FTIR JET SPECTRA OF THE UNSTABLE CHAIN MOLECULES NCCNO AND OC_5O MEASURED WITH A MULTIPASS SYSTEM

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Rovibrational spectra of several stretching modes of the unstable molecules NCCNO and OC_5O have been recorded by high resolution FTIR spectroscopy. A large number of hot bands, due to several excited states of low-lying bending vibrations, causes an enormous density of spectral lines. In order to obtain spectroscopic assignments we have also measured the FTIR jet spectra of both molecules. For this purpose a new multipass optical system has been developed. The multireflection configuration consists of two spherical mirrors facing each other within the jet apparatus. Each mirror is provided with a small central hole for coupling light through the mirror system. The combination of jet and room temperature data enabled us to perform a detailed spectroscopical analysis of the rovibrational transitions.