HIGH RESOLUTION SPECTRORCOPY OF THE ALKOXY RADICALS IN A SUPERSONIC FREE-JET

SANDHYA GOPALAKRISHNAN, VADIM STAKHURSKY, LILY ZU, CHRISTOPHER C. CARTER, TERRY A. MILLER, *The Ohio State University, Dept. of Chemistry, Laser Spectroscopy Facility, 120 W. 18th Avenue, Columbus, Ohio 43210*.

We have previously reported the rotationally resolved jet-cooled LIF spectra of a few bands of the $\tilde{B} \leftarrow \tilde{X}$ transition in several alkoxy radicals[a]. This was done as an initial step towards establishing the molecular identity of the carrier of the spectra and identifying different isomers and conformers. We now have in hand rotationally resolved spectra of more than thirty strong bands that were observed in moderate resolution survey scans of the excitation spectra of both the primary and secondary alkoxy radicals. Details of the rotational analyses performed on these spectra to obtain the molecular constants will be presented. The comparison of the experimentally determined constants with calculated ($ab\ initio$) constants will also be discussed.

[a]Sandhya Gopalakrishnan, Christopher C. Carter, Vadim Stakhursky, and Terry A. Miller, High Resolution Spectroscopy of Alkoxy Radicals in a Supersonic Free Jet, WH06, 56th International Symposium on Molecular Spectroscopy, 2001