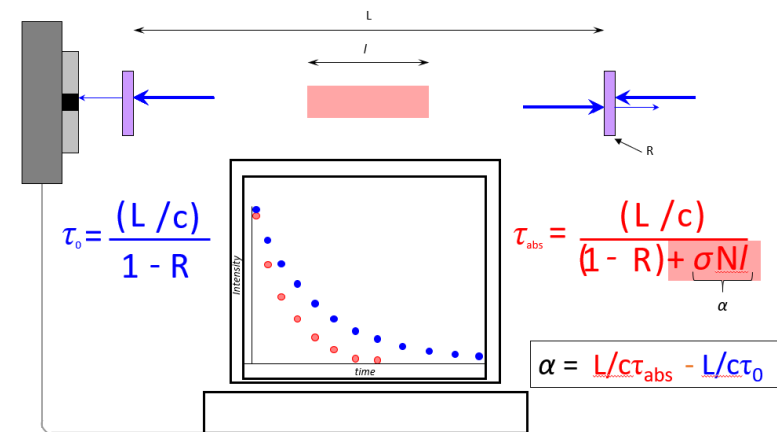
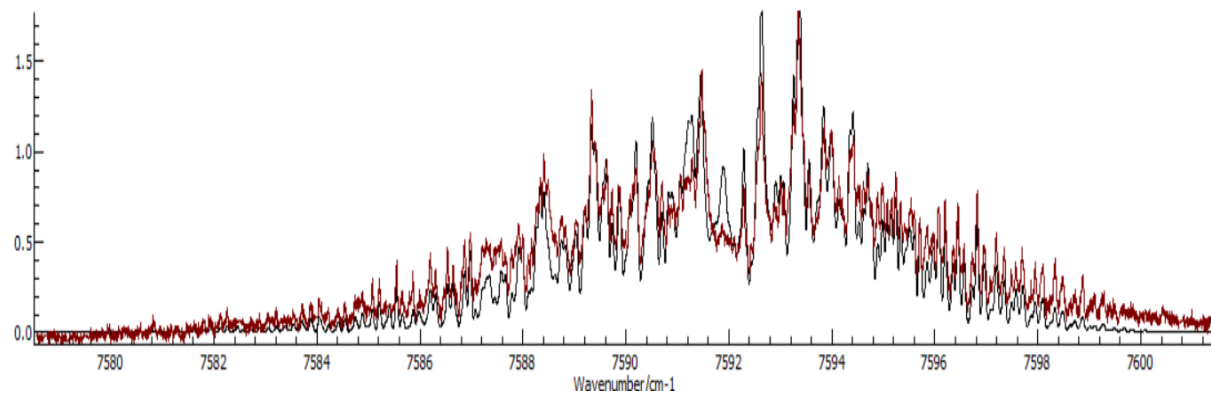
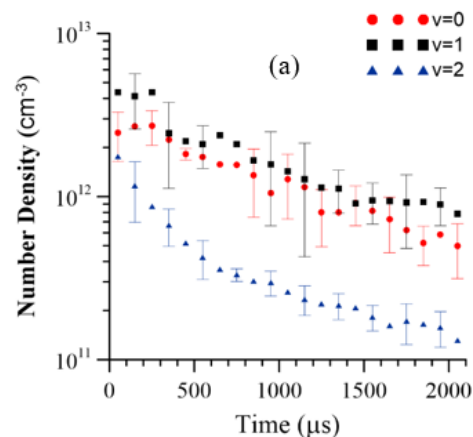
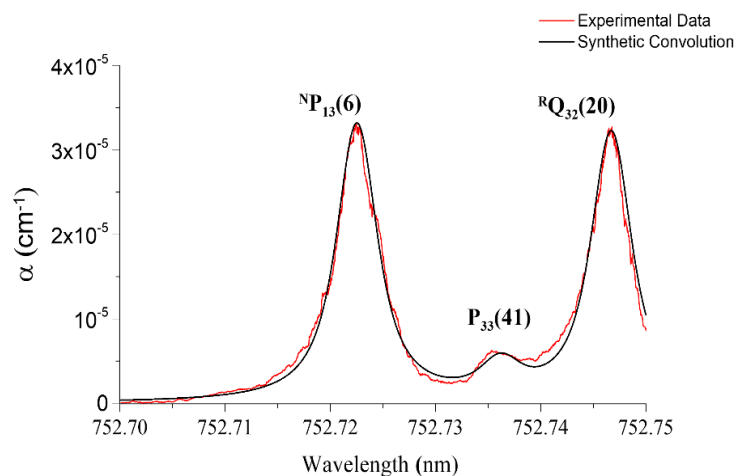


# P5756: Measuring Time-Resolved Concentrations of Free Radicals in Chemical Reactions with Cavity Ringdown Spectroscopy. [Ian W. Jones](#), Elijah R Jans, Terry A. Miller, Igor V. Adamovich, John F. Stanton.

- The theory relating experimental measurements of CRDS absorption with absolute molecular concentrations is summarized
- The populations of multiple vibrational levels of  $A^3\Sigma_u^+ N_2$  have been measured
- Dipole moments have been derived experimentally from observed spectra of  $HO_2$  that are found to be quite consistent with values calculated by quantum chemistry
- Similar work is in progress for  $C_2H_5O_2$  and other small radical species



Principles of Cavity Ringdown Spectroscopy (CRDS)



$C_2H_5O_2$  G conformer

B ← A CRDS spectrum (left) and A state number densities derived therefrom (right)