HIGH RESOLUTION SPECTROSCOPY OF ALKOXY RADICALS IN A SUPERSONIC FREE-JET

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We have recently reported the vibrationally resolved spectra of the $\tilde{B} \leftarrow \tilde{X}$ transition of a number of alkoxy radicals containing up to 12 carbon atoms. The rotational band contours of some of these moderate-resolution spectra, coupled with ab initio calculations, indicate that some of the vibrational bands may result from different molecular conformers. A full rotational analysis should aid in distinguishing different conformers that may exist in the jet and give us information about their structure. We have commenced a program to obtain rotationally resolved spectra of the alkoxy radicals using our high resolution (fundamental bandwidth $\sim$100 MHz) Ar^+ pumped, CW, pulse amplified dye laser system. We presently have in hand a number of such high resolution spectra. Work is in progress to obtain additional high resolution spectra and to complete detailed rotational analyses of them.