

Startup

Log on:

USER: uib\username OR username@uib.no

Password: your normal pw

Open OMNIC, answer OK for the ATR cell

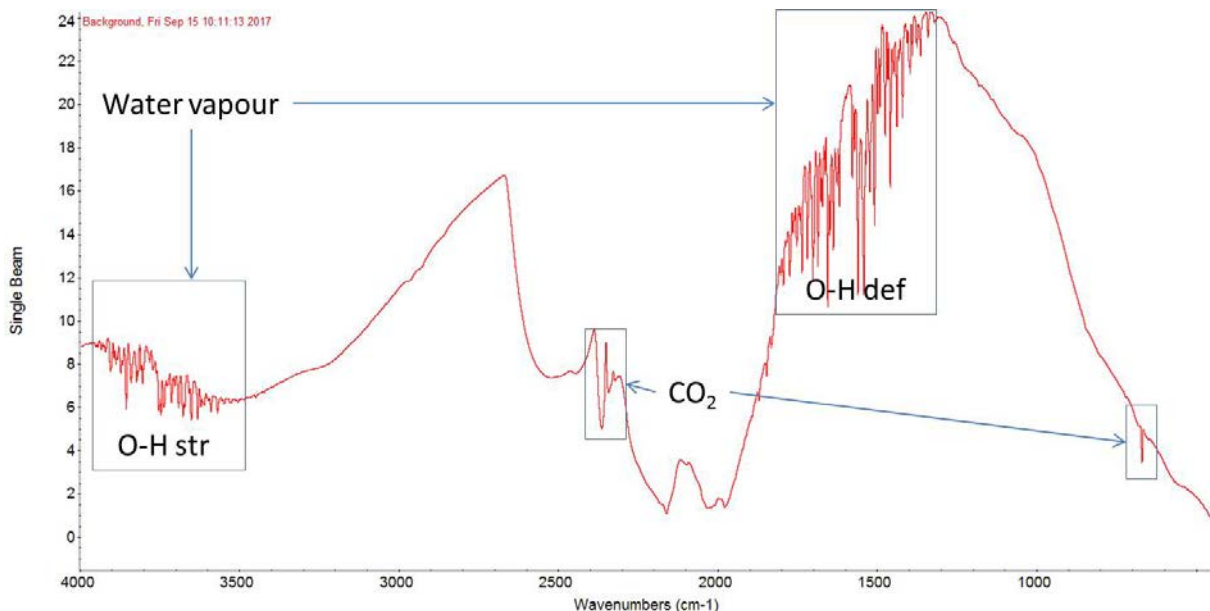
APPROVED

By Egil Nodland at 11:44 am, May 29, 2019

Collecting background spectrum

- Make sure the crystal is clean before using the instrument. Clean the crystal using alcohol on a "Kim wipe" tissue paper 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 CO₂-gas from the air in the 2400-2200 cm⁻¹ region.

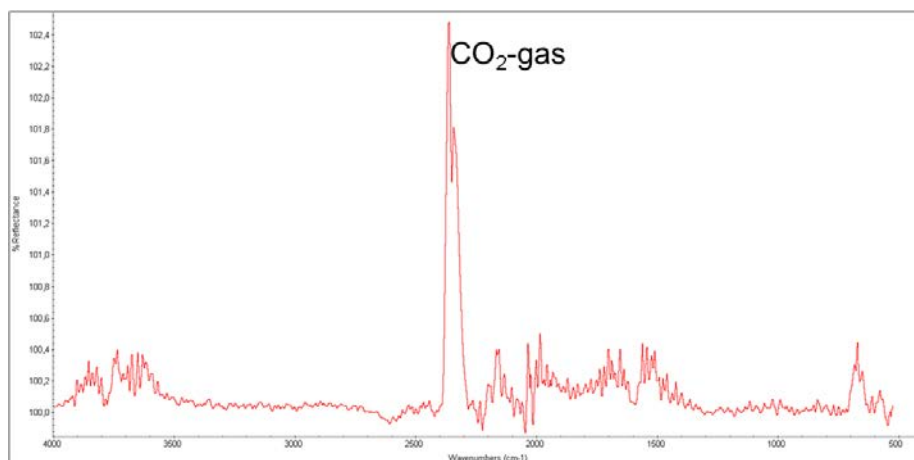
Liquid samples

- Apply a small drop to the crystal. Do not use the piston. Use the volatile cover if necessary.

Solid samples

- Put a small amount of solid next to the crystal. ¼ spatula tip. 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 black piston wheel clock wise.
 - Press "Start Collection" in the top right corner to start or hit the Enter key.
 - 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" **Keystroke "Ctrl + K"**
- 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"**

Saving spectra

Press "Save As". **Keystroke "F12"**

Open/create a folder on your home directory O:\ustaostet, \\hallingskeid or \\gol and give a file name and select "Save". Set title to file name.

Printing spectra as PDF

Keystroke "Ctrl + P"

Select "PDFCreator" as printer. Give a title and press save. Select same path\folder as above.

Cleaning crystal

- Clean by dripping alcohol on tissue paper and wipe the crystal once or twice. Then wipe with dry tissue paper. Also, clean the piston tip if it has been used.
- Do **NOT** apply solvent directly to the crystal *and do not use "normal towel paper"*.
- 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, ethyl ether, acetonitrile or water can be used as cleaning agents.

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>