Chem 302 Laboratory 6

What Molecule Is It? Fourier Transforms and Interferograms For FT-IR Vibrational Spectroscopy

NAME:

An interferogram is the “raw product” of an FT-IR experiment. Explain the process of how IR radiation travels from the source of the instrument to the detector and ultimately forms the interferogram.

1. Using the **read.csv** function, read in the “unknown” interferogram in the file interferogram.csv. Plot the interferogram.

(optional) “Zoom-in” on the center-burst by dropping most of the data to the left and to the right of the center-burst (HINT: use negative indices). Plot the result. It should look like a clear center-burst.

1. Source the file **ft\_spectroscopy.func.R** and using the control script to FFT the unknown interferogram. Plot the spectrum as a function of absorbance and %T and Absorbance. Paste your plots below.
2. Estimate the positions of each of the frequencies and record them.
3. What is the identity of the molecule based on the frequencies you found?