FTIR manual

Sample preparation

Step one: After cleaning the mortal, measure 95mg of KBr and 5mg of your sample

Step two: mix the two samples and grind the mixture

Step three: prepare the sample holder metal and putting sample inside ethe container

1st : collect the container sample kit

2nd : prepare the sample removing support as well

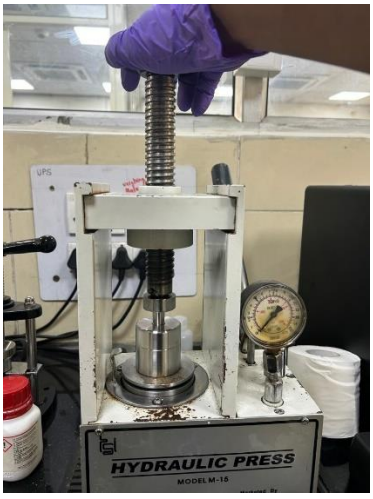
3rd: take out the sample holder from the kit and fix them accordingly

4th : put the small metal road on the hole first , make sure it is properly placed inside the container

5th : put your sample inside and make sure for its uniform distribution inside the container

6th : insert longer metal road on top of the sample

7th: put it in the hydraulic press at the center point and tighten it using the screw press

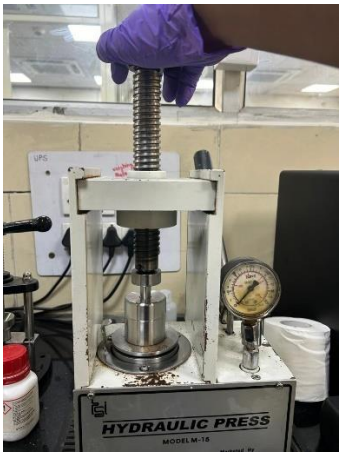



8th : give it a pressure range 4 to 5 kg/cm^2

- First rotate the lock valve toward you

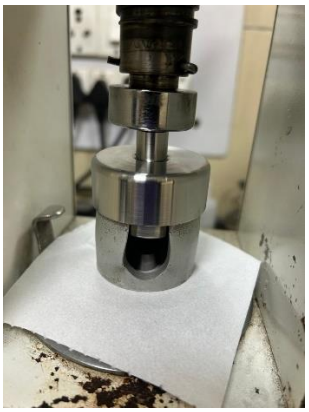
- Then by reversing back and for the hydraulic pressure handler adjust the pressure to be between 4 and 5 kg/cm^2 and maintain it for 2min.


- Release the pressure by reversing the key to the opposite side and remove the screw holder by reversing and remove the container.

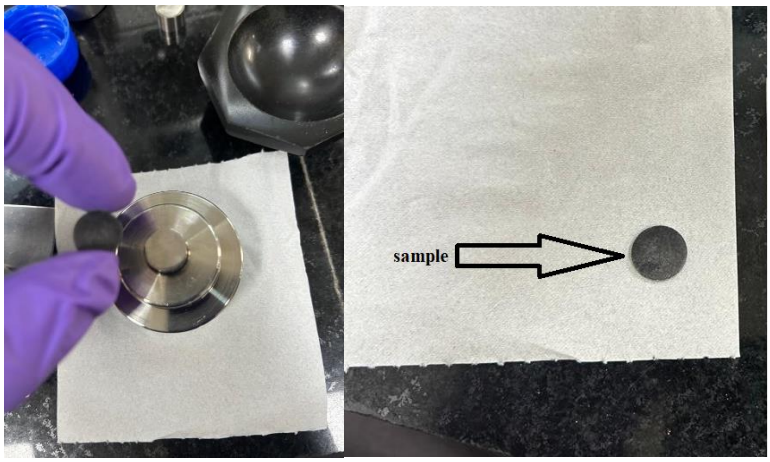


- For removing the prepared sample from the container , first put a tissue paper on the hydraulic press and put the sample removing support on top of it.

- Put the upper part of the container after detaching it from the whole container and put it on the sample removing support and slowly press the long metal using the screw till the small metal road is removed .

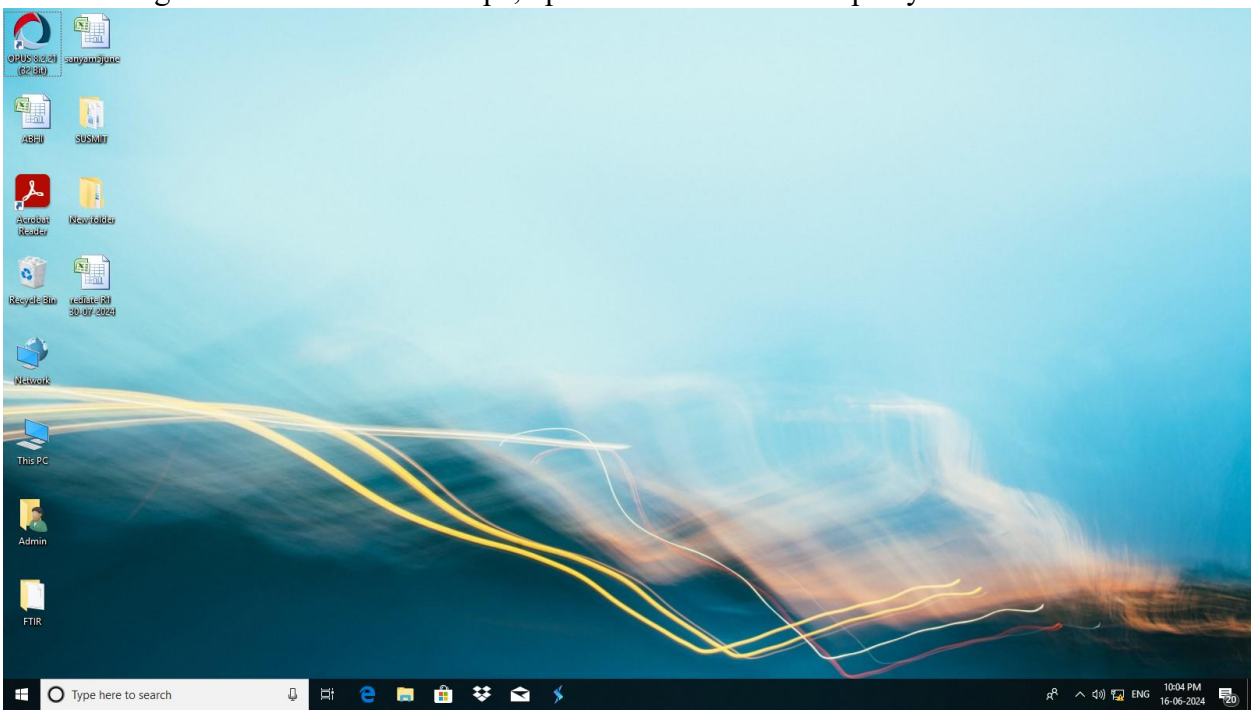



Note : sometimes your prepared sample might drop with the small metal road. And sometimes the sample may come out without being attached with the small or long metal road. And lastly your sample might be attached to the long road, so in all cases carefully remove your sample carefully without breaking it and put it on a tissue paper.

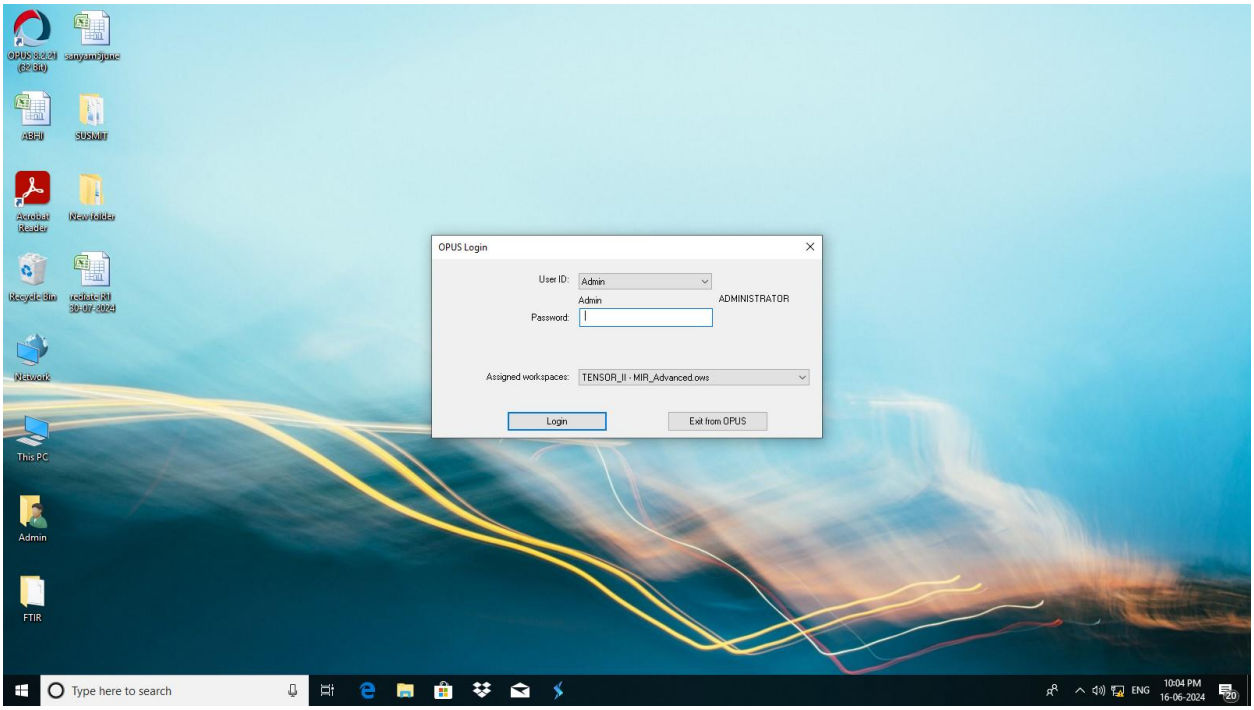


9th: starting on the machine and sample insertion

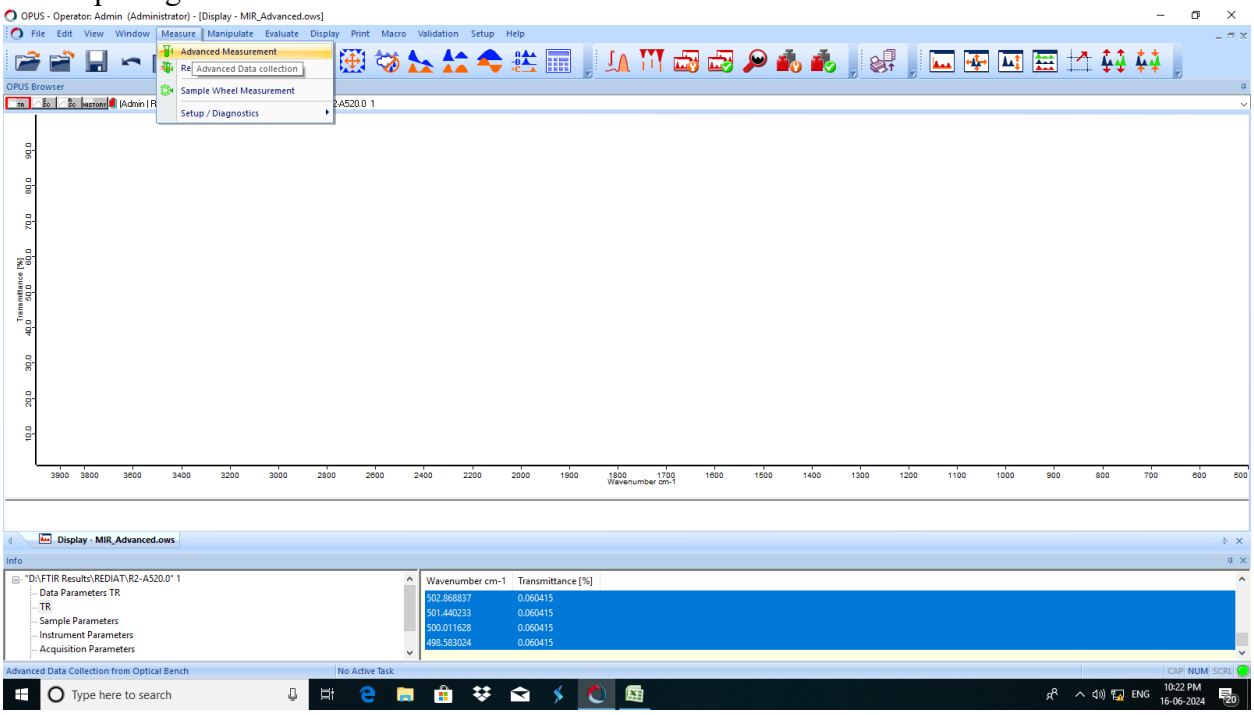
- Turn on the pc and machine main switch
- Turn on the FTIR machine using the back side main switch on the machine
- After turning on the machine and the pc, open the software on the pc by the name OPUS



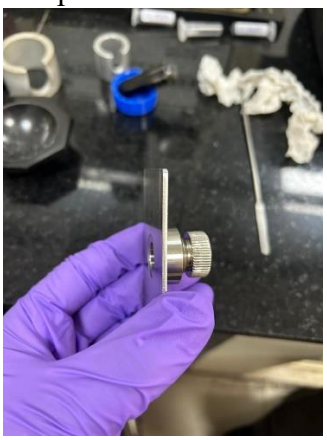
- Use password OPUS for opening and make sure all letters are in uppercase



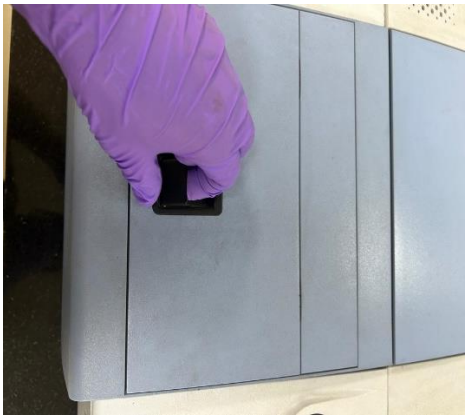
- After opening the software click on **measure** and select **advance measurement**



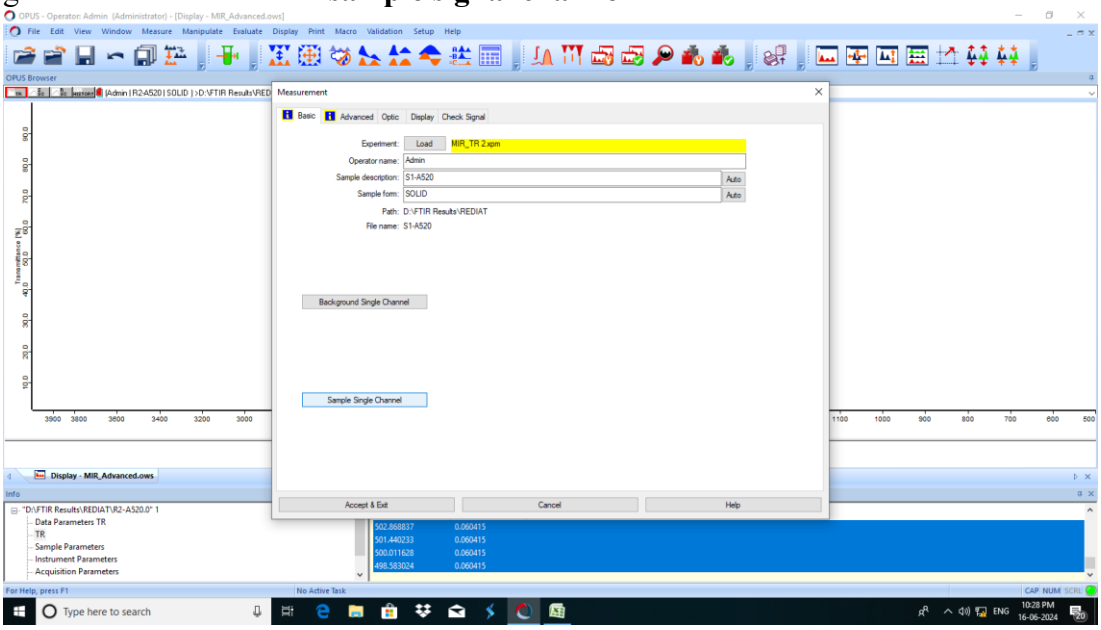
- Open the machine and place the holder accordingly, make sure there is no sample in the sample holder of the FTIR machine and if its detached like the left picture , attach the other part like its when in the picture.

- Open the machine and put the sample holder inside and close it




- go to software and select **sample signal channel** and wait till its over

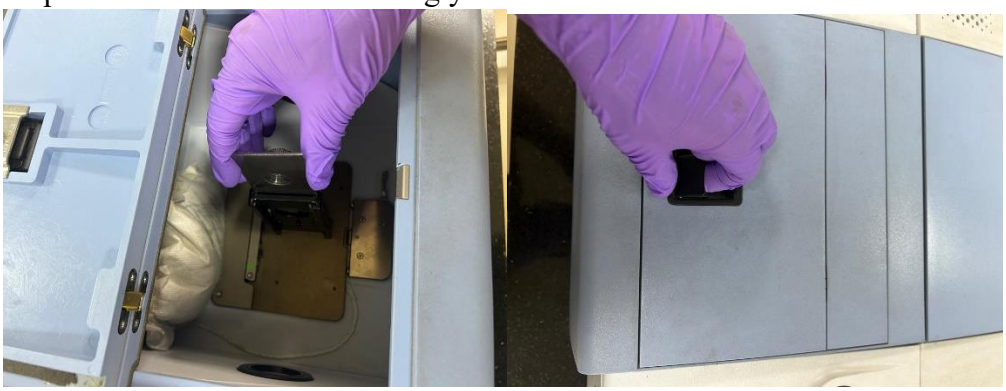


- After completion, remove the sample holder from the machine again and put your sample inside the sample holder and put it back inside the machine.
  1st unscrew the sample holder lock part

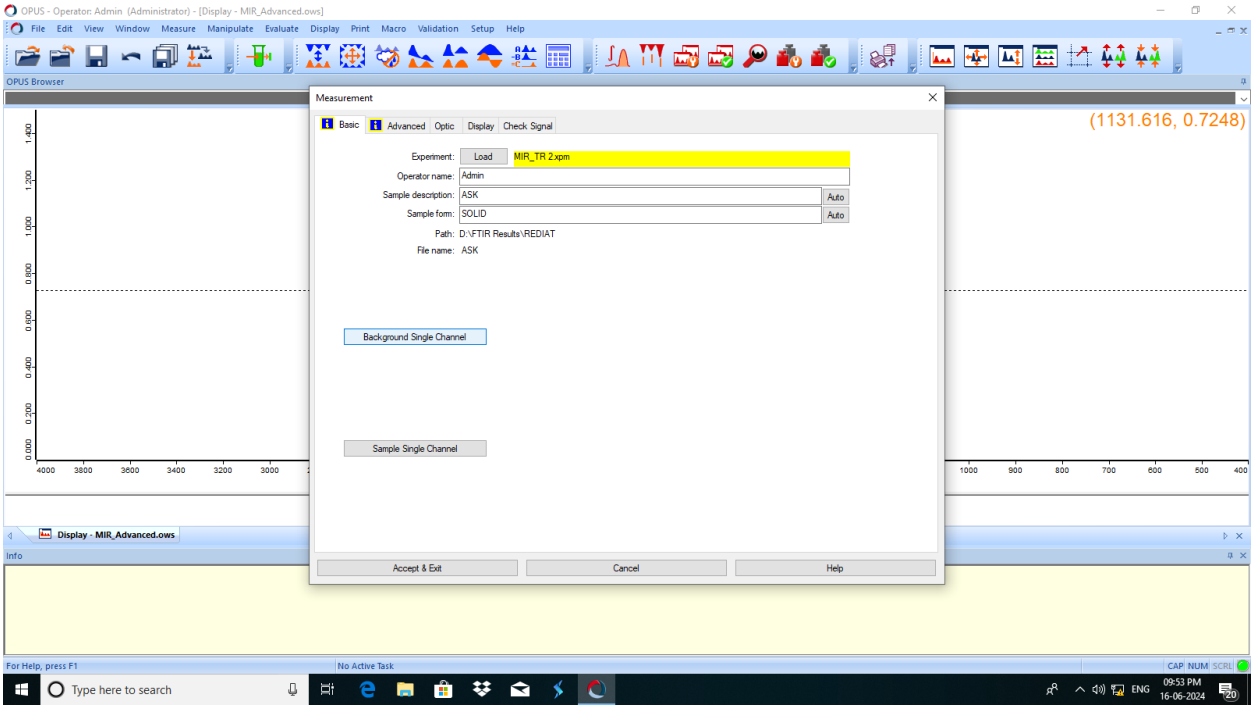
  2nd put your sample inside

  3rd put on the screw lock and gently tighten it

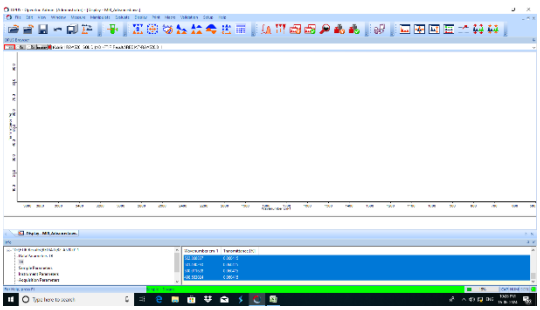
4th put it in the machine accordingly and close the cover of the machine



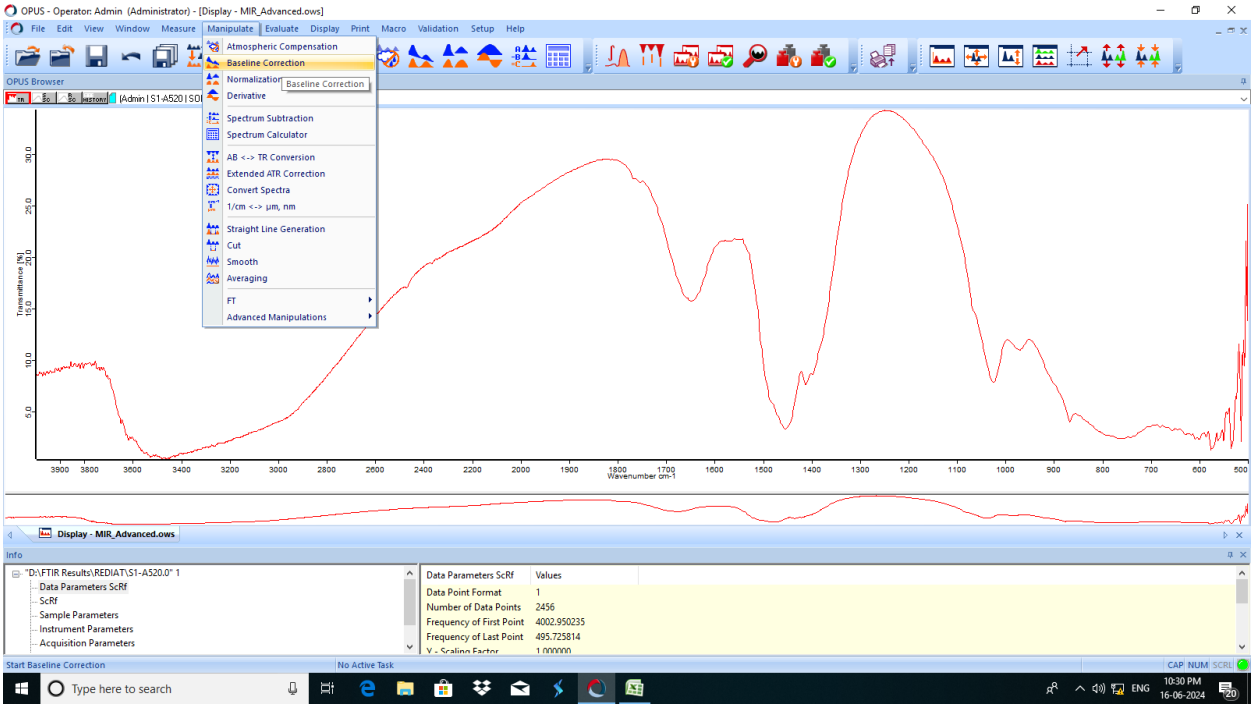
- Go to software make sure measurement window is open if not open it again by clicking on **measure** and next click on **advance measure** from the header part. On the coming/showing window, select basic and put your sample name on the sample description part of the input box.



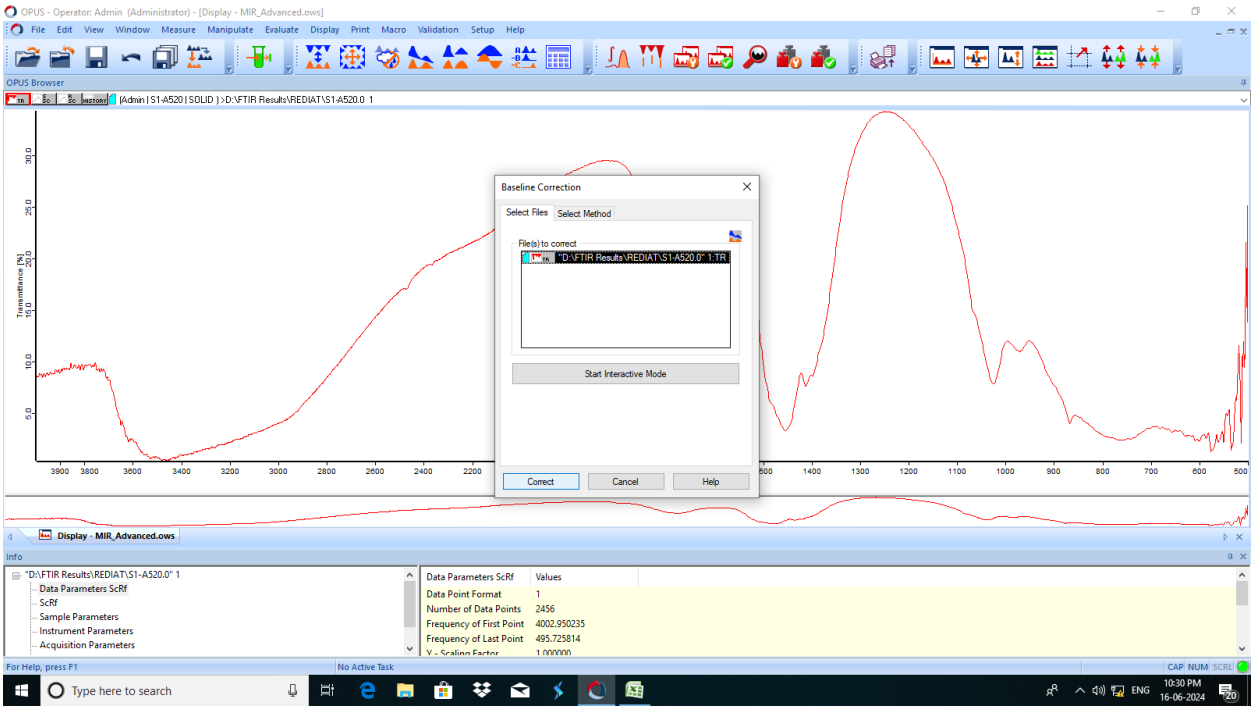
- Next click on **Advanced** and put the sample name accordingly then go back to the **Basic** tab and select Bac**kground Single Channel** then analysis will start and wait until completion.



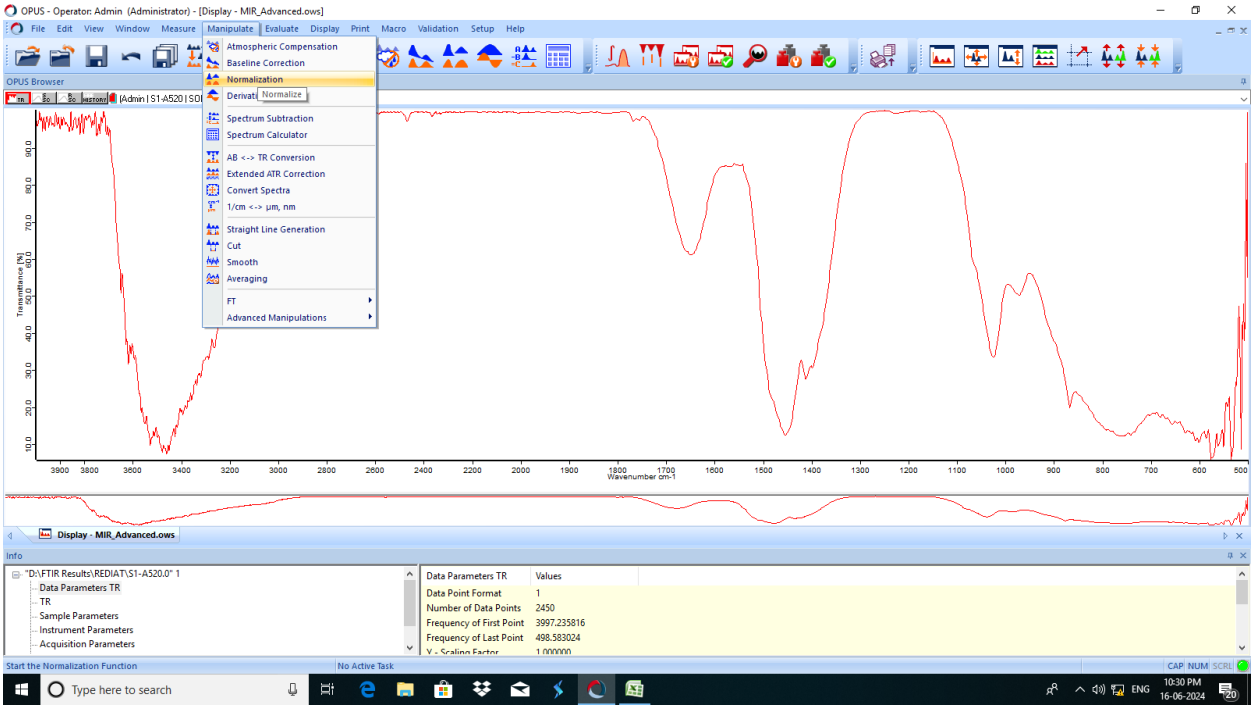
- When the analysis is over do the following adjustments.
  1st click on **Manipulate** select **Baseline correction**



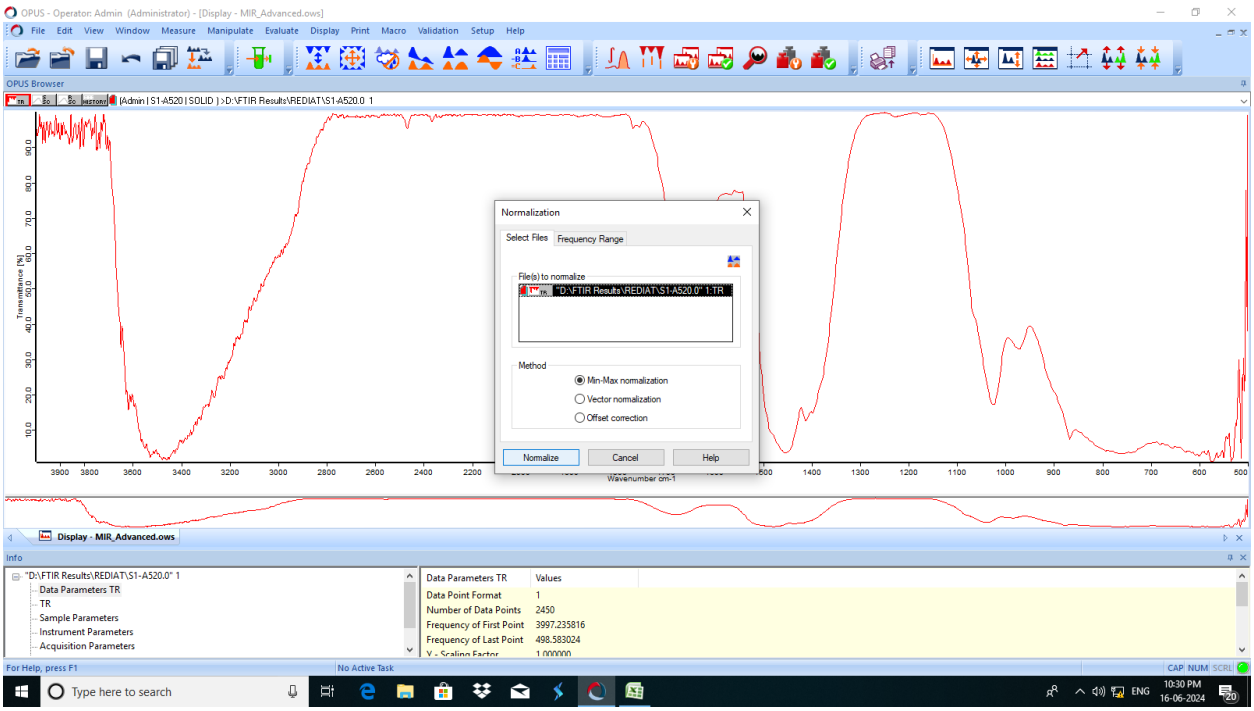
Next , small window will pop with the sample name and directory , just click on the choice under the **file to correct** and click on **correct** button , do this two times minimum.



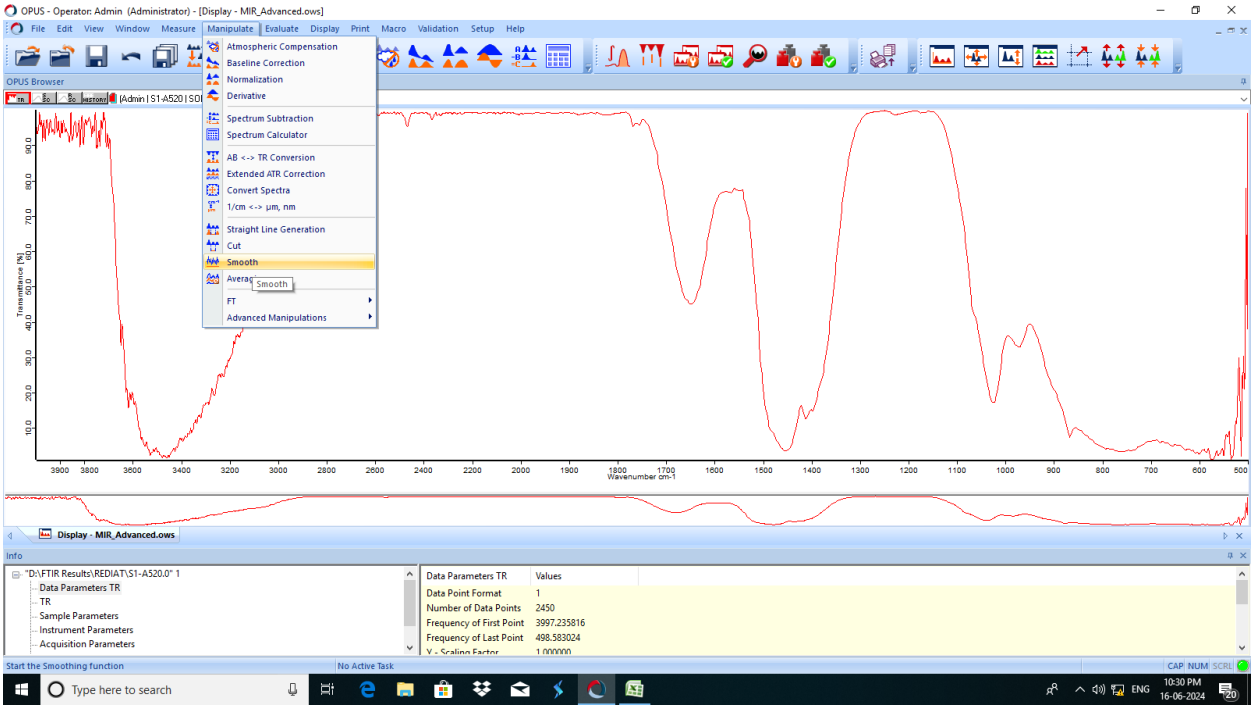
2nd click on manipulate and select normalization



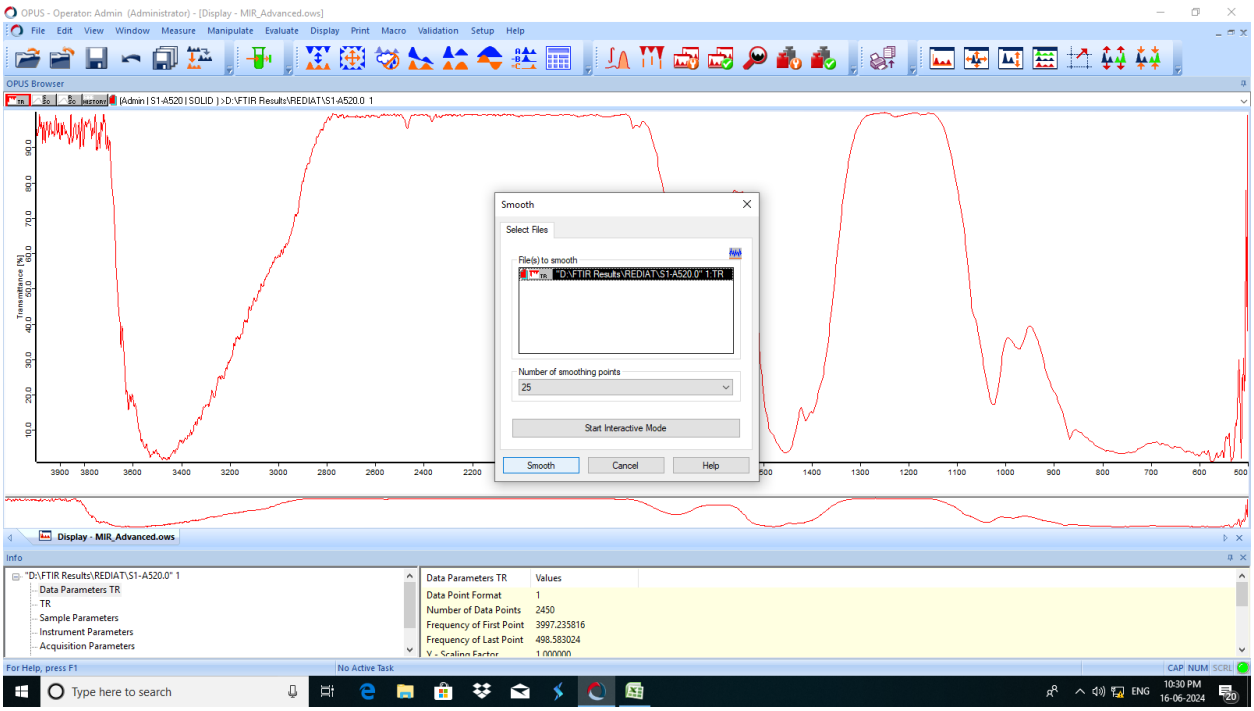
Next , small window will pop with the sample name and directory , just click on the choice under the **file to correct** and click on **normalize** button , do this two times minimum.



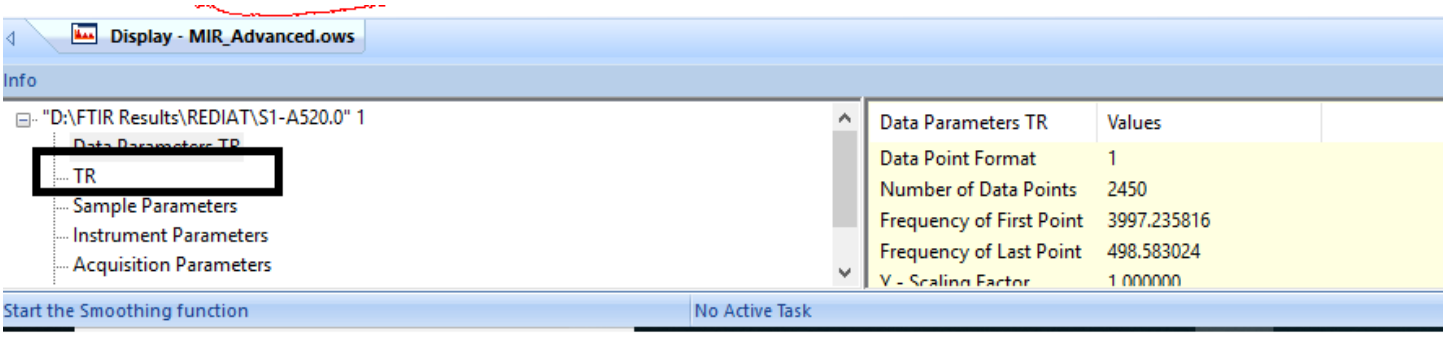
3rd click on manipulate and click on smooth

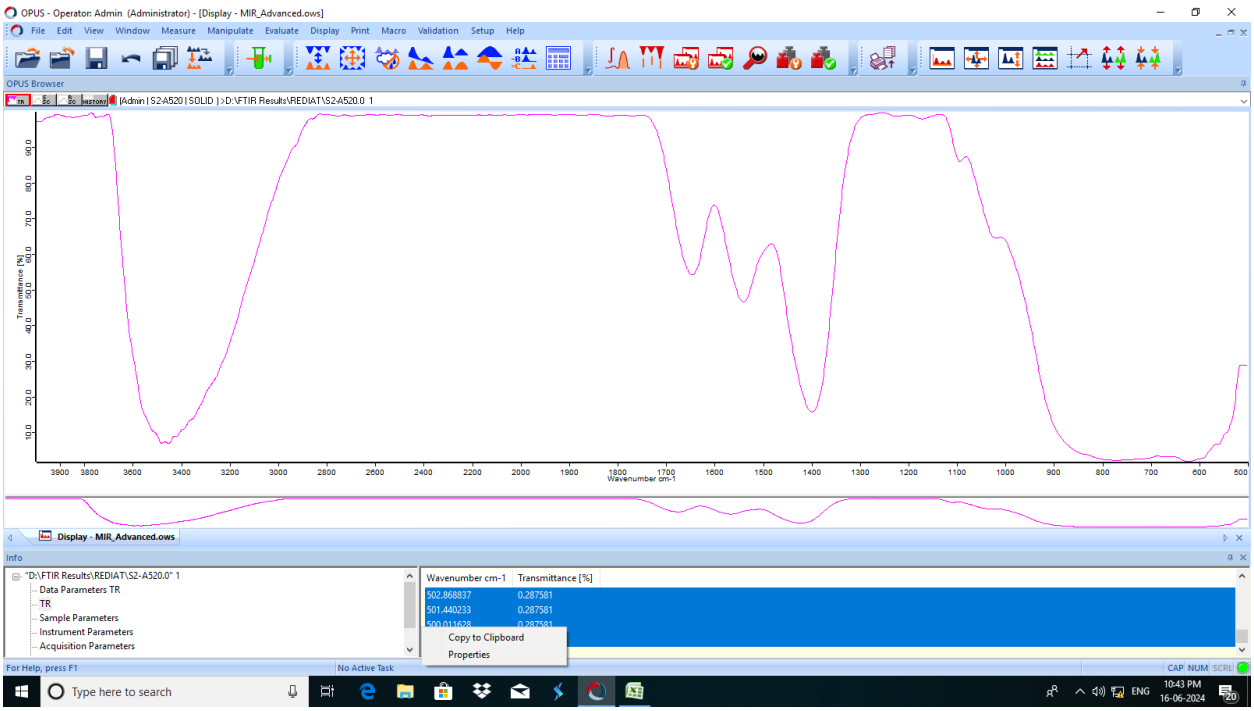


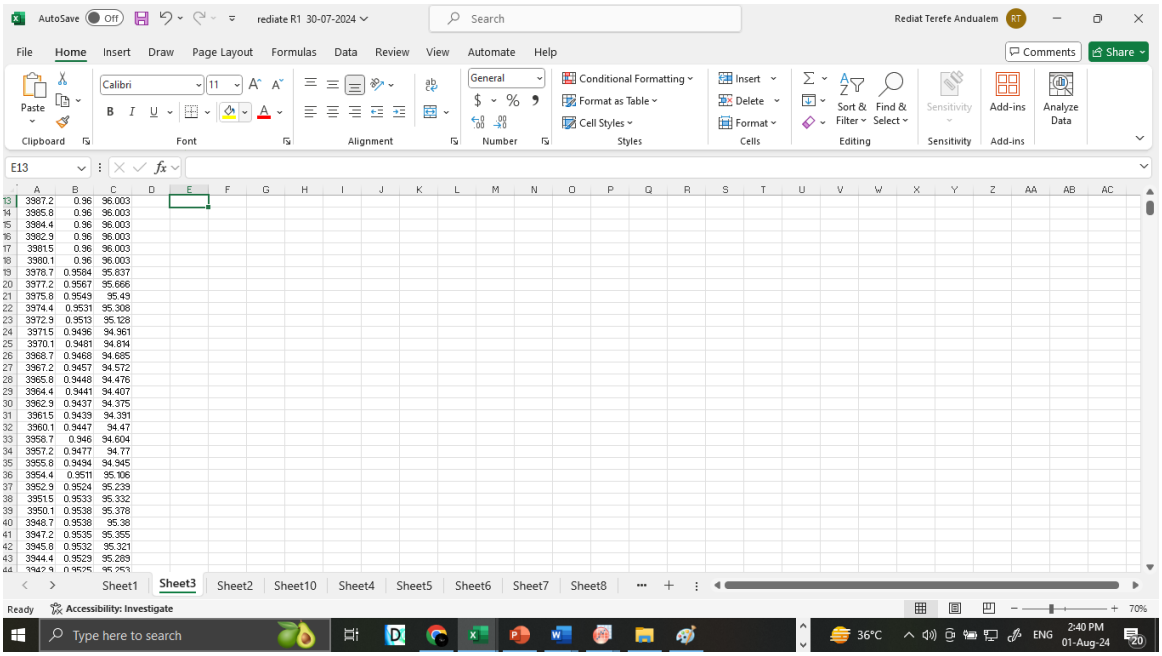
Next , small window will pop with the sample name and directory , just click on the choice under the **file to correct** and click on **smooth** button , do this two times minimum.



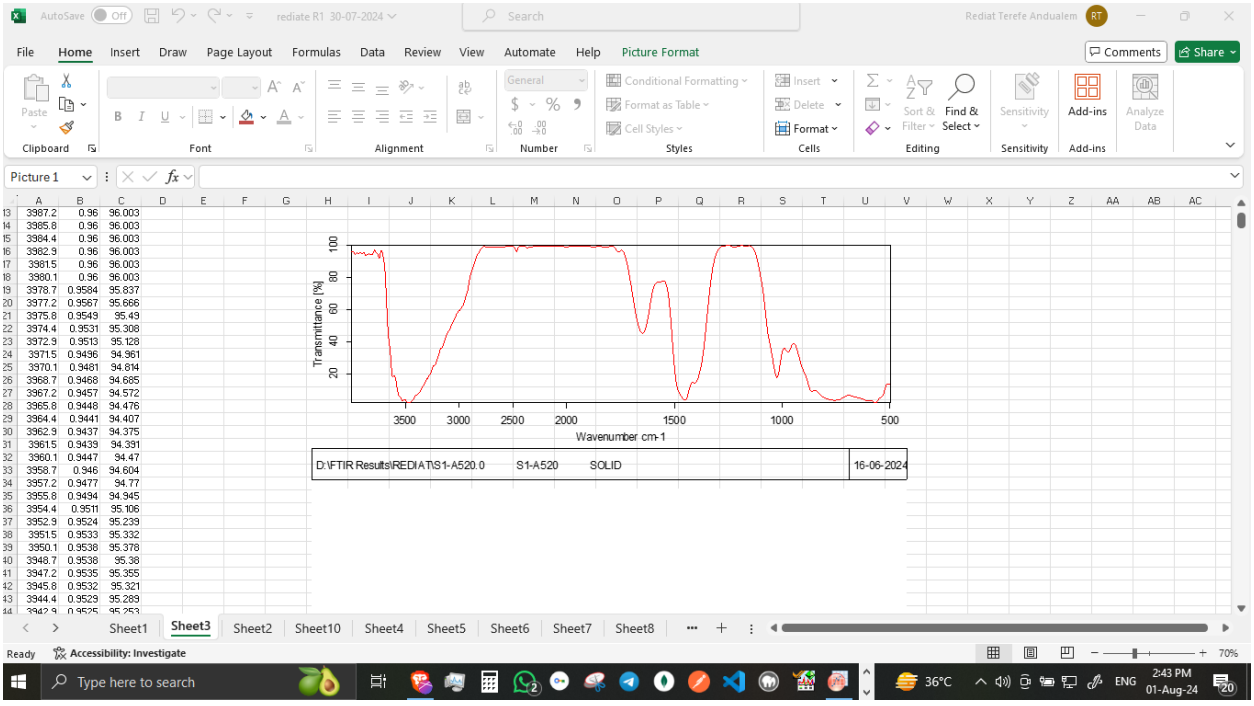
4th click on **TR** and select the whole number results then by write clicking on the side window select **Copy to clipboard** then open excel file and paste the values



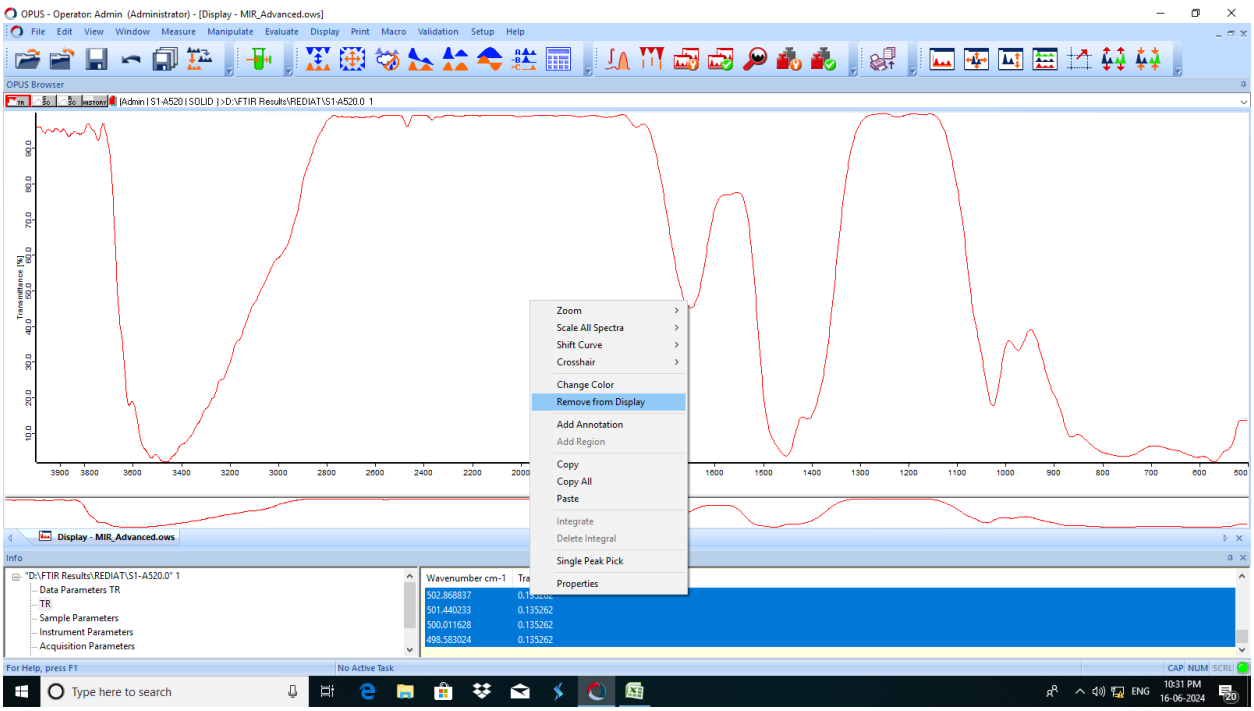




Again, go to the software window and right click on the picture and select **Copy all** and paste it on the excel file on the same sheet where you pasted the numbers.



If you are doing multiple analysis at a time, make sure to remove the display graph after compilation by right clicking on the graph and select **Remove from display**.



Analysis of Liquid sample

For analysis of liquid sample , follow all the procedure above but on sample preparation your sample bed will be KBr only and after putting it on the sample holder from the machine, slowly drop one or two drop (one drop = 10 microliter) of the liquid using micropipette and put it inside the machine and start analysis.