

## **VII. Equipment**

### ***M. TA Instruments Q2000 DSC***

For DSC experiments (such as melting point and Tg determination), use the DSC located in the Molecular Characterization Lab on the 10th floor. TGA analysis must be run before any DSC experiments may be performed.

Register time on the DSC by signing the logbook in advance. There are no rules to the amount of time students may block out and some over-zealous students tend to overestimate the amount of time they need, so plan accordingly.

#### *Running a DSC Experiment*

1. Open the large LN2 tank.



2. Turn on the small LN2 (LNCS).



3. Turn on the DSC helium line.



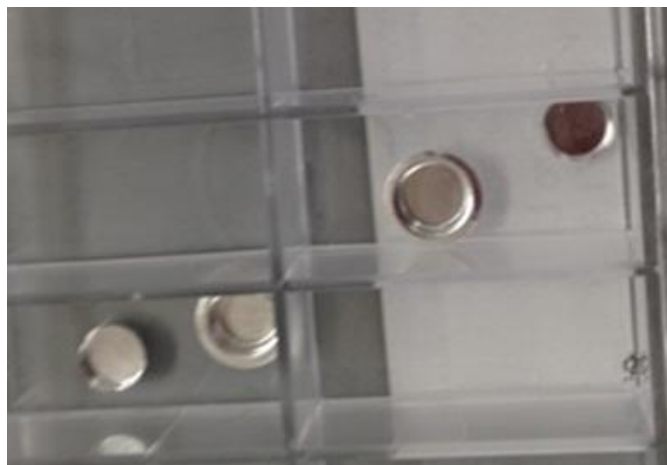
4. Open all 3 blue gas purifier valves next to the helium tank



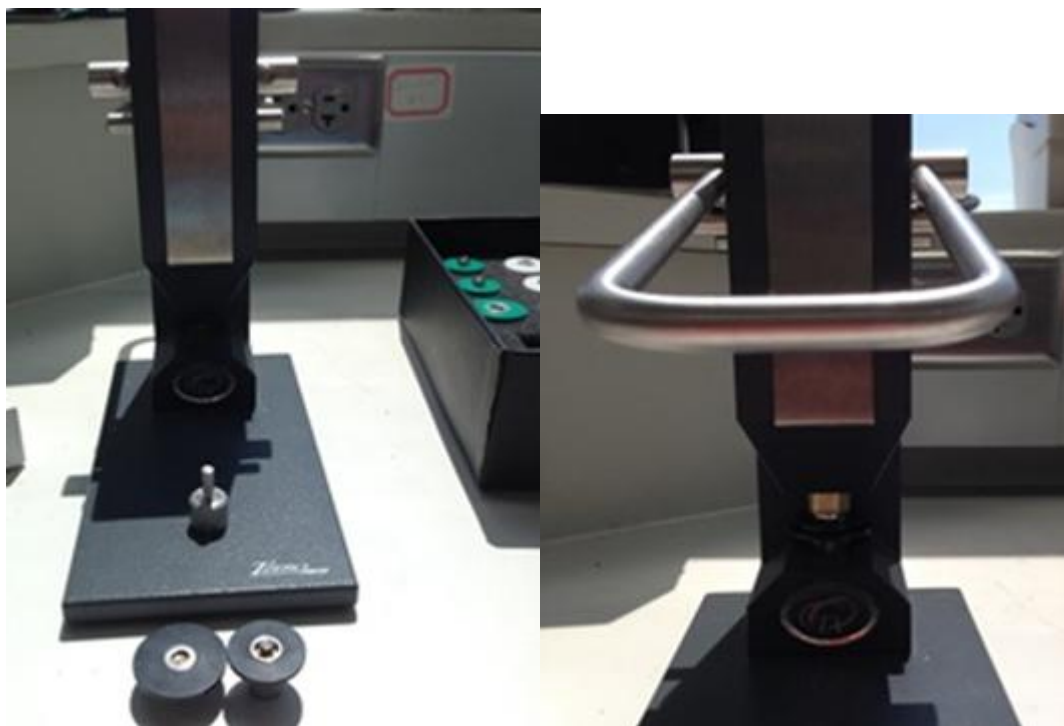
5. Turn on the DSC nitrogen tank



6. Open TA Instrument Explorer on the computer
7. Open Q 2000
8. Click Control--->LNCS--->Fill, The LNCS level should be above 80% during running.
9. Take a pair of pan and lid, weigh the empty pan and lid, record the weight. Put some sample inside pan ( a few mg), record sample's weight.



10. Seal the pan



11. Click Summary, put sample name, sample size, pan mass, reference mass. Save your data into your own folder through Data File Name.
12. Click Procedure and click Editor to build your method
13. Click Notes and put your name in Operator

14. Click Control--->Lid--->Open, put your sample and reference inside, and then click Control-Lid-close, do it quickly to avoid condensation of moisture inside of instrument
15. Click the green arrow to start the run
16. Click Control--->LNCS--->Stop cool when you are done with all the measurements and take out your sample and reference.
17. Close the large LN2 tank, turn off the small LN2 (LNCS), turn off the DSC helium line, close all 3 blue gas purifier valves next to the helium tank, turn off N2 cylinder when Flange temperature increased to room temperature. It usually takes about 20 min after stop cool of LNCS.