

FAR INFRARED SYNCHROTRON SPECTRUM OF TRIMETHYLENE OXIDE

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Rotationally-resolved vibrational spectra of trimethylene oxide (c-C₃H₆O) from 650 through 1200 cm⁻¹ were recorded using far infrared synchrotron radiation at the Canadian Light Source with better than 0.001 cm⁻¹ resolution. The observed bands correspond to at least eight different fundamental vibrations in this region. Due to the low frequency ring puckering motion,^a the observed rovibrational pattern of each band is congested with hot-combination bands that originate in the first two excited ring puckering states (52.9 cm⁻¹, 142.6 cm⁻¹). The ongoing analysis of the strong *b-type* bands corresponding to asymmetric in-plane CO stretching (ν_{10} : 1008 cm⁻¹)^b will be discussed along with the identification of allowed Coriolis interactions arising from nearby energy levels related to in-plane CC stretching (ν_9 : 940 cm⁻¹, ν_3 : 1033 cm⁻¹).

^aG. Moruzzi *et al.*, *J. Mol. Spectrosc.* **219**, 152 (2003).

^bBánhegyi *et al.* *Spectrochim. Acta.* **39A**, 761 (1983).