SPECTROSCOPIC AND KINETIC MEASUREMENTS OF ORGANIC PEROXY RADICALS BY DUAL-WAEVELENGTH CAVITY RING DOWN SPECTROSCOPY

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The weakly-absorbing $\tilde{A} \leftarrow \tilde{X}$ transition of organic peroxy radicals in the NIR provides an excellent opportunity for quantitative species-specific measurements. Previously[a] we used the dual-wavelength cavity ring-down spectroscopy (CRDS) technique to accurately measure the absolute peak absorption cross-section of ethyl peroxy radical, $C_2H_5O_2$. In the present work, we extend the capabilities of the dual-wavelength technique to studying kinetics of the self-reaction of ethyl peroxy by utilizing a high duty-factor, time-resolved CW-CRDS. An extension of this technique to study cross-reactions between different species will be discussed.

[a] D. Melnik et al., *J. Phys. Chem. A*, **114**, 11583 (2010)