

FIRST RESULTS FROM THE FAR INFRARED BEAMLINE AT THE CANADIAN LIGHT SOURCE: HIGH RESOLUTION ANALYSIS OF ACROLEIN IN THE 600  $\text{CM}^{-1}$  REGION

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Synchrotron radiation from the new Canadian Light Source facility has been used to obtain a high resolution ( $0.0012 \text{ cm}^{-1}$ ) absorption spectrum of acrolein,  $\text{CH}_2\text{CHCHO}$ , in the  $550\text{-}660 \text{ cm}^{-1}$  region. Almost 2000 transitions have been included in a detailed analysis of the  $\nu_{12}$  ( $\sim 564 \text{ cm}^{-1}$ ) and  $\nu_{17}$  ( $\sim 593 \text{ cm}^{-1}$ ) fundamental bands to obtain precise values for the band origins, rotational and centrifugal distortion parameters. The analysis included the  $a$ - and  $b$ -type Coriolis interactions connecting  $\nu_{12}$  and  $\nu_{17}$ , as well as an  $a$ -type Coriolis interaction between  $\nu_{17}$  and a “dark” perturbing state, identified as  $4\nu_{18}$ . We believe that this is the first high resolution infrared study of acrolein.