

Supporting Information

Table S-1. The magnitude of A , $\Delta\mu$, and $\Delta\alpha$ for photo excitation into each of the Gaussian components.

compd	Band #	ν/cm^{-1}	λ/nm	$\Delta\nu/\text{cm}^{-1}$	A	$\Delta\mu/\text{D}$	$\Delta\alpha/\text{\AA}^3$
1	G1	20200	495	1950	7.00×10^{-4}	3.60	27.29
	G2	18350	545	1790	4.50×10^{-3}	5.30	45.49
	G3	17180	582	1280	1.00×10^{-4}	3.03	3.64
	G4	16050	623	1160	-1.00×10^{-4}	1.47	6.00
	G5	14970	668	1050	2.00×10^{-4}	1.47	21.84
	G6	14005	714	1050	-5.00×10^{-4}	2.33	41.85
	G7	13160	760	840	3.50×10^{-4}	2.55	36.39
	G8	12470	802	730	3.00×10^{-4}	2.08	36.39
2	G9	18940	528	2770	-2.80×10^{-3}	3.29	-72.78
	G10	17270	579	1240	2.80×10^{-3}	1.80	-13.65
	G11	16310	613	750	1.00×10^{-4}	1.80	-13.65
	G12	15670	638	820	0.00	1.80	13.65
	G13	14450	692	1500	2.00×10^{-3}	3.12	-8.19
	G14	13250	755	790	-1.00×10^{-3}	2.75	18.20
	G15	12500	800	1740	1.00×10^{-4}	4.88	181.96