

ELECTRONIC SUPPLEMENTARY INFORMATION

THE pH-DEPENDENT PHOTOCHEMISTRY OF ANTHRAQUINONE-2-SULPHONATE

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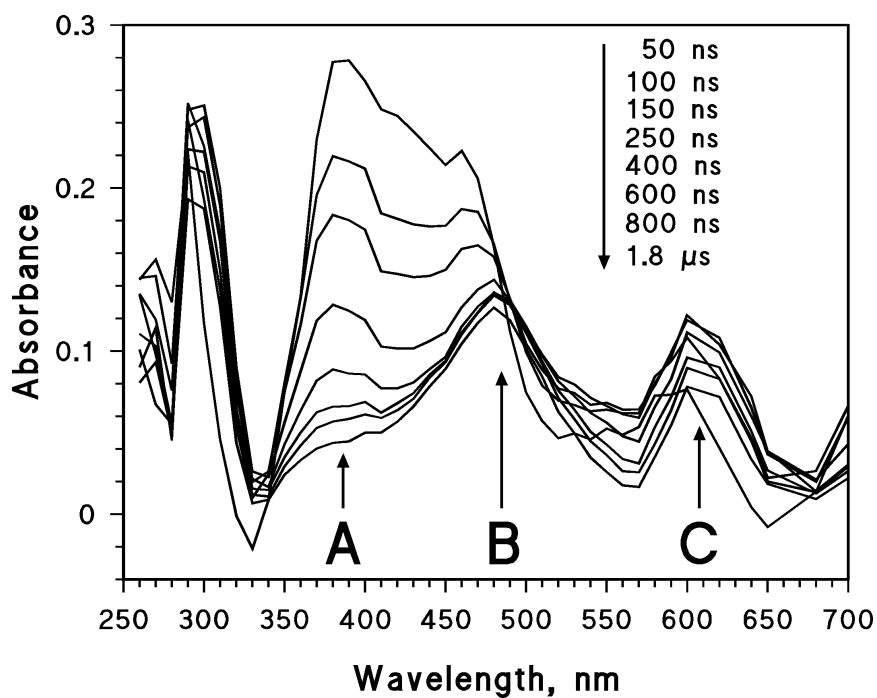


Figure ESI1. Time evolution of the spectrum of 0.1 mM AQ2S, excited by a 30 mJ laser pulse at 355 nm, in the 50-1800 ns time scale, in Milli-Q water (pH = 6.5). The absorption maxima of the three identified transient species are also highlighted.

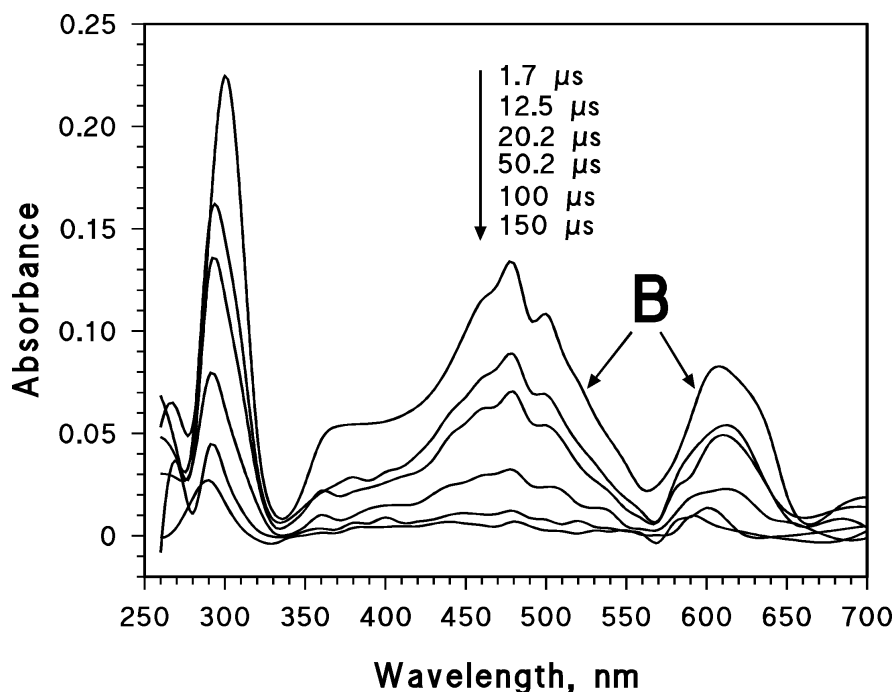


Figure ESI2. Time evolution of the spectrum of 0.1 mM AQ2S, excited by a 30 mJ laser pulse at 355 nm, in the 1.7-150 μ s time scale, in Milli-Q water (pH = 6.5). The absorption spectrum of B is also highlighted.

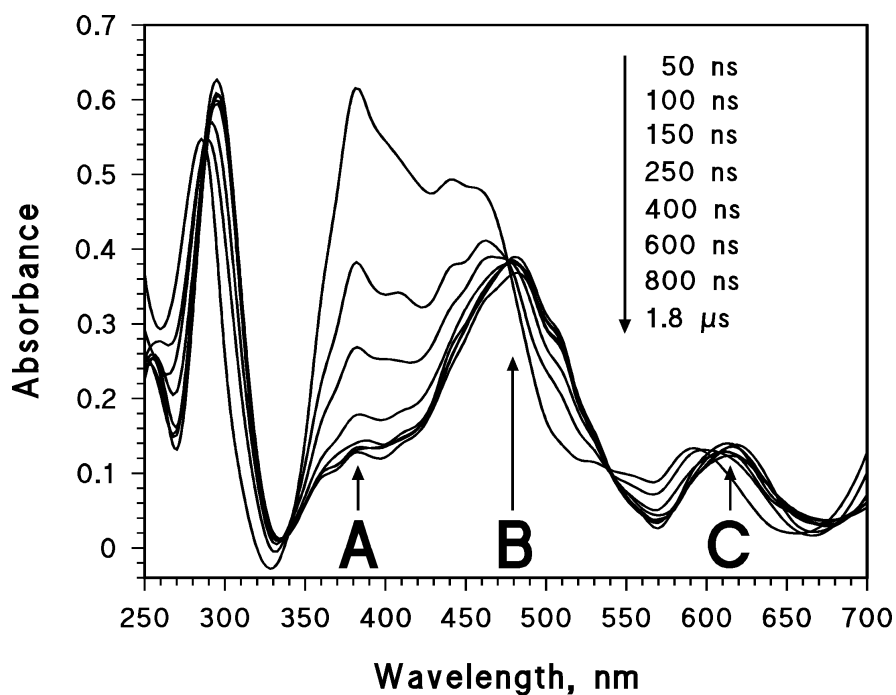


Figure ESI3. Time evolution of the spectrum of 0.2 mM AQ2S at pH 2.5, excited by a 30 mJ laser pulse at 355 nm, in the 50-1800 ns time scale. The absorption maxima of the three identified transient species are also highlighted.

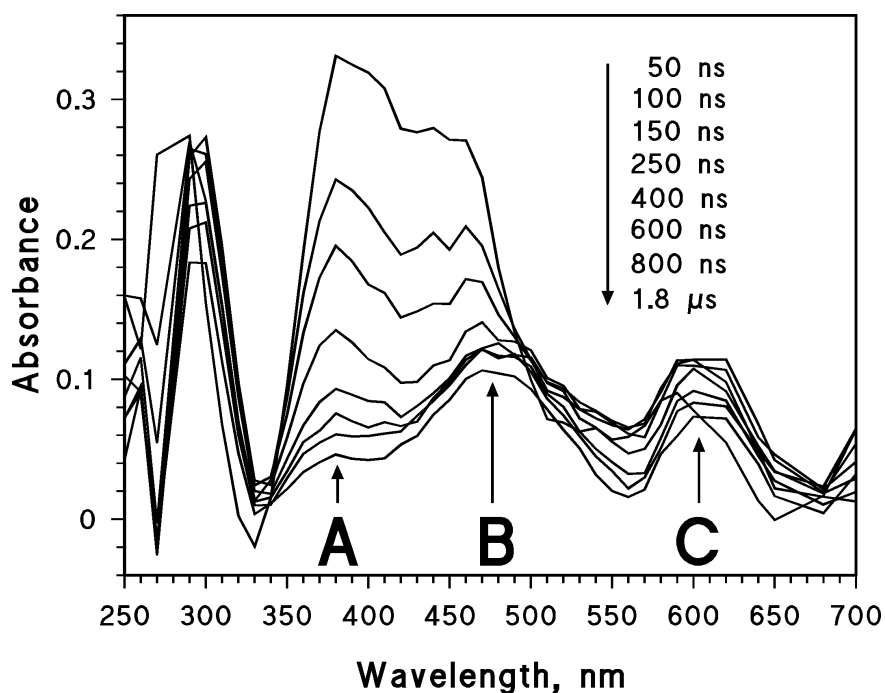


Figure ESI4. Time evolution of the spectrum of 0.1 mM AQ2S at pH 9.0, excited by a 30 mJ laser pulse at 355 nm, in the 50-1800 ns time scale. The absorption maxima of the three identified transient species are also highlighted.

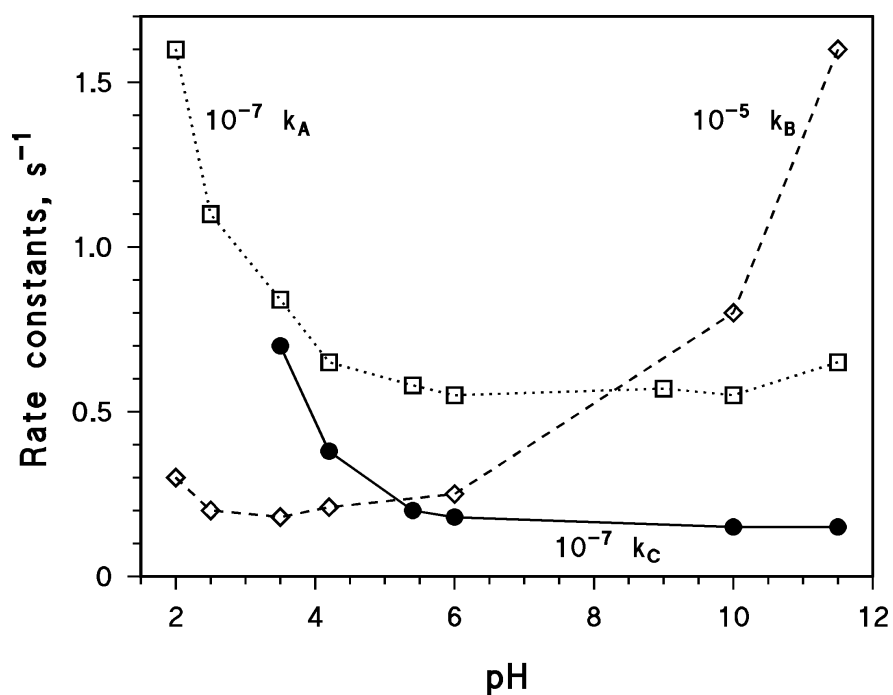


Figure ESI5. pH trend of the pseudo-first order degradation rate constants of the three identified transient species. Note that k_A and k_C are around two orders of magnitude higher than k_B . Laser pulse: 30 mJ, 355 nm, 0.1 mM AQ2S.

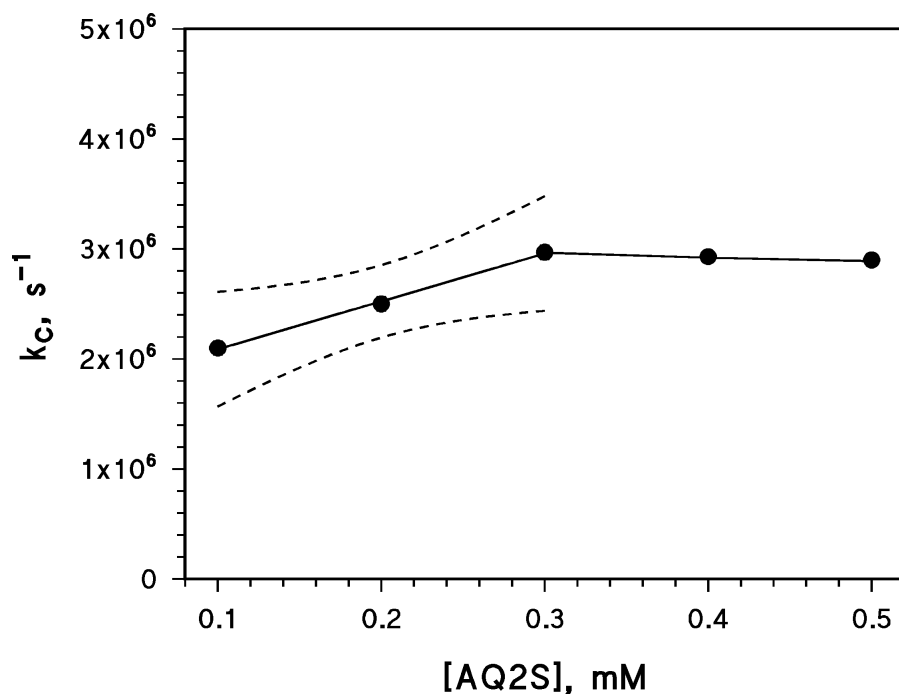


Figure ESI6. Trend of k_C as a function of [AQ2S]. The linear part is highlighted, together with the 95% error bounds to the regression line. Laser pulse: 30 mJ, 355 nm.

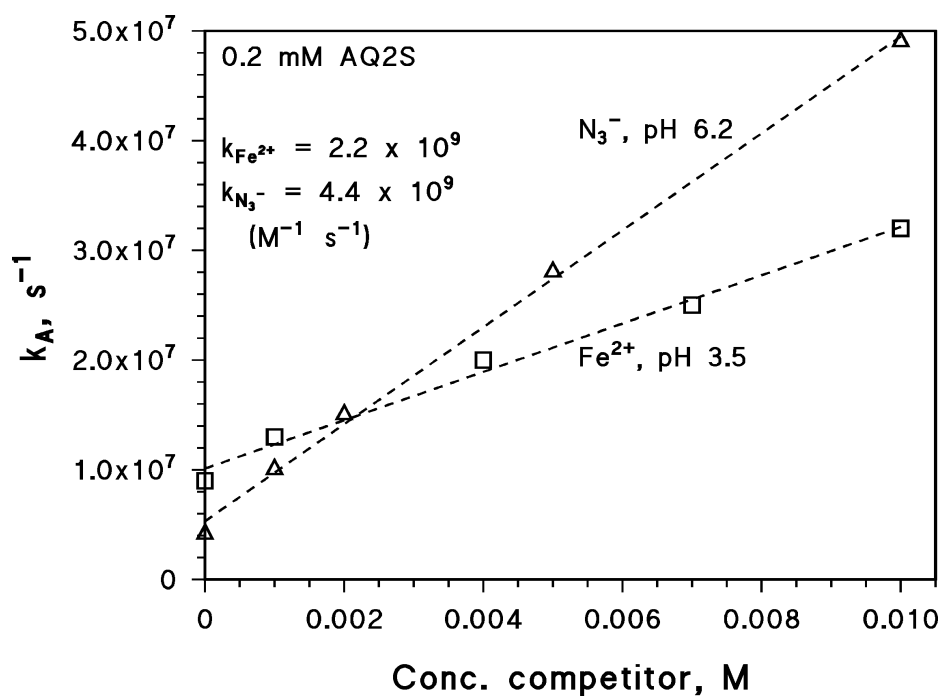


Figure ESI7. Trend of k_A as a function of the concentrations of Fe^{2+} and N_3^- . The second-order reaction rate constants between A and the competitors are also reported. They were derived as the slope of the experimental lines. Laser pulse: 30 mJ, 355 nm.

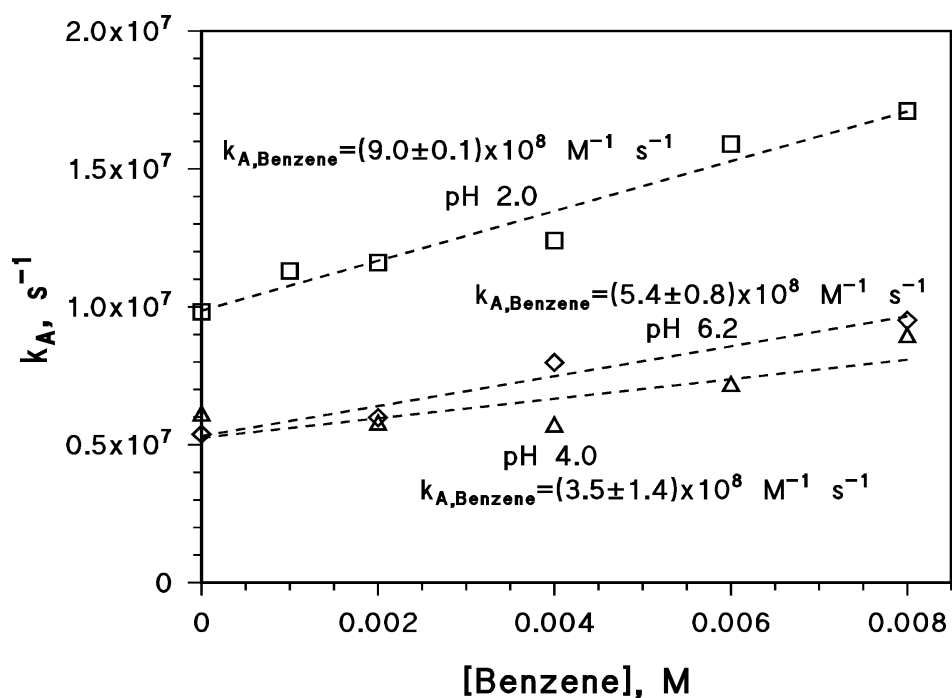


Figure ESI8. Pseudo-first order degradation rate constant of the transient species A, produced upon irradiation of 0.1 mM AQ2S, as a function of the concentration of added benzene. The pH was adjusted by addition of HClO₄. The reported values of $k_{A,Benzene}$ are derived from the slopes of the relevant lines ($k_{A,Benzene} = k_A [Benzene]^{-1}$). Laser pulse: 30 mJ, 355 nm.

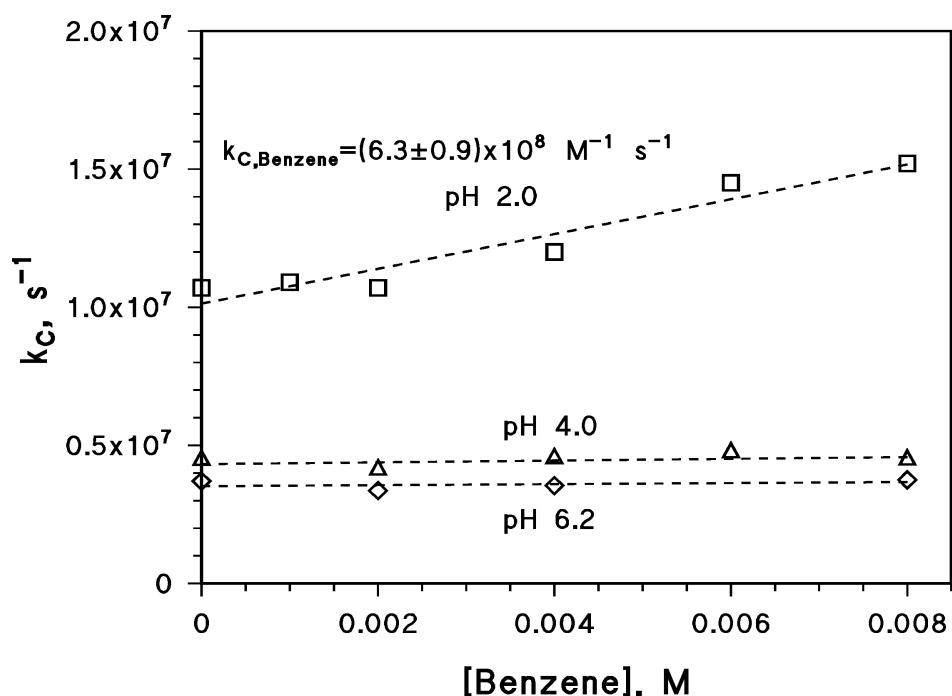


Figure ESI9. Pseudo-first order degradation rate constant of the transient species C, produced upon irradiation of 0.1 mM AQ2S, as a function of the concentration of added benzene. The pH was adjusted by addition of HClO₄. The reported values of $k_{C,Benzene}$ are derived from the slopes of the relevant lines ($k_{C,Benzene} = k_C [Benzene]^{-1}$). Laser pulse: 30 mJ, 355 nm.

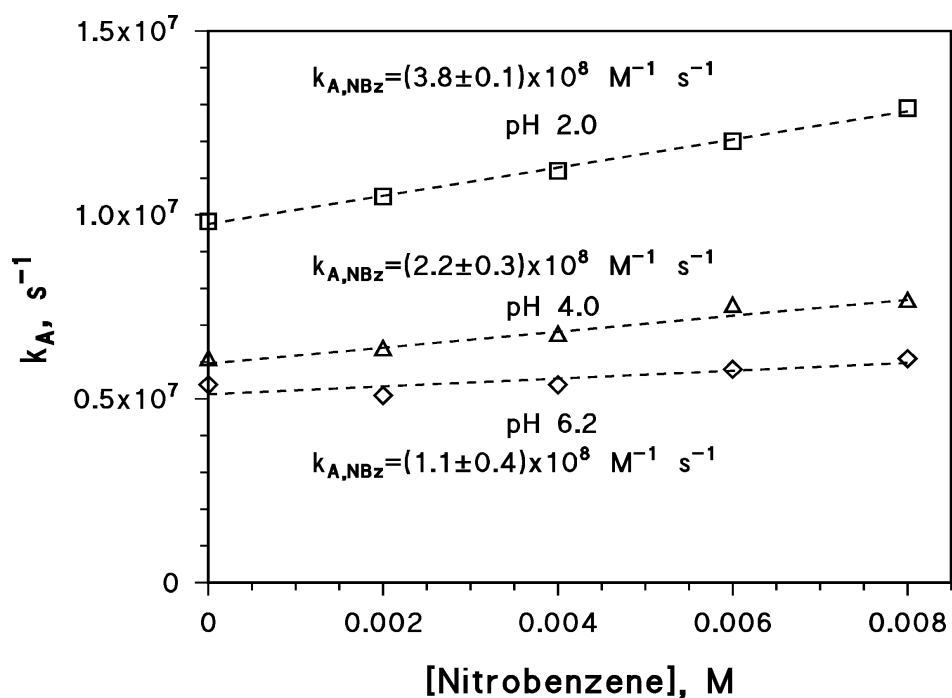


Figure ESI10. Pseudo-first order degradation rate constant of the transient species A, produced upon irradiation of 0.1 mM AQ2S, as a function of the concentration of added nitrobenzene (NBz). The pH was adjusted by addition of HClO₄. The reported values of $k_{A,NBz}$ are derived from the slopes of the relevant lines ($k_{A,NBz} = k_A [\text{NBz}]^{-1}$). Laser pulse: 30 mJ, 355 nm.

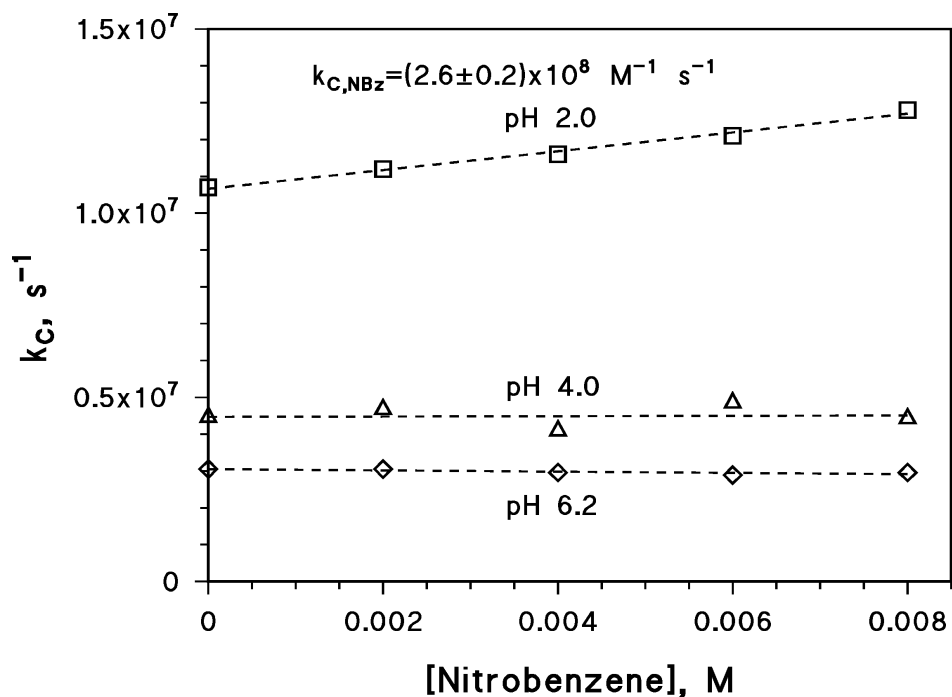


Figure ESI11. Pseudo-first order degradation rate constant of the transient species C, produced upon irradiation of 0.1 mM AQ2S, as a function of the concentration of added nitrobenzene (NBz). The pH was adjusted by addition of HClO₄. The reported values of $k_{C,NBz}$ are derived from the slopes of the relevant lines ($k_{C,NBz} = k_C [\text{NBz}]^{-1}$). Laser pulse: 30 mJ, 355 nm.