

*University of Houston*  
*Department of Chemistry*  
*Nuclear Magnetic Resonance (NMR) Facility*

- 1.) JEOL ECA-600 II (Installed Oct. 2014)
  - a. 5-mm 3-channel JEOL Royal Z-axis Gradient auto-tune Probe (NM-03831RO5S)
    - i. Low Frequency (LF) Channel  $^{15}\text{N}$ : 60 MHz to  $^{31}\text{P}$ : 242 MHz
    - ii. High Frequency (HF) Channel  $^1\text{H}$ : 600 MHz to  $^{19}\text{F}$ : 564 MHz
    - iii. Lock Channel  $^2\text{H}$ : 92 MHz
    - iv. Variable Temperature (VT) Range; +150 °C to -100 °C
      1. 30 liter dewar for long experiments
  - b. Z-gradient amplifier to 10-amps
  - c. 45-shim Room Temperature Matrix system
  - d. One (1) dual channel frequency synthesizer
  - e. Linear, Class AB 100 watt RF power amplifier high band
  - f. Linear, Class AB 300 watt RF power amplifier low band
  - g. Expandable to 10 RF channels.
  
- 2.) JEOL ECA-500 (Installed 2009)
  - a. 5-mm 3-channel Z-axis Gradient auto-tune Probe (NM-50TH5AT/FG2)
    - i. Low Frequency (LF) Channel  $^{15}\text{N}$ : 50 MHz to  $^{31}\text{P}$ : 202 MHz
    - ii. High Frequency (HF) Channel  $^1\text{H}$ : 500 MHz to  $^{19}\text{F}$ : 470 MHz
    - iii. Lock Channel  $^2\text{H}$ : 76 MHz
    - iv. Variable Temperature (VT) Range; +150 °C to -100 °C
      1. 30 liter dewar for long experiments
  - b. 3.2-mm high resolution Cross Polarization (CP)/Magic Angle Spinning (MAS) probe.
    - i. Two (2) channel: One (1) high frequency,  $^1\text{H}$ ; One (1) low frequency with inserts for  $^{31}\text{P}$ ,  $^7\text{Li}$ ,  $^{11}\text{B}$ ,  $^{23}\text{Na}$ ,  $^{27}\text{Al}$ ,  $^{13}\text{C}$ ,  $^{79}\text{Br}$ ,  $^{29}\text{Si}$ ,  $^2\text{H}$ , and  $^{15}\text{N}$ .
    - ii. Variable temperature Ambient to 80 °C.
  - c. Z-gradient amplifier to 10-amps
  - d. 45-shim Room Temperature Matrix system
  - e. Two (2) dual channel frequency synthesizers: can generate four (4) discrete frequencies.
  - f. Linear, Class AB 100 watt RF power amplifier high band
  - g. Linear, Class AB 300 watt RF power amplifier low band
  
- 3.) JEOL ECX-400P (Installed 2009)
  - a. 5-mm 3-channel JEOL Gradient auto-tune Probe (NM-UPG40TH5AT/FG2)
    - i. Low Frequency (LF) Channel  $^{15}\text{N}$ : 40 MHz to  $^{31}\text{P}$ : 161 MHz
    - ii. High Frequency (HF) Channel  $^1\text{H}$ : 400 MHz to  $^{19}\text{F}$ : 376 MHz
    - iii. Lock Channel  $^2\text{H}$ : 61 MHz
    - iv. Variable Temperature (VT) Range; +150 °C to -100 °C
      1. 30 liter dewar for long experiments
  - b. Z-gradient amplifier to 10-amps
  - c. 45-shim Room Temperature Matrix system
  - d. One (1) dual channel frequency synthesizer
  - e. Linear, Class AB 100 watt RF power amplifier high band
  - f. Linear, Class AB 300 watt RF power amplifier low band