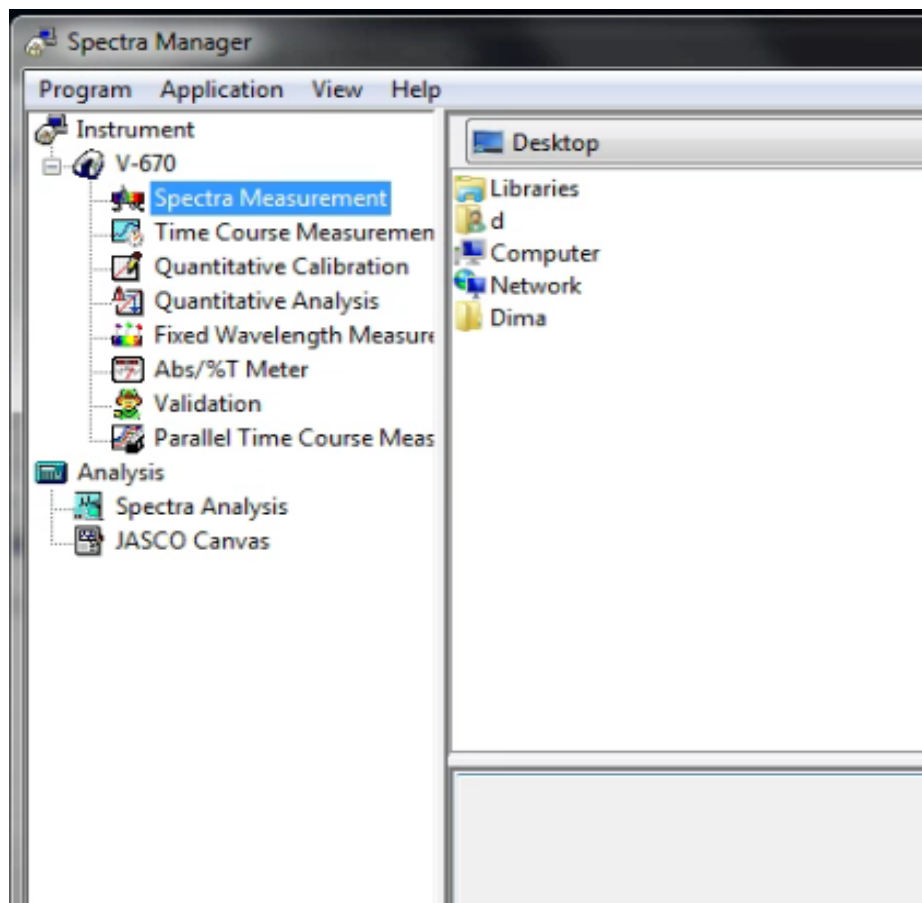# Jasco V-670 absorption spectrometer

Operation instructions

1. Turn ON the power switch on the right side of the spectrophotometer. It takes about 5 minutes for the light source to stabilize. Wait until the light source has stabilized before starting measurement.

2. Double click on Spectra Manager icon on a desktop:

Measurement programms

a. Spectra measurement

This program obtains UV/VIS absorption spectra of a sample. The spectrum acquired using this program is automatically transferred to the [Spectra Analysis] program for analysis.

b. Quantitative measurement

This program creates a calibration curve by measuring a standard sample of known concentration according to the common quantitative analysis method and measures an unknown sample to determine its concentration.

c. Time Course Measurement

This program is used to measure changes to a sample over time at a fixed wavelength. The spectrum acquired is transferred by this program to the [Spectra Analysis] program for analysis.

d. Fixed Wavelength Measurement

This program measures the absorbance or transmittance of a sample at a fixed wavelength. Up to eight wavelengths can be set and measured.

e. Abs/%T Meter

The Abs/%T program is used to monitor photometric values. It is useful when a simple photometric value readout is required.

f. Validation

The validation program is used to check the basic performance of the spectrophotometer. It conducts tests based on various official methods.

Analysis program

a. Spectra Analysis

This program saves, prints, and processes (difference spectra, peak picking, smoothing, derivative, vertical axis conversion, etc.) spectrum data or time course data.

b. JASCO Canvas

Use this program to layout and print spectra, measurement parameters, comments, etc. It can also be used to create drawings and enter characters.

3. Double click on Spectra Measurement.

4. Setting Measurement Parameters

a. Select [Parameters] from the menu [Measure] (or click the button):

b. The [Parameters] dialog will be displayed. The [General] tab is open by default in the Parameters dialog.

c. The measurement conditions are set in the [General] tab. The setting conditions for [Basic Mode] are used as an example here. To toggle between [Basic Mode] and [Advanced Mode], click the <Basic Mode > or <Advanced Mode > button.

d. **It is suggested to have NIR bandwidth 4 times greater than UV-Vis bandwidth for better data appearances.**

e. In [Control] tab the lamp and/or grating point in spectrum can be change. The margins of the changes will be seen when one put the mouse cursor on it. One can change the point of the change if the absorption lines coincide with the currently set point.

f. [Information] tab. Enter the [Sample Name], [Operator], [Division], and [Comment] as desired. The information entered here is saved as comment information together with the spectral data when the spectrum is saved. To display the [Information] dialog prior to taking a measurement, check the [Display the Comment] dialog box before taking measurement] box.

g. [Data] tab. Set the [Auto Save], [Send to Analysis] and [Print] options for the spectrum obtained.

5. Baseline measurement.

a. The baseline defines the absorbance 0 (or transmittance 100%) and is subtracted from the measurement result to give a correct sample spectrum (or is divided in the case of transmittance). The baseline characteristics are inherent to an instrument, but in an actual measurement they differ slightly depending on the measurement parameters, such as response, scanning speed and other settings. It is recommended to measure the baseline under the same conditions as the actual spectrum measurement conditions in order to obtain an accurate spectrum.

b. To perform baseline measurement, click [Measure] - [Baseline Measurement] (or click the button):

c. Starts a baseline measurement. Click the [Measure] button to start a measurement.

6. Sample measurement.

a. Select the [Measure] - [Sample] menu (or click the button)

b. Sample measurement starts and the progress of the measurement will be displayed.

c. After the measurement has been finished the data is sent to Spectra Analysis if this option has been checked in [Data] tab. Otherwise go to File-Send to Spectra Analysis option menu.

7. Saving the data.

a. The data is saved and analyzied in Spectra Analysis.
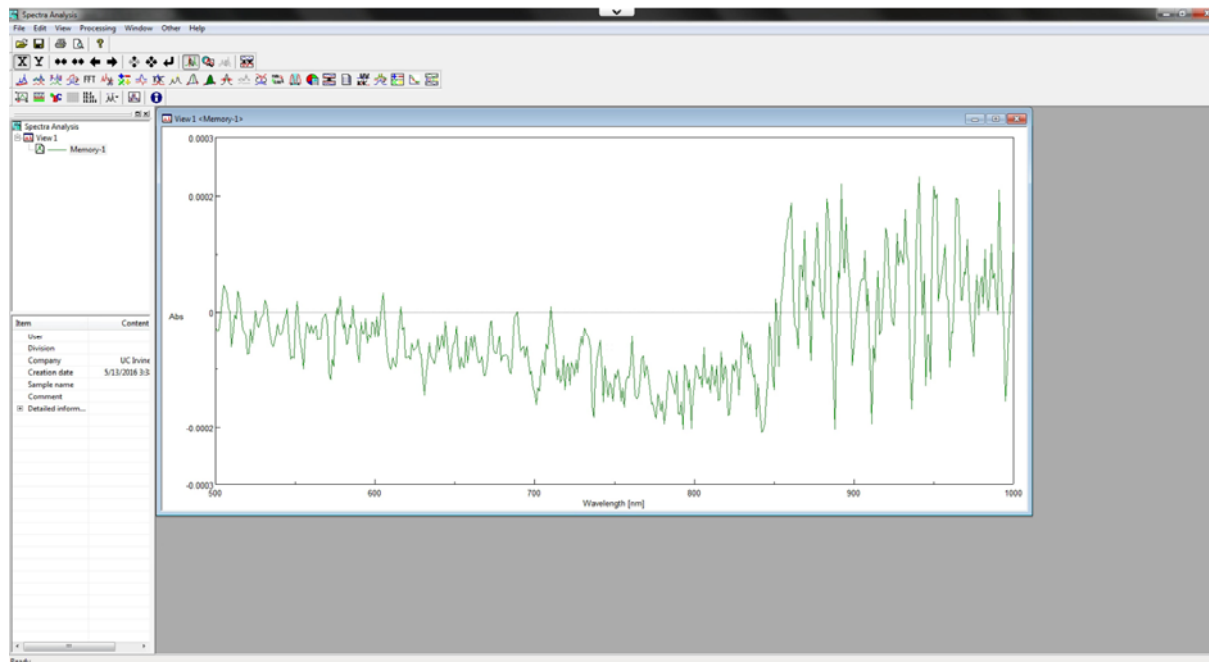
b. To save the data, go to File-Save As. Always save the data in internal program format. Also, save the data in ASCII code (.txt, .csv or .dat) format through File-Export.

8. Shutting down procedure.

a. Close Spectra Analysis.

b. Close Spectra Measurement or another measurement program that has been used.

c. Close Spectra Manager. The following window will appear and drivers will be terminated.
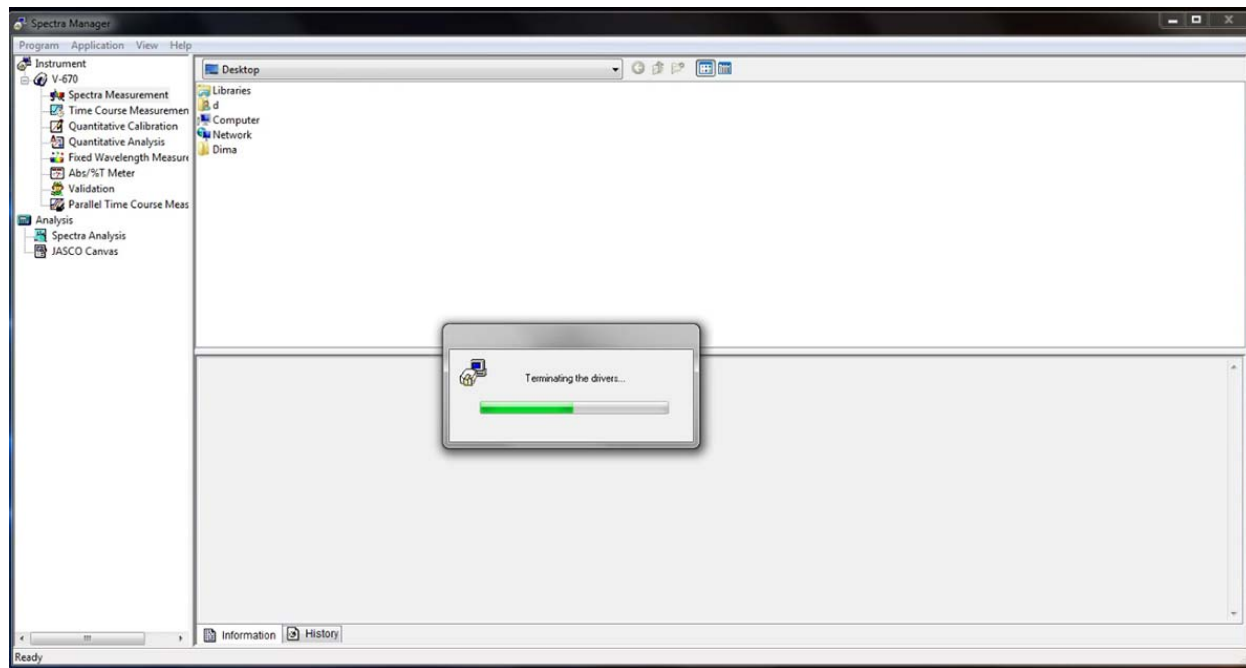
d. Only after the drivers have been terminated switch off the instrument.