AV-800

This is the highest field instrument available in the facility, which is geared for handling either very low concentration samples or those with very high molecular weights. All the routine NMR spectroscopy are also possible, of course. The instrument is based on the latest model BRUKER AVANCE III console and drives a cryogenically cooled probehead that has a $^1$H sensitivity that is unrivaled in any other facility instrument. The detectability for $^1$H can be as low as 100 µM with this spectrometer.

**Console Hardware**

- Bruker state-of-art AVANCE III console
- $^1$H base frequency of operation: 800.23 MHz
- $^2$H field frequency lock system
- Ultra shielded and Ultra stabilized Ascend series magnet from Bruker
- 40 RT shims
- BOSS 3 RT shim system
- VT range (with cryoprobe): +5 C to +80 °C
- Four RF channels with latest generation SGU boards
- BLAXH2H500 amplifier driving $^1$H, X and $^2$H channels with 500 W max output
- BLAX500 for additional X channel with 500 W max output
- HPPR/2 preamplifier with 5 slices: $^1$H, X-BB (up to $^{31}$P), $^{13}$C, $^{15}$N and $^2$H
- Integrated receiver+ADC board: DRU
- Max ADC sampling rate of 20 Ms/s
- Triple axis gradient amplifier with max strength of 56 G/cm at 10 A nominal
- BCU-X compact automated chiller for VT operation
Software

- Topspin 3.6 - latest acquisition and processing software from Bruker
- ATMA - Automatic Tuning and Matching interface for compatible probeheads
- Topshim - Automatic 1D shimming and 3D gradient shimming, when strong $^1$H signal is available
- EDTE - Variable Temperature control interface delivers a precision of at least (+/-) 0.1 °C
- Runs on an industry standard Linux workstation with CentOS 7 platform

Probehead

- $^1$H ($^{13}$C,$^{15}$N) cryogenically cooled probehead
- +5 to +80 °C temperature range
- Z-gradient coil delivering 56 Gauss/cm max gradient strength
- Max $^1$H signal to noise ratio of 8600:1 on an ethylbenzene sensitivity standard
- ATMA accessory included for automated probe tuning/matching operation
- All operations of probehead are under computer control

Reservations

AV-800
Approval Form (PDF)

Department of Chemistry
University of Washington
109 Bagley Hall
Box 351700
Seattle, WA 98195-1700

Main Office: 206.543.1610
chemdesk@uw.edu

Advising: 206.616.9880
advisers@chem.washington.edu

Source URL: https://chem.washington.edu/instruments/av-800