INFRARED CAVITY RINGDOWN LASER ABSORPTION SPECTROSCOPY

R. A. PROVENCAL, J. B. PAUL, K. ROTH, R. CASAEAS, A. PETERSSON, and R. J. SAYKALLY, *Department of Chemistry, UC Berkeley, Berkeley, CA 94720*.

We are vigorously pursuing extension of cavity ringdown laser absorption spectroscopy into the infrared region.[a,b] With medium resolution (˜1000 MHz), we have measured spectra of H_2O, D_2O, CH_3OH, CH_3CH_2OH, and $CH_3(CH_2)_3OH$ clusters in the spectral region between 2.8 and 6 microns. By employing a laser vaporization/supersonic molecular beam source, we have also studied carbon clusters in this spectral region. High resolution (<100 MHz) cavity ringdown experiments are also being pursued using a novel Alexandrite based laser system.

[a] J. B. Paul, and R. J. Saykally. *Anal. Chem.* **69**, 287A (1997).
[b] J. B. Paul, R. A. Provencal, and R. J. Saykally. *J. Phys. Chem.* in press.