

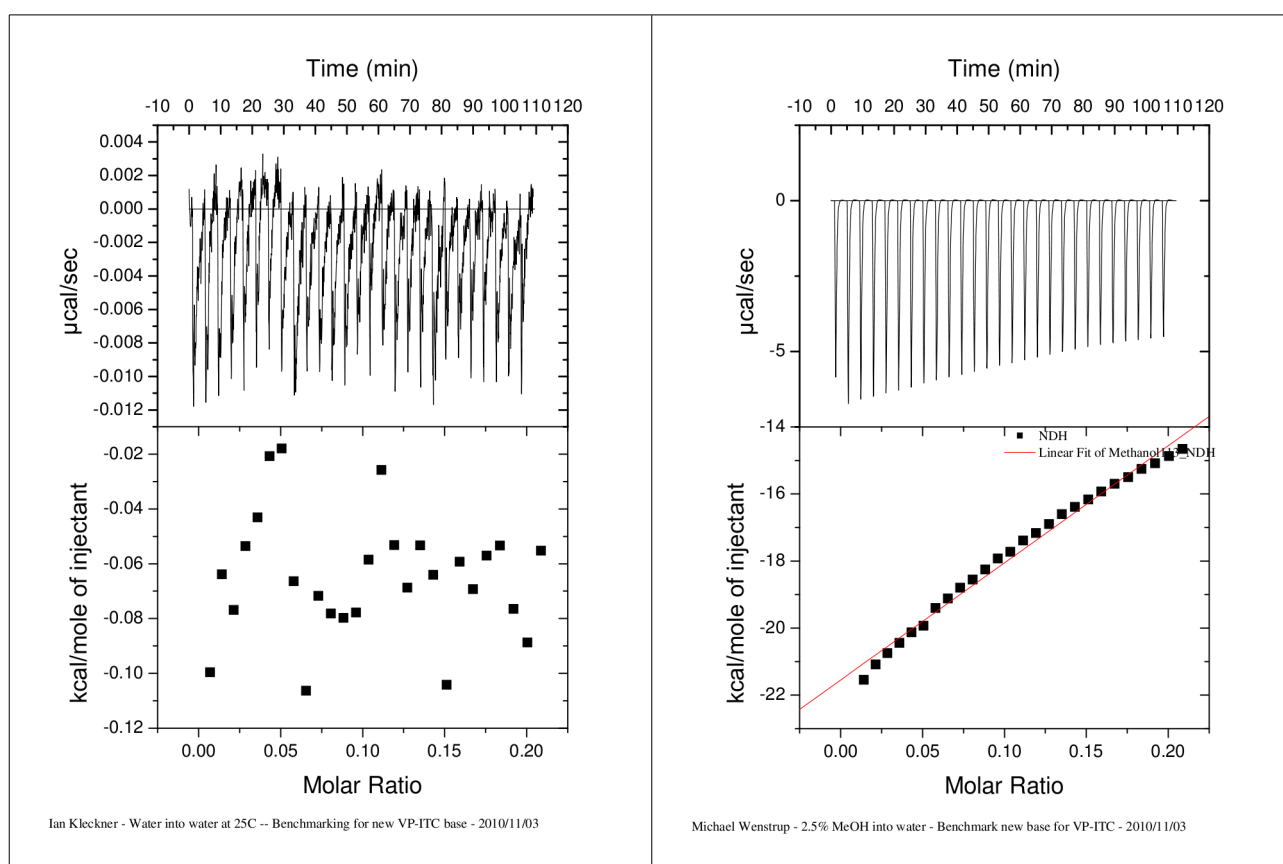
Ian Kleckner
Foster Lab

Maintenance and benchmarking log for instrumentation

Microcal VP-ITC

2010 / 11 / 09 – Ian Kleckner, Michael Wenstrup

- Replaced plunger tip
- Benchmarked new base with H₂O-H₂O and MeOH-H₂O runs both at 25C
- H₂O run indicates noise of instrument (ΔH results from heat of injecting / mixing)
- MeOH run indicates uniformity of injection size (ΔH results from dilution)
 - The manual indicates one should seek linearity of the peak heights and areas, while the actual numbers are less meaningful due to differences in MeOH stock concentrations and potential evaporation during sample prep.



2010 / 11 / 02 – Ian Kleckner

- Addressed issue of syringe not stirring
- Installed new base
 - Required a small 0.25x0.5" adaptor block to receive a screw from the new base
- Installed new syringe holder
- Adjusted height of syringe to 2 mm from bottom of sample chamber
 - Instructions in ITC manual
- Attach serial cable from base to PC

- Installed new ITC software on computer
- Update INI file in C:/VPITC/VPViewer.ini
 - [Constants]
 - ...
 - StepsPerInch=104422
 - MaximumSteps= 318545
 - [COM]
 - ComPortNum=1
 - ITCBaseType=EZ
 - MaxVolume=280
- Calibrated tip height for open and closed positions
- **Notes**
 - Syringe holder is **designed** to fit tightly into base – *do not grease this interface!*
 - More force is required to ensure the syringe snaps into the base
 - Old parts are stored in box labeled with date
 - Old base
 - Old syringe holder
 - Old cable from ITC ↔ PC

2010/07/12 – Elihu Ihms

- Syringe was not stirring
- **Users beware:** do not overfill the sample cup, this will corrode the rotation bearings

2010/07/07 – Ian Kleckner

- Replaced plunger tip
- This should be done every 3 months assuming daily use

2010/05/12 – Ian Kleckner

- Syringe housing case did not rotate properly (it is frozen)
- Apply force to break this freeze and now it rotates easily
- It should continue to spin for ~0.5 sec when given some angular momentum
- Also recalibrated plunger tip positions for "open" and "closed" with respect to fill port
 - ITC...Pipette Calibration...

2010/05/10 – Ian Kleckner

- Replaced bent syringe with new (?) syringe in drawer
- Need to replace teflon plunger tip (no new tips available)
- Need to acquire new syringe as backup

Microcal iTC-200

2010/09/28 – Elihu Ihms

- Replaced plunger tip

2010/07/26 – Elihu Ihms

- Replaced cracked injector syringe
- **Users beware:** do not overtighten the filling tube connection to the injector syringe



2010/07/01 – Elihu Ihms

- Investigated periodicity in iTC200 injections
- See full report linked via instrumentation web page

2010 – Elihu Ihms

- Benchmarked injection volume and heat with methanol into water
- Insert figures and results here

Aviv CD Spectrometer

(None)