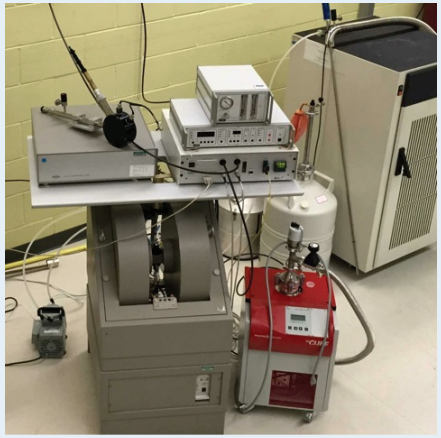
EPR



The facility has one X-band EPR spectrometer.

EPR is a very sensitive spectroscopic technique that relies on unpaired electrons, such as those in free radicals or high spin metal complexes, to give important structural information.

EPR has applications in

- dosimetry
- investigating the spoiling of food stuffs
- defects in nano materials
- radical reaction monitoring

We have both liquid nitrogen and liquid helium cooling systems to reach 4 K.

RATES

Proton, run by staff	$20
Carbon, run by staff, must be submitted neat or in a 3-mm NMR tube	$50
Other nuclei or 2D NMR, industrial (run by staff)	Competitive rates
Reports	Competitive rates
Solids NMR, includes rotor use and rotor packing (per sample)	Competitive rates
Use of 700 MHz spectrometer, industrial	Competitive rates
Training	Competitive rates
GMP samples	Competitive rates
EPR use	Competitive rates
Hourly rates are calculated per minute. Carbon spectra must have proton spectra run first. Rates are for 2015 and subject to change.	

THE UNIVERSITY OF TORONTO

CSICOMP NMR FACILITY

NMR spectroscopy is one of the most powerful and versatile spectroscopic techniques for investigating molecular structures and spans many disciplines from life sciences to material sciences to chemical syntheses.

The Centre for Spectroscopic Investigation of Complex Organic Molecules and Polymers at the University of Toronto has nine high-field NMR spectrometers from 200 to 700 MHz available for academic, government and commercial samples.

SERVICES

Your samples can be submitted directly to the facility for preparation, spectrometer optimization, and acquisition by facility staff.

We are available for consultation, for research support, and to collaborate for NMR data collection, processing, and interpretation. For those that prefer to collect their own spectra, we also train clients on routine or advanced NMR techniques. Many of the spectrometers are available with easy sample changer use.

In addition to proton, carbon and many 2D NMR techniques, we can acquire NMR on a wide variety of nuclei, in liquids, semi-solids or solids.

We can follow GMP practices for external samples—please use our sample submission/ chain of custody form for GMP samples.

Online submission forms are available from: http://www.chem.utoronto.ca/facilities/nmr/

CONTACT

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NMR SPECTROMETERS

We are one of the best-equipped NMR Facilities in Canada with nine high-field spectrometers from 200 to 700 MHz available to external researchers. Two of the spectrometers have cryogenically cooled probes for the highest sensitivity—one probe is optimized for carbon detection and the other for proton and fluorine detection. Additionally, two spectrometers are capable of solid-state NMR with a variety of probes for different techniques.

Bruker Avance III 400 MHz NMR	• Routine multinucleus probe for liquids NMR; H-F and 2D experiments • With 60 tube robotic sample changer.	Agilent VnmrS 400 MHz NMR	• Routine multinucleus probe for liquids NMR —all standard 1D and 2D gradient experiments available. • Variable temperature capable to -80°C.
Agilent Mercury 200 MHz NMR	• Routine screening, proton and phosphorus NMR. • Walk up use for internal and external users (reserve time first).	Agilent DD2 500 MHz NMR	• Routine multinucleus probe for liquids NMR —all standard 1D and 2D gradient experiments available. • Protasis 10 µL flow probe for extremely small volumes.
Agilent Mercury 300 MHz NMR	• Routine screening, proton, fluorine, carbon and phosphorus NMR. • With a 100 tube robotic sample changer.	Agilent DD2 500 MHz NMR	• Extreme carbon sensitive cryogenically cooled probe optimized for both carbon and proton detection, and 2D experiments. • With 96 tube robotic sample changer. • Ideal for all 2D NMR experiments, either proton or carbon detected.
Agilent Mercury 400 MHz NMR	• Routine screening, proton, fluorine and carbon NMR. • Standard 2D sequences available (COSY, HSQC, ROESY, NOESY). • With a 100 tube robotic sample changer.	Agilent DD2 600 MHz NMR	• Solids and Liquids NMR capable. • Multinucleus probes for liquids NMR. • 12 sample robotic sample changer. • Ideal for 2D NMR experiments and diffusion studies, and DOSY experiments. • 3.2- and 1.6-mm solids rotors for solid state NMR experiments.
Agilent DD2 700 MHz NMR	• HFCN cryogenically cooled probe optimized for biological and protein NMR. • With 96 tube robotic sample changer. • HFX probe with extremely low 19F background, ideal for perfluorinated polymers and other compounds • HR MAS probe optimized for low sample heating and protein NMR. • 19F and 1H detection FastNANO probes of in vivo cell NMR. • 1.6-mm solids rotors for solid state NMR experiments.		