

## Supporting information

### Analysis of Charge Transfer Transitions in Stacked $\pi$ -Donor-Acceptor Complexes

Zhong-hua Cui,<sup>a,b</sup> Adélia J. A. Aquino,<sup>a,c</sup> Andrew C.-H. Sue<sup>a</sup> and Hans Lischka<sup>a,c</sup>

<sup>a</sup> School of Pharmaceutical Sciences and Technology, Tianjin University, Tianjin 300072, P.R. China

<sup>b</sup> Institute of Atomic and Molecular Physics, Jilin University, Changchun 130012, P. R. China

<sup>c</sup> Department of Chemistry and Biochemistry, Texas Tech University, Lubbock, Texas 79409, United States

#### Table of Contents

<b>Table S1:</b> EA, IP and CE energies	p. 2
<b>Table S2:</b> Vertical excitation energies in the PDI/DAN complex	p. 2
<b>Table S3:</b> Vertical excitation energies in the pCIA/TMPD complex	p. 3
<b>Table S4:</b> Vertical excitation energies in the TCNB/Bpe complex	p. 4
<b>Table S5:</b> Basis set dependence of the vertical excitation energies	p. 5
<b>Figure S1:</b> Molecular orbitals	p. 6
<b>Figure S2.</b> $\Omega_{AB}$ plots	p. 7
<b>Figure S3.</b> Electrostatic potential	p. 8
<b>Table S6</b> Coordinates for the ground states.	p. 9
<b>Table S7.</b> Coordinates for the excited states.	p. 12

**Table S1.** Electron affinity (EA) and ionization potential (IP) of acceptor and donor in the dimers, respectively, and intermolecular Coulomb interaction (CE) energies based on NPA charges computed at the PBE0-D3/cc-pVDZ level. All energies are in eV.

Complexes	EA/IP	IP - EA	Coulomb int.
PDI/DAN	1.62/6.76	5.14	-3.24
pCIA/TMPD	2.42/5.90	3.48	-2.44
TCNB/Bpe	2.33/8.94	6.61	-0.21

**Table S2.** Vertical excitation energies  $\Delta E_{exc}$  (eV) for the PDI/DAN complex, oscillator strengths and charge transfer (q(CT) in  $e$ ) using the SOS/ADC(2)/cc-pVDZ method.

State	$\Delta E_{exc}$	f	CT
PBE0-D3/cc-pVDZ geometries			
$S_1$	3.00	0.07	0.95
$S_2$	3.85	0.01	0.95
$S_3$	3.92	0.00	0.62
$S_4$	4.02	0.09	0.30
$S_5$	4.23	0.00	0.03
$S_6$	4.33	0.00	0.04
$S_7$	4.37	0.12	0.06
$S_8$	4.52	0.00	0.96
SOS-MP2/cc-pVDZ geometry			
$S_1$	3.16	0.07	0.96
$S_2$	3.96	0.01	0.95
$S_3$	3.98	0.01	0.35
$S_4$	4.04	0.06	0.35
$S_5$	4.20	0.00	0.03
$S_6$	4.30	0.00	0.03
$S_7$	4.42	0.12	0.06
$S_8$	4.49	0.00	0.97

**Table S3.** Vertical excitation energies  $\Delta E_{\text{exc}}$  (eV) for the pCIA/TMPD complex, oscillator strengths and charge transfer ( $q(\text{CT})$  in  $e$  units) using the SOS-ADC(2)/cc-pVDZ.

State	$\Delta E_{\text{exc}}$	f	CT
PBE0-D3/cc-pVDZ geometries			
$S_1$	1.18	0.08	0.86
$S_2$	3.21	0.05	0.89
$S_3$	3.25	0.06	0.62
$S_4$	3.44	0.00	0.08
$S_5$	3.52	0.00	0.27
$S_6$	3.61	0.00	0.47
$S_7$	4.28	0.12	0.61
$S_8$	4.29	0.02	0.34
SOS-MP2/cc-pVDZ geometry			
$S_1$	1.77	0.08	0.92
$S_2$	3.44	0.00	0.06
$S_3$	3.48	0.01	0.24
$S_4$	3.71	0.03	0.71
$S_5$	3.76	0.05	0.45
$S_6$	3.89	0.00	0.70
$S_7$	4.29	0.00	0.29
$S_8$	4.44	0.00	0.58

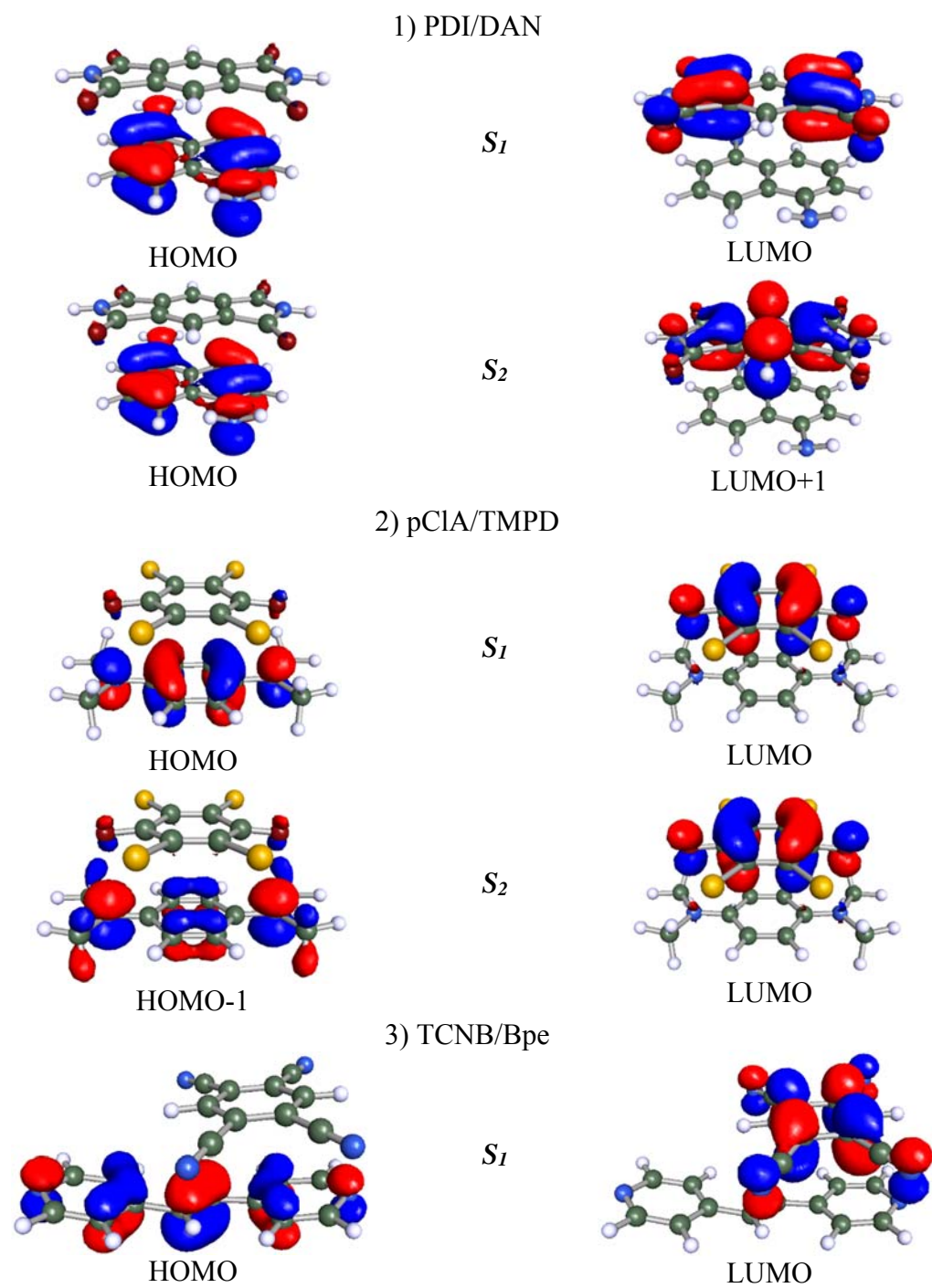
**Table S4.** Vertical excitation energies  $\Delta E_{\text{exc}}$  (eV) for the TCNB/Bpe complex, oscillator strengths and charge transfer ( $q(\text{CT})$  in  $e$  units) using the SOS/ADC(2)/cc-pVDZ.

State	$\Delta E_{\text{exc}}$	f	CT
PBE0-D3/cc-pVDZ geometries			
$S_1$	4.06	0.04	0.71
$S_2$	4.48	0.05	0.30
$S_3$	4.66	0.10	0.24
$S_4$	4.68	0.01	0.11
$S_5$	4.78	0.41	0.16
$S_6$	4.85	0.00	0.02
$S_7$	4.89	0.00	0.10
$S_8$	4.93	0.29	0.65
SOS-MP2/cc-pVDZ geometry			
$S_1$	4.09	0.03	0.61
$S_2$	4.39	0.04	0.43
$S_3$	4.59	0.04	0.07
$S_4$	4.60	0.00	0.25
$S_5$	4.76	0.14	0.38
$S_6$	4.86	0.63	0.43
$S_7$	4.88	0.01	0.02
$S_8$	4.92	0.01	0.11

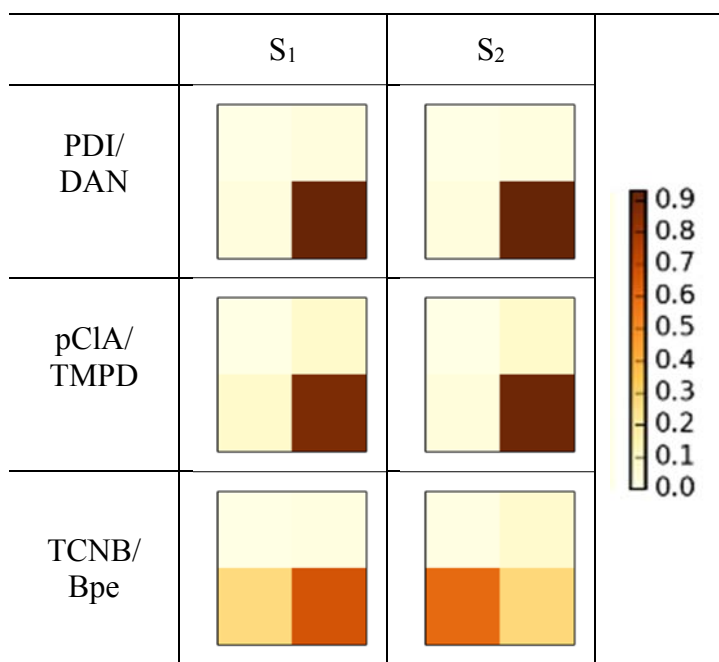
**Table S5.** Basis set dependence of the vertical excitation energies  $\Delta E_{\text{exc}}$  (eV), oscillator strengths ( $f$ ) and charge transfer values  $q(\text{CT})$  for the two lowest states of the three complexes investigated.<sup>a</sup>

Methods	States	$\Delta E_{\text{exc}}$	$q(\text{CT})$	$f$
PDI/DAN				
SOS-ADC(2)/cc-pVDZ	S <sub>1</sub>	3.00	0.95	0.07
	S <sub>2</sub>	3.85	0.95	0.01
SOS-ADC(2)/aug-cc-pVDZ	S <sub>1</sub>	2.95	0.98	0.06
	S <sub>2</sub>	3.73	0.10	0.01
pCIA/TMPD				
SOS-ADC(2)/cc-pVDZ	S <sub>1</sub>	1.18	0.86	0.08
	S <sub>2</sub>	3.21	0.89	0.05
SOS-ADC(2)/aug-cc-pVDZ	S <sub>1</sub>	1.10	0.85	0.07
	S <sub>2</sub>	3.11	0.60	0.06
TCNB/Bpe				
SOS-ADC(2)/cc-pVDZ	S <sub>1</sub>	4.06	0.71	0.04
	S <sub>2</sub>	4.48	0.30	0.05
SOS-ADC(2)/aug-cc-pVDZ	S <sub>1</sub>	3.97	0.74	0.04
	S <sub>2</sub>	4.41	0.20	0.08

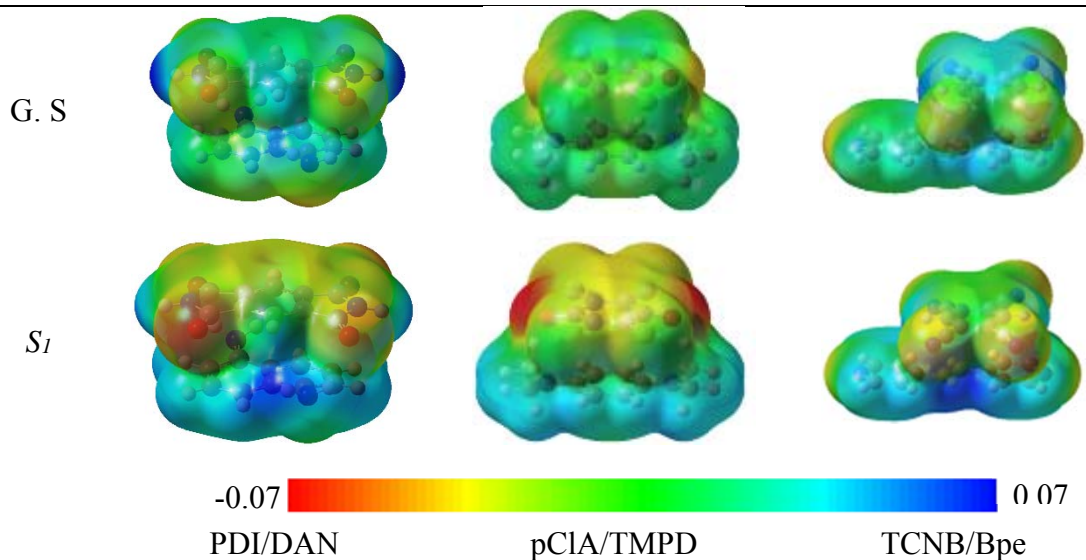
<sup>a</sup> gas phase calculations using the PBE0-D3 geometry.



**Figure S1.** Molecular orbitals obtained at the PBE0-D3/cc-pVDZ level, and the lowest charge-transfer transition are illustrated.



**Figure S2.**  $\Omega_{AB}^n$  plots for the first two excited states of the three complexes investigated using the SOS-ADC(2)/cc-pVDZ level. The two segments in the plots represent the two monomers in the complex.



---

**Figure S3.** Projection of the electrostatic potential on the molecular van der Waals surface using the SOS-MP2(G.S.) and SOS-ADC(2) (*S*<sub>1</sub>) methods with the cc-pVDZ basis for the gas phase. Geometries have been optimized for the respective state in gas phase. The vdW surface is defined by the 0.001 e/bohr<sup>3</sup> contour of the electronic density.



**Table S6.** Coordinates for the ground states.

PBE0				SOS-MP2			
<b>1) PDI/DAN</b>							
O	3.0775293	2.1883464	1.4113142	O	3.1060366	-2.2125177	1.4974760
O	2.9388954	2.3930894	1.6571914	O	2.9620318	2.4116781	1.6713660
N	3.3467579	0.1088441	1.6140178	N	3.3768849	0.1070253	1.6633344
C	2.6195972	-1.0745027	1.5367457	C	2.6468766	-1.0890509	1.5874699
C	2.5469789	1.2521363	1.6383546	C	2.5716405	1.2621134	1.6590907
C	1.1926792	-0.6586373	1.6193512	C	1.2038180	-0.6656435	1.6338566
C	1.1468632	0.7401417	1.6448635	C	1.1580616	0.7442682	1.6512251
C	-0.0475423	1.4459526	1.6472323	C	-0.0472409	1.4590643	1.6595833
H	-0.0824359	2.5356308	1.6503829	H	-0.0808035	2.5535047	1.6784027
O	-3.0775252	2.1882074	1.4112812	O	-3.1060456	2.2124982	1.4974554
O	-2.9388260	-2.3931142	1.6572637	O	-2.9620195	-2.4116910	1.6713916
N	-3.3467370	-0.1088731	1.6140369	N	-3.3768879	-0.1070372	1.6633328
C	-2.6195807	1.0743599	1.5367604	C	-2.6468846	1.0890410	1.5874630
C	-2.5469578	-1.2522053	1.6383944	C	-2.5716217	-1.2621189	1.6591084
C	-1.1927957	0.6586736	1.6193625	C	-1.2038064	0.6656569	1.6338608
C	-1.1469252	-0.7400853	1.6448642	C	-1.1580907	-0.7442527	1.6512210
C	0.0473688	-1.4458948	1.6472097	C	0.0472478	-1.4591018	1.6595820
H	0.0825342	-2.5354885	1.6502809	H	0.0808016	-2.5534944	1.6783916
N	-1.4818056	2.6850354	-1.3839994	N	-1.4772686	2.7286842	-1.4577370
N	1.4819712	-2.6850546	-1.3839102	N	1.4772342	-2.7286863	-1.4577215
C	-1.3527035	1.3121552	-1.4951379	C	-1.3622913	1.3230197	-1.5079743
C	-0.0505454	0.7123589	-1.5828892	C	-0.0517216	0.7169241	-1.5779808
C	1.1258088	1.4996313	-1.6180331	C	1.1379722	1.5138221	-1.6339415
H	1.0634547	2.5863561	-1.6761918	H	1.0696773	2.6035503	-1.7121925
C	2.3640258	0.8937454	-1.6237461	C	2.3839627	0.9003705	-1.6494308
H	3.2675237	1.5051139	-1.6639733	H	3.2928576	1.5112195	-1.7132042
C	2.4808608	-0.5015191	-1.5410078	C	2.4990862	-0.5138858	-1.5625750
H	3.4686325	-0.9658868	-1.4937233	H	3.4917532	-0.9816151	-1.5363957
C	1.3526942	-1.3121311	-1.4951660	C	1.3622589	-1.3230128	-1.5079719
C	0.0505192	-0.7122933	-1.5828955	C	0.0517137	-0.7169276	-1.5779778
C	-1.1259015	-1.4996411	-1.6180148	C	-1.1379830	-1.5137782	-1.6339315
H	-1.0634799	-2.5862537	-1.6761953	H	-1.0696714	-2.6035624	-1.7121867
C	-2.3639517	-0.8936737	-1.6236586	C	-2.3839441	-0.9003503	-1.6494134
H	-3.2674470	-1.5051652	-1.6638711	H	-3.2928619	-1.5112192	-1.7131843
C	-2.4808039	0.5014972	-1.5409357	C	-2.4990351	0.5138698	-1.5625642
H	-3.4685979	0.9658956	-1.4936514	H	-3.4917695	0.9816276	-1.5363756
H	-2.3500593	2.9709329	-0.9408156	H	-2.3870676	3.0095971	-1.0887650
H	-0.6972489	3.1454886	-0.9370739	H	-0.7611361	3.1484889	-0.8639620
H	0.6971828	-3.1454322	-0.9370722	H	0.7611444	-3.1484619	-0.8639499
H	2.3500064	-2.9709417	-0.9406930	H	2.3870857	-3.0095977	-1.0887448
H	4.3554851	0.1440117	1.5369034	H	4.3908077	0.1413882	1.6022869
H	-4.3554989	-0.1441181	1.5368442	H	-4.3908021	-0.1414069	1.6022823
<b>2) pCIA/TMPD</b>							
H	0.9755271	50.2576503	12.3981289	H	1.1330806	50.2200475	12.3742849
H	3.6038051	50.2485242	9.7717471	H	3.9164186	49.6590517	9.4261953
H	-0.9754198	50.2577285	5.2238309	H	-0.8158147	49.7580075	4.9712576
H	-3.6038367	50.2486325	7.8503449	H	-3.5665810	50.3615391	7.9477546
H	-1.0952635	48.4676019	5.1301504	H	-1.4482869	48.1256860	5.3855234
H	-3.6776142	48.4570735	7.7452564	H	-3.5599571	48.5871046	7.6402645
H	1.0952319	48.4677060	12.4919276	H	1.3908798	48.4396958	12.2902816
H	3.6776894	48.4571410	9.8767222	H	3.5184031	48.0105106	10.0257082

C	-0.3604467	49.2398503	10.1524758	C	-0.1949891	49.6148475	10.0794255
C	1.0186755	49.2769710	9.8229686	C	1.1728125	49.5081902	9.7172428
C	-1.3393639	49.2401619	9.1801710	C	-1.2187076	49.6439014	9.1159537
C	1.6164386	49.3905545	12.1795346	C	1.8407025	49.4325444	12.0685686
C	3.3788592	49.3790258	10.4073755	C	3.5198814	49.0921068	10.2843781
H	-0.6737985	49.2408935	11.1950120	H	-0.4908142	49.6777718	11.1302836
H	-2.3797452	49.2434690	9.5006002	H	-2.2474775	49.7276623	9.4768939
H	2.5252872	49.4904479	12.7825537	H	2.7493372	49.5551770	12.6787567
H	3.9883450	49.4636842	11.3135476	H	4.2085472	49.2514418	11.1290753
N	1.9836520	49.3539498	10.7824167	N	2.2009966	49.5945415	10.6618117
C	0.3604584	49.2398530	7.4695213	C	0.4223090	49.3588555	7.3699571
C	-1.0185985	49.2770143	7.7990069	C	-0.9432331	49.5674925	7.7262025
C	1.3393675	49.2401495	8.4419436	C	1.4396561	49.3304267	8.3270539
C	-1.6164166	49.3906241	5.4423792	C	-1.6676037	49.2155729	5.4131810
C	-3.3789128	49.3791074	7.2146444	C	-3.3321580	49.5841657	7.2028468
H	0.6737473	49.2408790	6.4269603	H	0.7088814	49.2278226	6.3233152
H	2.3797372	49.2434681	8.1213549	H	2.4626197	49.1785439	7.9730476
H	-2.5253823	49.4905375	4.8394258	H	-2.5467647	49.4145552	4.7801845
H	-3.9883638	49.4637846	6.3083675	H	-3.9922800	49.7513955	6.3371284
N	-1.9836595	49.3540871	6.8395836	N	-1.9452661	49.7101864	6.7598212
Cl	-0.7969069	52.4582174	11.8474762	Cl	-0.8851544	52.7756995	12.2636991
Cl	-3.0421079	52.4670591	9.5843461	Cl	-3.2488420	52.8403728	10.0529994
C	-0.4092586	52.3828653	10.1733841	C	-0.5765965	52.7129791	10.5605908
C	1.0329425	52.2910263	9.8517132	C	0.8734837	52.6114086	10.1714480
C	-1.3652101	52.3851487	9.2099238	C	-1.5726257	52.7402618	9.6289772
O	1.8895650	52.1695378	10.7138754	O	1.7663871	52.5960458	11.0062526
Cl	0.7969460	52.4582590	5.7745282	Cl	0.4754758	52.6118413	6.0627175
Cl	3.0420811	52.4670183	8.0377462	Cl	2.8408570	52.5484624	8.2747480
C	0.4092611	52.3828641	7.4486400	C	0.1648317	52.5942938	7.7653396
C	-1.0328947	52.2909792	7.7703965	C	-1.2835831	52.6713660	8.1537582
C	1.3652279	52.3851219	8.4120764	C	1.1626840	52.5673227	8.6986911
O	-1.8896447	52.1693323	6.9081019	O	-2.1756602	52.7075384	7.3187302

3) TCNB/Bpe							
N	4.0448009	0.6287084	1.7846232	N	4.0292749	0.7144292	1.7443522
C	3.6627020	1.7113671	1.1027048	C	3.6278043	1.7982809	1.0465168
C	2.6873185	1.7008315	0.1085630	C	2.6262885	1.7748544	0.0594431
H	2.4100752	2.6307297	-0.3941590	H	2.3501874	2.7022686	-0.4582541
C	2.0410894	0.4983250	-0.2142249	C	1.9721657	0.5601137	-0.2443481
C	2.4723134	-0.6481691	0.4737322	C	2.4161120	-0.5865852	0.4565705
C	3.4591072	-0.5260496	1.4453999	C	3.4259362	-0.4539267	1.4221829
C	0.9269591	0.5162126	-1.1587475	C	0.8659103	0.5507506	-1.2268007
N	-1.5678167	-2.6241459	1.4117051	N	-1.7156129	-2.6562416	1.6924679
N	-1.3944825	4.0070183	-0.0665897	N	-1.3813635	4.0812238	0.1550182
C	-1.1896074	-1.5711140	1.7245376	C	-1.2586943	-1.5966652	1.9530911
C	-0.7022082	-0.2639654	2.0365008	C	-0.6871397	-0.2894882	2.2101276
C	-1.1817817	0.8250643	1.3089565	C	-1.1681221	0.8213765	1.4914543
H	-1.9495646	0.6756440	0.5502415	H	-1.9885317	0.6978901	0.7776852
C	-0.6368827	2.0937268	1.5072418	C	-0.5713144	2.0837824	1.6654060
C	-1.0617774	3.1671976	0.6640512	C	-1.0214529	3.1965147	0.8528677
H	3.7873054	-1.4109214	1.9998729	H	3.7713102	-1.3384665	1.9737407
H	0.2831532	-1.4809895	-0.9390286	H	0.0581377	-1.3586985	-0.7543693
N	-3.5623450	-0.4351466	-3.6543830	N	-3.4984692	-0.5354757	-3.9931629
C	-3.0736416	-1.5547653	-3.1184324	C	-3.0676776	-1.6214580	-3.3194530
C	-1.8875986	-1.6176944	-2.3911708	C	-1.9553379	-1.6285758	-2.4594414
H	-1.5553794	-2.5661977	-1.9634985	H	-1.6714531	-2.5511445	-1.9383425
C	-1.1342120	-0.4509060	-2.2015765	C	-1.2133423	-0.4421444	-2.2732042
C	-1.6502423	0.7307365	-2.7581443	C	-1.6667608	0.7056191	-2.9657236
C	-2.8471269	0.6785913	-3.4628554	C	-2.7903996	0.6009635	-3.7985598
C	0.0897232	-0.5098532	-1.4055626	C	-0.0465828	-0.4496857	-1.3629301

H	-3.2605456	1.5940721	-3.8976643	H	-3.1505708	1.4856469	-4.3396262
H	0.7372793	1.4865664	-1.6286473	H	0.7675389	1.4598091	-1.8355013
N	1.4903952	4.5996087	2.7903777	N	1.6738842	4.5804970	2.8777698
N	1.2882982	-2.0919461	4.3034538	N	1.3536958	-2.2077311	4.4246309
C	0.9829767	3.5647595	2.6468001	C	1.1401037	3.5330262	2.7478415
C	0.3811035	2.2804624	2.4663065	C	0.5020861	2.2421517	2.5822270
C	0.8418796	1.1961974	3.2143186	C	0.9698377	1.1355296	3.3164456
C	0.3147040	-0.0774259	2.9965411	C	0.3878981	-0.1328219	3.1246217
C	0.8433288	-1.1912752	3.7205682	C	0.9124605	-1.2767599	3.8435845
H	-1.1434590	1.6897386	-2.6370866	H	-1.1701921	1.6760354	-2.8554930
H	-3.6672159	-2.4613758	-3.2733112	H	-3.6460325	-2.5421366	-3.4721670
H	2.0405258	-1.6299356	0.2713850	H	1.9961574	-1.5781087	0.2527551
H	4.1519233	2.6514896	1.3767746	H	4.1281545	2.7435297	1.2951503
H	1.6446598	1.3360965	3.9368864	H	1.8098405	1.2530888	4.0078863

**Table S7.** Coordinates for the exited states.

wB97xD				SOS-ADC(2)			
<b>1) PDI/DAN</b>							
O	2.5142510	-2.8605460	1.4741340	O	3.1167998	-2.2200334	1.2930274
O	3.5326860	1.6322550	1.6886620	O	2.9875156	2.4014177	1.4634483
N	3.3152730	-0.6850110	1.6607620	N	3.3551761	0.0900854	1.5827507
C	2.3113150	-1.6602040	1.6357860	C	2.6161795	-1.1099727	1.5353373
C	2.8309320	0.6357190	1.7261070	C	2.5555951	1.2574918	1.5989666
C	1.0621530	-0.9129030	1.7301350	C	1.2175532	-0.7011689	1.6985450
C	1.3773410	0.4884000	1.7760400	C	1.1727593	0.7553450	1.7158100
C	0.3890930	1.4611820	1.7940600	C	-0.0332808	1.4633790	1.7160546
H	0.6349980	2.5240970	1.8258430	H	-0.0481803	2.5612361	1.7229694
O	-2.3694390	2.9729140	1.5519990	O	-3.1168032	2.2199749	1.2930055
O	-3.3907860	-1.5227100	1.4656010	O	-2.9875217	-2.4014456	1.4634882
N	-3.1760820	0.7916610	1.5891650	N	-3.3552092	-0.0901090	1.5827397
C	-2.1715990	1.7658490	1.6514950	C	-2.6161272	1.1099631	1.5353266
C	-2.6923360	-0.5302590	1.5858080	C	-2.5556023	-1.2575102	1.5989802
C	-0.9251380	1.0128370	1.7413030	C	-1.2176519	0.7012263	1.6985316
C	-1.2403030	-0.3870920	1.6911890	C	-1.1727097	-0.7554039	1.7158228
C	-0.2523090	-1.3609680	1.6965750	C	0.0332857	-1.4634862	1.7160665
H	-0.5000470	-2.4232080	1.6571250	H	0.0481661	-2.5612047	1.7229886
N	-2.1707650	2.1442730	-1.3542110	N	-1.5197844	2.6470240	-1.1975050
N	2.0403300	-2.2427640	-1.3694990	N	1.5197814	-2.6470217	-1.1974885
C	-1.7002320	0.8907700	-1.5434800	C	-1.3615338	1.3182336	-1.4405890
C	-0.2828270	0.6337230	-1.5922290	C	-0.0482267	0.7239924	-1.5846151
C	0.6541760	1.6708970	-1.6010510	C	1.1193254	1.5003164	-1.6804048
H	0.3303320	2.7107010	-1.6243920	H	1.0667713	2.5928015	-1.7360614
C	2.0276420	1.3950250	-1.6125030	C	2.3958932	0.8819053	-1.7120142
H	2.7415240	2.2174350	-1.6067590	H	3.2917741	1.5066500	-1.7909377
C	2.4870980	0.0958470	-1.5716170	C	2.5209371	-0.4961008	-1.5861880
H	3.5563680	-0.1081590	-1.5149700	H	3.5079425	-0.9674111	-1.5269057
C	1.5785000	-0.9849530	-1.5212990	C	1.3615732	-1.3182555	-1.4405763
C	0.1615370	-0.7265850	-1.6289460	C	0.0481710	-0.7239533	-1.5846129
C	-0.7691310	-1.7597480	-1.7552950	C	-1.1193290	-1.5002834	-1.6803783
H	-0.4441020	-2.7967520	-1.8354470	H	-1.0667697	-2.5927798	-1.7360231
C	-2.1392240	-1.4791050	-1.8094550	C	-2.3958058	-0.8818190	-1.7119825
H	-2.8531260	-2.2973250	-1.8935170	H	-3.2918165	-1.5066629	-1.7909059
C	-2.6008970	-0.1829280	-1.7047060	C	-2.5209176	0.4960944	-1.5861834
H	-3.6726380	0.0159700	-1.6807500	H	-3.5079528	0.9674438	-1.5268920
H	-3.1598680	2.2332930	-1.1565640	H	-2.3842293	2.8897501	-0.7057312
H	-1.6211980	2.7920730	-0.7991330	H	-0.7187843	3.1287769	-0.7955270
H	1.4417110	-2.9231880	-0.9158720	H	0.7188138	-3.1287375	-0.7955355
H	3.0050970	-2.3484470	-1.0780770	H	2.3842177	-2.8897190	-0.7057345
H	4.3021950	-0.9071830	1.6553970	H	4.3589568	0.1180236	1.4294651
H	-4.1625040	1.0151180	1.5725850	H	-4.3589519	-0.1180530	1.4294677
<b>2) pCIA/TMPD</b>							
H	2.0069810	50.6391310	12.3157690	H	1.2153112	50.4084867	12.3094421
H	3.4400380	50.5008300	9.8693650	H	3.5044853	50.4266818	10.0390074
H	-1.3126200	50.3382140	5.3092240	H	-1.2153162	50.4084791	5.3125744
H	-3.5290640	50.2368030	7.5580990	H	-3.5044735	50.4266810	7.5830109
H	-0.9384170	48.6024850	4.9788400	H	-0.8855229	48.6328837	5.0984354
H	-3.8159030	48.4696850	7.7987890	H	-3.7176959	48.6602452	7.9577533
H	0.4523140	49.8148160	12.2261440	H	0.8855237	48.6328826	12.5235633
H	3.5412220	48.7120070	9.6405620	H	3.7176839	48.6602432	9.6642500

C	-0.4968180	48.9968060	10.0433680	C	-0.3775833	49.0772283	10.1692428
C	0.8843660	49.1818480	9.7234970	C	1.0226423	49.0988173	9.8273716
C	-1.4480690	48.8847240	9.0701880	C	-1.3561704	49.0783539	9.1968094
C	1.5236210	49.6865430	12.0597780	C	1.6159409	49.3885647	12.1929803
C	3.2327770	49.5187390	10.3177350	C	3.3905252	49.3969976	10.4148284
H	-0.8200990	48.9575490	11.0803690	H	-0.6907389	49.1332829	11.2135080
H	-2.4853240	48.7838500	9.3774520	H	-2.3983440	49.1361560	9.5165138
H	1.9037720	48.8772860	12.7024010	H	2.5256067	49.2805634	12.7994007
H	3.8175210	49.4333470	11.2402980	H	4.0017791	49.2651926	11.3182203
N	1.8220400	49.3992220	10.6642540	N	1.9798062	49.1588382	10.7804367
C	0.2764130	49.0295290	7.3630770	C	0.3775846	49.0772167	7.4527650
C	-1.1117300	48.9524100	7.6840500	C	-1.0226429	49.0988215	7.7946408
C	1.2286750	49.1484030	8.3361320	C	1.3561671	49.0783443	8.4251983
C	-1.6930070	49.3050230	5.3569180	C	-1.6159426	49.3885617	5.4290287
C	-3.4474710	49.2362050	7.1038150	C	-3.3905263	49.3969952	7.2071796
H	0.5973690	49.0791740	6.3264300	H	0.6907390	49.1333009	6.4085009
H	2.2615950	49.2912110	8.0278490	H	2.3983423	49.1361363	8.1055001
H	-2.5809530	49.2153610	4.7224810	H	-2.5256095	49.2805599	4.8226019
H	-4.0690720	49.1962220	6.2033440	H	-4.0017855	49.2652074	6.3037903
N	-2.0631860	48.9807070	6.7277620	N	-1.9798104	49.1588239	6.8415691
Cl	-0.5057380	52.6611040	12.0988810	Cl	-0.7949429	52.5123224	11.8702034
Cl	-2.7744560	52.2065830	9.9058820	Cl	-3.0594129	52.5108142	9.6058482
C	-0.1259630	52.5574670	10.4055770	C	-0.3729097	52.5288843	10.1692462
C	1.2930570	52.6047860	10.0669800	C	1.0561993	52.4396465	9.8674311
C	-1.1040930	52.3805960	9.4631120	C	-1.3584464	52.5284457	9.1835915
O	2.1932630	52.5897030	10.9204770	O	1.9383056	52.2416207	10.7500839
Cl	0.9561720	52.3391410	5.9988200	Cl	0.7949481	52.5123220	5.7518006
Cl	3.2403050	52.7402040	8.1841410	Cl	3.0594173	52.5108032	8.0161586
C	0.5851040	52.4419670	7.6925940	C	0.3729162	52.5288838	7.4527595
C	-0.8164460	52.2549240	8.0411900	C	-1.0561948	52.4396454	7.7545736
C	1.5661080	52.6064090	8.6327790	C	1.3584497	52.5284417	8.4384130
O	-1.6842840	51.9569840	7.2017350	O	-1.9383048	52.2416241	6.8719267

### 3) TCNB/Bpe

N	4.4133400	0.6846120	1.6380120	N	4.4256932	0.9518025	1.5936377
C	3.9679470	1.7966970	1.0467890	C	3.8725211	2.0365048	1.0057697
C	2.8633210	1.8200870	0.2094170	C	2.7123698	1.9839142	0.2202720
H	2.5191860	2.7600030	-0.2220640	H	2.3036639	2.8979632	-0.2263135
C	2.1626300	0.6162800	-0.0309200	C	2.0574116	0.7317700	0.0260106
C	2.6425230	-0.5572000	0.6002210	C	2.6379748	-0.4101261	0.6618631
C	3.7568680	-0.4627080	1.4126560	C	3.8041615	-0.2411610	1.4151734
C	0.9937700	0.6593780	-0.8426300	C	0.8705691	0.6875755	-0.7815360
N	-2.0837870	-2.6074260	1.1232010	N	-2.4364565	-2.4235123	1.1036051
N	-1.4985670	3.8148000	-0.4831530	N	-1.1618618	4.1591128	-0.3432921
C	-1.6573010	-1.5934030	1.5013720	C	-1.8452124	-1.4432202	1.4270797
C	-1.0905730	-0.3363140	1.8381730	C	-1.0924037	-0.2549206	1.7156270
C	-1.5580950	0.8021580	1.1876470	C	-1.4604127	0.9629586	1.1011555
H	-2.4063490	0.7086180	0.5102550	H	-2.3161485	0.9745167	0.4161179
C	-0.9119030	2.0335640	1.2876310	C	-0.7110401	2.1526513	1.2842484
C	-1.2572820	3.0530410	0.3627750	C	-0.9795031	3.2828933	0.4404369
H	4.1342720	-1.3465520	1.9305470	H	4.2665064	-1.1032023	1.9104517
H	0.4230560	-1.3986990	-0.6798760	H	0.3935163	-1.3999543	-0.5047260
N	-3.4168540	-0.4105350	-3.3505390	N	-3.3612639	-0.8032238	-3.5122022
C	-2.9489180	-1.5245620	-2.7837250	C	-2.8337239	-1.8647234	-2.8710306
C	-1.7753880	-1.5689260	-2.0434090	C	-1.7081695	-1.7895129	-2.0319452
H	-1.4561450	-2.4945980	-1.5650490	H	-1.3366572	-2.6852197	-1.5233387
C	-1.0320090	-0.3813180	-1.8813320	C	-1.0746456	-0.5332539	-1.8409392
C	-1.5389060	0.8002610	-2.4683760	C	-1.6385377	0.5940674	-2.5066022
C	-2.7219600	0.7226440	-3.1830350	C	-2.7623590	0.3996410	-3.3146540

C	0.1665990	-0.4276960	-1.1040580	C	0.0892698	-0.4626110	-0.9850625
H	-3.1441370	1.6193350	-3.6418760	H	-3.2180500	1.2503709	-3.8354561
H	0.7303790	1.6310300	-1.2615030	H	0.5845059	1.6198140	-1.2820527
N	1.5787790	4.3466290	2.3453160	N	1.7192528	4.3537089	2.7860920
N	1.2214750	-2.2933880	3.7136450	N	1.0241187	-2.5205384	3.5570353
C	0.9329840	3.3807870	2.3115890	C	1.0831149	3.3718575	2.5778436
C	0.2035490	2.1672220	2.2085650	C	0.3586928	2.1659267	2.2813968
C	0.6344140	1.0402720	2.9045960	C	0.7088393	0.9540552	2.9183624
C	0.0570320	-0.2153180	2.7219860	C	0.0480236	-0.2662331	2.6360008
C	0.6690970	-1.3589420	3.2981050	C	0.5568547	-1.4987378	3.1692125
H	-1.0527200	1.7671280	-2.3455430	H	-1.2332671	1.6042099	-2.3832040
H	-3.5478630	-2.4276550	-2.9213050	H	-3.3375482	-2.8258050	-3.0297635
H	2.1438580	-1.5182060	0.4891430	H	2.1971974	-1.4077836	0.5765842
H	4.5087410	2.7185350	1.2697390	H	4.3763202	2.9939407	1.1817569
H	1.4906730	1.1316340	3.5734680	H	1.5324172	0.9557518	3.6428450