you see Absorbance or % Transmission during the run.
5. Click **OK**.
6. Click on **Auto Zero** and wait until it reads 0.000A (or 100% Transmission) in the photometer status window on the bottom right corner.
7. Insert any baseline sample cells and solvent as necessary, click on Baseline once and wait until the equipment completes the baseline correction.

Note: The spectrophotometer has two holders. The one on the inner side is the reference holder and the other one is the sample holder. In order to obtain useful data for the desired sample, all background should be subtracted. If using a liquid sample with the PS or PMMA sample cells, the baseline of the sample cell and solvent should be taken (i.e. fill two sample cells with the same solvent and insert the cells into reference and sample holders) before putting the solute in the solvent.
8. Prepare dye solutions with about 1 drop of dye in 50 mL of distilled water for blue, red, green and yellow colors. Then empty the sample cell with solvent for the baseline run and fill it with the solution.
9. Pour/insert the sample into sample holder. Close the cover.
10. Click **Start**.
11. After each run, either save or discard the data.

Note: Clicking Save will only save the file name. To save the data, go to file menu and select “**Save**”.

*Exporting data in the ASCII format*

12. From the file menu, select **Data Translation**.

13. Select **ASCII Export**.

14. Find the file for export. Then click **OK**.

15. Browse to adequate file and folder on PC.

16. Finally, transfer the file to a CD\flash drive.

Note: the ASCII format only includes numerical data for the X and Y axis of the Transmission or Absorption vs Wavelength plot.