VIBRATIONAL SATELLITES IN THE ROTATIONAL SPECTRA OF ϵ-CAPROLACTAM AND CYCLOHEXANONE OXIME

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The rotational spectra of the normal and deuterated species of ϵ-caprolactam and cyclohexanone oxime have been studied in the range of 26-40 GHz. The rotational and centrifugal distortion constants of these species have been obtained. Then the molecular conformations of the molecules were completely determined. Three and two types of the excited vibrational satellites were observed for ϵ-caprolactam and cyclohexanone oxime, respectively. The vibrational wavenumbers have been estimated from the relative intensity measurements of the absorption lines. They are 58(15) cm^{-1}, 105(25) cm^{-1} and 237(29) cm^{-1} for ϵ-caprolactam and 97(28) cm^{-1} and 198(35) cm^{-1} for cyclohexanone oxime (The errors in parentheses are one standard deviation). Then the assignments of the vibrational modes will be discussed by comparing the experimental and theoretical wavenumbers.