



Department of Chemistry
NMR Facilities
Director: Dr. Carlos A. Steren

NMR NEWS

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* To check on the [instrumental status](#) and [reservation system](#), and find tutorials, links and more, visit our website www.chem.utk.edu/nmr

* **New NMR spectrometer coming soon!**

A new 500 MHz Varian liquid state NMR spectrometer has been acquired. The instrument will be shared between the Dept. of Chemistry and BCMB. The instrument will be located in the SERF NMR lab (room 230) next to the Varian 400MHz spectrometer.

Installation should begin in approximately two months.

The 500 MHz spectrometer will have three channels and will have two interchangeable probes, a **triple resonance HCN** probe and a multinuclear probe called **OneNMR probe**.

The **HCN probe** is a dedicated indirect probe with three channels, one for ^1H , one for ^{13}C and one for ^{15}N .

The **OneNMR™ probe** is a two channel probe, one channel for $^1\text{H}/^{19}\text{F}$ and one for X (with X covering from ^{15}N to ^{31}P). The frequencies are ^1H (500MHz), ^{19}F (470 MHz), ^{15}N (50.67 MHz) and ^{31}P (202.34 MHz).

Varian's remarks on the OneNMR probe: "The OneNMR™ Probe represents the most significant advancement in solution-state probe technology in over a decade. The OneNMR probe uses a hybrid approach to deliver the performance advantages of both the classic "carbon probe" (direct detect probe) and the highly sensitive "proton probe" (indirect detect probe). It is simultaneously optimized for both high and low band frequencies in a single unit."

Probes sensitivities:

HCN: ^1H : 1000:1

OneNMR probe, ^1H : 730:1 , ^{13}C : 220:1

For comparison, the sensitivities of our instruments are shown below,

	AC250	V300	B400 (QNP)	V600 (cold probe)
^1H	70:1	105:1	131:1	4600:1
^{13}C	50:1	75:1	259:1	524:1

*** Bruker 400 MHz magnetic field boosted.**

After almost 10 years of drifting, the magnetic field on the Bruker 400MHz spectrometer went down from 400.25 MHz to 399.71 MHz. Bruker services was hired to boost the magnetic field. Now the magnetic field has been boosted and is back at 400.25MHz.