

JASCO FT/IR-4100

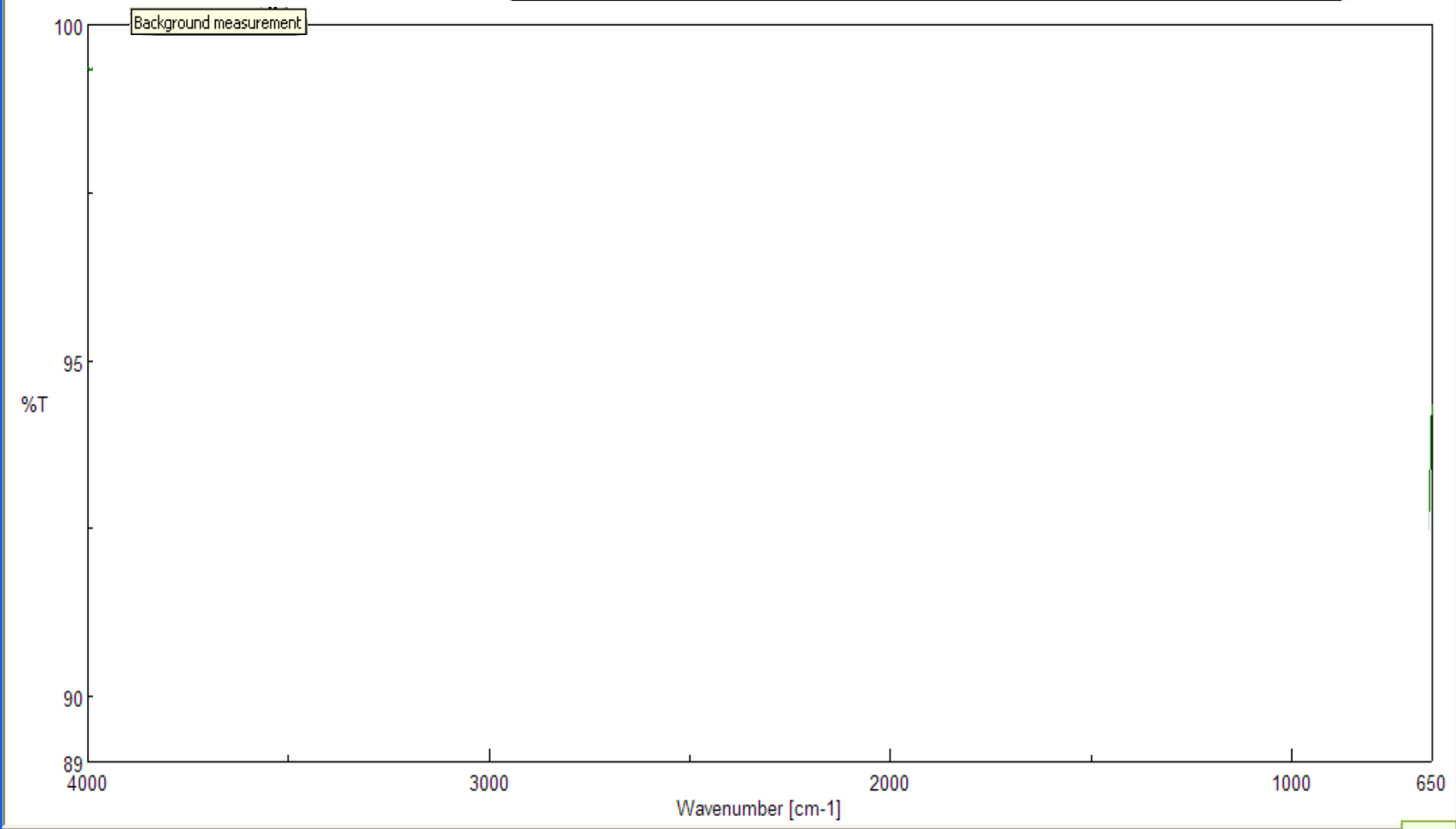
ATR Tutorial

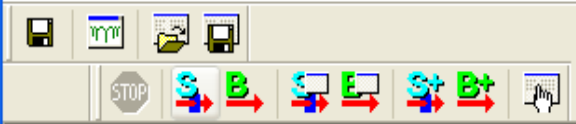
1/4/2009



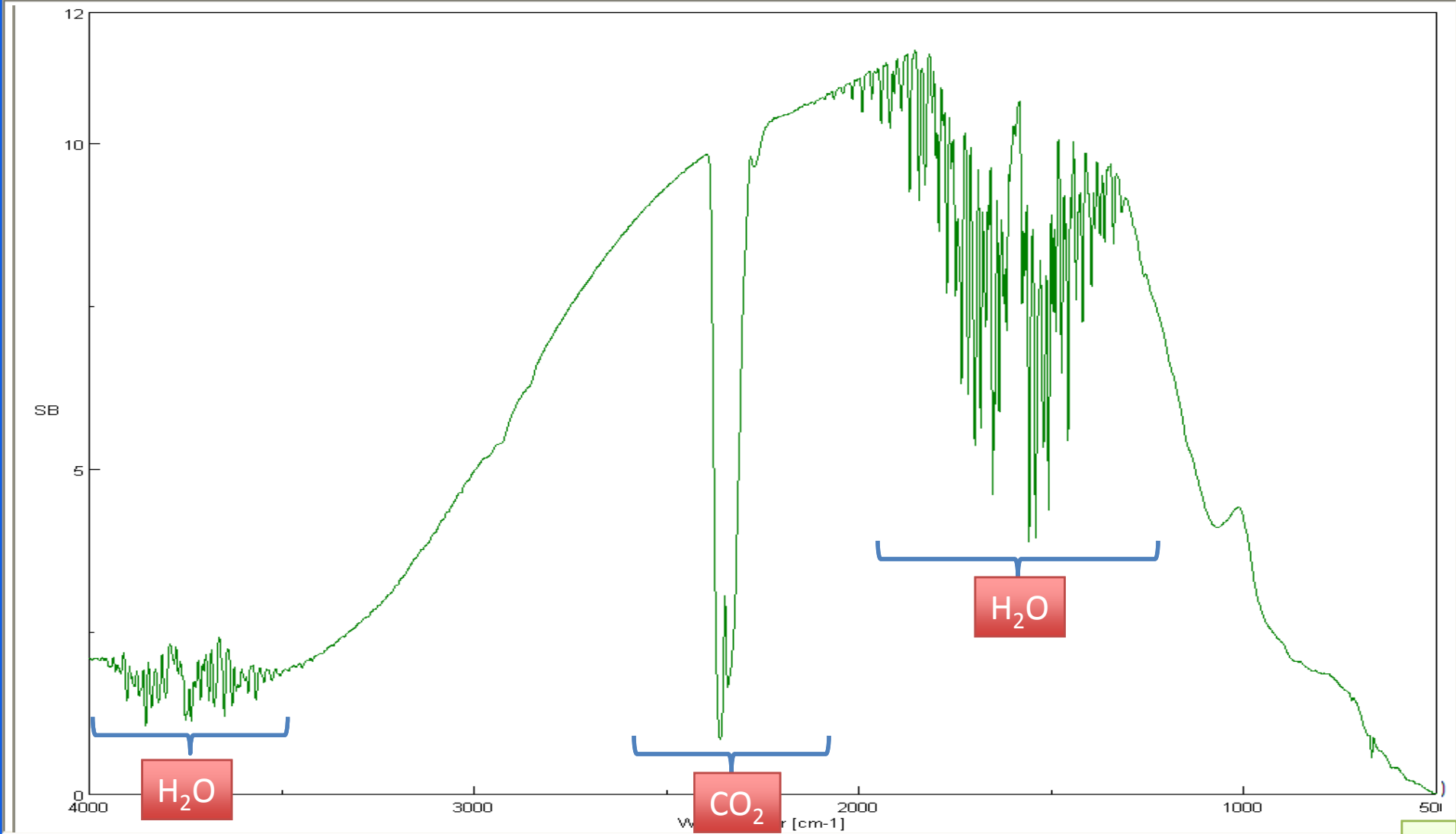


To begin, make sure the ATR crystal is clean and press "Background measurement" on the IR toolbar.



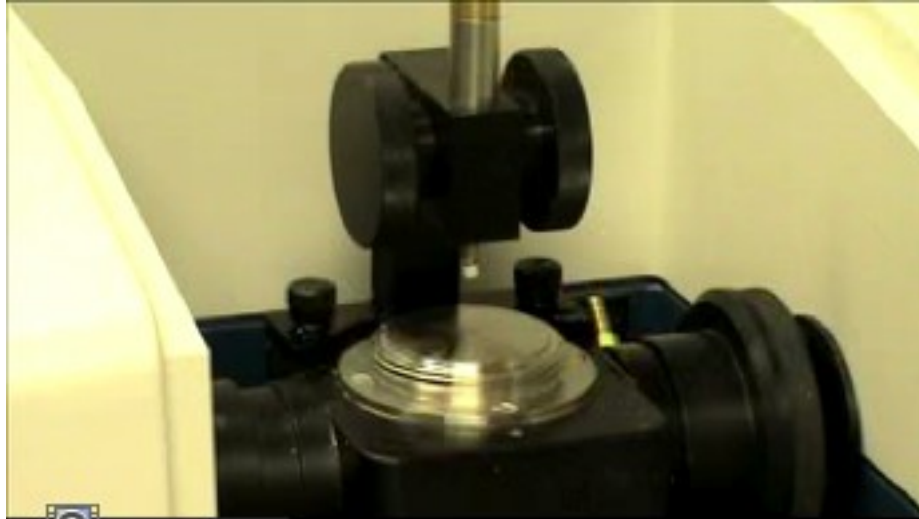


The background should look something like this



Sample Preparation

Liquids

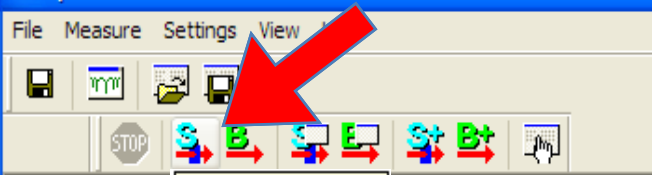


- Place 1 – 2 drops on the crystal using a Pasteur pipette or dropper making sure that there are no bubbles on the crystal
- The clamp has not to be lowered here
- Open Hyperlink to see the movie

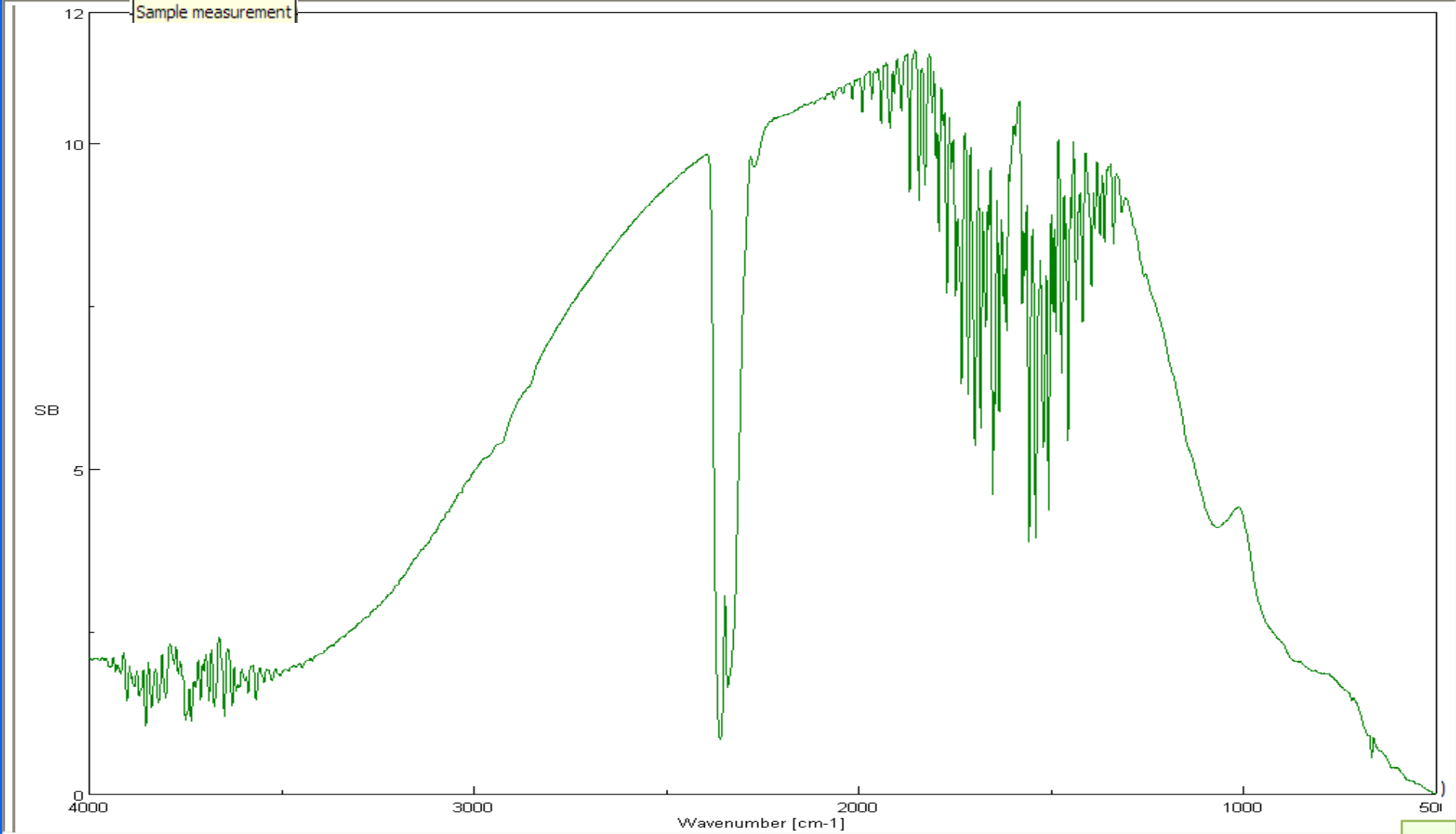
Solids



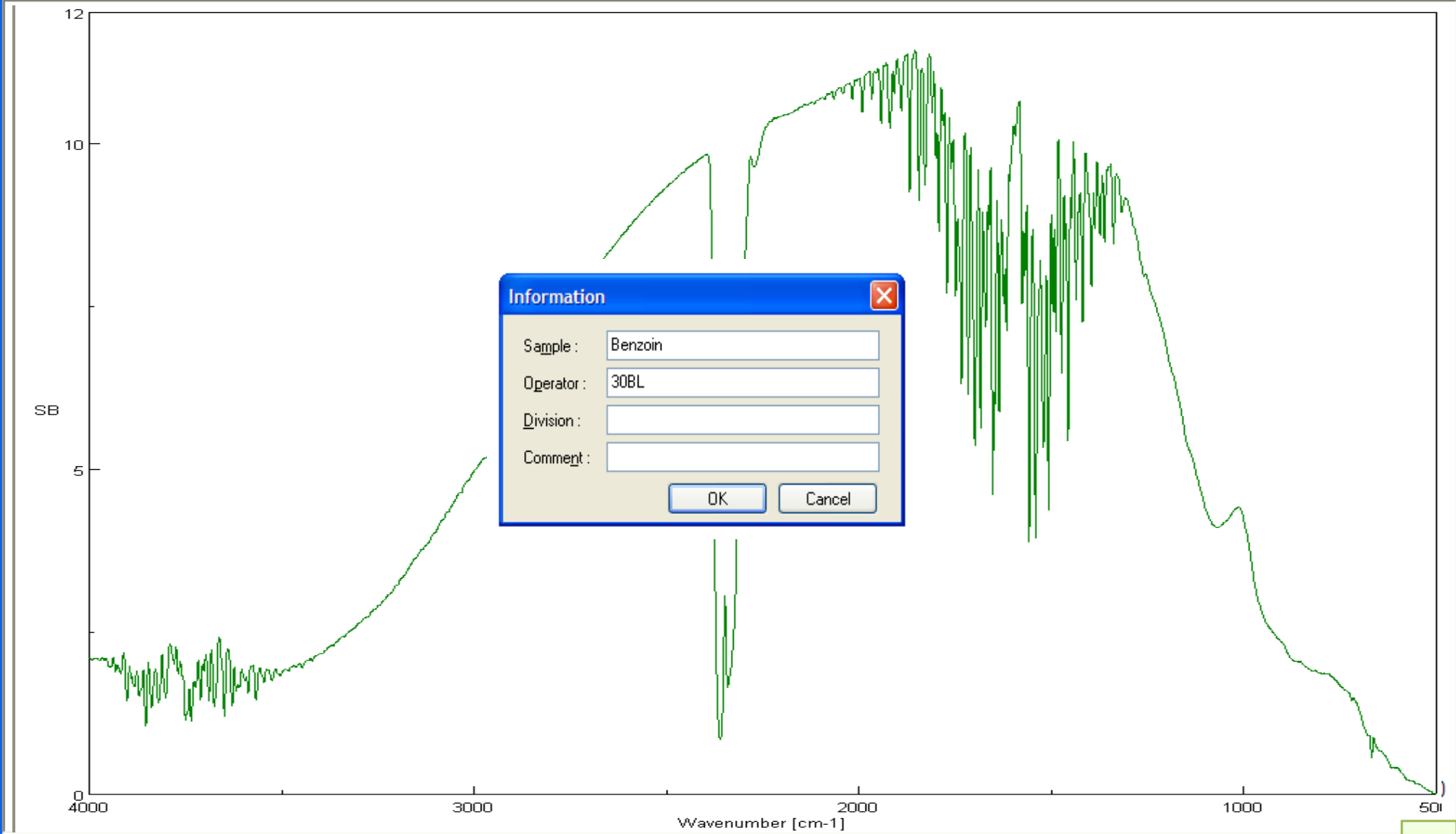
- Place solid next to the ATR crystal
- Move the solid onto crystal with wooden stick
- Apply pressure by lowering the clamp
- Open Hyperlink to see the movie



After sample preparation, press "Sample measurement" on the toolbar



Enter the sample name and your name



Information [X]

Sample :

Operator :

Division :

Comment :

Spectra Analysis

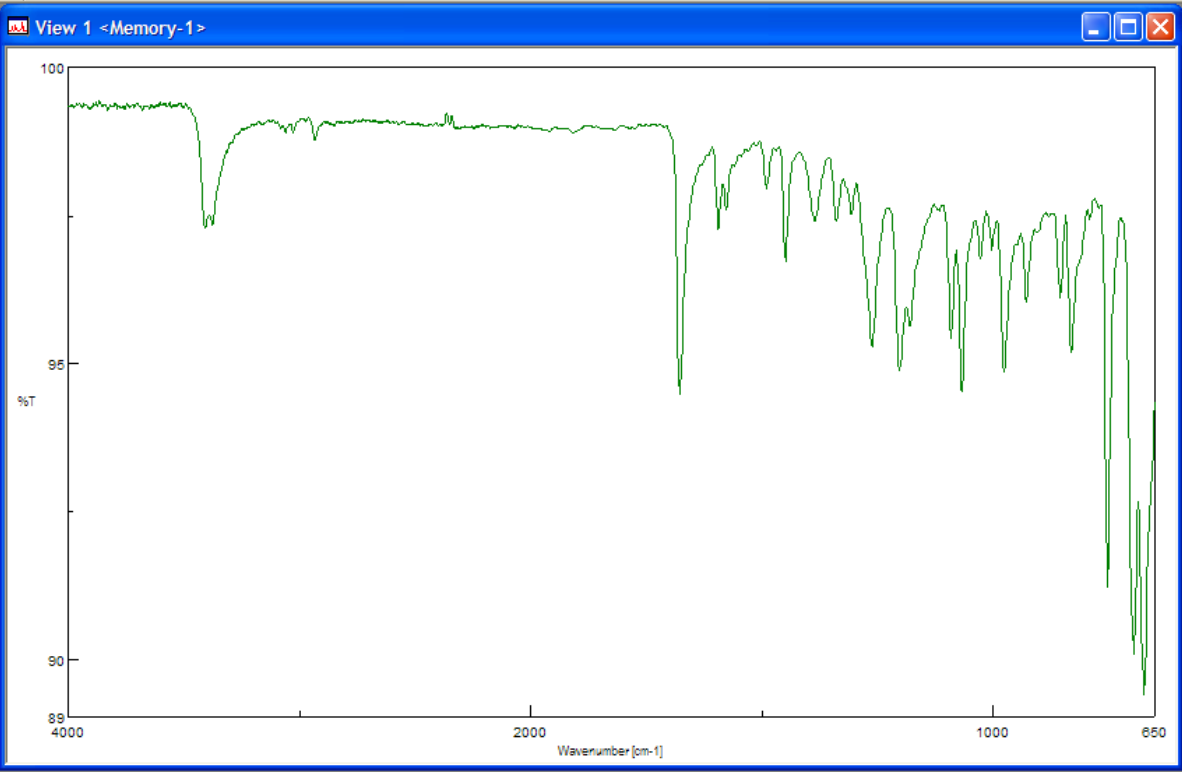
File Edit View Processing Window Other Help

A new window will open with your raw spectrum.
However, some corrections have to be made to improve the spectrum.

Spectra Analysis

- View 1
 - Memory-1

Item	Contents
User	A. Bacher
Division	
Company	UCLA
Creation Date	1/28/2009 9:4
Sample Name	Benzoin
Comment	
Data Information	



File Edit View Processing Window Other Help

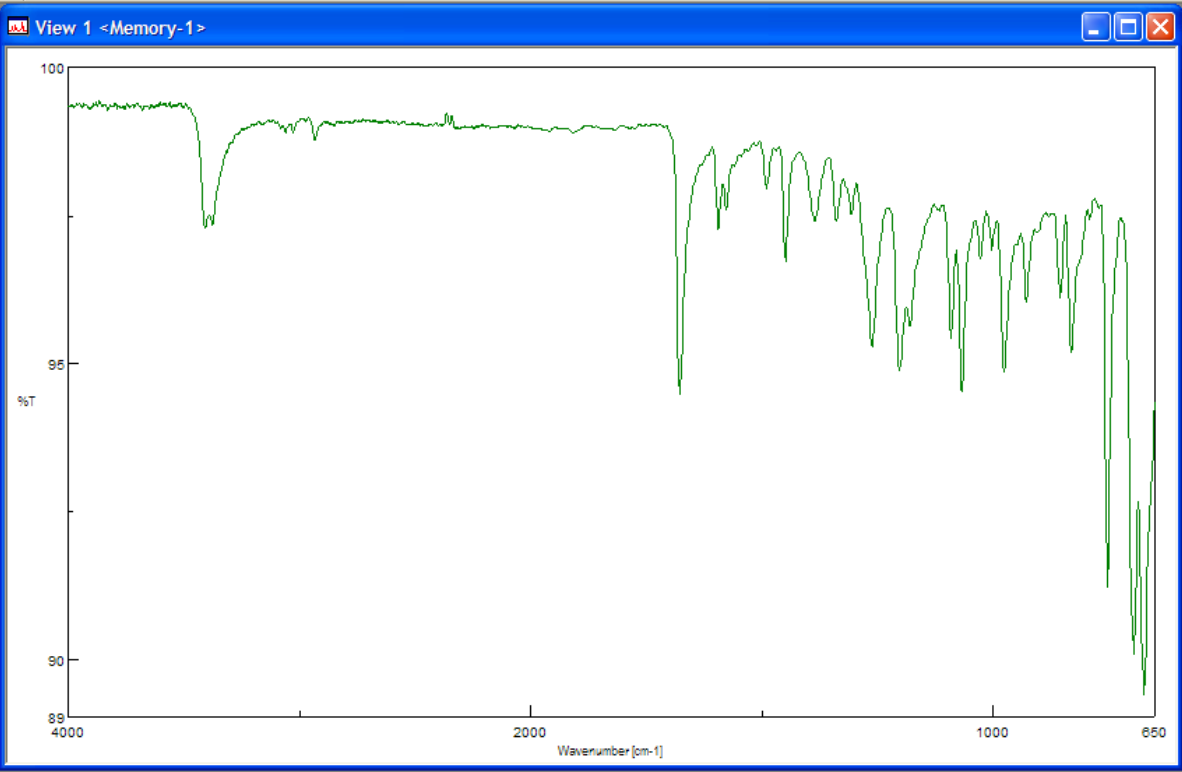
ATR Correction

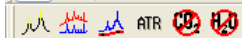
First, click "ATR Correction" on the toolbar

Spectra Analysis

- View 1
 - Memory-1

Item	Contents
User	A. Bacher
Division	
Company	UCLA
Creation Date	1/28/2009 9:4
Sample Name	Benzoin
Comment	
Data Information	



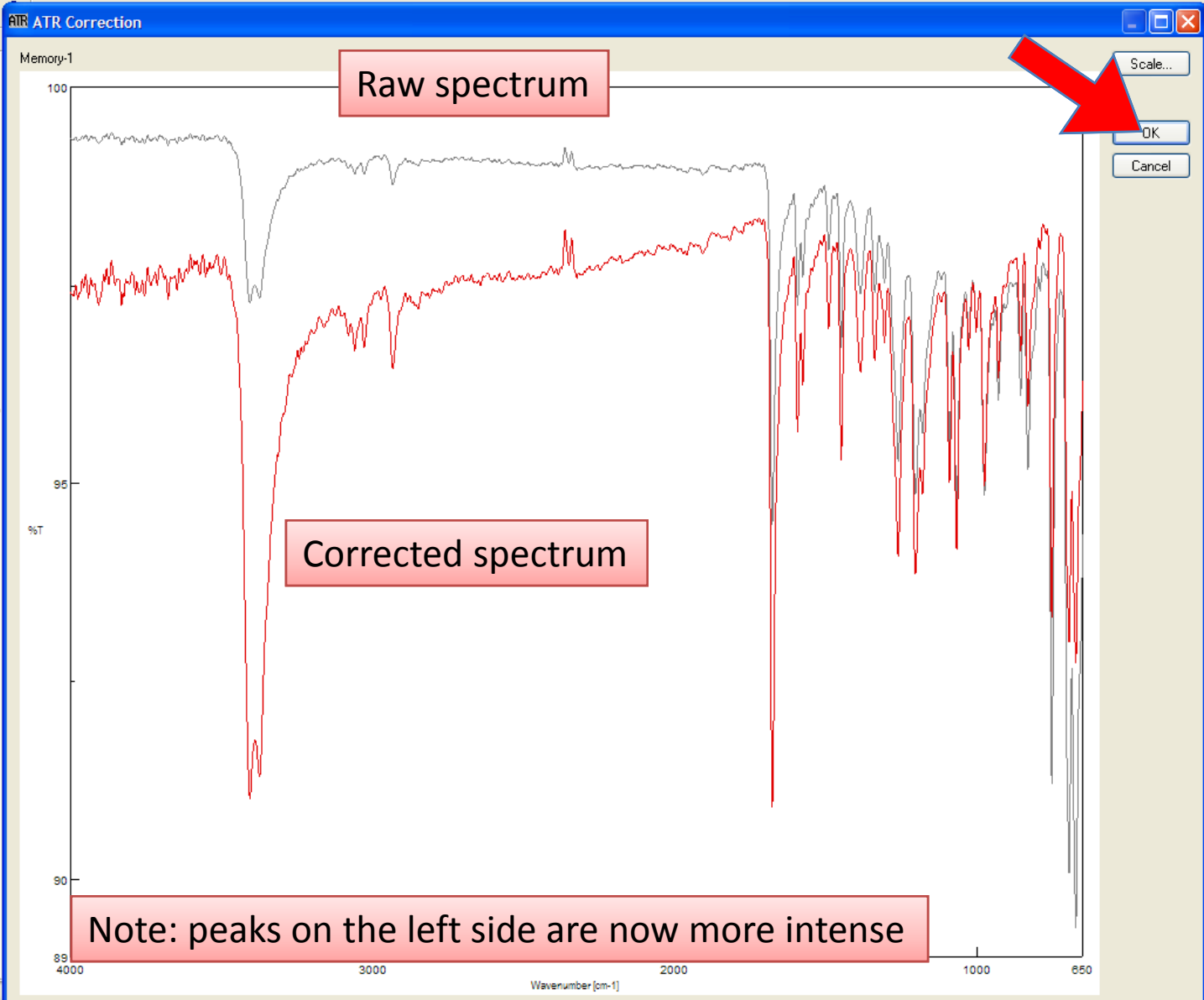


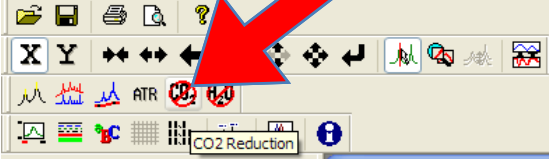
Click "OK" in the window

Spectra Analysis

- View 1
 - Memory-1

Item	Contents
User	A. Bacher
Division	
Company	UCLA
Creation Date	1/28/2009 9:4
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Comment	
Data Information	



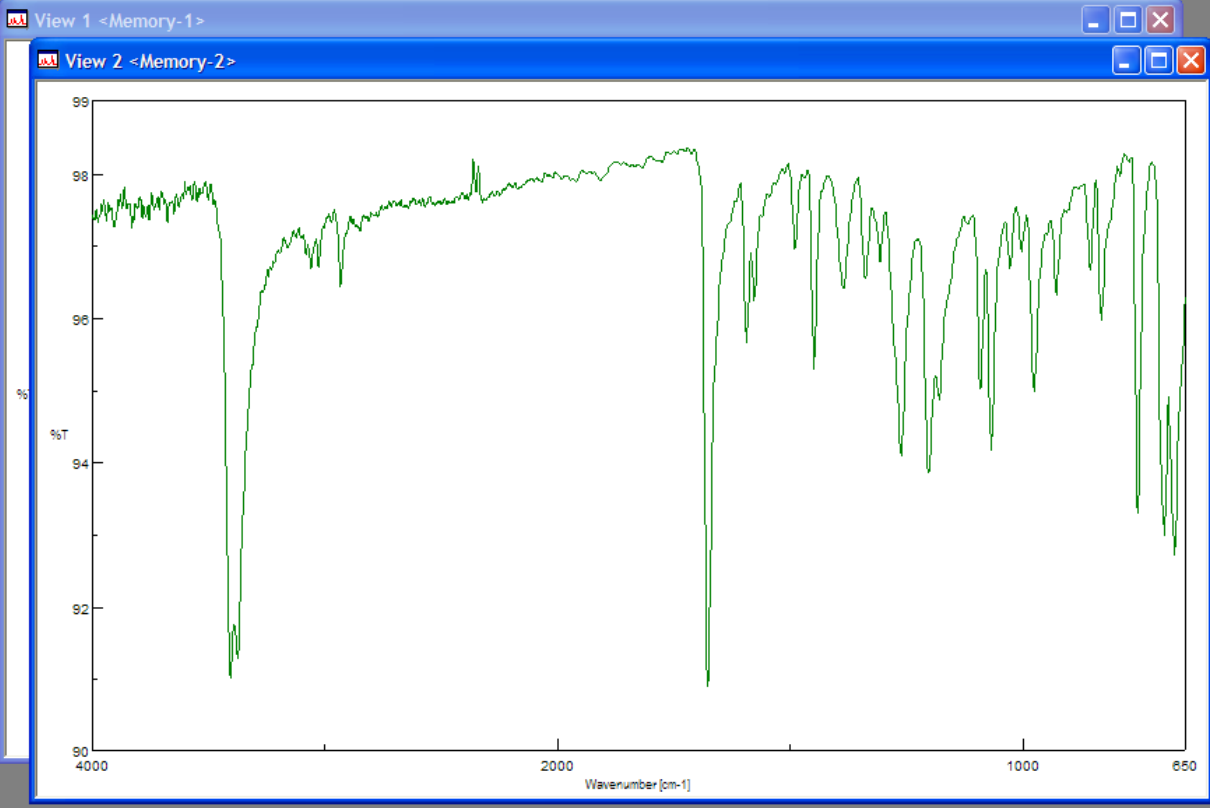


Second, click "CO₂ Reduction" on the toolbar

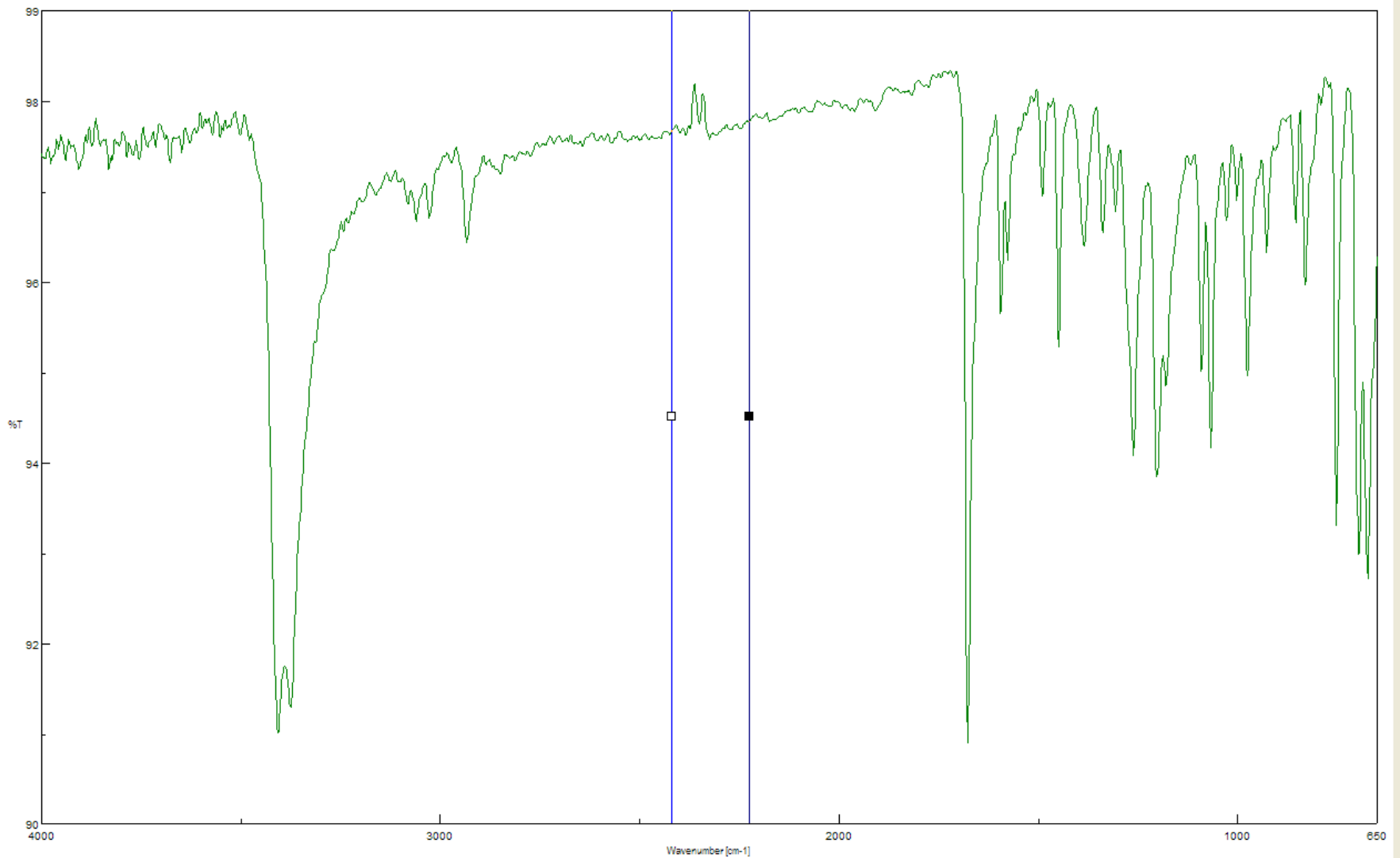
Spectra Analysis

- View 1
 - Memory-1
- View 2
 - Memory-2

Item	Contents
User	A. Bacher
Division	
Company	UCLA
Creation Date	1/28/2009 9:4
Sample Name	Benzoin
Comment	
Data Information	



Memory-2



Range:

	Start	End	Function
1	2225	2420	Constant

Click "OK" in the window

Append
Delete
OK
Cancel

File Edit View Processing Window Other

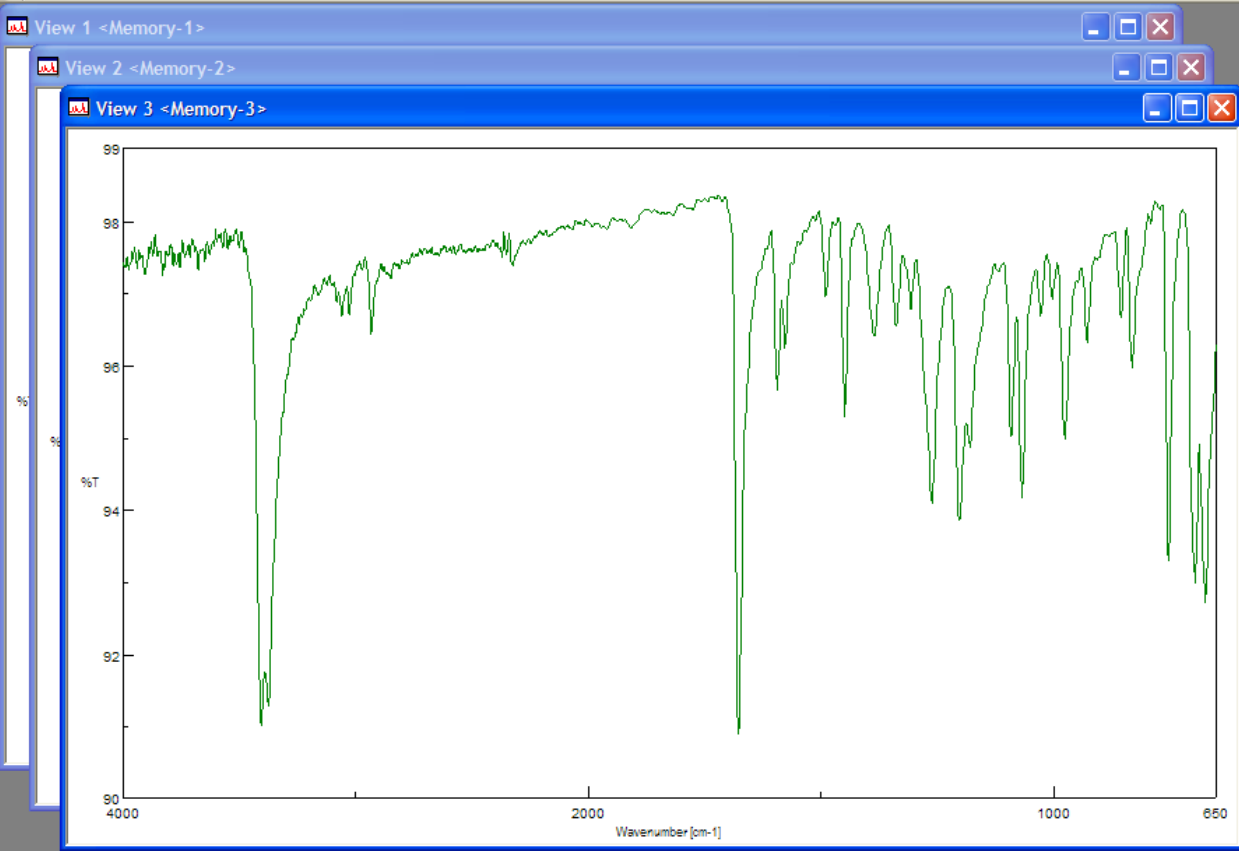
ATR H_2O H_2O Reduction

Third, click "H₂O Reduction" on the toolbar

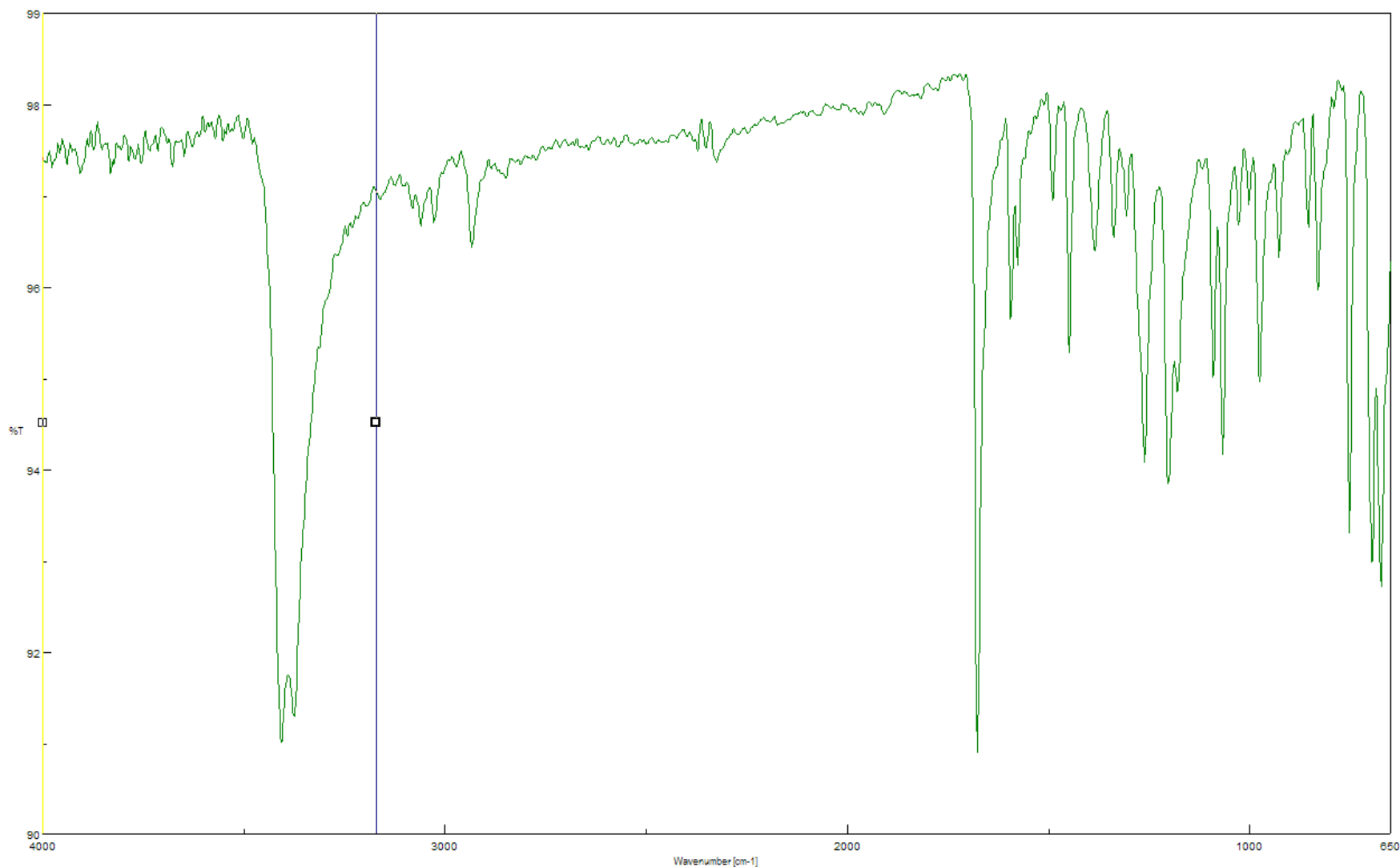
Spectra Analysis

- View 1 - Memory-1
- View 2 - Memory-2
- View 3 - Memory-3

Item	Contents
User	A. Bacher
Division	
Company	UCLA
Creation Date	1/28/2009 9:5
Sample Name	Benzoin
Comment	
Data Information	



Memory:3



Range:

	Start	End	Function
1	1200	2100	Linear
2	3170	4000	Linear

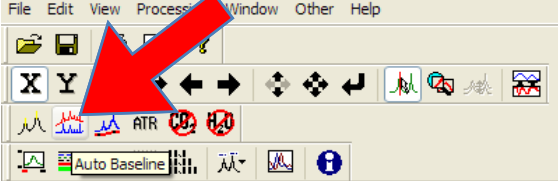
Click the second row and "OK" in the window

Append

Delete

OK

Cancel

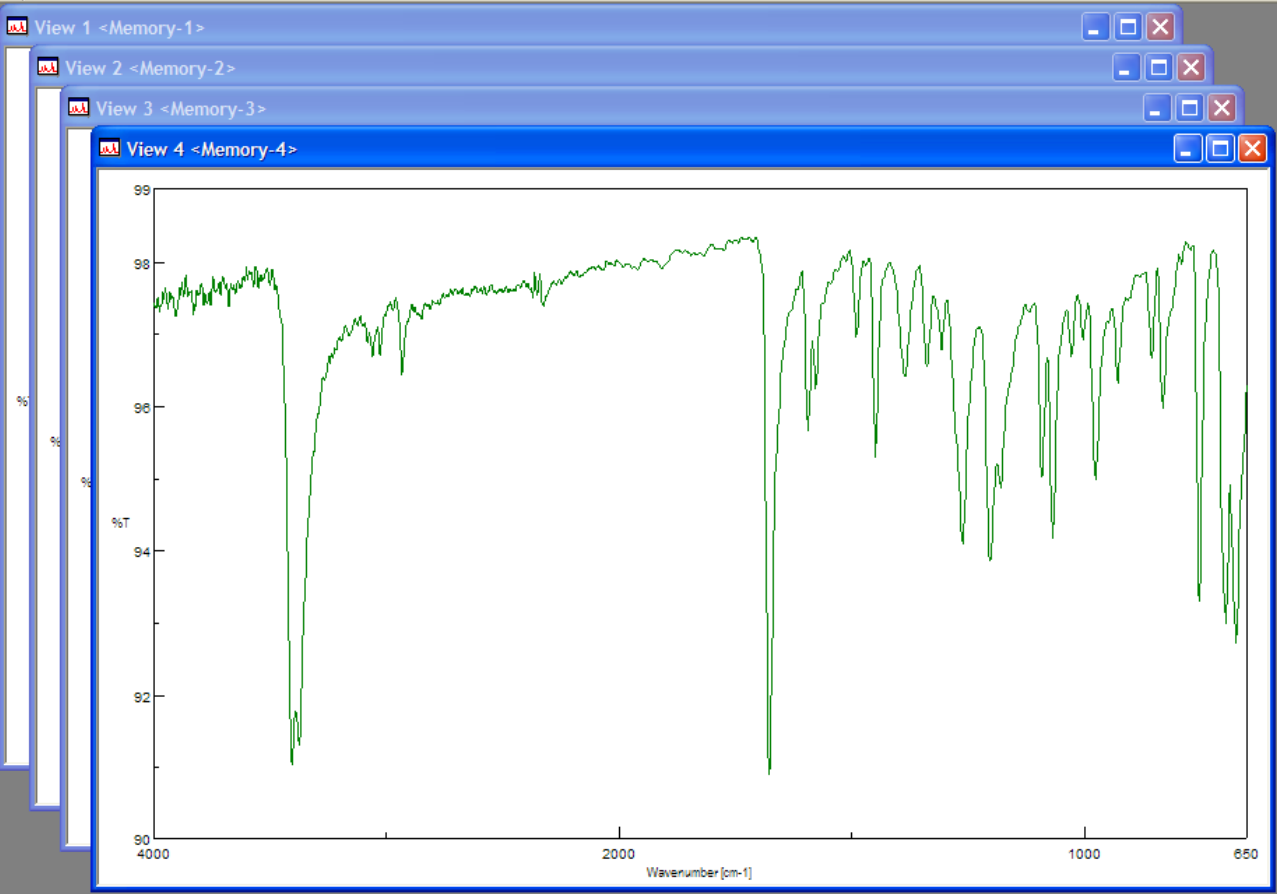


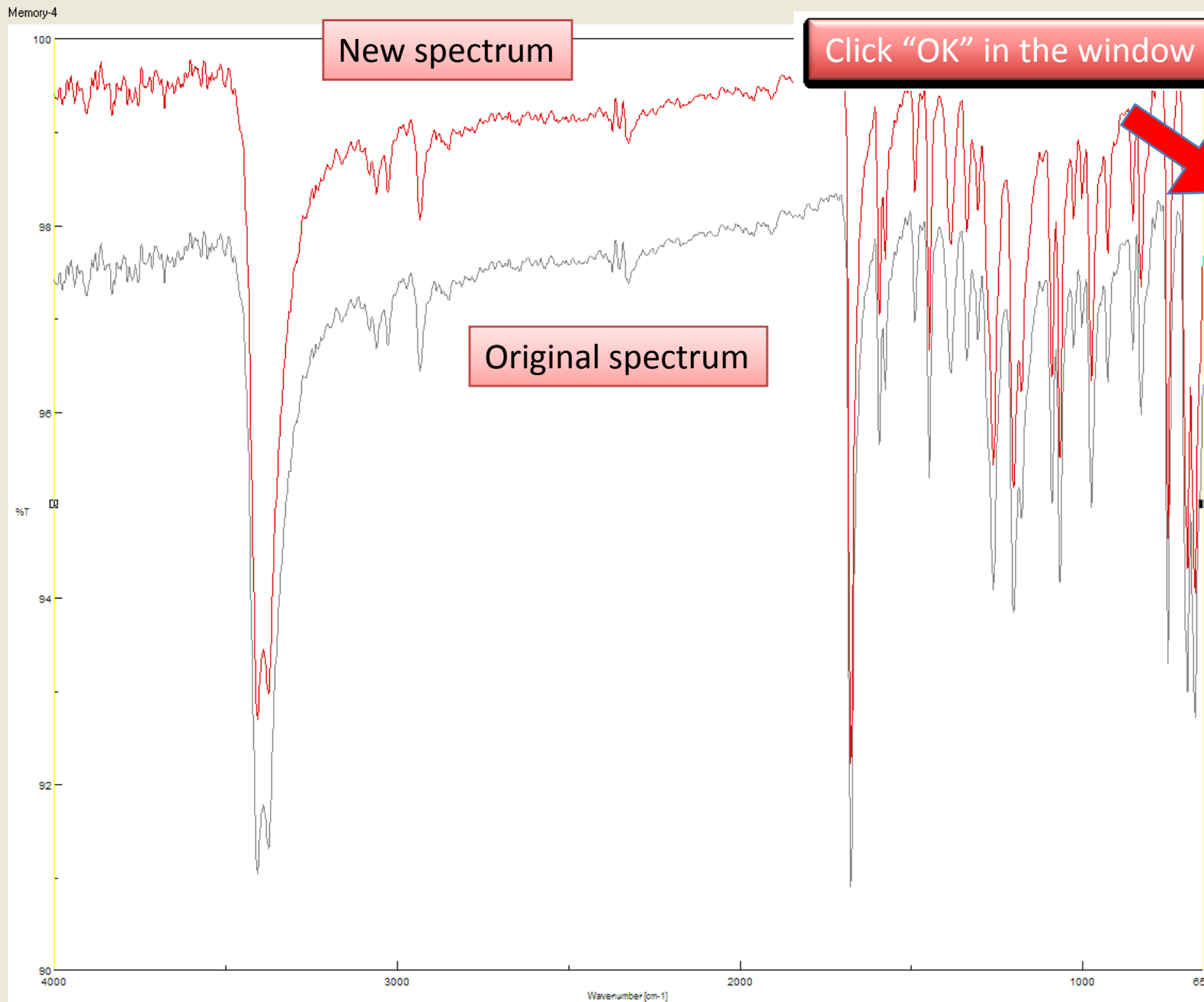
Fourth, click "Auto Baseline" on the toolbar

Spectra Analysis

- View 1
- Memory-1
- View 2
- Memory-2
- View 3
- Memory-3
- View 4
- Memory-4

Item	Contents
User	A. Bacher
Division	
Company	UCLA
Creation Date	1/28/2009 9:5
Sample Name	Benzoin
Comment	
Data Information	





New spectrum

Click "OK" in the window

Original spectrum

Order: 2

Fitting Range:

4000 - 650

Apply

Scale...

OK

Cancel

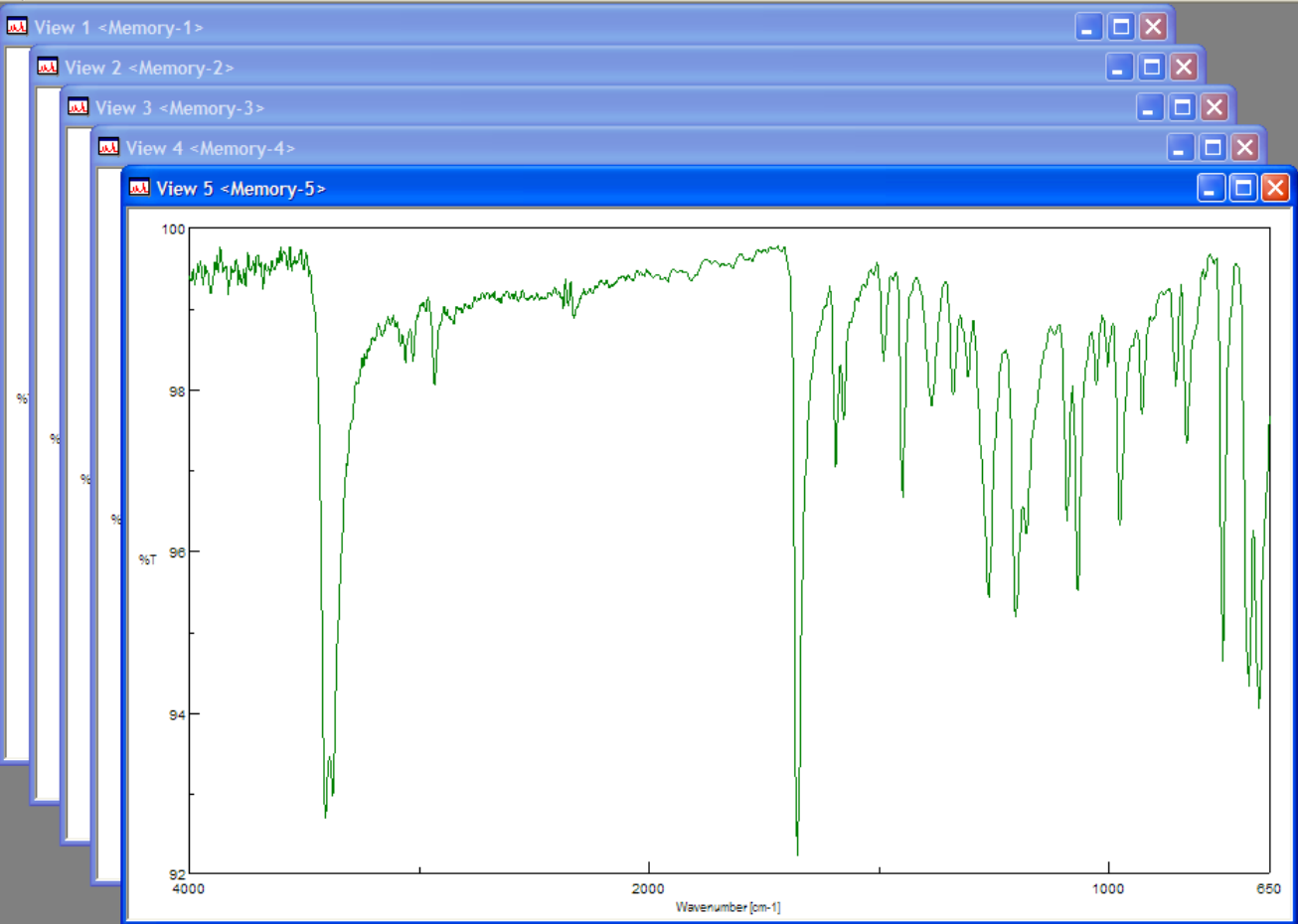


Fifth, click "Peak Find" on the toolbar

Spectra Analysis

- View 1
- Memory-1
- View 2
- Memory-2
- View 3
- Memory-3
- View 4
- Memory-4
- View 5
- Memory-5

Item	Contents
User	A. Bacher
Division	
Company	UCLA
Creation Date	1/28/2009 9:5
Sample Name	Benzoin
Comment	
Data Information	



Memory-5

Wavenum...	%T
2325.73 cm-1	98.8768

Parameters

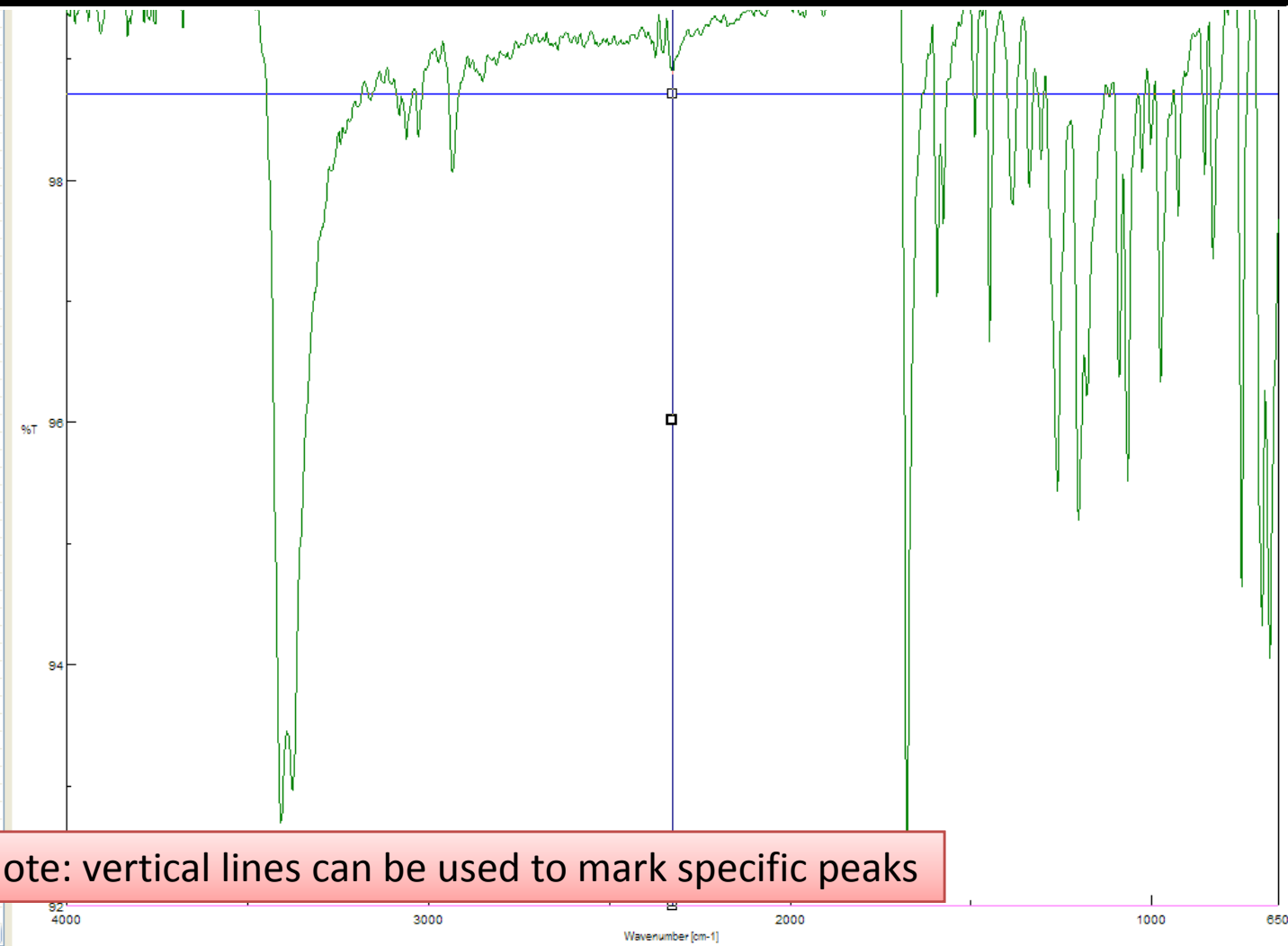
Peak: Bottom Noise Level: 1

Upper Limit 98.703 Lower Limit 92 **Apply**



- OK
- Cancel
- Print
- Scale...
- Add
- Delete

Drag the horizontal lines so your peaks are inside them and press "Apply"



Note: vertical lines can be used to mark specific peaks

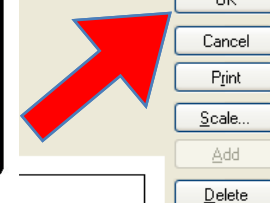
Memory-5

Wavenum...	%T
3407.6	92.6854
2933.2	98.0577
1677.77	92.2161
1594.84	97.0329
1490.7	98.3549
1448.28	96.6591
1384.64	97.7936
1261.22	95.4283
1203.36	95.1877
1091.51	96.368
1066.44	95.5039
975.804	96.3219
927.593	97.6945
854.311	98.0427
831.169	
752.102	
696.177	
673.035	

Parameters

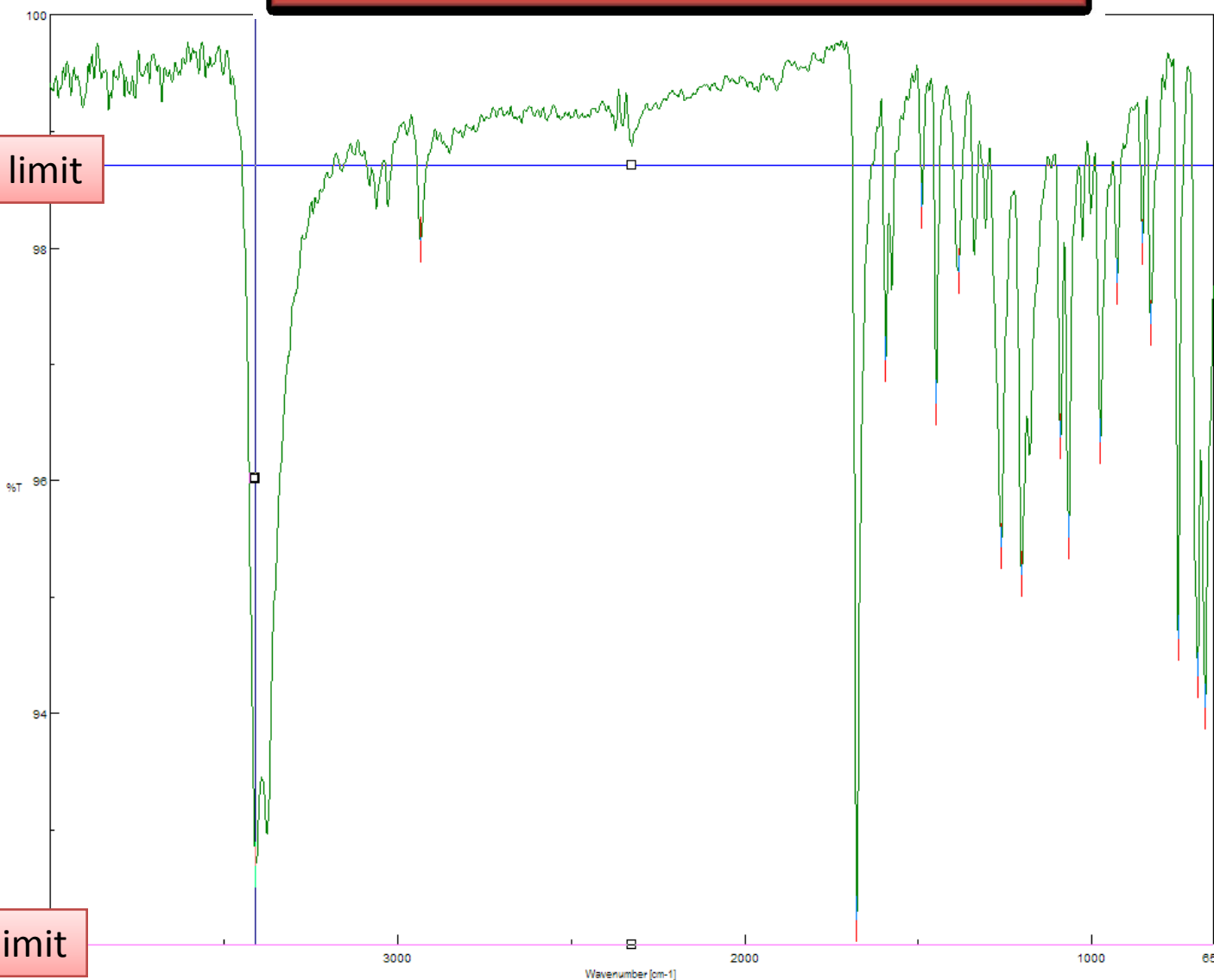
Peak: Bottom Noise Level:
 Upper Limit 98.703 Lower Limit
3407.6 cm-1 92.6854

The peak labels will appear in the left column.
The noise level can also be adjusted.
When satisfied, click "OK."



Upper limit

Lower limit



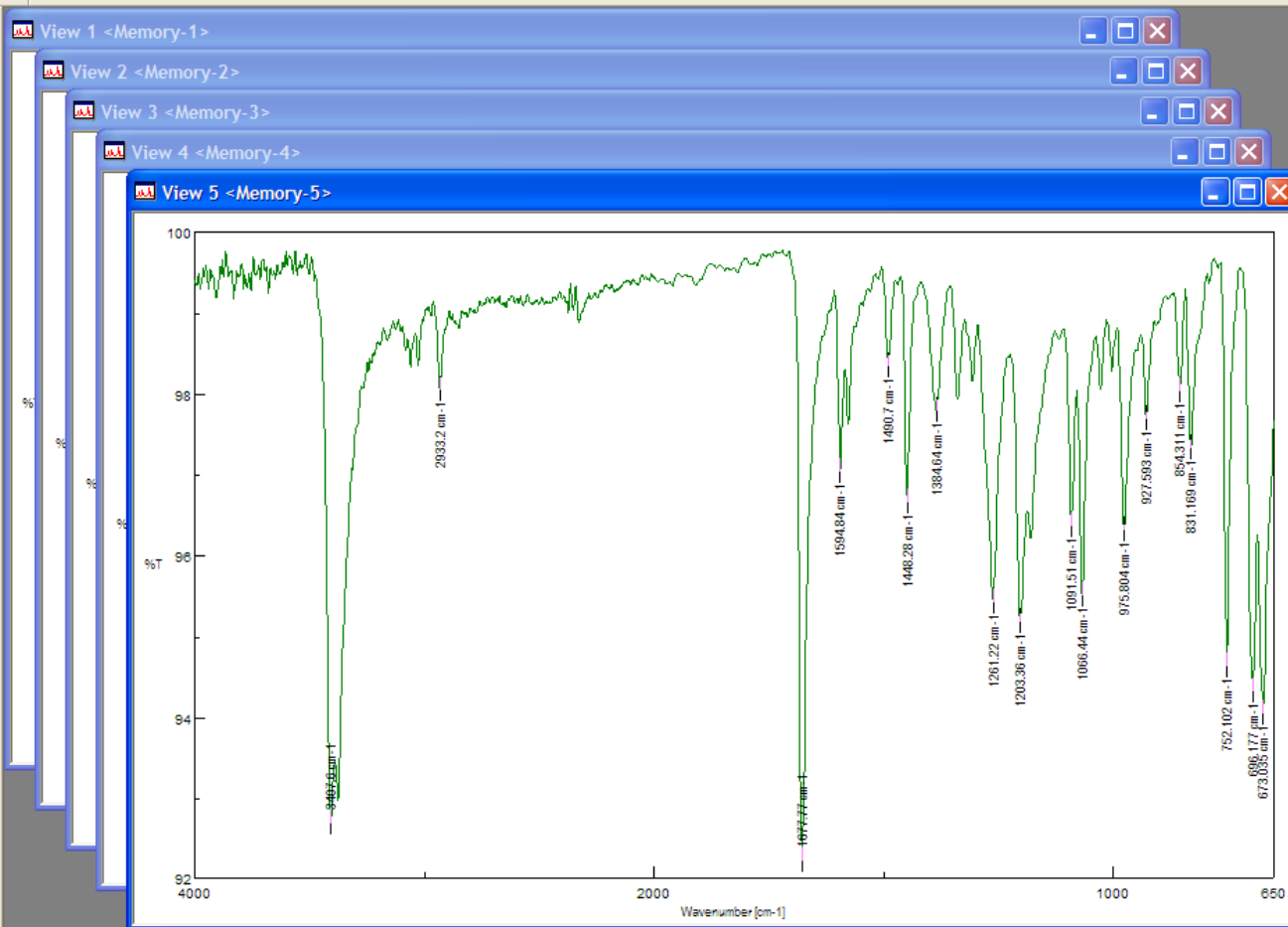


Finally, click "Print" to print your spectrum

Spectra Analysis

- View 1 Memory-1
- View 2 Memory-2
- View 3 Memory-3
- View 4 Memory-4
- View 5 Memory-5

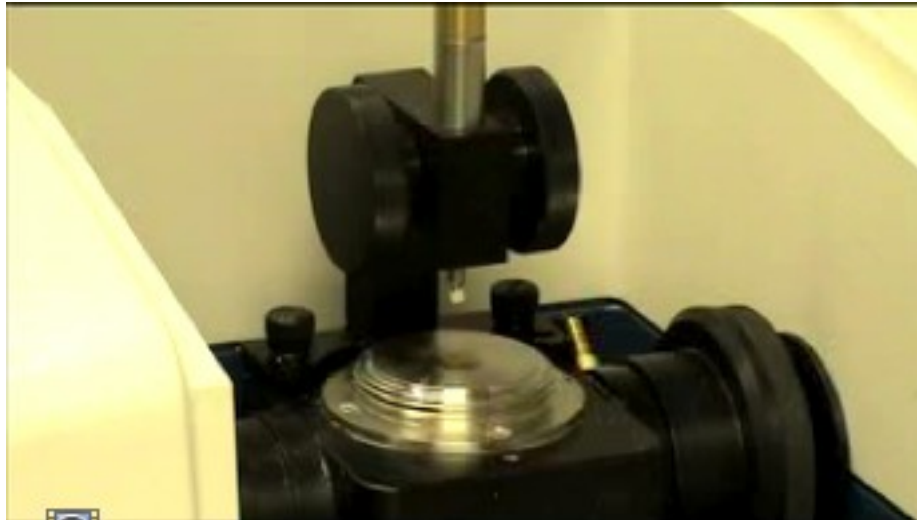
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Print the active view

Sample Clean-up

Liquids



- Clean with alcohol wipe. **Do not use Kim Wipes or paper towels!**
- Open [Hyperlink](#) to see the movie



Solids



- Release clamp by raising the pin
- Brush sample onto collecting paper
- Clean with alcohol wipe. **Do not use Kim Wipes or paper towels!**
- Open [Hyperlink](#) to see the movie