Preparation and Properties of three Novel Plasticizer free Di-benzo-18-crown-6 Aldimine derived Lead(II) Ion Selective Electrodes

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Supporting Information

1 S1: Bond Distances and Angles

1.1 DBAP

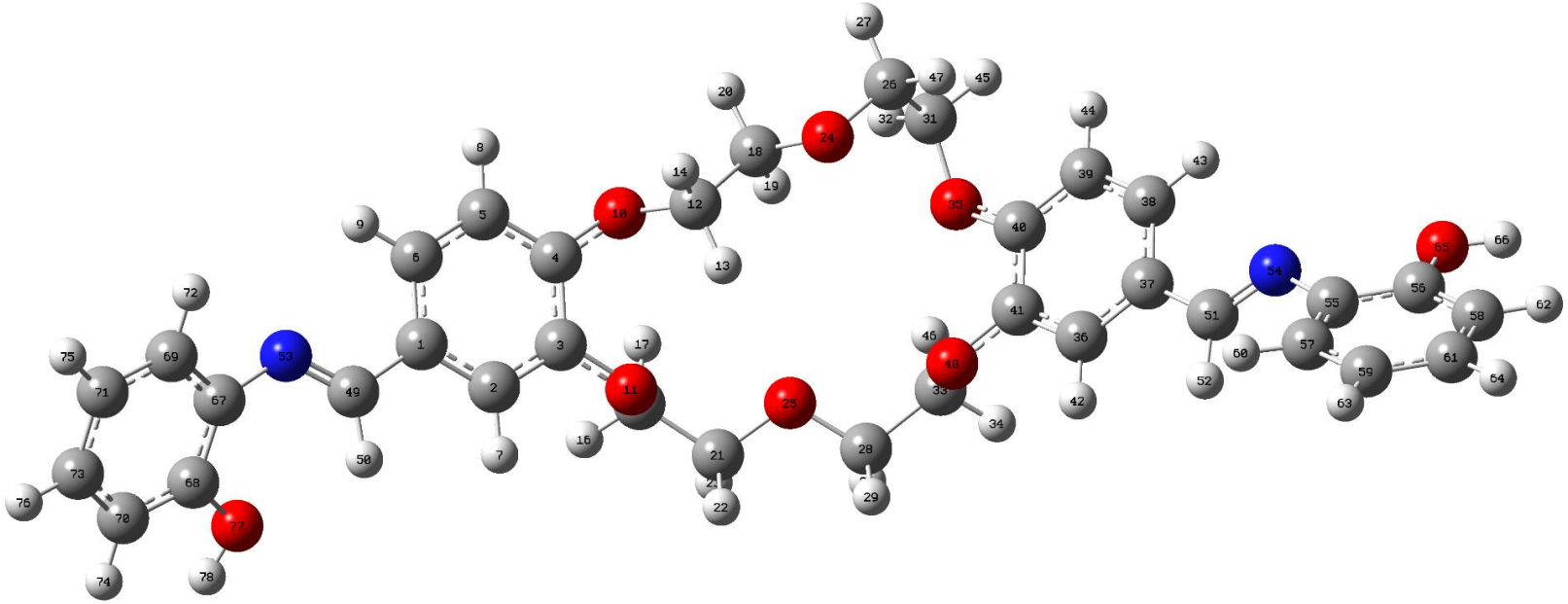


Figure S1_a. Labelled optimized structure of 4, 4-Difomyl (2-amino phenol) dibenzo-18-crown-6 (**DBAP**)

Table S1_a. Bond angles and lengths for 4,4-Difomyl (2-aminophenol)dibenzo-18-crown-6 (**DBAP**) as calculated using DFT/6-311++G(d,p)/RB3LYP

Bond(d)	d/ Å	Bond(d)	d/ Å	Bond agles(A)	A/ °	Bond agles(A)	A/ °
R(1,2)	1.4009	R(36,37)	1.4015	A(2,1,6)	118.8349	A(22,21,23)	108.001
R(1,6)	1.403	R(36,41)	1.3893	A(2,1,49)	119.016	A(22,21,25)	110.6635
R(1,49)	1.4674	R(36,42)	1.0849	A(6,1,49)	122.1482	A(23,21,25)	110.0539
R(2,3)	1.3914	R(37,38)	1.4004	A(1,2,3)	121.228	A(18,24,26)	115.7252
R(2,7)	1.0851	R(37,51)	1.4645	A(1,2,7)	120.5603	A(21,25,28)	112.6375
R(3,4)	1.4046	R(38,39)	1.3875	A(3,2,7)	118.2117	A(24,26,27)	111.1056
R(3,11)	1.3769	R(38,43)	1.0828	A(2,3,4)	119.4643	A(24,26,31)	114.6083
R(4,5)	1.3981	R(39,40)	1.4002	A(2,3,11)	119.3246	A(24,26,47)	105.1126
R(4,10)	1.3722	R(39,44)	1.0827	A(4,3,11)	121.1808	A(27,26,31)	107.4333
R(5,6)	1.3866	R(40,41)	1.4098	A(3,4,5)	119.4168	A(27,26,47)	107.9537
R(5,8)	1.084	R(41,48)	1.3713	A(3,4,10)	121.4616	A(31,26,47)	110.4709
R(6,9)	1.0826	R(49,50)	1.0925	A(5,4,10)	119.0765	A(25,28,29)	110.4028
R(10,12)	1.4428	R(49,53)	1.2794	A(4,5,6)	120.8463	A(25,28,30)	110.0727
R(11,15)	1.4383	R(51,52)	1.0994	A(4,5,8)	118.0366	A(25,28,33)	110.2561
R(12,13)	1.0917	R(51,54)	1.2769	A(6,5,8)	121.1165	A(29,28,30)	108.0577
R(12,14)	1.095	R(53,67)	1.401	A(1,6,5)	120.1814	A(29,28,33)	109.7575
R(12,18)	1.5183	R(54,55)	1.4	A(1,6,9)	118.8481	A(30,28,33)	108.2383
R(15,16)	1.0973	R(55,56)	1.4115	A(5,6,9)	120.9678	A(26,31,32)	111.1839
R(15,17)	1.0941	R(55,57)	1.4017	A(4,10,12)	115.5052	A(26,31,35)	113.226
R(15,21)	1.5109	R(56,58)	1.3932	A(3,11,15)	114.8214	A(26,31,45)	109.3066
R(18,19)	1.0957	R(56,65)	1.3663	A(10,12,13)	110.5277	A(32,31,35)	103.8829
R(18,20)	1.1	R(57,59)	1.3933	A(10,12,14)	109.4805	A(32,31,45)	107.2431
R(18,24)	1.4193	R(57,60)	1.0842	A(10,12,18)	106.6011	A(35,31,45)	111.7534
R(21,22)	1.0994	R(58,61)	1.3945	A(13,12,14)	109.6009	A(28,33,34)	108.9704
R(21,23)	1.102	R(58,62)	1.0866	A(13,12,18)	110.4187	A(28,33,46)	110.2168
R(21,25)	1.4159	R(59,61)	1.3917	A(14,12,18)	110.1699	A(28,33,48)	108.7539
R(24,26)	1.4114	R(59,63)	1.0836	A(11,15,16)	109.013	A(34,33,46)	109.2109
R(25,28)	1.4172	R(61,64)	1.0838	A(11,15,17)	110.2009	A(34,33,48)	109.1463
R(26,27)	1.1026	R(65,66)	0.9629	A(11,15,21)	109.0268	A(46,33,48)	110.5141
R(26,31)	1.5309	R(67,68)	1.4141	A(16,15,17)	109.0098	A(31,35,40)	120.457
R(26,47)	1.0913	R(67,69)	1.4037	A(16,15,21)	109.1814	A(37,36,41)	121.6034
R(28,29)	1.0993	R(68,70)	1.3945	A(17,15,21)	110.3838	A(37,36,42)	120.6332
R(28,30)	1.102	R(68,77)	1.3735	A(12,18,19)	109.2491	A(41,36,42)	117.753
R(28,33)	1.5108	R(69,71)	1.3894	A(12,18,20)	110.0593	A(36,37,38)	118.6405
R(31,32)	1.0903	R(69,72)	1.0836	A(12,18,24)	106.5671	A(36,37,51)	119.4538
R(31,35)	1.4283	R(70,73)	1.3921	A(19,18,20)	108.7438	A(38,37,51)	121.9054
R(31,45)	1.0962	R(70,74)	1.0869	A(19,18,24)	111.5106	A(37,38,39)	120.3706
R(33,34)	1.098	R(71,73)	1.3934	A(20,18,24)	110.6873	A(37,38,43)	118.9284
R(33,46)	1.0917	R(71,75)	1.0835	A(15,21,22)	109.3156	A(39,38,43)	120.7009
R(33,48)	1.4349	R(73,76)	1.0837	A(15,21,23)	108.5787	A(38,39,40)	120.8269
R(35,40)	1.3645	R(77,78)	0.963	A(15,21,25)	110.1722	A(38,39,44)	119.2711

Table S1_a. Continued

Bond agles(A)	A/ °	Bond agles(A)	A/ °
A(54,55,56)	118.6992	A(36,41,40)	119.2633
A(54,55,57)	123.0222	A(36,41,48)	118.4081
A(56,55,57)	118.1598	A(40,41,48)	122.1841
A(55,56,58)	120.1828	A(33,48,41)	117.181
A(55,56,65)	117.5223	A(1,49,50)	115.505
A(58,56,65)	122.2798	A(1,49,53)	121.9037
A(55,57,59)	121.5425	A(50,49,53)	122.584
A(55,57,60)	118.4241	A(37,51,52)	115.5969
A(59,57,60)	119.9873	A(37,51,54)	122.9688
A(56,58,61)	120.6676	A(52,51,54)	121.4293
A(56,58,62)	119.2589	A(49,53,67)	122.9726
A(61,58,62)	120.0734	A(51,54,55)	120.131
A(57,59,61)	119.6113		
A(57,59,63)	119.9435		
A(61,59,63)	120.4396		
A(58,61,59)	119.8266		
A(58,61,64)	119.6451		
A(59,61,64)	120.5263		
A(56,65,66)	109.1381		
A(53,67,68)	125.8713		
A(53,67,69)	116.5826		
A(68,67,69)	117.4236		
A(67,68,70)	120.3378		
A(67,68,77)	118.6456		
A(70,68,77)	121.0058		
A(67,69,71)	122.2079		
A(67,69,72)	116.9204		
A(71,69,72)	120.8716		
A(68,70,73)	120.8911		
A(68,70,74)	119.0386		
A(73,70,74)	120.0692		
A(69,71,73)	119.4763		
A(69,71,75)	120.0614		
A(73,71,75)	120.4555		
A(70,73,71)	119.631		
A(70,73,76)	119.6902		
A(71,73,76)	120.6778		
A(40,39,44)	119.9016		
A(35,40,39)	124.1546		
A(35,40,41)	116.533		
A(39,40,41)	119.2853		

1.2 DBNAP

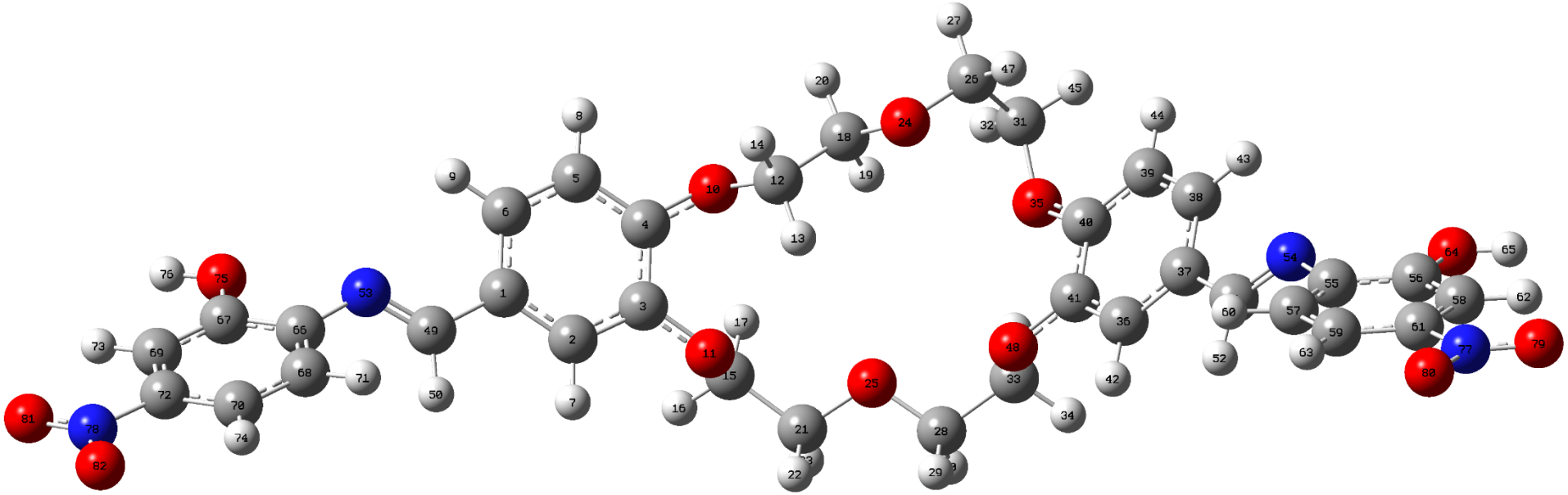


Figure S1_b. Labelled optimized structure of 4,4-Difomyl(2-amino-5-nitrophenol)dibenzo-18-crown-6 (**DBNAP**).

Table S1_b. Bond angles and lengths for 4,4-Difomyl(2-aminophenol)dibenzo-18-crown-6 (**DBAP**) as calculated using DFT/6-311++G(d,p)/RB3LYP

Bond(d)	d/ Å	Bond(d)	d/ Å	Angle(A)	A/ °
R(1,2)	1.4011	R(36,42)	1.0848	A(2,1,6)	119.1042
R(1,6)	1.4032	R(37,38)	1.4009	A(2,1,49)	119.1041
R(1,49)	1.4633	R(37,51)	1.4605	A(6,1,49)	121.7912
R(2,3)	1.391	R(38,39)	1.3867	A(1,2,3)	121.1114
R(2,7)	1.0851	R(38,43)	1.0827	A(1,2,7)	120.7116
R(3,4)	1.4059	R(39,40)	1.4008	A(3,2,7)	118.177
R(3,11)	1.3749	R(39,44)	1.0825	A(2,3,4)	119.3729
R(4,5)	1.3987	R(40,41)	1.4114	A(2,3,11)	119.315
R(4,10)	1.3694	R(41,48)	1.3697	A(4,3,11)	121.2807
R(5,6)	1.3859	R(49,50)	1.0989	A(3,4,5)	119.5264
R(5,8)	1.0838	R(49,53)	1.2774	A(3,4,10)	121.5058
R(6,9)	1.0827	R(51,52)	1.0989	A(5,4,10)	118.9201
R(10,12)	1.4444	R(51,54)	1.2786	A(4,5,6)	120.8464
R(11,15)	1.4401	R(53,66)	1.3914	A(4,5,8)	118.0357
R(12,13)	1.0914	R(54,55)	1.3905	A(6,5,8)	121.1168
R(12,14)	1.0947	R(55,56)	1.4171	A(1,6,5)	120.0017
R(12,18)	1.5183	R(55,57)	1.4031	A(1,6,9)	119.0132
R(15,16)	1.097	R(56,58)	1.387	A(5,6,9)	120.9837
R(15,17)	1.0939	R(56,64)	1.3613	A(4,10,12)	115.6999
R(15,21)	1.5106	R(57,59)	1.3895	A(3,11,15)	114.9111
R(18,19)	1.0957	R(57,60)	1.0834	A(10,12,13)	110.5238
R(18,20)	1.0997	R(58,61)	1.3945	A(10,12,14)	109.3927
R(18,24)	1.4193	R(58,62)	1.0831	A(10,12,18)	106.5756
R(21,22)	1.0993	R(59,61)	1.3886	A(13,12,14)	109.6689
R(21,23)	1.1018	R(59,63)	1.0806	A(13,12,18)	110.5075
R(21,25)	1.4159	R(61,77)	1.4702	A(14,12,18)	110.1254
R(24,26)	1.4115	R(64,65)	0.9634	A(11,15,16)	108.9714
R(25,28)	1.4175	R(66,67)	1.4167	A(11,15,17)	110.1542
R(26,27)	1.1022	R(66,68)	1.4027	A(11,15,21)	108.9878
R(26,31)	1.5311	R(67,69)	1.3873	A(16,15,17)	109.0526
R(26,47)	1.0912	R(67,75)	1.3608	A(16,15,21)	109.2128
R(28,29)	1.0992	R(68,70)	1.3897	A(17,15,21)	110.4363
R(28,30)	1.1018	R(68,71)	1.0834	A(12,18,19)	109.2873
R(28,33)	1.5105	R(69,72)	1.3943	A(12,18,20)	110.0863
R(31,32)	1.0901	R(69,73)	1.083	A(12,18,24)	106.4364
R(31,35)	1.4297	R(70,72)	1.3885	A(19,18,20)	108.7393
R(31,45)	1.0959	R(70,74)	1.0806	A(19,18,24)	111.5724
R(33,34)	1.0977	R(72,78)	1.4709	A(20,18,24)	110.695
R(33,46)	1.0915	R(75,76)	0.9634	A(15,21,22)	109.3453
R(33,48)	1.4361	R(77,79)	1.228	A(15,21,23)	108.5357
R(35,40)	1.3611	R(77,80)	1.2262	A(15,21,25)	110.1113
R(36,37)	1.4023	R(78,81)	1.2277	A(22,21,23)	108.0022
R(36,41)	1.3884	R(78,82)	1.226	A(22,21,25)	110.6813

Table S1_b. Continued

Angle(A)	A/ °	Angle(A)	A/ °	Angle(A)	A/ °
A(23,21,25)	110.1091	A(36,41,40)	119.2111	0 A(68,70,72)	118.2292
A(18,24,26)	115.7592	A(36,41,48)	118.4307	1 A(68,70,74)	121.7478
A(21,25,28)	112.6383	A(40,41,48)	122.1991	2 A(72,70,74)	120.0201
A(24,26,27)	111.1794	A(33,48,41)	117.3627	3 A(69,72,70)	121.9878
A(24,26,31)	114.4635	A(1,49,50)	115.772	4 A(69,72,78)	118.5541
A(24,26,47)	105.0905	A(1,49,53)	123.0093	5 A(70,72,78)	119.4578
A(27,26,31)	107.5098	A(50,49,53)	121.2127	6 A(67,75,76)	109.7339
A(27,26,47)	107.9263	A(37,51,52)	115.7336	7 A(61,77,79)	117.7733
A(31,26,47)	110.5177	A(37,51,54)	123.1248	8 A(61,77,80)	117.8764
A(25,28,29)	110.3992	A(52,51,54)	121.1347	9 A(79,77,80)	124.3503
A(25,28,30)	110.1136	A(49,53,66)	120.6868	0 A(72,78,81)	117.7556
A(25,28,33)	110.1853	A(51,54,55)	120.6794	1 A(72,78,82)	117.853
A(29,28,30)	108.0692	A(54,55,56)	118.6797	2 A(81,78,82)	124.3914
A(29,28,33)	109.7902	0 A(54,55,57)	122.7602		
A(30,28,33)	108.2293	1 A(56,55,57)	118.4229		
A(26,31,32)	111.2592	2 A(55,56,58)	120.2694		
A(26,31,35)	113.0378	3 A(55,56,64)	117.1734		
A(26,31,45)	109.4743	4 A(58,56,64)	122.5424		
A(32,31,35)	103.8156	5 A(55,57,59)	121.7451		
A(32,31,45)	107.2765	6 A(55,57,60)	118.5123		
A(35,31,45)	111.7321	7 A(59,57,60)	119.7067		
A(28,33,34)	109.0145	8 A(56,58,61)	119.3617		
A(28,33,46)	110.2423	9 A(56,58,62)	121.3478		
A(28,33,48)	108.6813	0 A(61,58,62)	119.2905		
A(34,33,46)	109.2633	1 A(57,59,61)	118.2491		
A(34,33,48)	109.1209	2 A(57,59,63)	121.7397		
A(46,33,48)	110.49	3 A(61,59,63)	120.0082		
A(31,35,40)	120.6824	4 A(58,61,59)	121.945		
A(37,36,41)	121.5441	5 A(58,61,77)	118.5738		
A(37,36,42)	120.6811	6 A(59,61,77)	119.4809		
A(41,36,42)	117.7634	7 A(56,64,65)	109.6678		
A(36,37,38)	118.7654	8 A(53,66,67)	118.6536		
A(36,37,51)	119.3437	9 A(53,66,68)	122.7074		
A(38,37,51)	121.8909	0 A(67,66,68)	118.5003		
A(37,38,39)	120.3112	1 A(66,67,69)	120.2263		
A(37,38,43)	119.0582	2 A(66,67,75)	117.162		
A(39,38,43)	120.6304	3 A(69,67,75)	122.5963		
A(38,39,40)	120.7984	4 A(66,68,70)	121.7064		
A(38,39,44)	119.2769	5 A(66,68,71)	118.5365		
A(40,39,44)	119.9244	6 A(70,68,71)	119.7201		
A(35,40,39)	124.2107	7 A(67,69,72)	119.343		
A(35,40,41)	116.4069	8 A(67,69,73)	121.3533		
A(39,40,41)	119.3583	9 A(72,69,73)	119.3036		

1.3 DBMAP

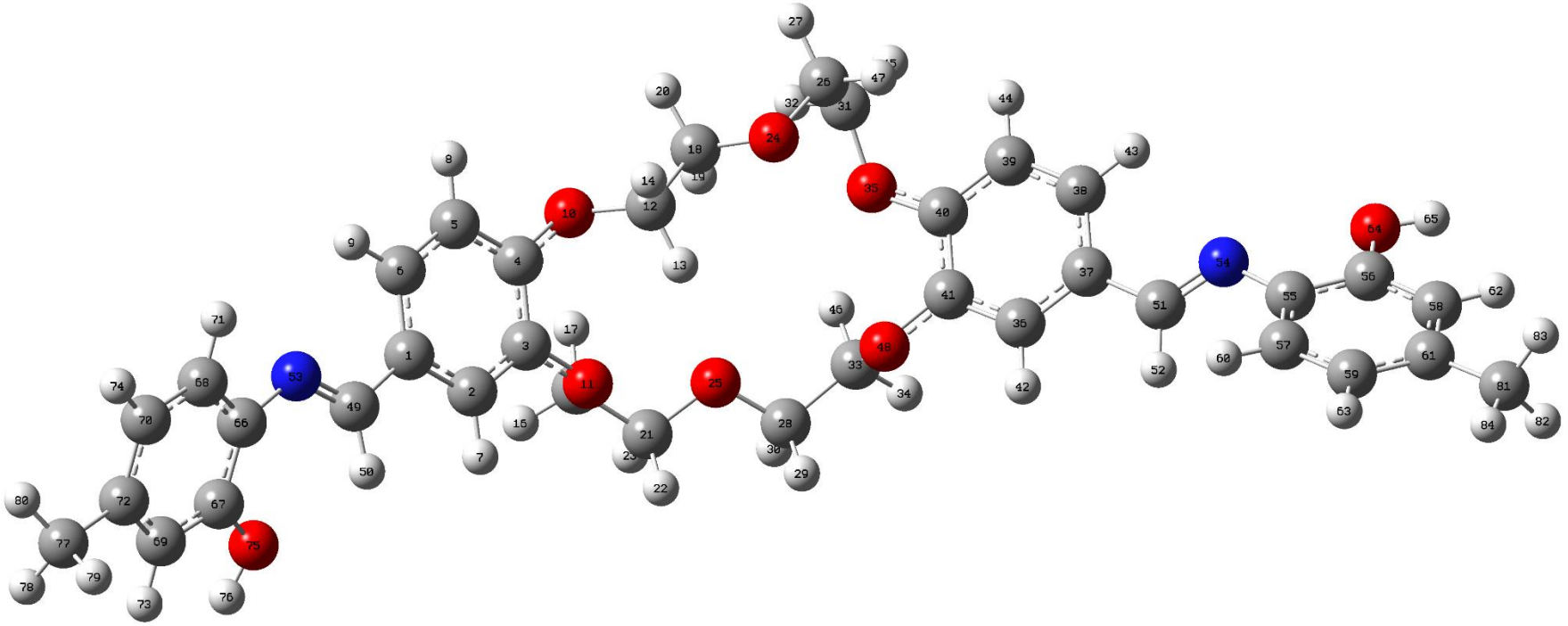


Figure S1_c. Labelled optimized structure of 4,4-Difomyl(2-amino-5-methylphenol)dibenzo-18-crown-6 (**DBMAP**)

Table S1_c. Bond angles and lengths for 4,4-Difomyl(2-amino-5-methylphenol)dibenzo-18-crown-6 (**DBMAP**) as calculated using DFT/6-311++G(d,p)/RB3LYP

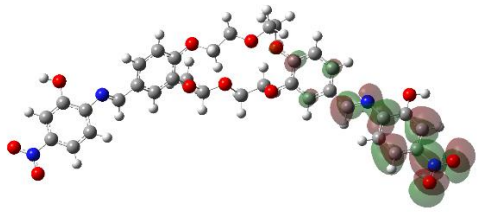
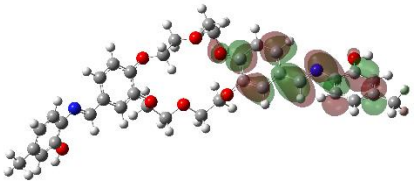
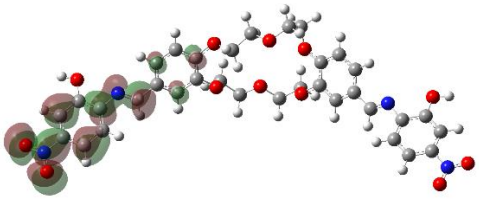
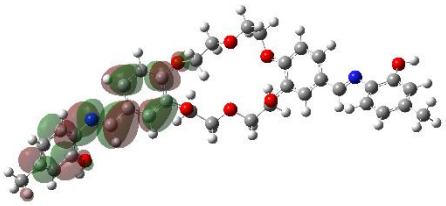
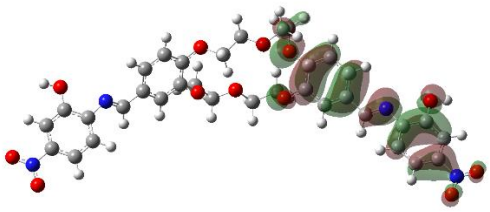
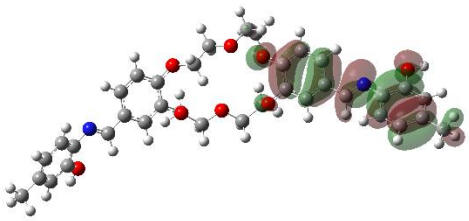
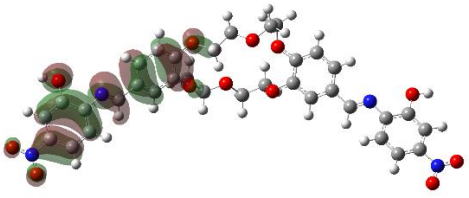
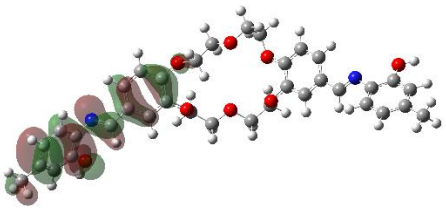
Bond(d)	d/ Å	Bond(d)	d/ Å	Bond(d)	d/ Å	Angle(A)	A/ °
R(1,2)	1.4012	R(36,41)	1.3894	R(77,80)	1.0921	A(2,1,6)	118.7627
R(1,6)	1.4032	R(36,42)	1.0849	R(81,82)	1.0946	A(2,1,49)	119.0101
R(1,49)	1.4679	R(37,38)	1.4005	R(81,83)	1.0949	A(6,1,49)	122.2264
R(2,3)	1.3914	R(37,51)	1.4647	R(81,84)	1.0917	A(1,2,3)	121.2579
R(2,7)	1.0851	R(38,39)	1.3876			A(1,2,7)	120.5387
R(3,4)	1.4044	R(38,43)	1.0828			A(3,2,7)	118.2035
R(3,11)	1.3772	R(39,40)	1.4001			A(2,3,4)	119.4845
R(4,5)	1.398	R(39,44)	1.0827			A(2,3,11)	119.3227
R(4,10)	1.3727	R(40,41)	1.4096			A(4,3,11)	121.1612
R(5,6)	1.3867	R(41,48)	1.3715			A(3,4,5)	119.3914
R(5,8)	1.0841	R(49,50)	1.0915			A(3,4,10)	121.4425
R(6,9)	1.0826	R(49,53)	1.2806			A(5,4,10)	119.1203
R(10,12)	1.4425	R(51,52)	1.0995			A(4,5,6)	120.8519
R(11,15)	1.438	R(51,54)	1.277			A(4,5,8)	118.0376
R(12,13)	1.0917	R(53,66)	1.3997			A(6,5,8)	121.1099
R(12,14)	1.095	R(54,55)	1.4			A(1,6,5)	120.2232
R(12,18)	1.5183	R(55,56)	1.4118			A(1,6,9)	118.8062
R(15,16)	1.0973	R(55,57)	1.3994			A(5,6,9)	120.9679
R(15,17)	1.0941	R(56,58)	1.3914			A(4,10,12)	115.4589
R(15,21)	1.511	R(56,64)	1.3664			A(3,11,15)	114.8175
R(18,19)	1.0957	R(57,59)	1.3938			A(10,12,13)	110.5261
R(18,20)	1.1	R(57,60)	1.0842			A(10,12,14)	109.4993
R(18,24)	1.4194	R(58,61)	1.4003			A(10,12,18)	106.6132
R(21,22)	1.0994	R(58,62)	1.088			A(13,12,14)	109.587
R(21,23)	1.102	R(59,61)	1.395			A(13,12,18)	110.398
R(21,25)	1.4159	R(59,63)	1.0846			A(14,12,18)	110.1763
R(24,26)	1.4114	R(61,81)	1.5095			A(11,15,16)	109.0234
R(25,28)	1.4171	R(64,65)	0.9629			A(11,15,17)	110.208
R(26,27)	1.1026	R(66,67)	1.4143			A(11,15,21)	109.0265
R(26,31)	1.5309	R(66,68)	1.4036			A(16,15,17)	109.0057
R(26,47)	1.0913	R(67,69)	1.3938			A(16,15,21)	109.1746
R(28,29)	1.0993	R(67,75)	1.3731			A(17,15,21)	110.3776
R(28,30)	1.1021	R(68,70)	1.3882			A(12,18,19)	109.2468
R(28,33)	1.5108	R(68,71)	1.0836			A(12,18,20)	110.0588
R(31,32)	1.0903	R(69,72)	1.3967			A(12,18,24)	106.5848
R(31,35)	1.4282	R(69,73)	1.0882			A(19,18,20)	108.7436
R(31,45)	1.0962	R(70,72)	1.398			A(19,18,24)	111.5008
R(33,34)	1.0981	R(70,74)	1.0845			A(20,18,24)	110.6827
R(33,46)	1.0918	R(72,77)	1.5088			A(15,21,22)	109.3078
R(33,48)	1.4347	R(75,76)	0.9632			A(15,21,23)	108.5924
R(35,40)	1.3649	R(77,78)	1.093			A(15,21,25)	110.1776
R(36,37)	1.4014	R(77,79)	1.0958			A(22,21,23)	108.002

Table S1_c. continued

Angle(A)	A/ °
A(22,21,25)	110.6582
A(23,21,25)	110.0472
A(18,24,26)	115.7221
A(21,25,28)	112.6456
A(24,26,27)	111.0959
A(24,26,31)	114.6345
A(24,26,47)	105.1166
A(27,26,31)	107.417
A(27,26,47)	107.9554
A(31,26,47)	110.4645
A(25,28,29)	110.4012
A(25,28,30)	110.0762
A(25,28,33)	110.2579
A(29,28,30)	108.0537
A(29,28,33)	109.7589
A(30,28,33)	108.2371
A(26,31,32)	111.1755
A(26,31,35)	113.2618
A(26,31,45)	109.2776
A(32,31,35)	103.8893

2 S2: Molecular orbital surfaces

Table S2. Molecular orbital surface for 4,4-Difomyl(2-amino-5-methylphenol) dibenzo-18-crown-6 (**DBMAP**) and 4,4-Difomyl(2-amino-5-nitrophenol)dibenzo-18-crown-6 (**DBNAP**), calculated based on DFT/6-311++G(d,p)/RB3LYP

DBNAP	**DBMAP**
 LUMO+1	 LUMO+1
 LUMO	 LUMO
 HOMO	 HOMO
 HOMO-1	 HOMO-1

3 S1: Infrared spectra of the lead complexes

3.1 DBNAP

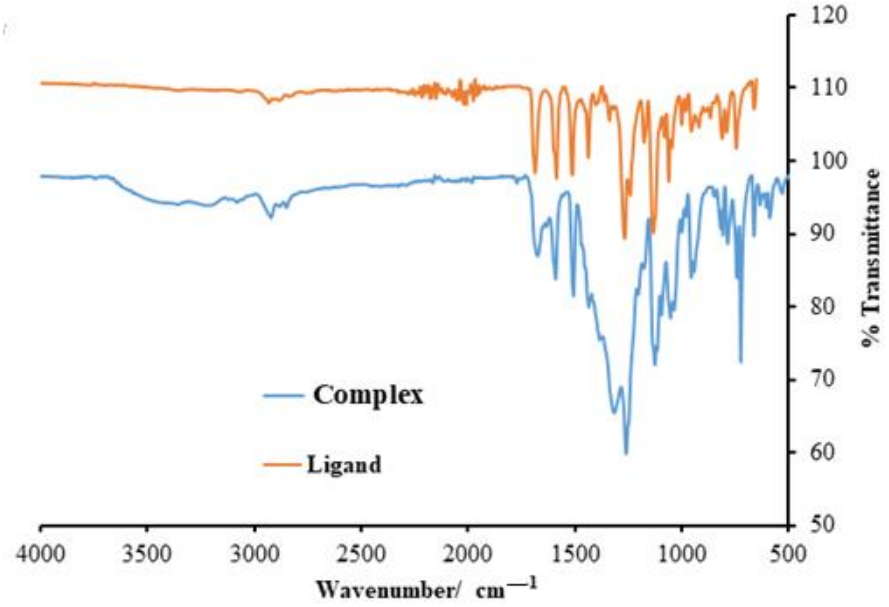


Figure S1_d. Solid state Infrared spectra of 4,4-Difomyl(2-amino-5-nitrophenol) dibenzo-18-crown-6 (**DBNAP**) and its lead complex, collected on powdered samples at ambient temperature.

3.2 DBAP

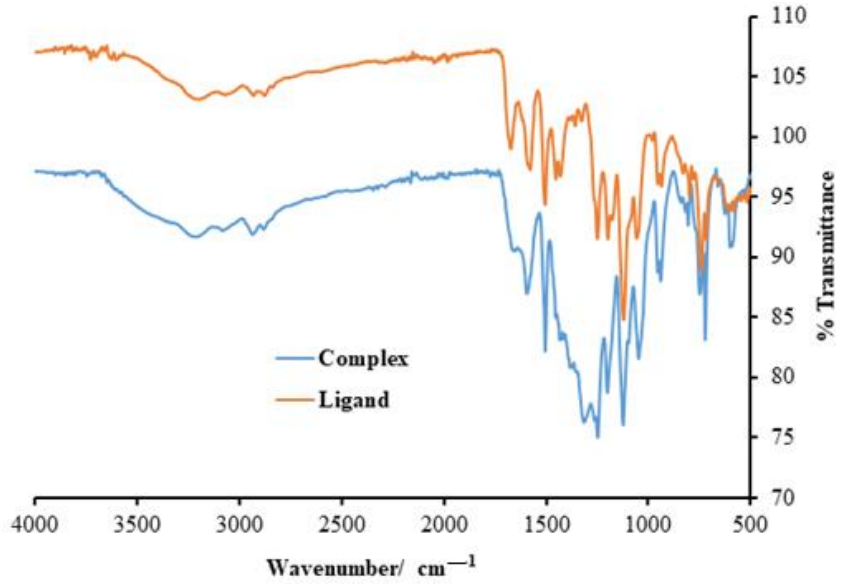


Figure S1_e. Solid state Infrared spectra of 4,4-Difomyl(2-aminophenol) dibenzo-18-crown-6 (**DBAP**) and its lead complex, collected on powdered samples at ambient temperature.

3.3 DBMAP

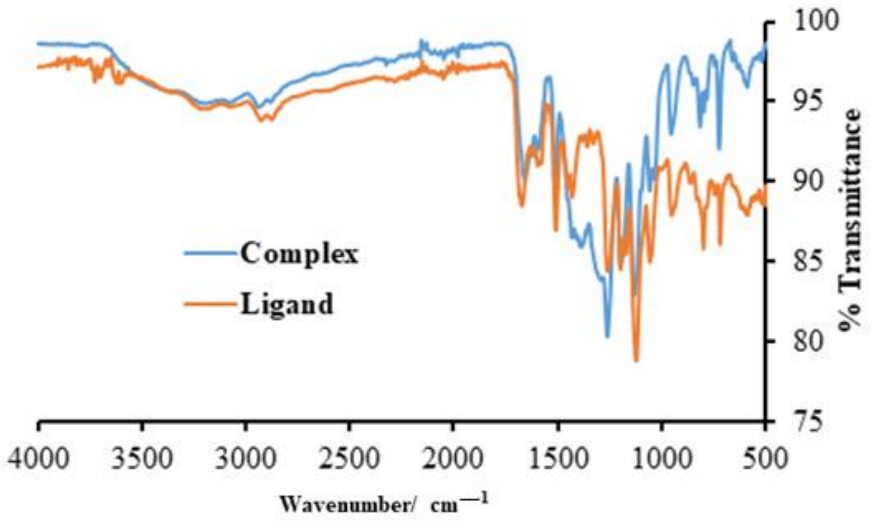


Figure S1_f. Solid state Infrared spectra of 4,4-Difomyl(2-amino-5-methylphenol) dibenzo-18-crown-6 (**DBMAP**) and its lead complex, collected on powdered samples at ambient temperature.

4 S2: Electrostatic Potentials of radical cation

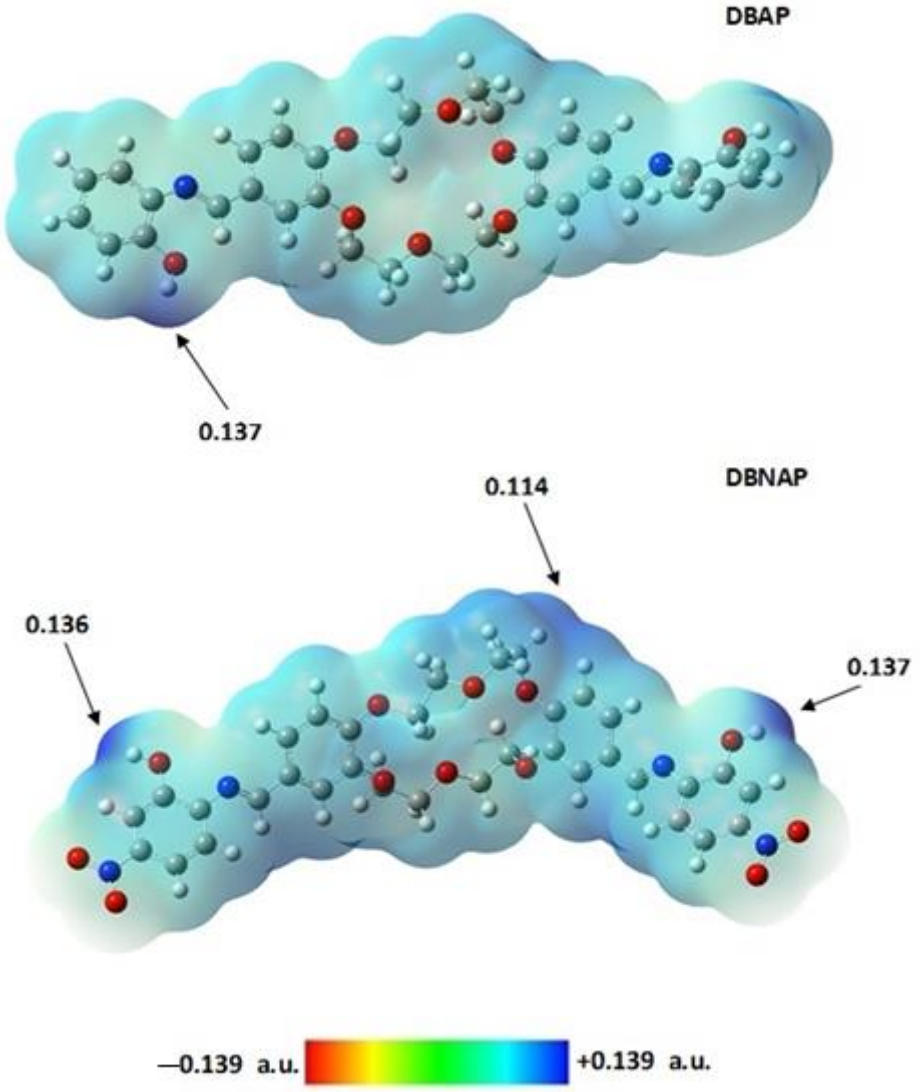
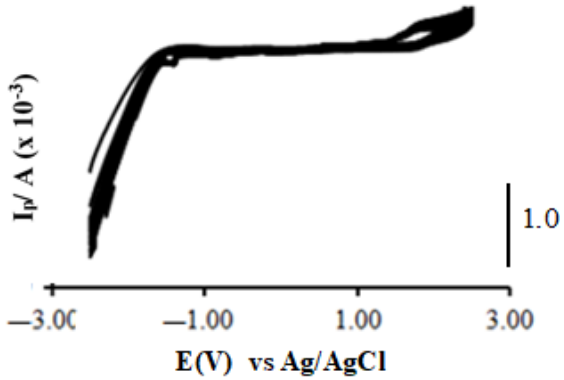


Figure S2. Calculated Electrostatic potential map surfaces (Isoval. 0.0040) for 4,4-Difomyl (2-aminophenol)dibenzo-18-crown-6 (**DBAP**) and 4,4-Difomyl(2-amino-5-nitrophenol)dibenzo-18-crown-6 (**DBNAP**) radical cations, calculated based on DFT/6-311++G(d,p)/RB3LYP.

5 S3: Cyclic voltammogram, Square wave Cyclic voltammogram, multiple cycle for

5.1 DBMAP



5.2 DBNAP

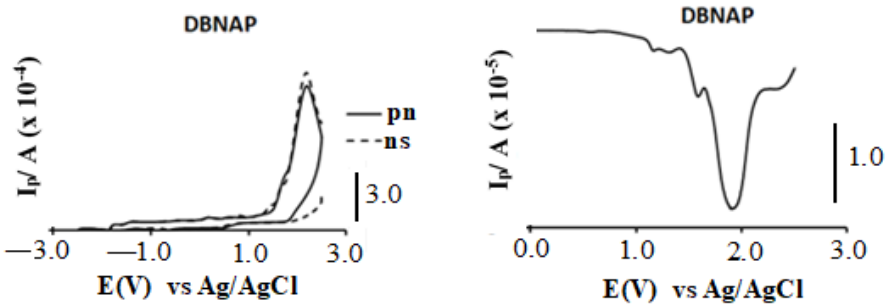


Figure S3_a. Multi-cycle voltammogram for 4,4-Difomyl(2-amino-5-methylphenol)dibenzo-18-crown-6 (**DBMAP**), collected during polymerization. Positive (ps) and negative (ns) cyclic voltammetric scans and square wave voltammogram for 4,4-Difomyl(2-amino-5-nitrophenol)dibenzo-18-crown-6 (**DBNAP**).

5.3 DBAP

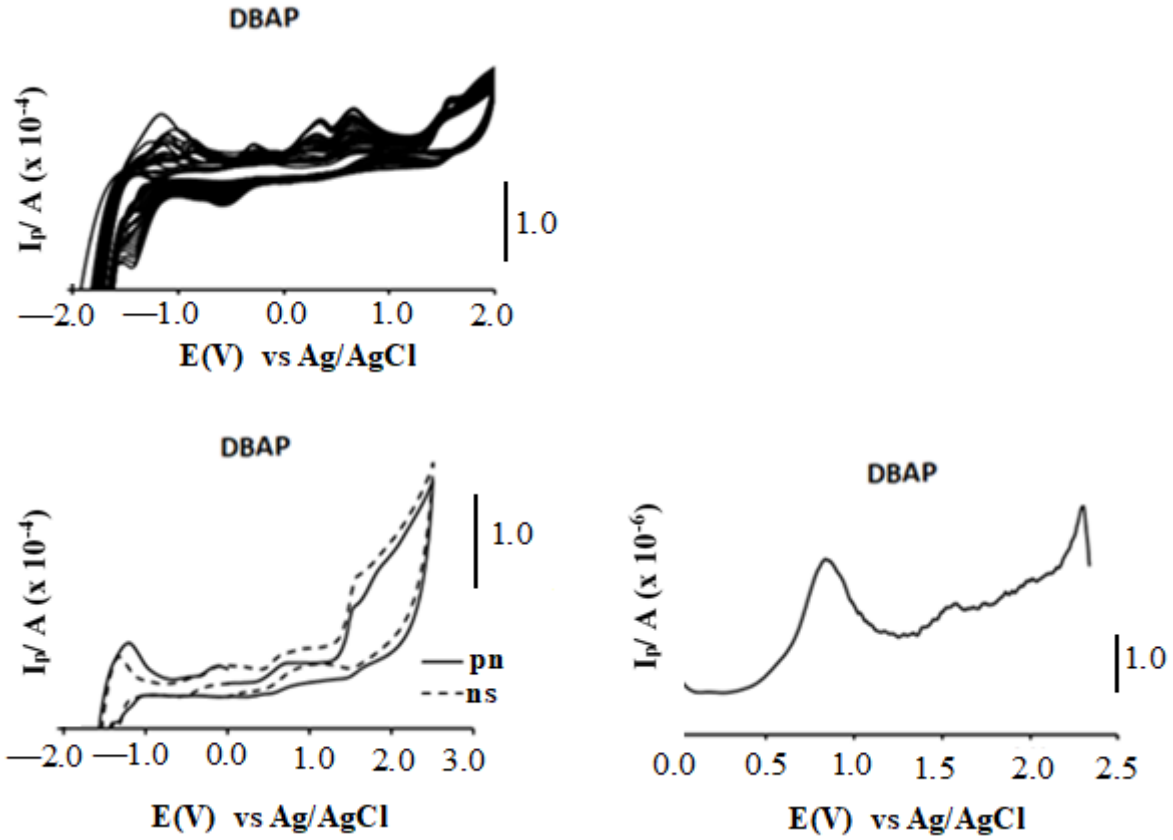


Figure S3_b. Multi-cycle (30 scans) voltammogram, collected during polymerization. Positive (ps) and negative (ns) cyclic voltammetric scans and square wave voltammogram for 4,4-Difomyl(2-aminophenol)dibenzo-18-crown-6 (**DBAP**).

6 S4: DPASV scans for the bare electrode in different concentrations of lead

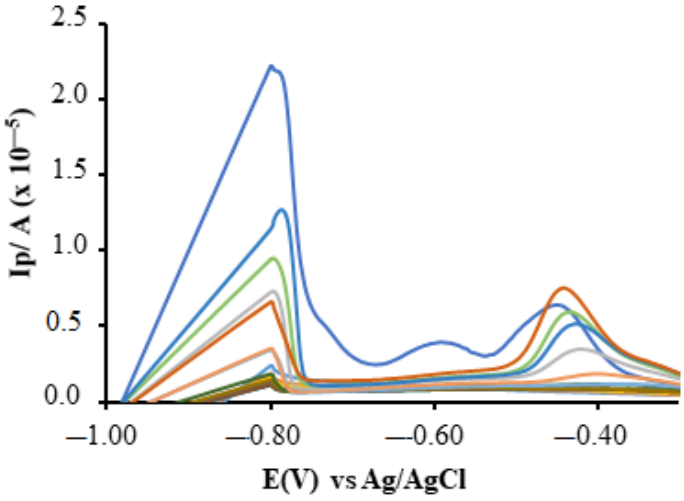


Figure S4. Differential pulse anodic stripping voltammetry (DPASV) curves using the bare electrode (platinum) at different lead concentrations (60 µL per-addition, $[Pb^{2+}]$ = 100 µM).

7 S1: ^{1}H and ^{13}C-NMR

7.1 DBAP

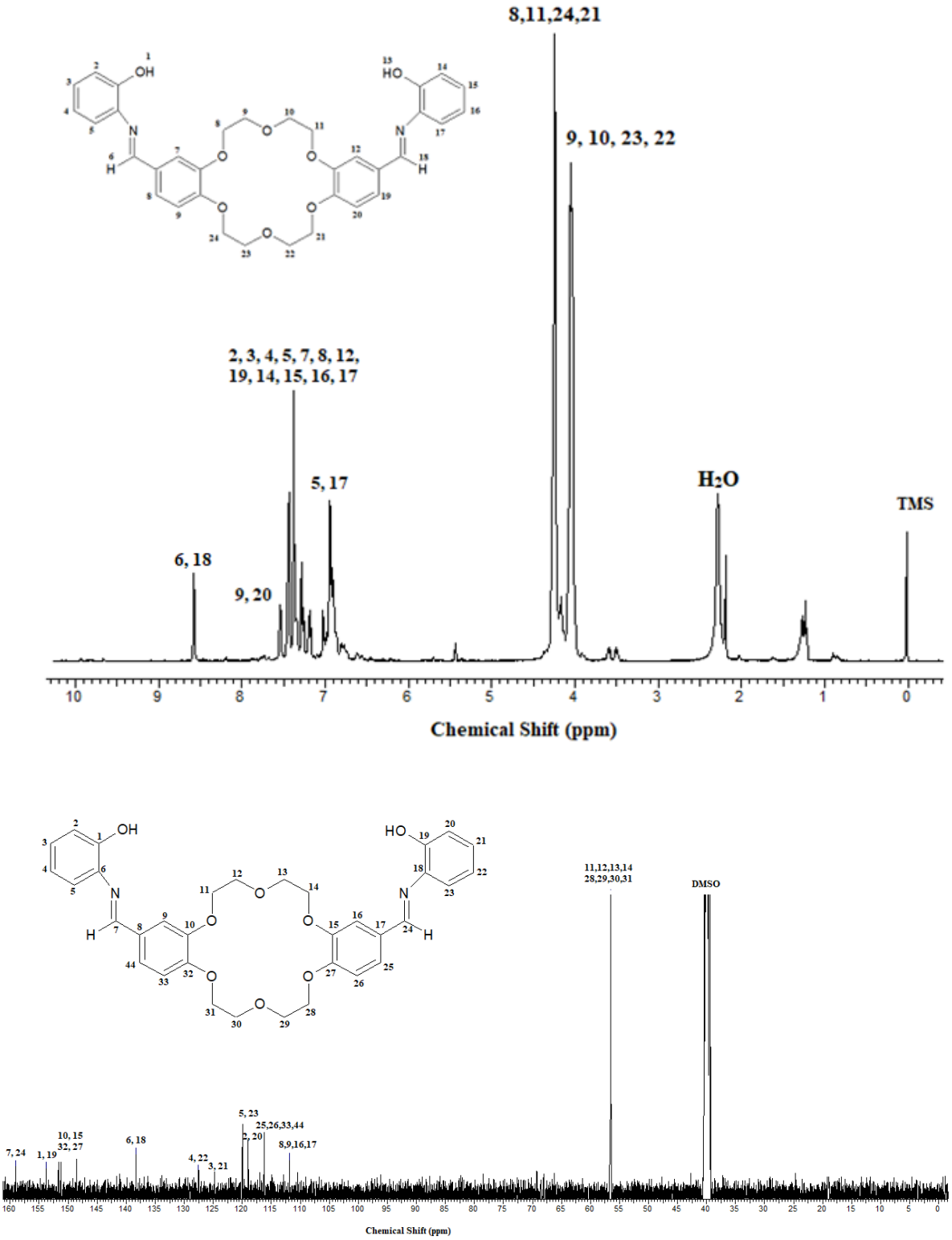


Figure S5_a. Proton and Carbon-13 NMR spectra of *4,4-Difomyl(2-aminophenol)dibenzo-18-crown-6 (DBAP)*, collected in d^{6}-DMSO.

7.2 2A5NP

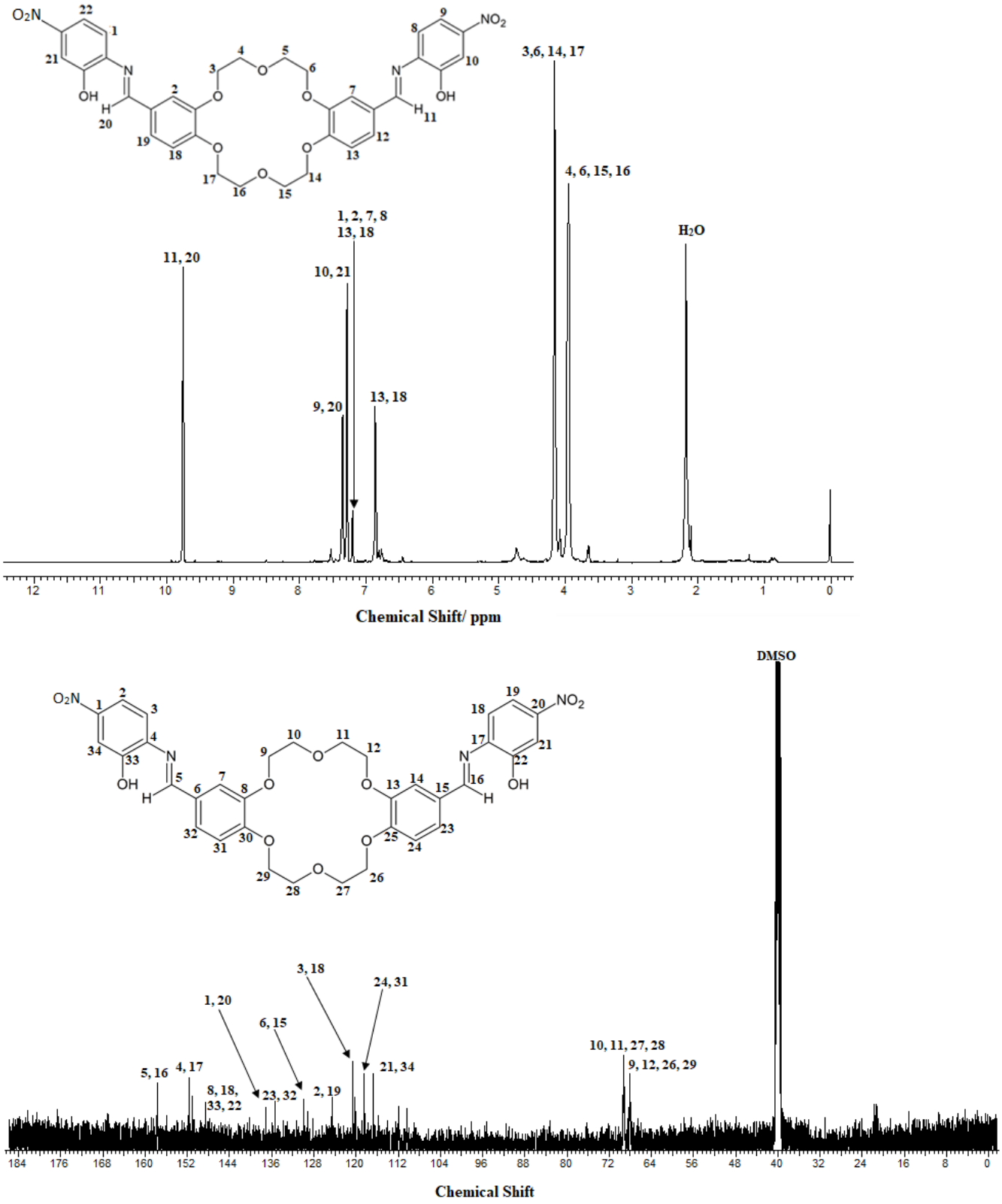


Figure S5_b. Proton and Carbon-13 NMR spectra of *4,4-Difomyl(2-amino-5-nitrophenol)dibenzo-18-crown-6 (DBNAP)*, collected in d^6-DMSO.

7.3 2A5MP

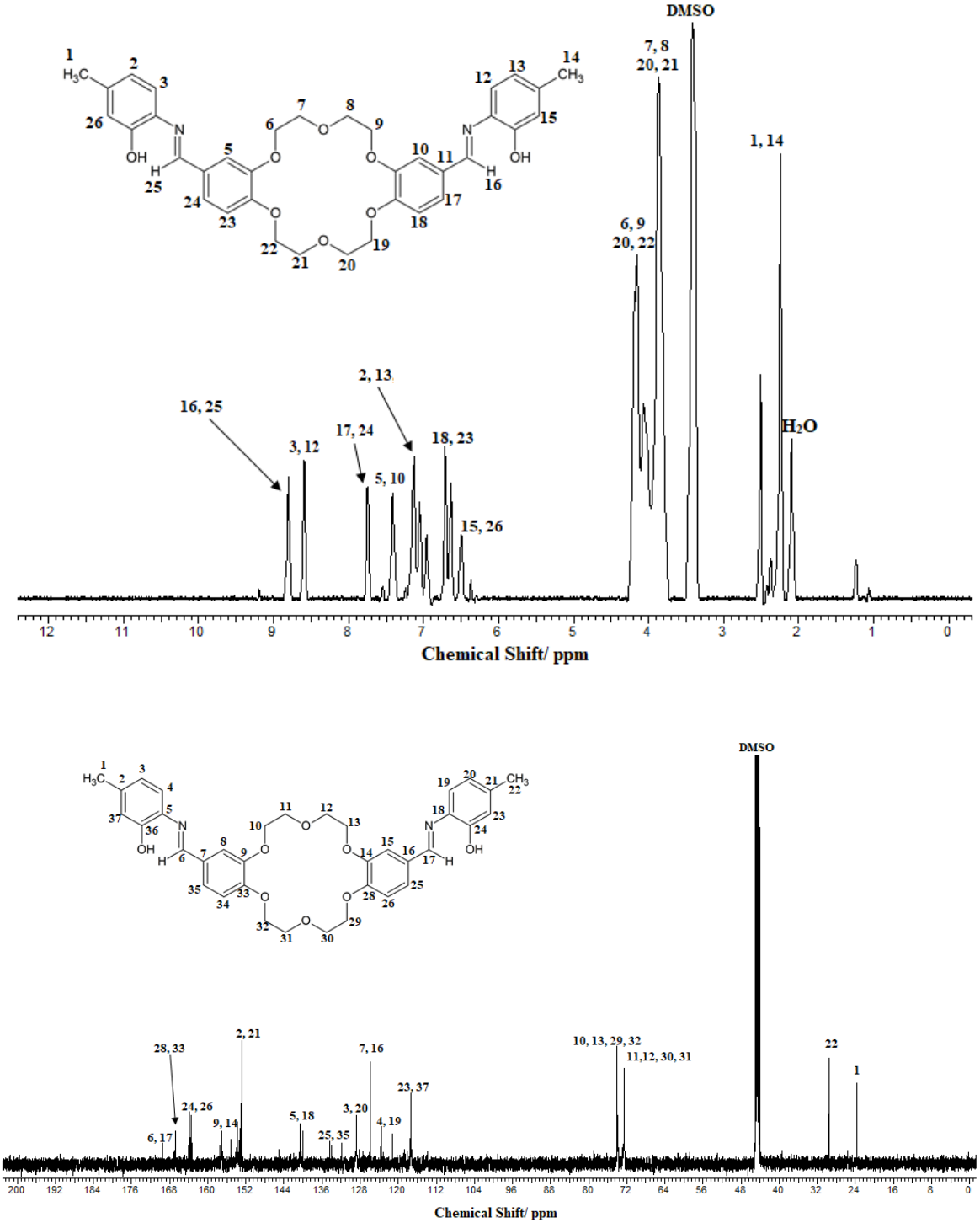


Figure S5_c. Proton and Carbon-13 NMR spectra of *4,4-Difomyl(2-amino-5-methylphenol)dibenzo-18-crown-6 (DBMAP),* collected in d^6-DMSO.

8 S2: CH-Analysis

Table S3. Carbon and hydrogen composition analysis for 4,4-Difomyl 2-aminophenol) dibenzo-18-crown-6 (**DBAP**), 4,4-Difomyl(2-amino-5-methylphenol)dibenzo-18-crown-6 (**DBMAP**) and 4,4-Difomyl(2-amino-5-nitrophenol)dibenzo-18-crown-6 (**DBNAP**).

Compound	**%C (Expt./ Theory)**	**%H (Expt./ Theory)**
DBAP.1.5H_2O	65.25/65.27	5.70/5.96
DBMAP.H_2O	67.01/67.07	6.22/6.25
DBNAP.H_2O	57.70/57.79	4.82/4.85