

**APPROVED**

*By Egil Nodland at 2:02 pm, Mar 07, 2017*

User manual 460 FT-IR

### Pre-start up

Contact the infrared Doctor of Science, in room 2G6e. He knows more than you do.

### Startup

Turn vintage computer on

Install the correct sampling accessory. Durasampler for ATR, or the COLLECTOR for DRIFT

Open program OMNIC

Select appropriate experiment file from drop-down menu (ATR / DRIFT...)

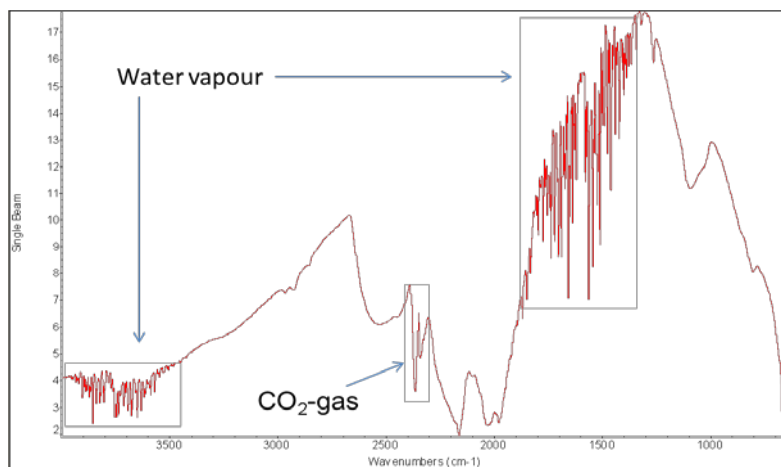
### Background spectrum file for DRIFT

Select the appropriate spectrum of KBr of the same quality used for your sample preparation.

### Collecting background spectrum ATR

- Make sure the crystal is clean before using the instrument. Clean the crystal using alcohol on "Kim wipes" if unsure.
- Clean by dripping alcohol on lense/tissue paper and wipe the crystal once or twice. Then wipe with dry lense paper. *Do not drip solvent directly on the crystal and do not use "normal towel paper".*
- Use **keystroke "Ctrl + B"** or press the button "Col Bkg" in the top left corner. See figure 1 for example of a background spectrum.
- Press "OK" and then "Start Collection" in the top right corner.
- Choose "No" when the collection is finished.
- It is not necessary to collect a new background before every sample.
- Do not use the piston when collecting the background.

**Figure 1:** Example of a background spectrum.



### Collecting sample spectrum

- Use **keystroke "Ctrl + S"** or press "Col Smp" in the top left corner

- Write a suitable sample name and press "OK" two times
- Check that the spectrum on screen only shows noise. See figure 2 for an example of a spectrum showing only noise.
- If there are downward peaks, then the crystal was not properly cleaned after the collection of the previous sample. Clean using alcohol.
- If there are upward peaks (intensity > 100 %) then the crystal was not washed properly before collection of the background spectrum. Collect a new background before continuing.
- Ignore the peak of CO<sub>2</sub>-gas from the air in the 2400-2200 cm<sup>-1</sup> region.

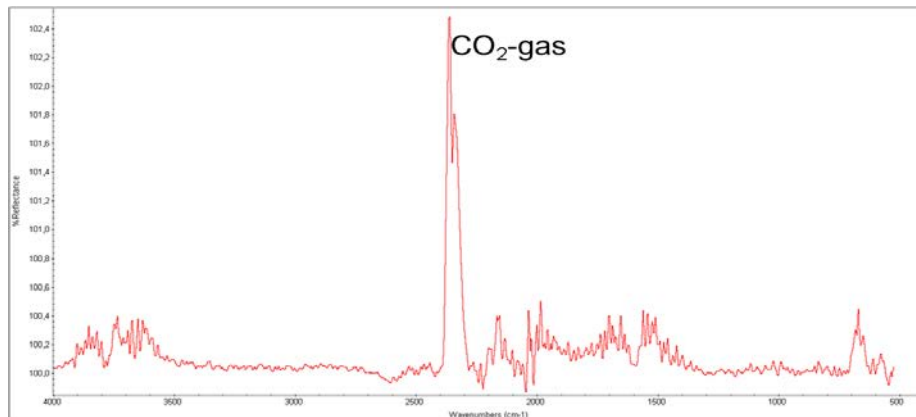
#### Liquid samples

- Apply a small drop on the crystal. Do not use the piston.

#### Solid samples

- Put a small amount of solid next to the crystal. Slide it onto the crystal using a spatula. Do not scratch the crystal.
- Apply just enough pressure with the piston until you get a good spectrum on the screen. 65% reflectance of the most intense peak is OK. This is done by turning one of the "wheels" towards you.
- Press "Start Collection" in the top right corner to start.
- Select "Yes" and then "OK" when the collection is finished.

**Figure 2:** Example of spectrum of clean and dry diamond-crystal



#### Saving spectra

Press "Save As".

Open your folder under C:\spectra and give a file name and select "Save".

#### Cleaning crystal

- Clean by dripping alcohol on lense/tissue paper and wipe the crystal once or twice. Then wipe with dry lense paper. Also, clean the piston tip if it has been used. *Do not drip solvent directly on the crystal and do not use "normal towel paper".*
- Do NOT apply solvent directly to the crystal

- The first part of the collection of sample can be started again to make sure the plate is properly cleaned.

Suitable alcohols are methanol, ethanol and iso-propanol. If compatible with the sample, acetonitrile or water can be used as cleaning agents.

### **File transfer from FTIR-460 to home directory server!**

**Start** the program **SSH ftp** (secure file transfer client)

Press «**quick connect**».

**Employees:** Enter the following:

**Host name:** login.uib.no

**User name:** your own

Press **connect** and type your own password when asked for.

The remote folder will be set to your UNIX home directory.

**Transfer** all your spectra and press the **disconnect icon**. At your office and open the file explorer.

Your UNIX home directory is labeled station W:

**Map station W:** as \\takvam.uib.no\user name

If station W: is missing, call 84700 (Brita) and you will get remote assistance.

### **File transfer for students.**

**Host name** = sync.uib.no

**User name:** your own

Press **connect** and type your own password when asked for.

Spectra will be transferred directly to your home directory.

Your home directory is labeled station Z:

**Map station Z:** as \\ustaset.uib.no\user name or \\hallingskeid.uib.no\user name

### **Shut down**

Close program OMNIC

Turn vintage confuser off.