Electronic Supporting Information (ESI)

2-Diazo-1-(4-hydroxyphenyl)ethanone: A Versatile Photochemical and Synthetic Reagent[a]

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Figure SI1. X-ray Crystal Structure of **1a**

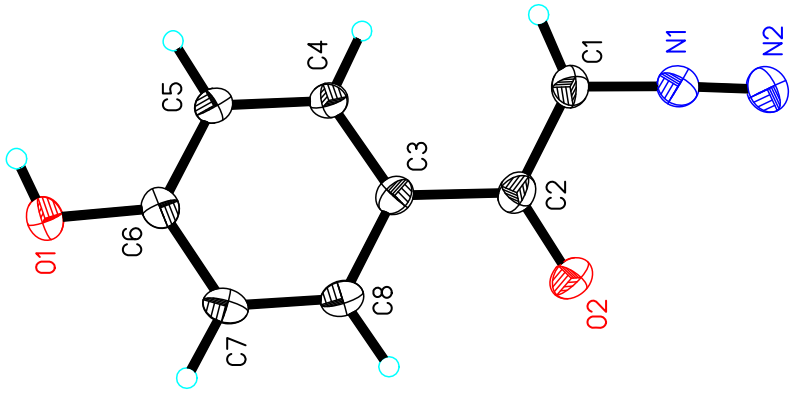


Figure SI2. Crystal packing of **1a** in the crystalline lattice cell

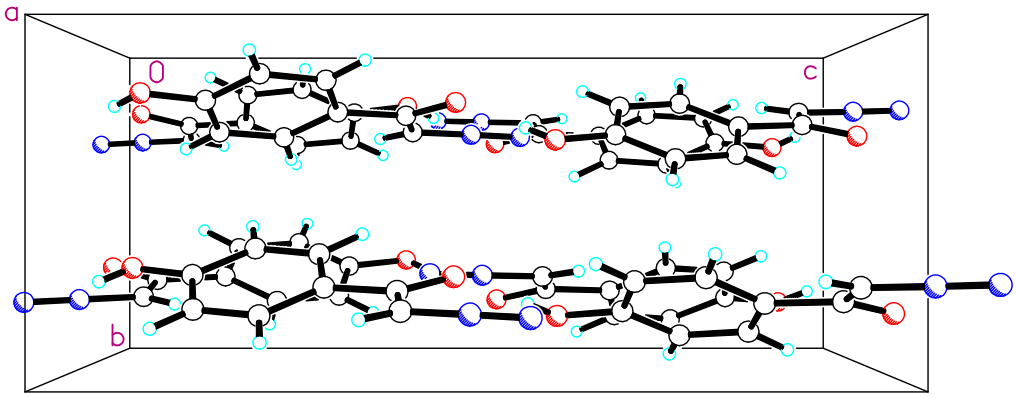


Figure SI3. The UV-vis Spectrum of diazo pHP **1a** in 50 % aqueous CH_3CN

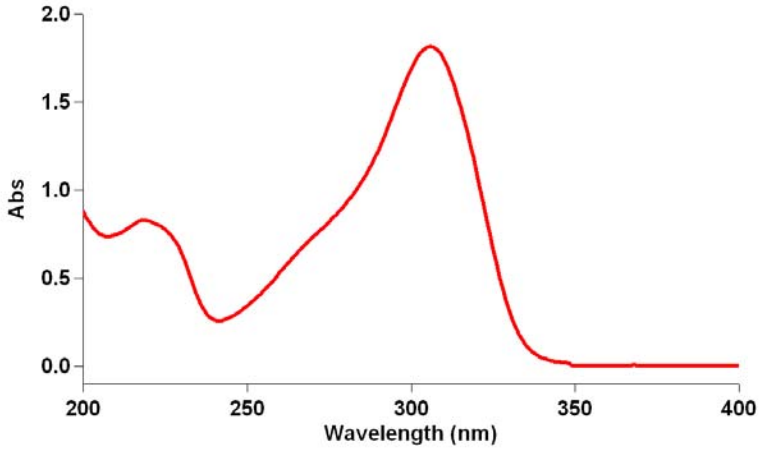


Figure SI4. The UV-vis spectra of diazo *p*HP **1a** at different pH Values

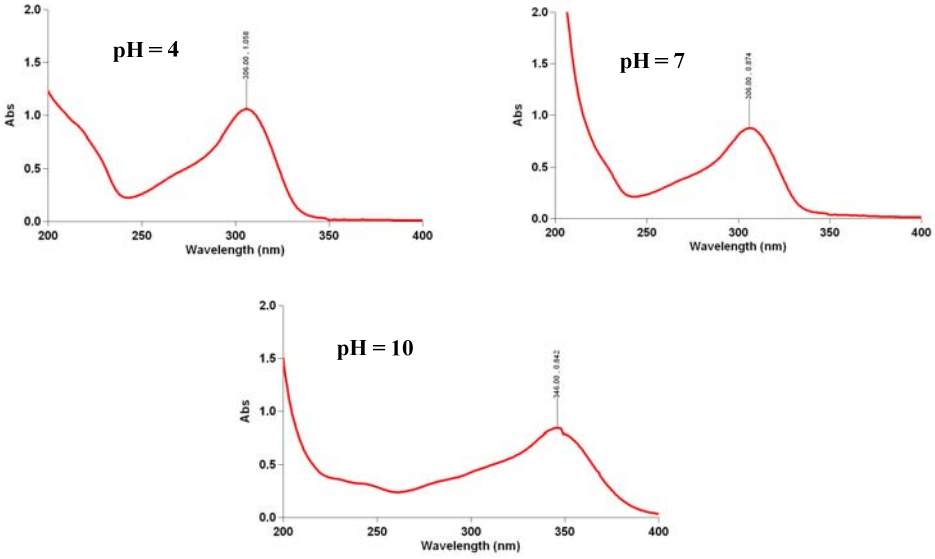


Figure SI5. Stern-Volmer plot for the photolysis of diazo *p*HP **1a** in 50% aqueous CH_3CN at 300 nm

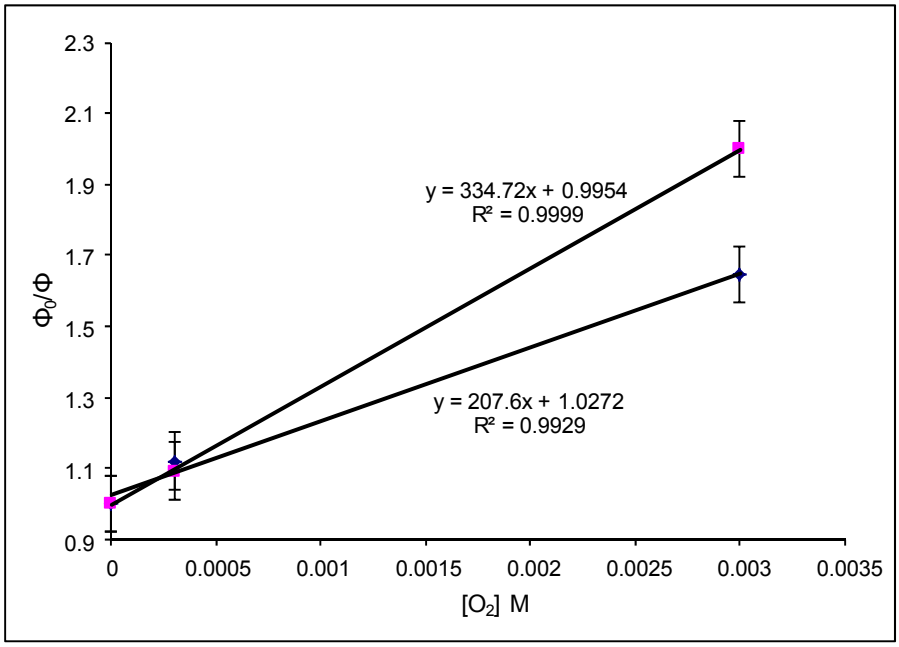
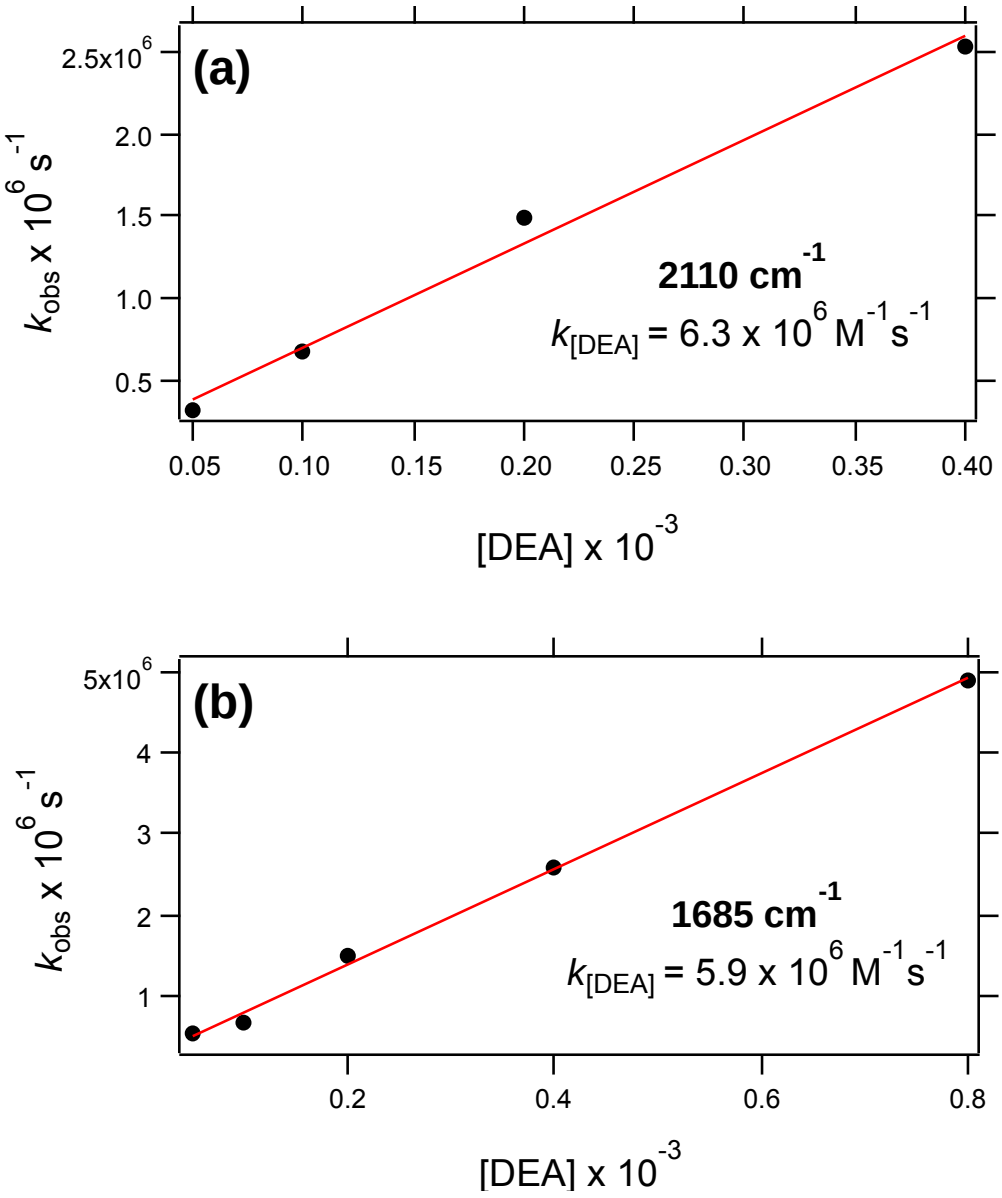


Figure SI6. Plots of observed rate of (a) decay of ketene **3a** at 2110 cm^{-1} and (b) growth of intermediate **22** or **23** at 1685 cm^{-1} as a function of diethylamine concentration in acetonitrile. Black markers are experimental values; red lines represent least-square fits of the data to a linear function.



Tables:

Table SI1. Measured structural parameters of **1a** in the crystalline ground state

Bond length / Å		Bond angle / (°)		Dihedral angle / (°)	
N1-N2	1.110	N2-N1-C1	177.5	N2-N1-C1-C2	22
N1-C1	1.321	N1-C1-C2	116.8	N1-C1-C2-O2	2
C1-H1	0.950	C2-C1-H1	129	N1-C1-C2-C3	179.7
C1-C2	1.431	O2-C2-C1	120.7	O2-C2-C3-C4	-168.5
O2-C2	1.241	O2-C2-C3	121.7	C1-C2-C3-C4	13.8
C2-C3	1.480	C1-C2-C3	117.6	O2-C2-C3-C8	12.3
C3-C4	1.399	C2-C3-C4	122.7	C1-C2-C3-C8	-165.4

Table SI2. Observed pseudo-first order kinetics (k_{obs}) for the decay of the ketene intermediate **3a**

[DEA] / mM	v/cm^{-1}	k_{obs}/ 10^{6} s^{-1}
0.05	2110	0.324
0.10	2110	0.678
0.20	2110	1.490
0.40	2110	2.539