Electronic Supplementary Material for PCCP

Supporting Information

Intermolecular Photoinduced Electron-Transfer of 1,8-Naphthalimides in Protic Polar Solvents

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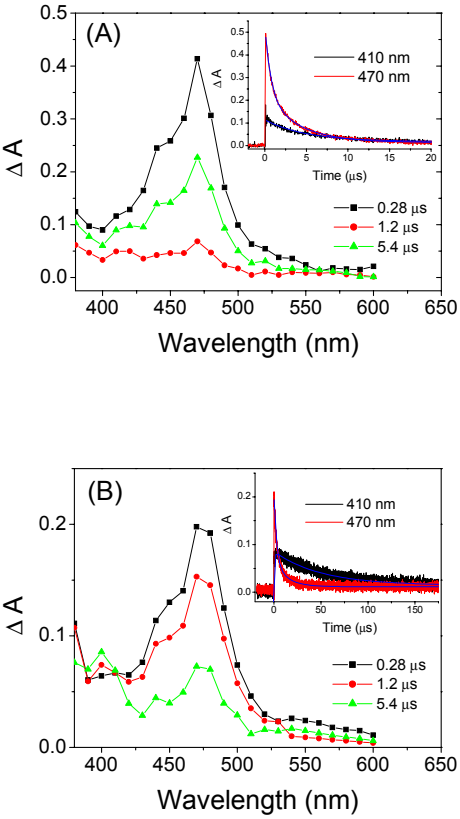

Fig. S1 Transient absorption spectra observed at various delay times during the laser flash photolysis of NI-O (2.9×10^{-5} M) in (A) CH_3CN and (B) H_2O/CH_3CN (v/v = 1:1) with a 355 nm excitation pulse. The inset shows kinetic traces of ΔA at 410 and 470 nm: (A) the decay times are 4.2 and 4.7 μs monitored at 410 and 470 nm, respectively; (B) the decay times are 59.4 and 5.5 μs monitored at 410 and 470 nm, respectively.

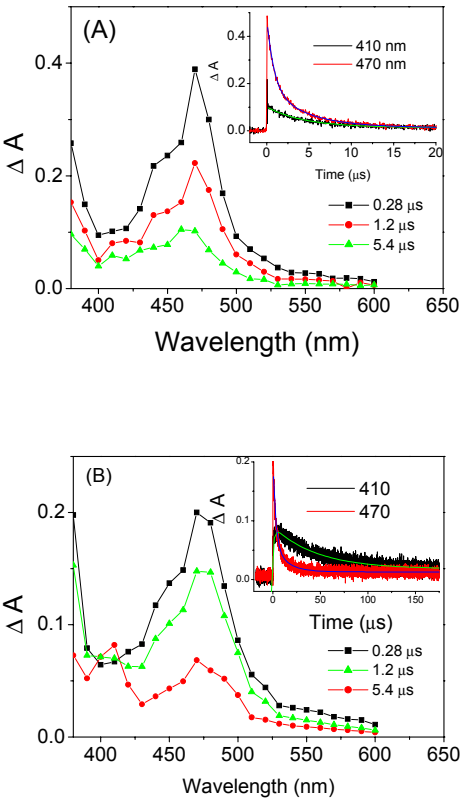

Fig. S2 Transient absorption spectra observed at various delay times during the laser flash photolysis of NI-O3 (2.9×10^{-5} M) in (A) CH_3CN and (B) H_2O/CH_3CN (v/v = 1:1) with a 355 nm excitation pulse. The inset shows kinetic traces of ΔA at 410 and 470 nm: (A) the decay times are 4.5 and 4.5 μs monitored at 410 and 470 nm, respectively; (B) the decay times are 50.5 and 5.5 μs monitored at 410 and 470 nm, respectively.

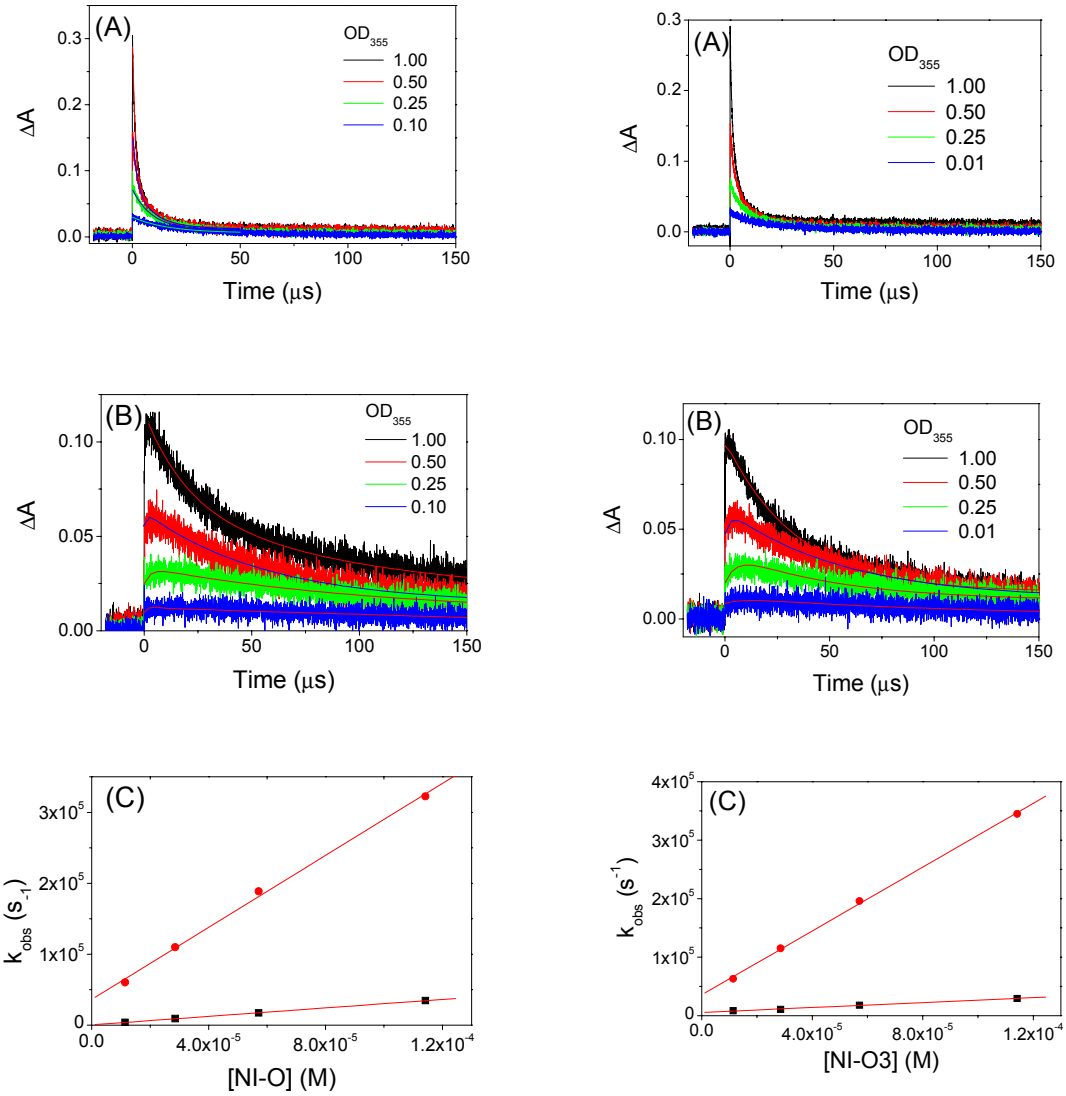

Fig. S3 Triplet decay of (A) NI-O3 at 470 nm and (B) concomitant growth of transient at 410 nm in H_2O/CH_3CN according to change of concentration of NI [$OD_{355\ nm}$ = 1.00 (1.1×10^{-4} M), 0.50 (5.7×10^{-5} M), 0.25 (2.9×10^{-5} M), and 0.10 (1.4×10^{-5} M)]. (C) Plots of k_{obs} *vs.* [NI-O] for self-quenching of NI derivatives monitored at 470 nm (circles) and at 410 nm (squares) in H_2O/CH_3CN.

Fig. S4 Triplet decay of (A) NI-O3 at 470 nm and (B) c oncomitant growth of transient at 410 nm in H_2O/CH_3CN according to change of concentration of NI [$OD_{355\ nm}$ = 1.00 (1.1×10^{-4} M), 0.50 (5.7×10^{-5} M), 0.25 (2.9×10^{-5} M), and 0.10 (1.4×10^{-5} M)]. (C) Plots of k_{obs} *vs.* [NI-O3] for self-quenching of NI derivatives monitored at 470 nm (circles) and at 410 nm (squares) in H_2O/CH_3CN.

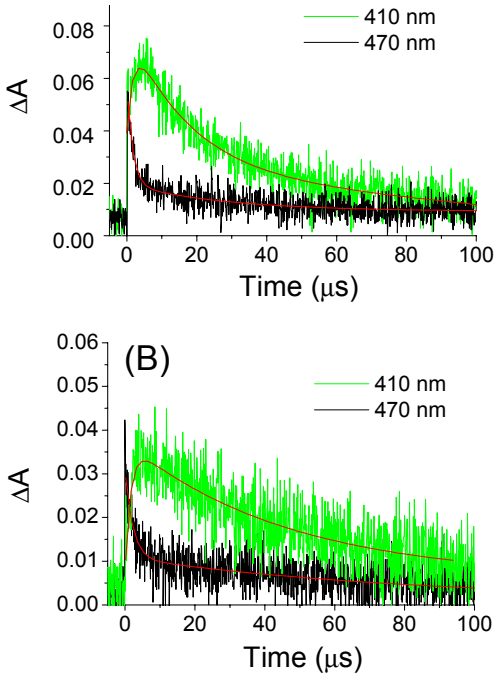

Fig. S5 Triplet decay of (A) NI-C8-PTZ (2.9×10^{-5} M) and (B) NI-O3-PTZ (2.9×10^{-5} M) monitored at 470 nm and concomitant growth of transient at 410 nm (B) in H_2O/CH_3CN.