Fill in in the log book

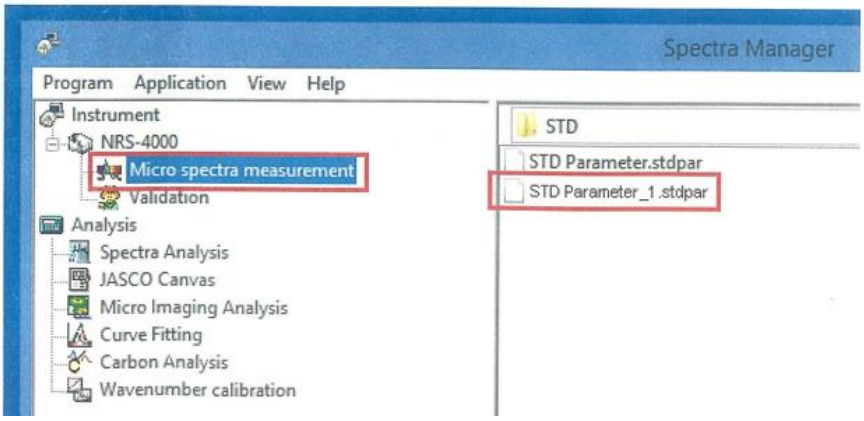
**Power on**

1. Turn on the computer and monitor.

   Switch on the power button of Raman equipment


2. Open the spectra manager on the desktop 


   Click on “Micro spectra measurment’’, then double click on ‘’STD Parameter_1.stdpar’’.



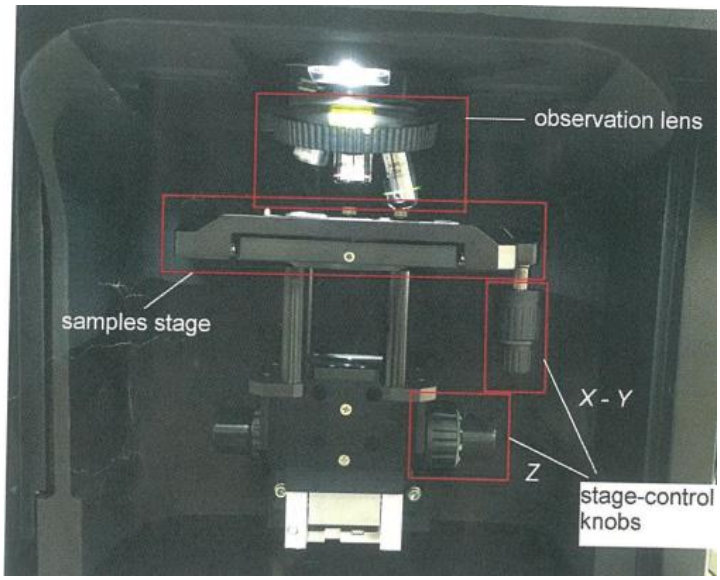
Before measurement, turn on the Raman equipment and initiate ‘’Micro spectra measurement” window at least 30 minutes for stabilizing laser.

- At ‘’Micro spectra measurement” window, you can observe sample through camera preview.

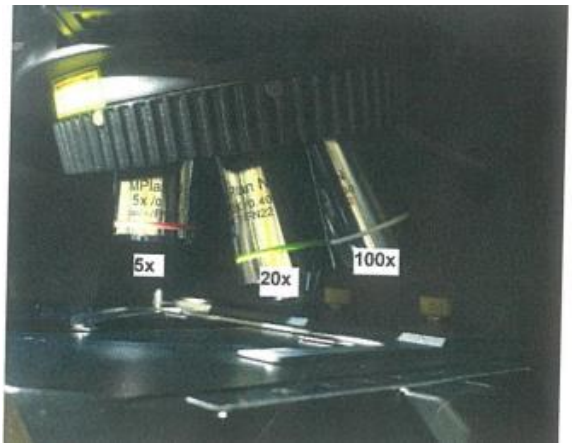
**Sample setting**

1. Open the door by pushing DOOR button located at the bottom of the instrument.


2. Inside the sample holder




3. Make sure the observation lens always starts with magnification 5x



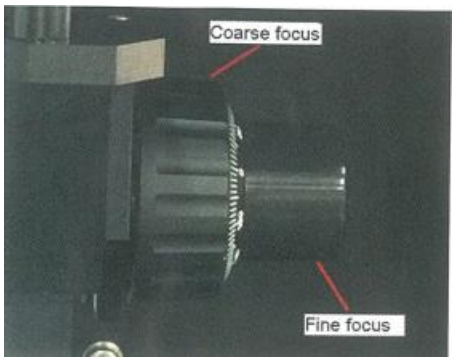

- Use only 5x and 20x lens. It is prohibited to use 100x

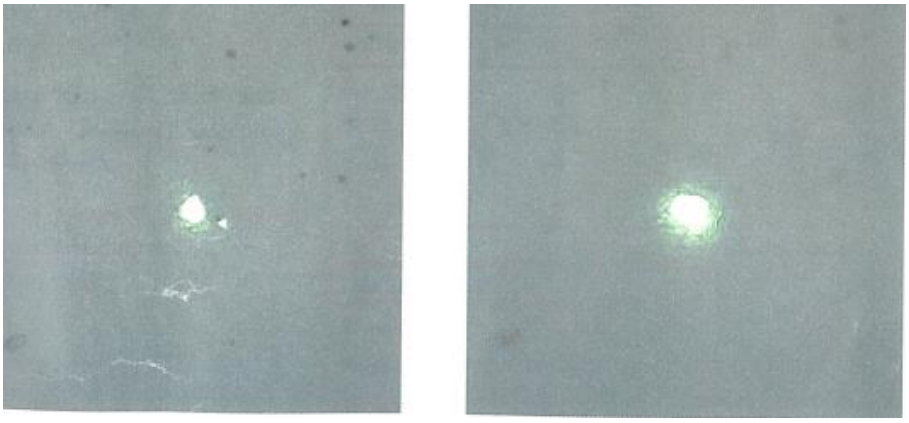
- Put the glass slide that contains sample into the sample holder

  With liquid, volatile and/or air-sensitive samples, please cover the sample with Mylar film before measurement, you need to carefully adjust the focus to minimize the peaks of Mylar. It may be useful to use other windows if the peaks from Mylar film severely disturbs the peaks of interest

- Using knob X-Y for choosing sample area, and use knob Z for adjusting the focus through camera preview.
  - For 20x lens, always use ONLY fine focus.
- After adjusting sample position with 5x lens, move to 20x lens and adjust the focus again.
- Close the door by pushing DOOR button again. After the door is closed, you can observe laser beam on camera window.

-





Focus (left) and de-focus (right) images

- Do not change ‘’Laser Int. (Observe)’’. If it is higher than 0.01%, CCD camera will be damaged.

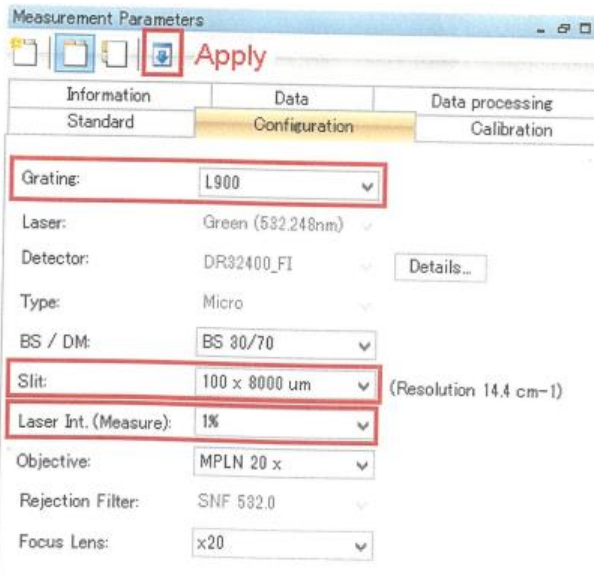

**Measurement**

Always click Apply if you change grating or center wave number.

**Configuration**

- At measurement Parameters window, choose configuration.

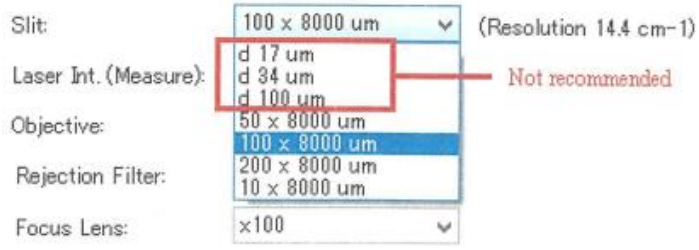
- Change grating, slit and Laser. Int depending on your sample.
  - Changing other settings is not recommended.




- Click sample monitor to obtain preview of the measurement.

  **Changing the configuration until you obtain good spectrum.**

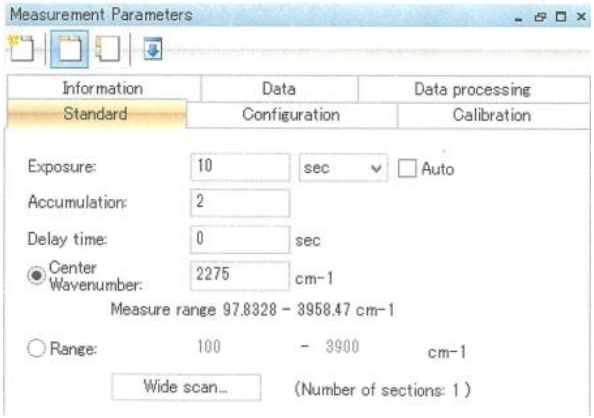
  - Laser Int. (Measure) should be started with 1% and increase until you reach good resolution. (It is not necessary to measure with Laser Int. 100%). In scientific reports, the laser intensity must be written in mW based on X%* 20mW (i.e. 20mW is the intensity at 100 %).
  - Changing slit to pinhole is not recommended.




- After adjusting configuration, click STOP

**Measurements conditions**

- At ‘’Measurment Parameters’’ window, choose tab ‘’ Standard.’’

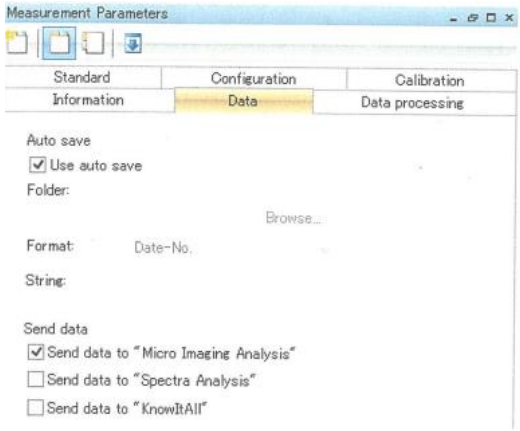



Set ‘’Exposure” (1-60 seconds, 10 seconds is recommended); accumulation (2-10 times, 2 times is recommended); and center wavenumber depending on your sample measurement.

- Changing Range is not recommended.

  Click Apply

**Auto save data**




- At Measurement Parameters window, chose the tab Data – use auto save and choose the path of your folder. Choose send data to Micro Imaging Analysis.

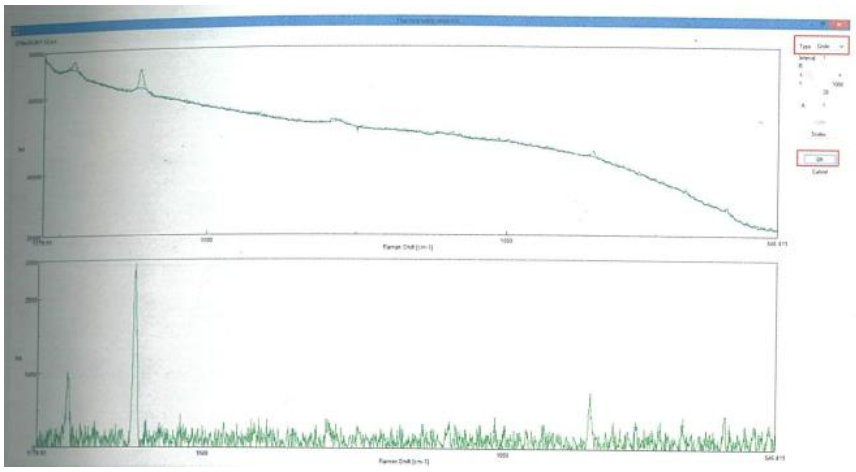
**Execute Measurement**

- Click Sample icon to start the measurement 

- Micro Imaging Analysis window will pop up when the measurement is finished.
  - After the measurment, if you want to change the sample position, Always come back to 5x lens before adjusting knob X-Y
  - It is recommended to 3 spectra per sample.

**Save data**

- Data and the image of measurment are automatically saved in your folder.
- In order to process the data using other software (Excel, origin), you need to export the data to .txt or .csv file
- At micro imaging analysis window, select the data you want to export.
- Click File- Export-Chose ASCII.txt or CSV files.csv – Click Save.
- If you wish to export the image:
- Select image-edit-chose Copy as Bitmap-Paste it into Paint and save as image.
- Data can be transferred by CD or USB drive
- Note: If your measurement involves high fluorescent intensity, you can execute Fluorescence correction as shown below
- At the tool bar, click Fluorescent correction icon
- At the opened window, choose the type as Circle and then click OK.



**Shutdown**

1. Return lens to 5x
2. Remove samples from the sample stage, close the door.
3. Close the Micro imaging Analysis window.
4. Close the Micro Spectra Measurement window.
5. At Spectra manager window, click program- Exit.
   - The temperature display of the CCD detector will appear. Wait until CCD detector. temperature is set to above 0°C, the window will be automatically closed.
6. Turn off the monitor only.
7. Turn off the power switch of the instrument.