

CAVITY RINGDOWN SPECTROSCOPY OF THE $\tilde{A}^2A' - \tilde{X}^2A''$ ELECTRONIC TRANSITION OF THE PHENYL PEROXY RADICAL

GABRIEL M.P. JUST, ERIN N. SHARP, SERGEY J. ZALYUBOVSKY, AND TERRY A. MILLER, *Laser Spectroscopy Facility, Department of Chemistry, The Ohio State University, Columbus, OH 43210.*

Peroxy radicals are key intermediates in both combustion and atmospheric chemistry. We have previously studied small alkyl peroxy radicals (methyl, ethyl peroxy^a, 1- and 2-propyl peroxy^b) via their near IR electronic transition using cavity ringdown spectroscopy (CRDS). The reaction of phenyl radical (C₆H₅) with oxygen is postulated to play a particularly important role in the soot formation process inherent in hydrocarbon combustion. In this talk, we report CRDS of the near IR $\tilde{A}^2A' - \tilde{X}^2A''$ electronic transition of phenyl peroxy radical. *Ab initio* calculations have been carried out to help assign T₀₀ band origin, as well as other vibrational bands.

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