**URL:** <http://www.utoledo.edu/nsm/chemistry/nmr/>

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**Description**

*Square Footage*: 1,700 square feet

*Facility Location*: Main Campus, Bowman-Oddy Laboratories, Room 187 & 210B

NMR spectroscopy is a powerful tool for the determination of molecular structure, the study of molecular dynamics, and the characterization of materials at the molecular level.

The NMR Facility mission is to support research and teaching at The University of Toledo. Instrumentation training and consultation are available to all users including researchers from companies and educational institutions outside of UToledo. There are 4 NMR spectrometers and 1 EPR spectrometer in the NMR Facility.

**Major Equipment**

* **Bruker Avance 600MHz** with a Dual resonance 5mm Cryoprobe, DCH with Z gradient. CryoProbes. While it is optimized for 13C detection, the 1H sensitivity is also very good: carbon experiments are more than 100 times faster. Great automation makes it easy to do advanced 1-D and multi-dimensional NMR involving H-H and H-C correlations.
* **The Avance 600** has a 4mm H/X CP-MAS probe for solid state NMR experiments. About once every month, we swap the Cryoprobe out for solid state NMR.
* **Varian Inova 600MHz** with a Penta, 1H {13C,15N,31P,2D} probe. The indirect detection probe is designed for versatility in biomolecular applications and is tuned to allow decoupling of up to four different nuclei. VnmrJ 4.2 spectrometer operating system is available. Alternate probe for work on proteins – triaxial PFG, 1H {13C/15N}probe

Other Probes; Indirect detect 5mm 1H {X(15N-31P)} z-PFG; Tunable X channel frequencies 15N to 31P. 5mm broadband X(15N-31P) {1H}; Tunable X channel frequencies 15N to 31P, and; 10mm broadband X(15N-31P) {1H}. Tunable X channel frequencies 15N to 31P.

* **VXRS 400MHz** with 5mm 4-nucleus Autoprobe - for 1H/19F/13C/31P NMR
* **Gemini 200MHz** with 5mm 4-nucleus Autoprobe - for 1H/19F/13C/31P NMR
* **Bruker ESP300E X-band CW-EPR spectrometer**: experiments down to 4K accessible with Helium Cryostat.