

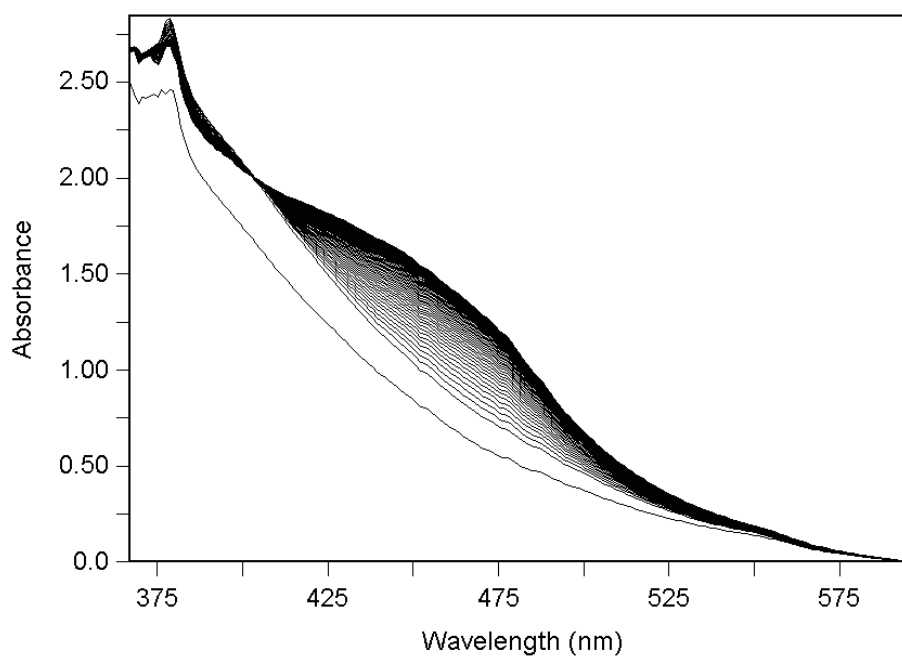
**Oxidation of C–H Bonds by [(bpy)<sub>2</sub>(py)Ru<sup>IV</sup>O]<sup>2+</sup> Occurs by Hydrogen Atom  
Abstraction**

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**Supporting Information**

(a)



(b)

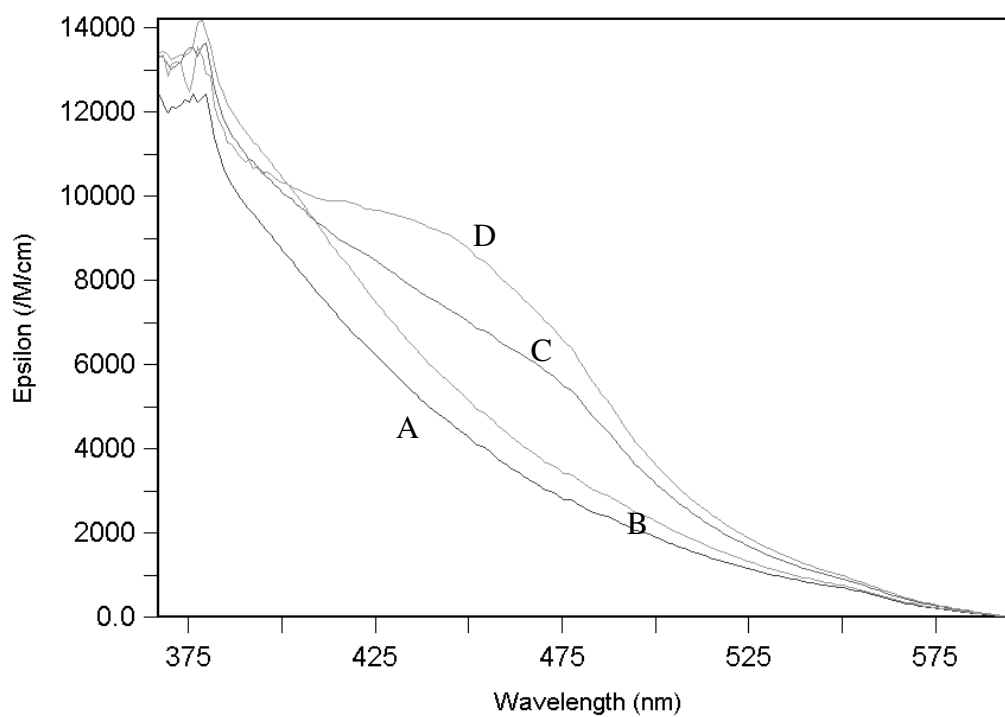


Figure S1. (a) Spectral changes observed for the reaction of 0.2 mM  $\text{RuO}^{2+}$  with 40 mM fluorene over 120 s (21 scans/s). (b) Calculated spectra returned by SPECFIT for species A, B, C and D.

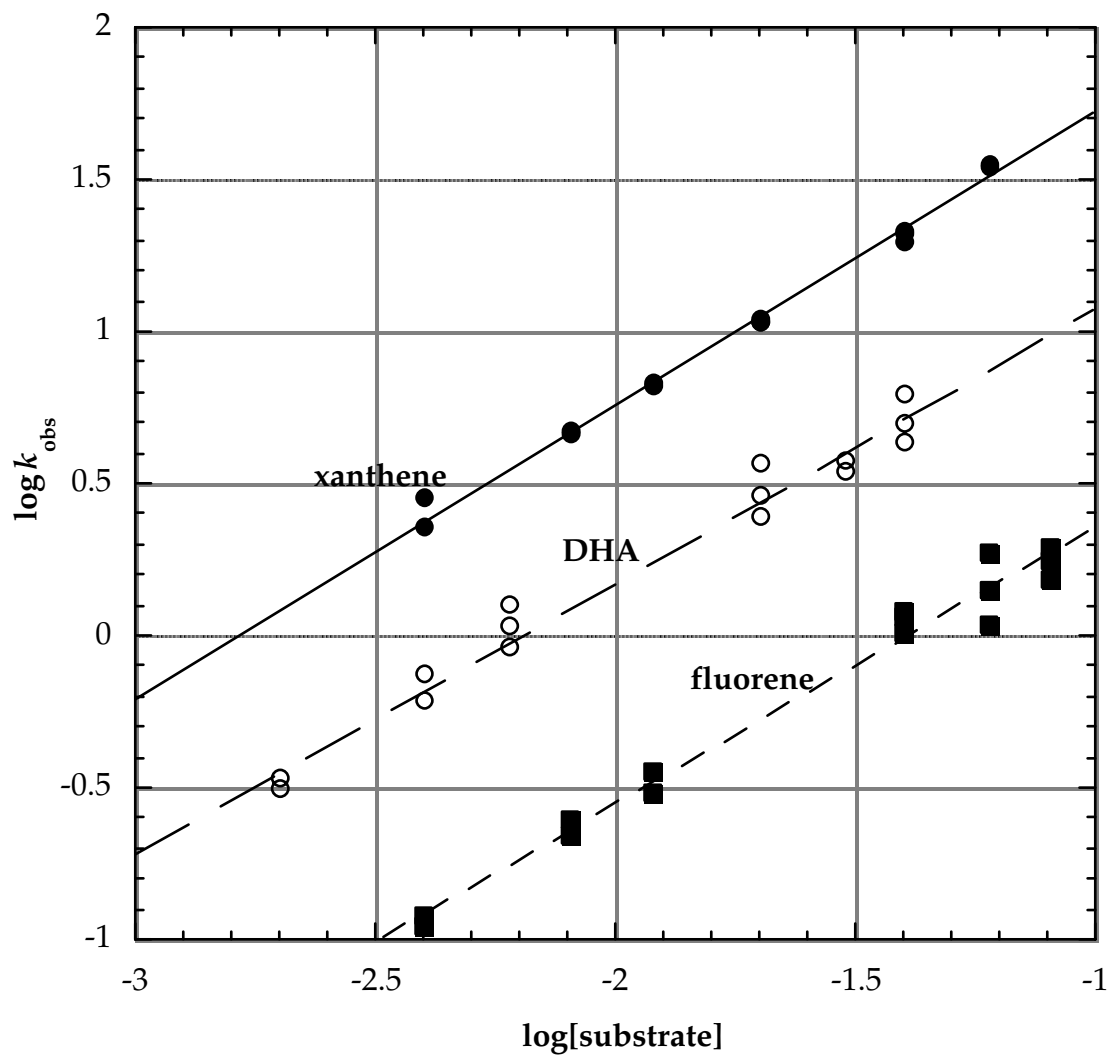


Figure S2. Plot of  $\log k_{\text{obs}}$  vs.  $\log[\text{concentration}]$  for xanthene, DHA, and fluorene.

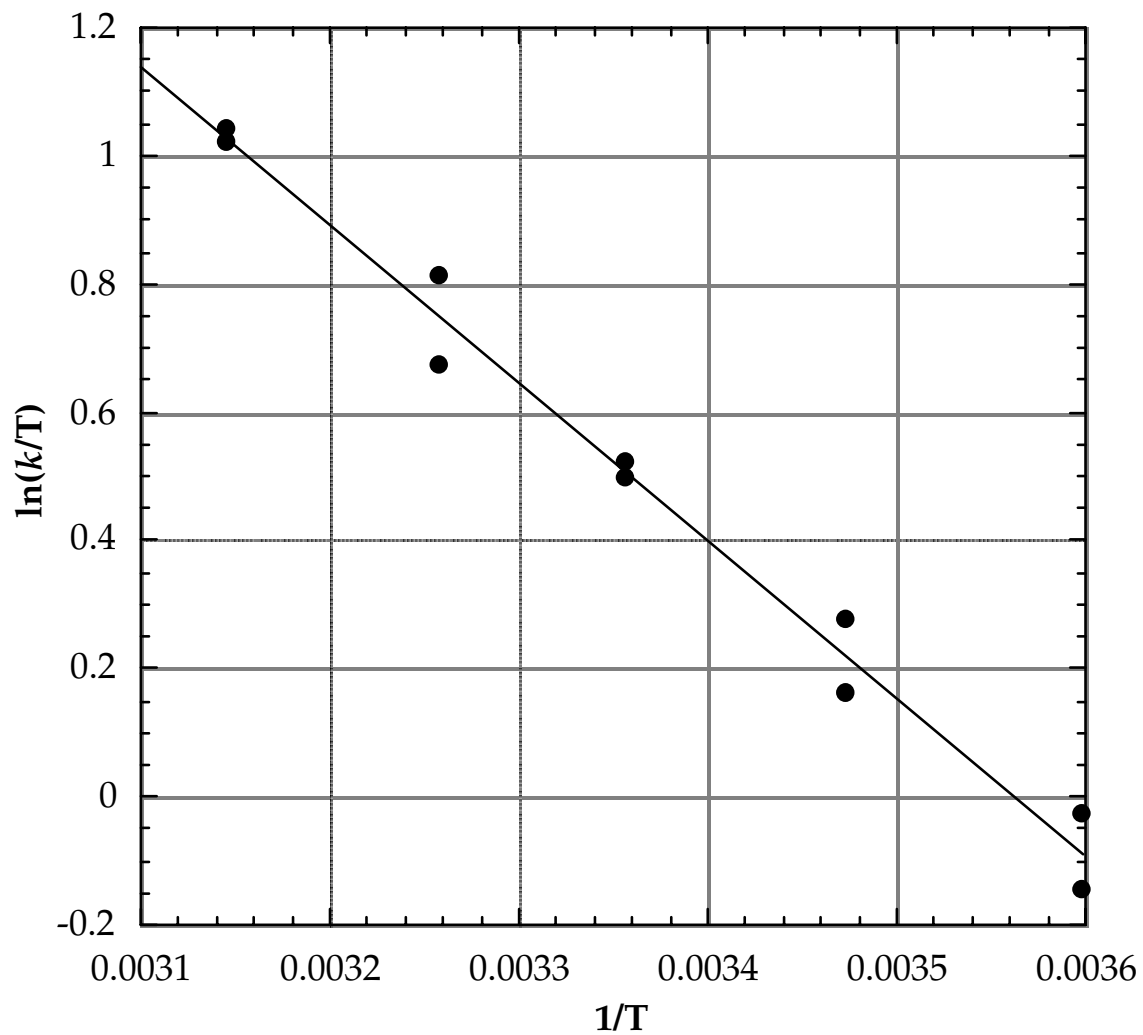


Figure S3. Eyring plot for the oxidation of xanthene by  $\text{RuO}_4$  over the temperature range 5-45 °C.

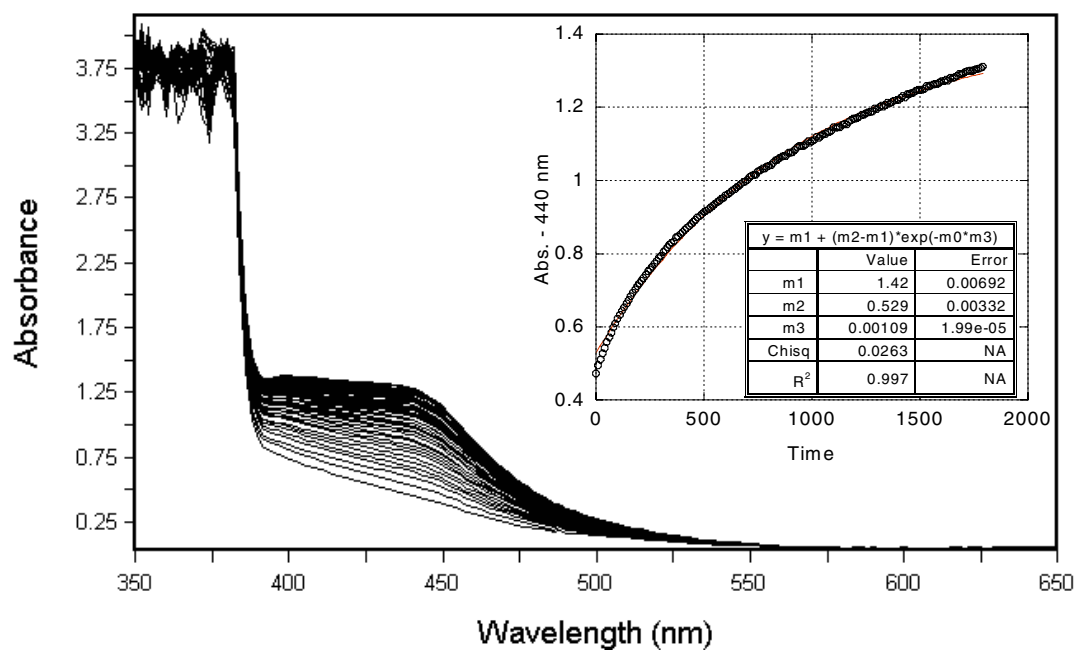


Figure S4. Stacked plot of the oxidation of anthracene by  $\text{RuO}_4^+$  with inset of the single wavelength trace at 440 nm.