HIGH RESOLUTION ROTATIONALLY RESOLVED SPECTROSCOPY OF THE 1-BUTOXY AND 1-PENTOXY RADICALS

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

We have obtained and analysed rotationally resolved jet-cooled laser induced fluorescence spectra of the $\tilde{B} \leftarrow \tilde{X}$ transition of all the prominent bands that were observed previously in moderate-resolution excitation spectra of 1-butoxy and 1-pentoxy. The rotational analyses confirm the presence in the jet of three of the five possible conformers for 1-butoxy and six of the possible fourteen for 1-pentoxy. We have performed $ab\ initio$ calculations to predict rotational constants for all of these conformers and have used these to guide us in assigning individual spectral lines to the appropriate conformers. The rotational analysis and the light it sheds upon the structure of these conformers will be presented.