

NanoSIMS Recovery from Complete Shutdown (instrument not vented)

Initial Startup

In the back room:

1. turn UPS on (box next to window)
2. turn water supply on (box to the left of UPS—with T controls)

In main room:

1. turn on general power and computer (cabinet next to flow bench, bottom panel)
2. turn on all breakers on bottom panel

Establish vacuum communication through the software

1. manually turn on UHV gauges for ion pumps through the controller
 - UHV1a (analysis chamber) turn emission on
 - UHV3a (central column) turn emission on
 - UHV3b (vessel chamber) turn emission on
2. turn on ion pumps through vacuum window in manual mode (password: ims)
 - IP3 on (vessel chamber)
 - IP1 on (analysis chamber)
 - IP2 on (central column)
3. wait for ion pump controllers to reach 7000V and currents better than $\sim 10^{-2}$ level
 - Varian controllers are on cabinet next to flow bench, top panel
4. go to protect mode for the ion pumps, through the vacuum window, manual mode
5. turn the roughing pump on (TC1a), wait for it to go to $\sim 10^{-3}$ range: close yellow valve on pump in back room (perpendicular to line), wait for reading on top gauge of pump to go to ~ 5.5 , then open yellow valve again (parallel to line), gauge reading should stabilize at ~ 7 ; gauges underneath NanoSIMS should read ~ 3 (under instrument in the back, near source)
6. most valves should be closed at this point (EP1, EP14, EP7, EP16, EP2, EP4, EP3, EP10, EP13, EP9)
7. start turbo pump for source chamber: open EP2, start TP5, turn on UHV2B gauge when pump is at full speed
8. start turbo pump for airlock: close EP2, open EP1, start TP1, turn on UHV1B gauge when pump is at full speed (may need to turn emission on at controller—cabinet to left of computer)
9. open EP2 again to remove pressure buildup; wait about 10-15 minutes
10. start turbo pump for multi-collection chamber: close EP1 and EP2, open EP4, start TP3, turn on UHV2A gauge when pump is at full speed
11. update status of chambers in manual mode (to the left of the schematic): button should read off (orange with x): go to change status and say ok, button should read on (green); do for all except gas line
12. open EP1 and EP2 again
13. go to auto mode in the vacuum window: EP7 should open; EP10 stays closed until the multi-collection chamber is in the 10^{-7} range; TSP will go on, but not really being used

Turn on electronics

Cabinet by flow bench:

1. turn key on (middle panel)
2. turn far right rocker on (on-off switch)
3. turn HV1-4 rockers on
4. turn Duo and Cs switches on (behind the cabinet, two red switches)
5. reset button by key will be illuminated, but do not need to reset

Cabinet to left of computer:

1. turn on Wien filter (just under table) and magnet (bottom panel under table) rockers
2. turn on rockers above the keyboard (motor control and other settings); NMR can stay off until later
3. reset the 68030 and get server connection
 - press green reset button above key, press white button behind magnet
 - open server, keyboard and 68030 windows
 - server: 'ctrl C,' then 'load68'
 - wait until the 68030 says 'Sun disconnected'
 - keyboard: 'esc', RT>'cm', RC>copy and paste 3 lines from 68030 file (on desktop)
 - server: '!se'
 - wait for 'server off' message to go away
 - start Setup
4. open Tuning and other windows in software
 - reset trolleys: ExsDn: reset; ExsUp: reset (exit tuning after this if all trolleys are not visible); trolleys: do an init
 - reset D1 (go to each aperture and do a reset) and Hex (go to X, Y and do a reset)
 - stage init (x,y,z)
 - source: switch the polarities and the source and then go back to desired setting (to make sure the magnet resets properly)