Differential Scanning Calorimetry
Standard Operating Procedure

Contact Person:

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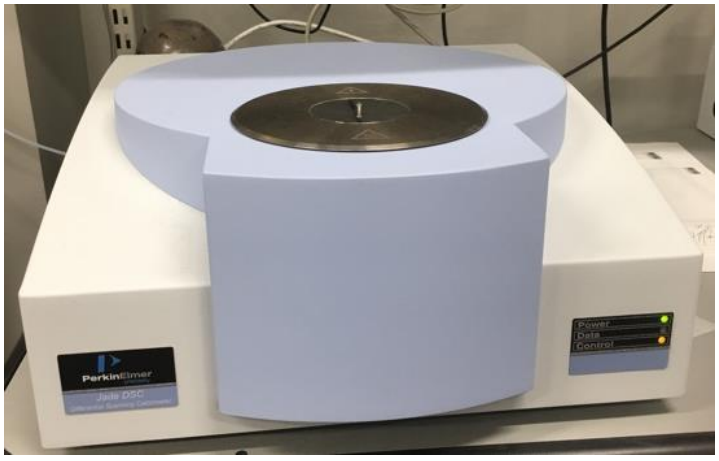
Email: amallia@ggc.edu



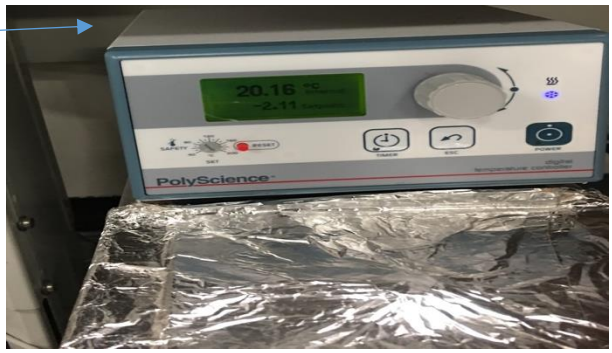
Georgia Gwinnett
COLLEGE

1) **Sign in to the log book, (Date, Your name, name of the chemical, temperature, Name of the Faculty and comments)**

Preparing DSC for the operation

- First, turn on Chiller

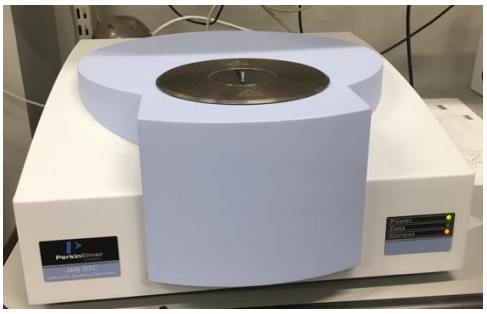
Switch is behind the machine



- Second, open Nitrogen tank (counter clockwise, only open black knob)

- Third, turn on the instrument

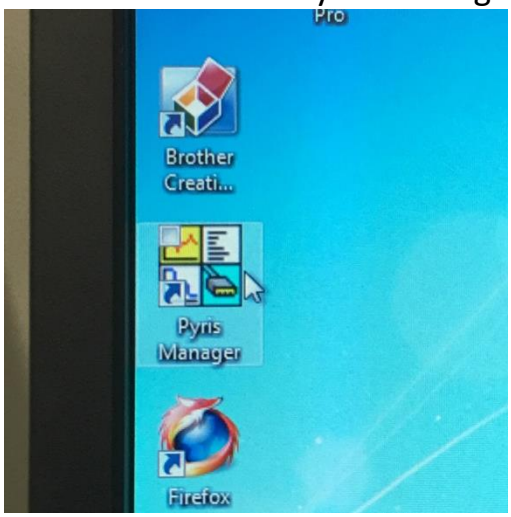
Switch is behind the instrument



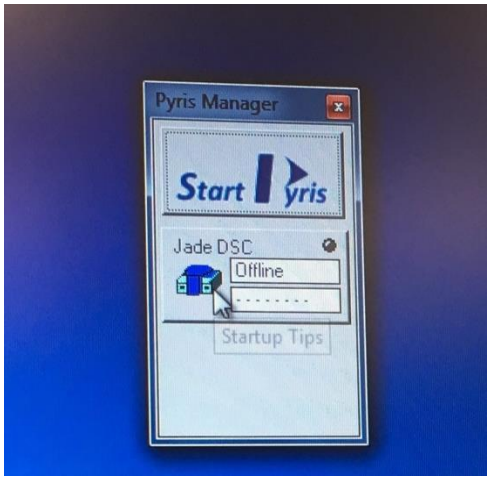
Checking the DSC configuration

- Turn on the computer

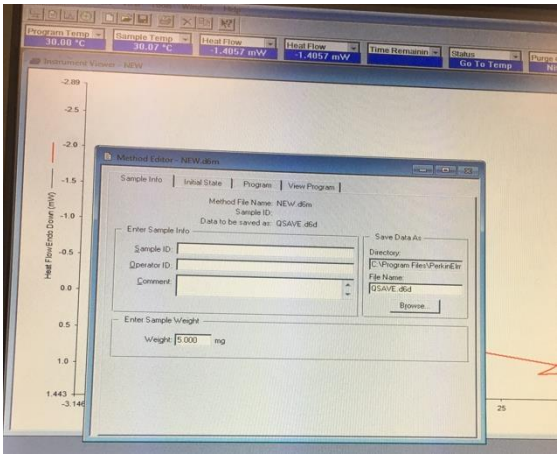
- Double click on “Pyrus Manager”

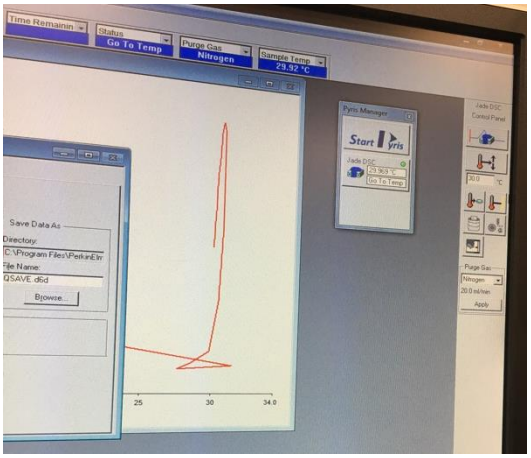


- Double click on “Jade DSC Picture”



- You will see 3 windows: “METHOD EDITOR”, “INSTRUMENT VIEWER”, “PYRUS SERIES”.

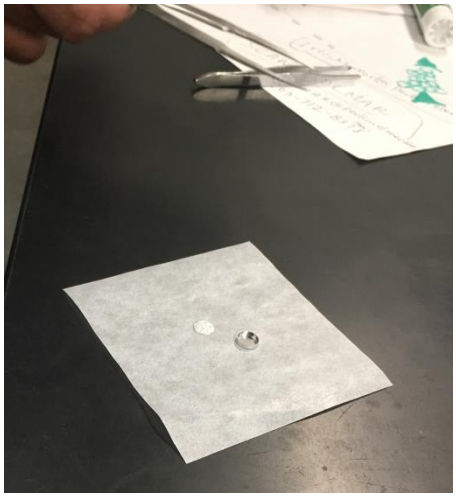


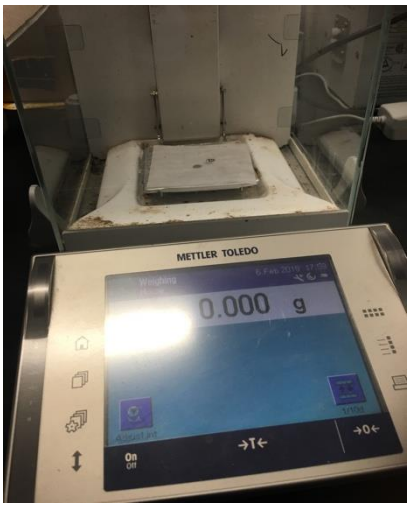


- SAMPLE PREPARATION:

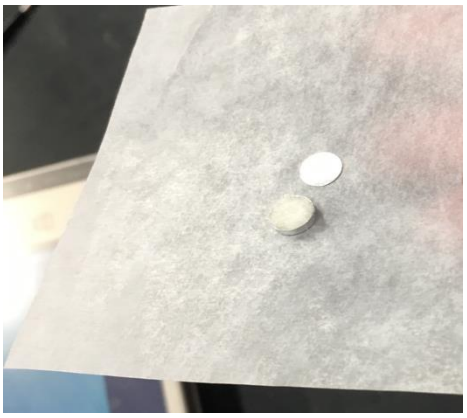
1. Obtain pan and lid from drawer adjacent to the instrument

2. Using tweezers put the pan and lid on weighing paper then transfer to Analytical balance and tare it.





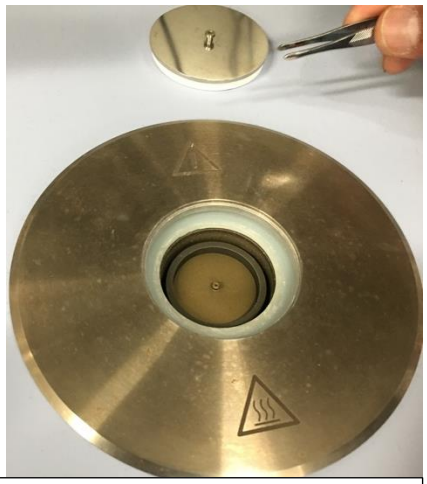
3. Add about 5 mg of sample, do not overfill



4. Proceed to the Sample Pan Crimper Press. Clean press using Ethanol and Kim wipe. Make sure pull down bottom part to clean any residue.

5. Gently place lid on pan with sample using tweezers, pull down and insert the pan then, release slowly. Press down once until it clicks. Do not use too much force. Weigh the pan and lid with compound one more time.

- INSERTING SAMPLE



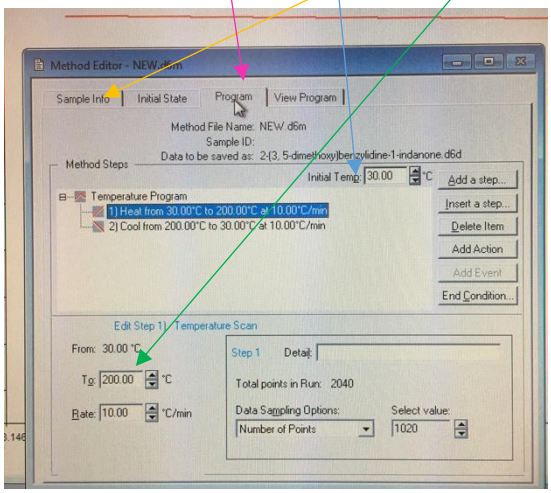
Remove first lid using tweezers

Remove second lid

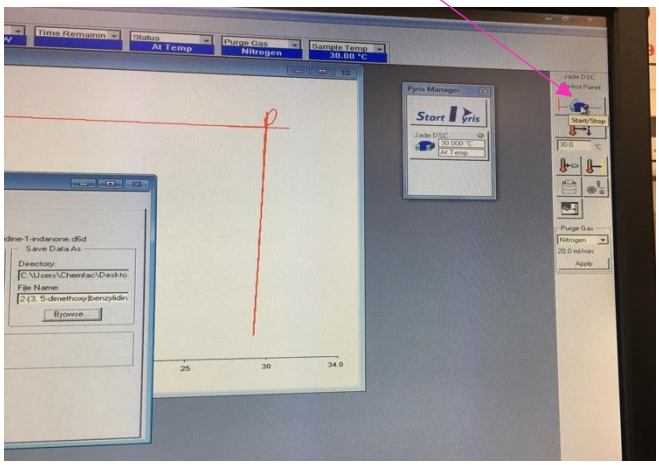
Sample needs to be inserted on the left side. The right side is the reference, do not remove.

- Place sample and close all lids

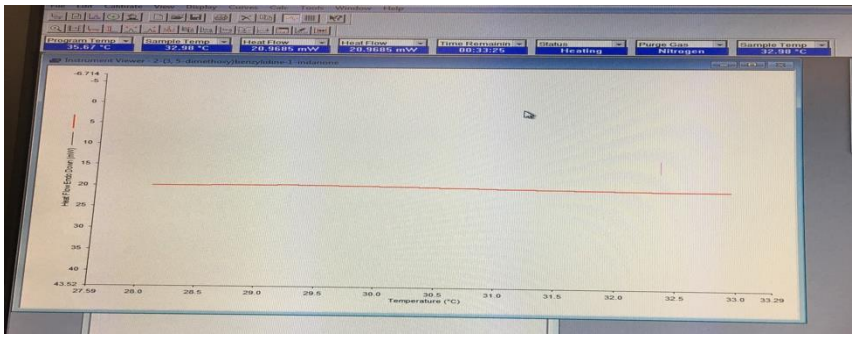
- To run the sample, go to the ‘METHOD EDITOR’>Sample Info: type sample weight> BROWSE: Name your file.
- Go to PROGRAM: Initial Temp: 30 C, To: 20C above melting point of sample



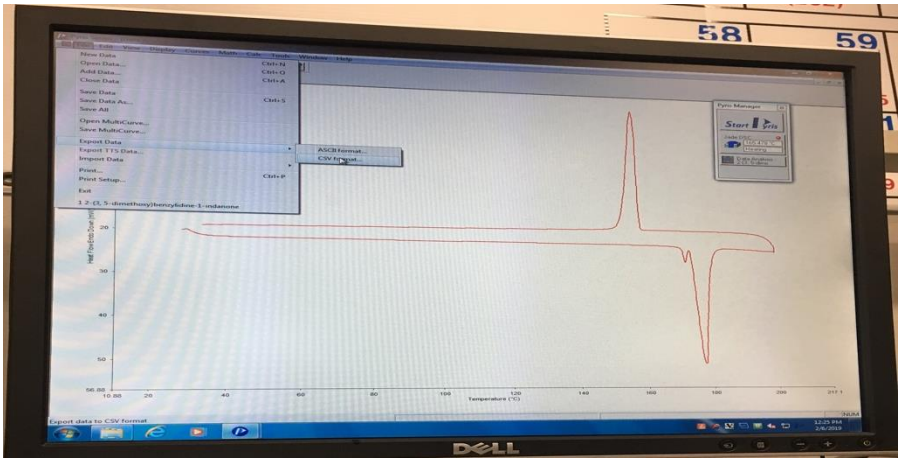
- Click on control panel to start



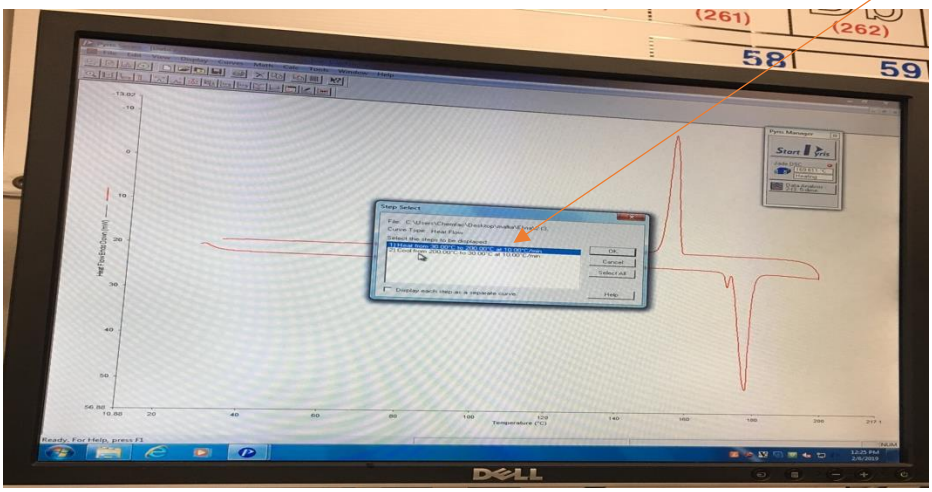
- Once the DSC starts to run the sample, the “Instrument Viewer” window will look like this:



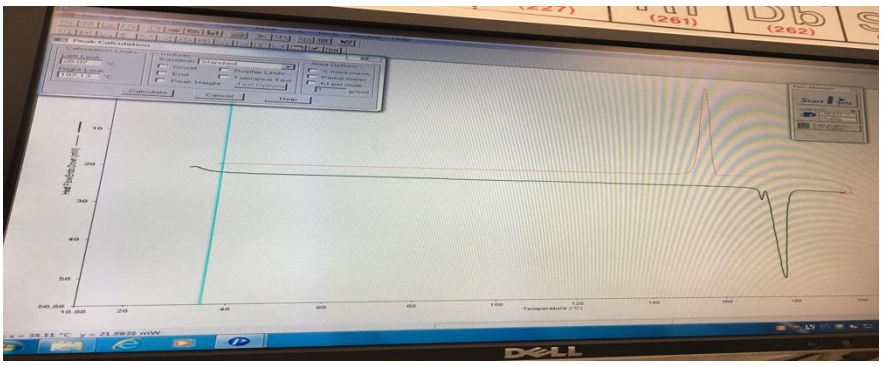
- The Sample will run aproximately for 30 mins. Once its done, save file. >Export Data>CSV format

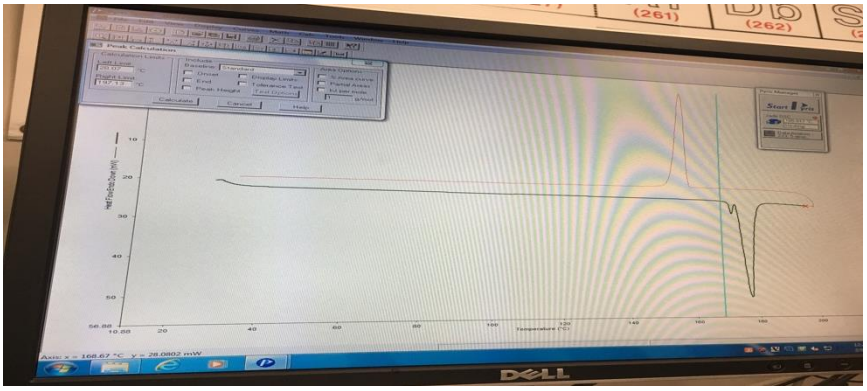


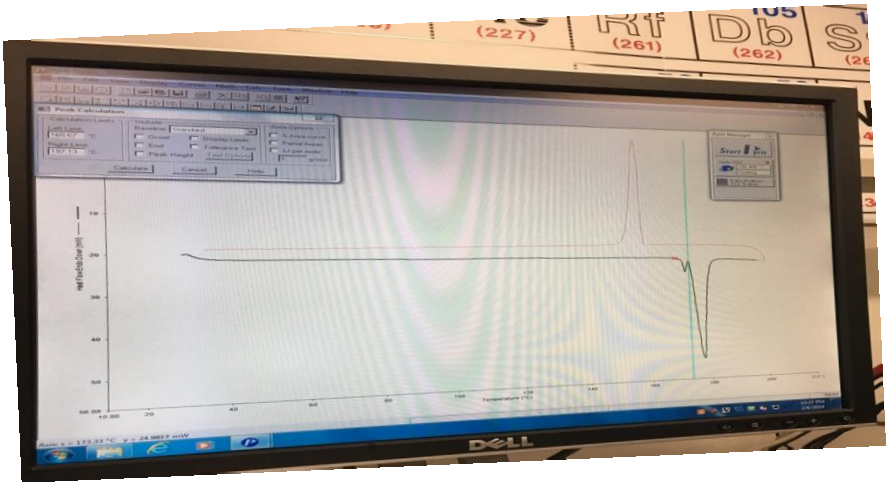
- ANALYSING SAMPLE: Go to FILE>Open your saved file>CURVES: Select Heat, then OK



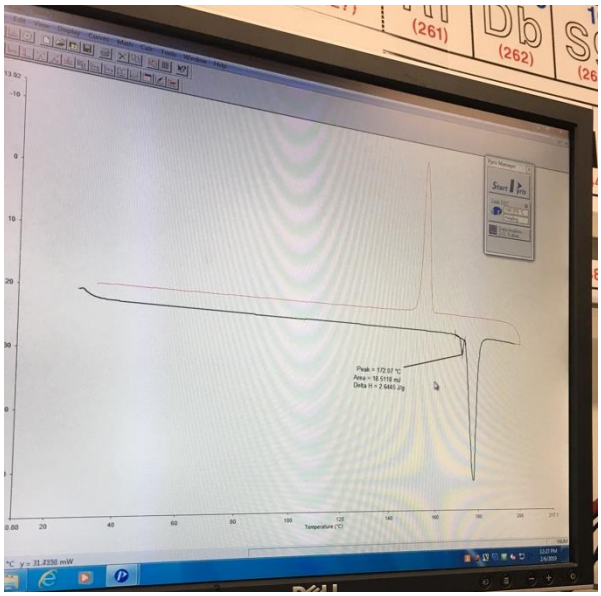
- Click on CALC >PEAK CALCULATION: A green line will appear and X's at the end of the peaks. Drag the line near the beginning of the peak. A secon X will appear at the end of the peak, drag the green line to the end of the peak



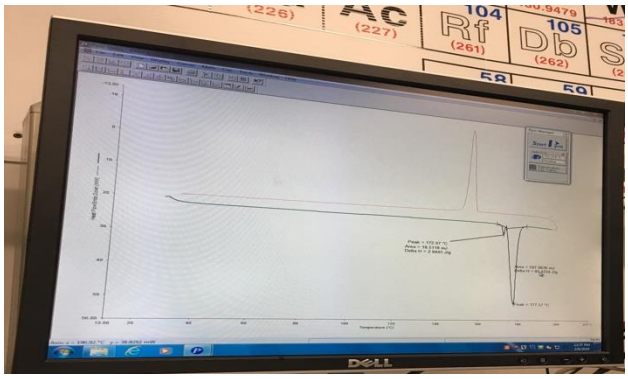




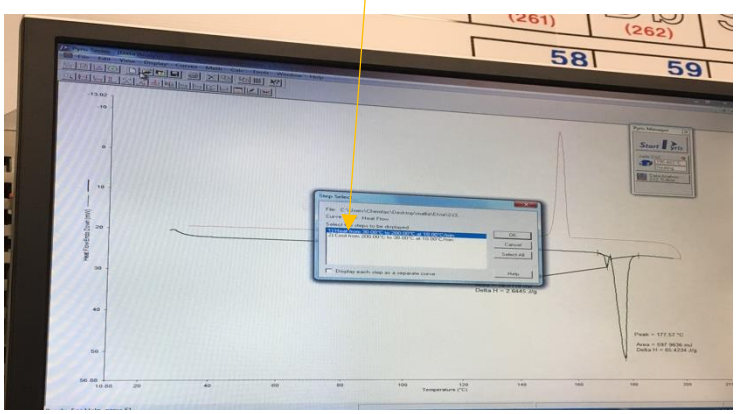
- Click> CALCULATE: the data for the pick will show up as following image



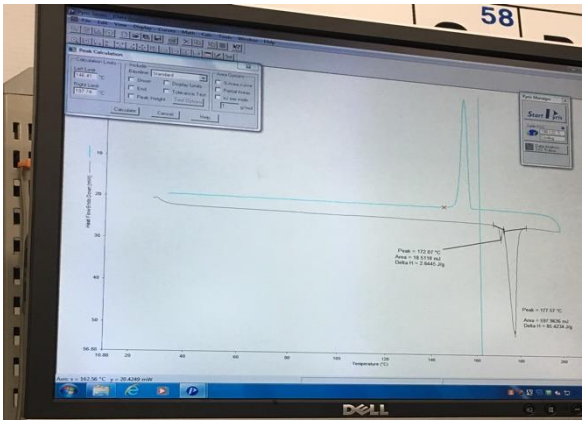
- In this example a second peak needed to be analyzed, the same procedure was done to calculate the peak

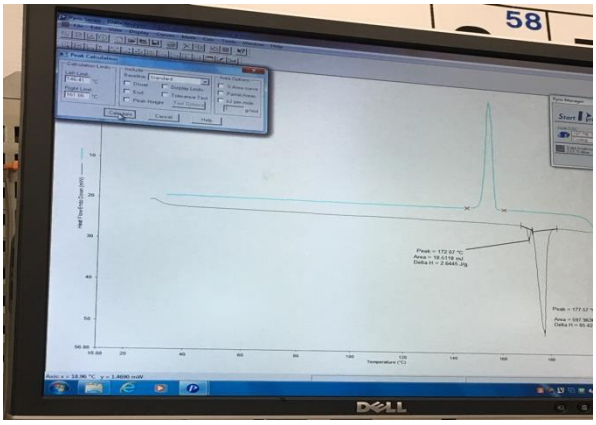


- CURVES> analyze the cooling temperature, Select #2 by deselecting the first option. Click OK

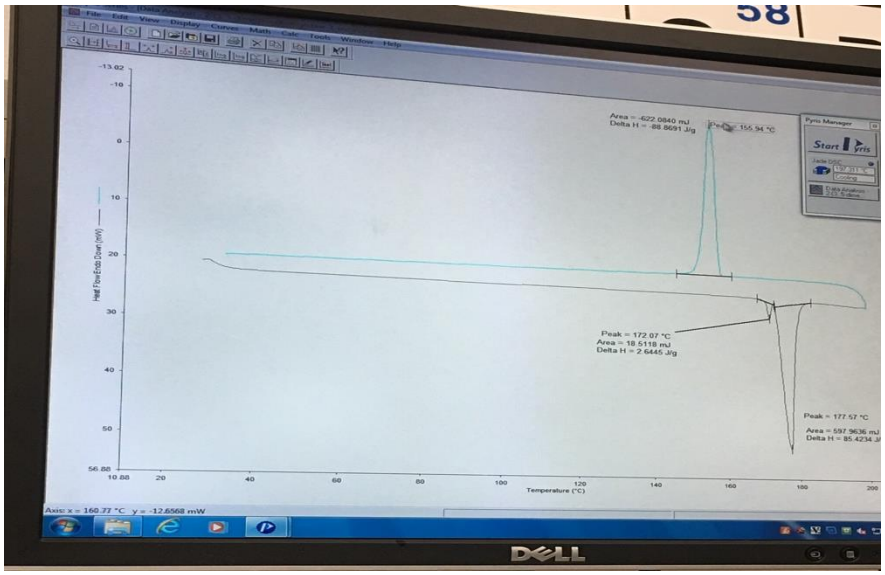


- Click>CALC>PEAK CALCULATION: again drag the X mark to the beginning of the peak and the second X to the end of the peak, >Calculate

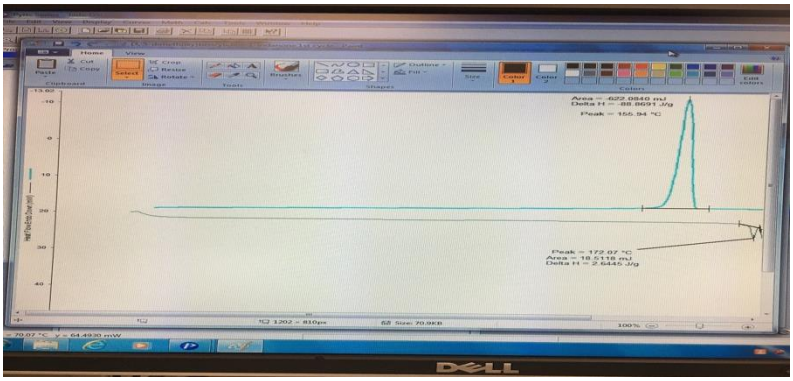




- After Calculating the peak, the data will show



- Go to Edit>Copy image> Open PAINTER>Ctrl V> Save image as File name.JPEG



- Repeat the process for each Sample Cycle, please include sample cycle # in your file name.