User manual 380 FT-IR

Startup

Log on:

Username: install

Password: ftir380

Log on to: This computer

Open OMNIC

Collecting background spectrum

- 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 us the piston when collecting the background.

Figure 1: Example of a background spectrum.
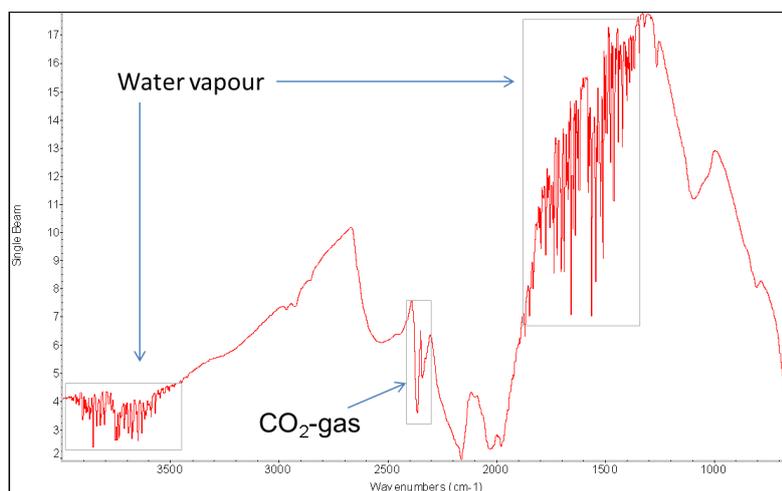
Collecting sample spectrum

- 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_2-gas from the air in the 2400-2200 cm^{-1} region.

Liquid samples
- Apply a small drop to 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 rubber 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 the large black "wheel". Do not turn the black knob on the top since it controls the pressure of the piston applied by the large "wheel".
  - 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
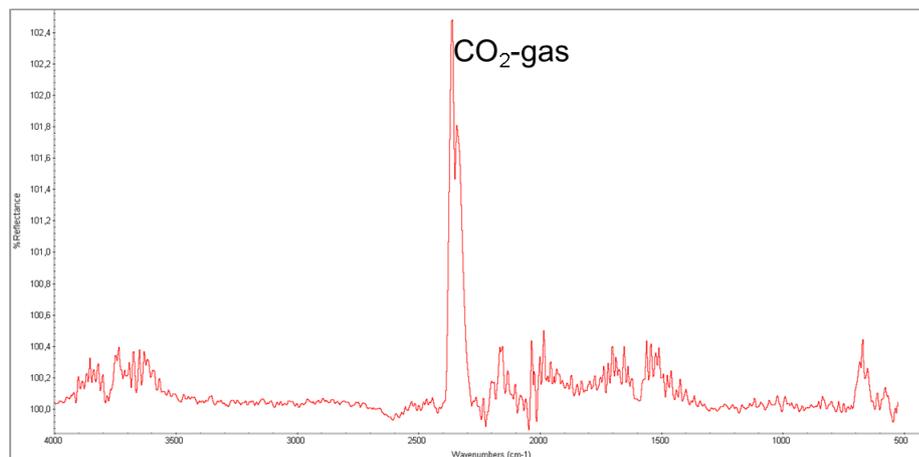
Analysis
- Press "Find Pks"
- The values of the peaks below the black line is shown.
- Click in the spectrum to move the line up or down to adjust the intensity threshold (%R) for the peak picking.
- Use the "Sensitivity" setting to the left to adjust what is defined as a peak (higher sensitivity to include broader peaks).
- Click "Replace in the top right corner to save.
- Press "Full Sc" to adjust the Y-axis to include everything. **Keystroke "Ctrl + F"**

Printing

Press "Print". **Keystroke "Ctrl + P"** Select the number of copies and select "Print".

Saving spectra

Press "Save As".

Open/create your folder under D:\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-380 for employees to home directory server!

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

Press «**quick connect**».

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, and will look something like this;

HOME/sivXX/user name

Transfer all your spectra, press the *disconnect icon*, and return to your office and open the file explorer.

Your unix home directory is labeled station W: in windows 7.

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 from FTIR-380 for students not using "rasmus" as home directory server!

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.

Frisk opp kunnskapen om IR;

https://no.wikipedia.org/wiki/Infrar%C3%B8d_spektroskopi

eller

https://w3.uib.no/nb/kj/53977/ir-kjemien-og-fysikken