

## Nexus 470 FTIR User Instructions

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If you have any problems with the instrument or would like training, please contact Celeste Morin (x3756 / [cmorin@bowdoin.edu](mailto:cmorin@bowdoin.edu) / Druckenmiller 243)

### Starting OMNIC Software:

1. Turn on the PC
2. Log in with your Bowdoin user name and password
3. Double click the **OMNIC** icon to open the software

### Selecting and Setting Up an Experiment:

1. Click the arrow on the **Experiment drop-down box**, below the OMNIC menu bar, and click on the type of experiment you would like to perform. **“Default – Transmission” is suitable for most applications.** A number of default experiments are included, as well as experiments that can be created and saved by users.
2. If parameters need to be review or edited after selecting the experiment type, click on **Experiment Setup** in the **Collect menu** to make changes. Click the **Collect tab** to display the parameters. Make any changes, if necessary, to the No. of scans, Resolution, Final format, Correction, Experiment description, File Handling, Background Handling, and Experiment title. When finished, click **Save** to update current experiment, or **Save As** if saving as a new experiment.
3. Click on the Bench tab to view the spectrometer parameters. Check to be sure that the following parameters are displayed: **Detector:** DTGS KBr, **Beamsplitter:** KBr, **Source:** IR. Click **OK** to exit the Experiment Setup window.

### Running an Experiment:

1. In the toolbar, click the **Collect Sample** button.
2. Enter the spectrum title in the window that appears or leave the default, click **OK**.
3. The **Background confirmation window** will appear. Make sure there is no sample in the sample compartment and click **OK** to start collecting the background spectrum. A background spectrum will appear in the window once it has finished scanning. The compartment is being purged with air so the CO<sub>2</sub> peak should be non-existent.

4. After the background spectrum appears in the window, the **Collect Sample confirmation** window will appear asking you to prepare to collect the sample spectrum. Slide open the cover and install your sample in the sample holder by sliding the sample into one pair of slots. Close the cover. **Wait 1 minute before clicking OK** to allow the purge air to fill the compartment. Click **OK** to start collecting the sample spectrum.
5. The sample spectrum will appear in the window as data is being collected and updates as scans continue. The number of scans collected will appear under the spectrum, as well as the **Collect Status indicator**. A green arrow in the Collect Status indicator means that the collection was successful and passed all selected spectral quality checks. A yellow circle indicates that the spectrum has failed a spectral quality check, but will not stop the collection. A red X means there is a problem with the quality of the spectrum and collection is stopped.
6. Once the data collection has stopped, a window appears that allows you to **View Collect Status** or **Yes or No** to add spectrum to the window. If a yellow circle or red X appeared during collection, click View collect Status and make the corrections necessary and then collect the spectrum again. If collection was successful, click **Yes** to add to the window. Choosing **No** ends the procedure without saving the spectrum.

#### **Saving the Spectrum:**

1. To save a spectrum, click on the spectrum, in the window, you would like to save, and choose **Save As** from the **File menu**. The **Save As dialog box** will appear.
2. Type the name you would like for the file and select the folder you want to save it to. Click **OK**.

#### **Converting the Spectrum's Units:**

1. The sample collected is in absorbance units. If you would like to convert to % transmittance, select the spectrum, in the window, that you would like to convert. Click on the **% Transmittance button** in the toolbar. The spectrum is then converted.
2. Click the **Absorbance button** in the toolbar to return the spectrum back to absorbance units.

#### **Labeling a Peak with the Annotation Tool:**

1. Six tools are available for annotating the spectrum in the window:
  - a. Select a spectrum
  - b. Select a spectral region
  - c. Change how spectra are displayed in a spectral window
  - d. Find the peak height
  - e. Find the peak area

- f. Label a peak
2. Select one of the tools by clicking on the tool of choice. A tool remains selected until another tool is selected and only one tool can be used at one time. When the pointer is moved in the spectral window, the tool icon will appear with a pointer arrow. Press **Enter** to accept the label and it will appear on the spectrum.
3. When trying to accurately locate the top of a peak, hold down the **Shift key** when you click near the peak, the label will appear, and then click **Enter** to accept the label.
4. To modify a label, click the label and then type a new label and press **Enter**. To delete an existing label, click the label and then press the **Delete key**.

### **Creating and Printing a Report:**

1. Select **Template** from the **Report menu**. Select a **report template** from the dialogue box.
2. Go to the **Report directory** (within the OMNIC directory) and select the report template file named **QCCOMP.RPT**. When you select a report template file, a preview image of the template appears at the right. You can review what the report will look like and choose the one that works best. Click **Layout option** to view the image as a graphical layout and it will show how the printed report will look on paper. Click **Description option** to view the image with the labeled items.
3. Choose **Select** to make the example template the current template for printing reports. When you print the report, OMNIC will automatically fill in the items in the template with the appropriate information and images. You can create your own templates by using the **Create button**, or you can modify a current template. Save the template with a new name when creating your own or making changes to a current one.
4. Select **Preview/Print Report** from the **Report menu**. A preview of the report will appear.
5. Select **Print** to print the report and choose **OK**. The default printer is **\\bradbury\carbon**.