FTIR instructions
(09/09/2016)

Before starting your session:

1) If using non-standard detector or source, contact staff at least 1 day before your session
    Standard detectors:
        Bench: DLATGS and MCT standard
   Microscope: MCT and InSb standard
    Standard sources:
        Glowbar (mid-IR)
        Tungsten lamp (Near-IR)
2) Check that the instrument is under vacuum (if not under vacuum notify staff and record in logbook)
3) Check that the N2 cylinder is not empty (if < 500 psi contact staff)
4) Check that the correct source is installed and on
5) Check that the correct beamsplitter is setup

You are NEVER allowed to change the beamsplitted
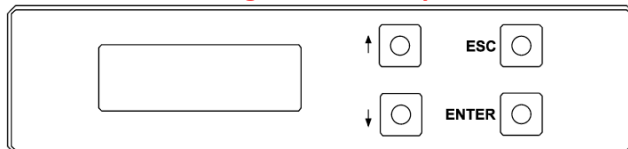
   a. Vent the chamber
        i. Upper left console (diagram above) use the arrow keys to move between lines and enter to select
       ii. From "START MENU"
            1. Select VACUUM CONTROL
                a. SAMPLE CHANGE MENU
                    i. VENT OPTICS
   b. Lift the round lid to check the beamsplitter handle color (Do not touch the beamsplitter)

Red handle	KBr	mid-IR
Brown handle	CaF2	Near-IR
Silver	6um Mylar	Far-IR

   If you need a beamplitter other than the one installed please contact the staff.

6) Check that the correct module is installed.
   a. Diamond-ATR
   b. Ge-ATR
   c. Straight through transmission
   d. SEAGULL variable angle reflectance
7) Evacuate the chamber
   a. On the console menu:
        Select: EVACUATE OPTICS

You are now ready to start your session:

1) Start the kiosk session using any internet connected device
    a. Automatically opens the N2 gas valve to the spectrometer
    b. You should now see blinking green LED in the front of the instrument
2) Start OPUS 4.0 Software:
    a. If computer not on: log into the computer: (no password – just hit return)
    b. log into OPUS 4.0 (password is OPUS)
    c. click return to get to the software
3) Click the green test tube icon (advanced Data Collection)
    a. "Basic" tab:
        i. Load your experiment file (typically setup during training)
        ii. Change sample name and other information if needed
    b. "Advanced" tab
        i. change filename
        ii. change scan times if necessary
            # of scans for background should be at least as long as # of scans for sample
        iii. change result spectrum if necessary
    c. "check Signal" Tab **DO NOT CLICK ANYWHERE**
        i. wait for the signal to appear **DO NOT CLICK ANYWHERE** until the signal appears of the software will likely crash.
        ii. Once you see signal the intensity (can take a couple of minutes) Compare the expected intensity to your observed intensity:

MIR + DLATGS + KBr + 8mm aperture	23,000
MIR + DLATGS + KBr + 8mm aperture+d-ATR	2,500
MIR + MCT + KBr + 2 mm aperture	26,000
MIR + MCT + KBr + 3 mm aperture + d-ATR	12,600
MIR + DLATGS + CaF2 + 8mm aperture	14,000
NIR + DLATGS + CaF2 + 8mm	16,000
NIR + MCT + CaF2 + 1 mm	19,000
NIR + DLATGS + CaF2 + 8mm + d-ATR	1,400
NIR + MCT + CaF2 + 8 mm + d-ATR	14,000

   If using MCT: Make sure you filled up the MCT dewar with LN2

        iii. If intensity is very different check your detector, beamsplitter and aperture in the "optics" tab if correct, contact staff
        iv.
    d. "Basic" Tab
        i. make sure you have your reference in place and the system is under vacuum
            Note: with d-ATR reference typically with nothing and crew off the diamond
                click "Background Single Channel"
        ii. Wait for the system to finish collecting the background
        iii. Vent system
        iv. Place your sample
        v. Evacuate System
        vi. Wait for pressure / signal to stabilize
        vii. Click "Sample Single Channel"
        viii. Wait for the system to finish measuring
4) You should now see your sample's the pattern

To export your data to ASCII

1) Select the pattern to export typically the first box under the file name (also recommended to export the S and R patterns)
2) Click in the menu: File / Save File As
3) A window popped up
    a. "Mode" tab
        select: "Data Point Table"
    b. "Data Point Table" tab
        don't check the tab box and write a "," between the two numbers
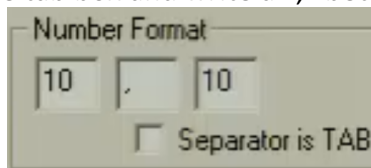
    c. "Select File" tab
        check that the Path is correct and type the file Name for the exported file:
        e.g. *MyData.csv*
4) repeat for each spectrum

When done:

1) **Evacuate the bench**
2) **If using a source other than MIR turn it off**
3) Close the software
4) End your kiosk session (the bench LED will typically revert back to red)