A FAR INFRARED SYNCHROTRON-BASED INVESTIGATION OF 3-OXETANONE

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The four membered ester ring 3-oxetanone is a precursor for adding oxetane subunits into pharmaceuticals which then block metabolically exposed sites in the bioactive molecule without increasing its lipophilicity. The high resolution (0.00096 cm^{-1}) rovibrational spectrum of 3-oxetanone was recorded for the first time using far infrared radiation from the Canadian Light Source (CLS) synchrotron facility coupled to a Bruker IFS125HR FTIR spectrometer. A total of six rotationally-resolved vibrational bands were observed between 360 and 1150 cm^{-1} at room temperature. The assignment of the dense spectrum is currently underway and the progress will be discussed in this talk.