

University of Oregon CAMCOR NMR Facility

NMR INSTRUMENT GUIDELINES

NMR tube quality:

- Norell **5-200-7** (economy) *or* Wilmad **528** (premium-high resolution) or better. Tubes must be *pyrex*; 7" length recommended for general use.
- discard defective tubes:
 - cracked, chipped, scratched, etched, broken top
 - warped (can result from oven-drying; avoid more than 30 min @ 100 C)

Every Sample:

- carefully **clean outside** of tube to prevent contamination of sample holder and probe.
- carefully set **tube depth** in sample holder with depth gauge (center of coil for short samples)
- recommended **liquid height**:
 - 5-cm (~0.7ml) routine samples (easy shimming)
 - 4-cm (~0.5ml) limited-mass samples
- no parafilm or tape "flag" labels
- **All samples** to be run **non-spinning** in this facility.
- for **highest resolution**: avoid particulates, excessive concentration, trace paramagnetics

First time *VnmrJ* user:

- enable command line: `View > Command Line` (*top menu bar*)
- load standard parameters: `Experiments > Proton` (*top menu bar*)

Every Session:

- Select solvent: `Start > Standard > Solvent`
- `Start > Shim -> Read Default shims` (or command line: `rts('std5') su`)
- Check `Start > Lock > Phase` for current value... spectrometer specific!... see white board.
- `Start > Lock > Find z0` (auto-lock)
- `Start > Lock > Gradient Shim` (auto-shim). Use manual shimming for highest resolution.
- Select nucleus/experiment, e.g. `Experiments > Proton` (*top menu bar*)
- 500 & 600MHz only: `Start > Standard > Tune Probe`
- save spectra in "**vnmrdata**" folder for off-line processing on other NMR facility workstations

When you're done:

- replace CDCl₃ standard
- call the next user in the queue
- **exit** VnmrJ software and **log-out** of desktop
- be sure that host computer has returned to login "Welcome" screen

Notify facility manager immediately in case of problems:

- scored or abraded sample tube
- broken sample tube in magnet. **Do not** attempt to insert another sample!!!
- Please record all broken/spilled samples in the system log book.

Other Facility rules:

- no sample preparation in NMR room
- no lab gloves in NMR room
- clean up after yourself... take your samples when you leave!
- please be considerate of others: limit your session to 10 minutes if there is a queue

Contact information:

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