INFRARED DIODE SPECTROSCOPIC INVESTIGATION OF THE FOUR C-H STRETCHING VIBRATIONAL MODES OF PROPYLENE OXIDE

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Propylene oxide is a simple chiral building block and is a prototype for theoretical and experimental studies of chiral recognition effects. The low resolution infrared vibrational spectra in the C-H stretching region of propylene oxide in the gas phase[a] and in a free jet expansion[b] were reported previously. In this talk, we will present the first high resolution infrared spectra of four C-H stretching vibrational modes. The spectra have been measured using a rapid scan mid-infrared lead salt diode laser spectrometer equipped with an astigmatic multi-path sample cell[c]. Analyses of the observed spectra show that there are severe perturbations associated with the first vibrationally excited states. The detailed analyses will be discussed.

[a] F. Winther and D. O. Hummel,*Spectro. Acta,* **1969,** 25A, 417.
[b] N. Borho and M. Suhm, unpublished results.
[c] Z. Su, W. Tam, and Y. Xu, *J. Chem. Phys.,* **2006,** 124, 024311/1-9.