CEM 845 NMR TRAINING OUTLINE

All students enrolled in CEM 845 are expected to go through extensive training for the NMR instruments. You need to demonstrate complete competence in order to be 'checked-out' on the instruments and be allowed to operate these spectrometers. At the same time you need to develop the skills necessary to produce high quality spectra. This is gained only through practice. Time blocks will be assigned by the TA for you to practice as well as data acquistion for your unknown. Dr. Dan Holmes and Dr. Li Xie have invested a great deal of time in providing the department with an efficient and smoothly operating NMR facility. They also have and will invest many hours in your training. Thus, it is imperative that you meet the deadlines listed below and attend their training sessions as scheduled. The following is the user ID and password; to be used for the course. All data processing will be done using Mnova NMR software. A license file and download instructions will be provided to you for the course.

User ID: cem845
Password: 845cem
Instrument: Bruker 500 MHz NEO
Location: B8, subbasement

IMPORTANT: All NMR Experiments must be run by you on the subbasement NMR spectrometer. Any data not from these instruments will not be accepted. All completed assignments should be submitted to the TA. All spectral data must be turned in electronically either as a PDF or Mnova data file.

I. Students read 'NMR Basics' and complete quiz. (**due 9/8)**

https://www2.chemistry.msu.edu/courses/cem845/

II. Group (2 students) training of 1D/2D NMR acquisition. Staff or TA monitored. (1 hour each, **9/11 – 9/15**)

III. Mnova 1D/2D NMR processing software Zoom workshop. (**tentatively, week of 9/18**)

IV. Each student processes the NMR data acquired in step II and turns in a peak-picked, integrated ^{1}H spectrum and a ^{13}C spectrum with peak picking. (**9/19 – 9/30**)

V. Zoom workshop on advanced NMR processing and common artifacts in NMR data. (**tentatively, week of 9/25**)

VI. Each student processes the 2D data acquired in step II and provides the TA with PDF's of the spectra **(10/2 – 10/20)**. You will be able to get your unknown only by turning in your 2D spectra.