

Supporting Information for

Selenadiazolopyridine: A synthon for
supramolecular assembly and complexes with
metallophilic interactions

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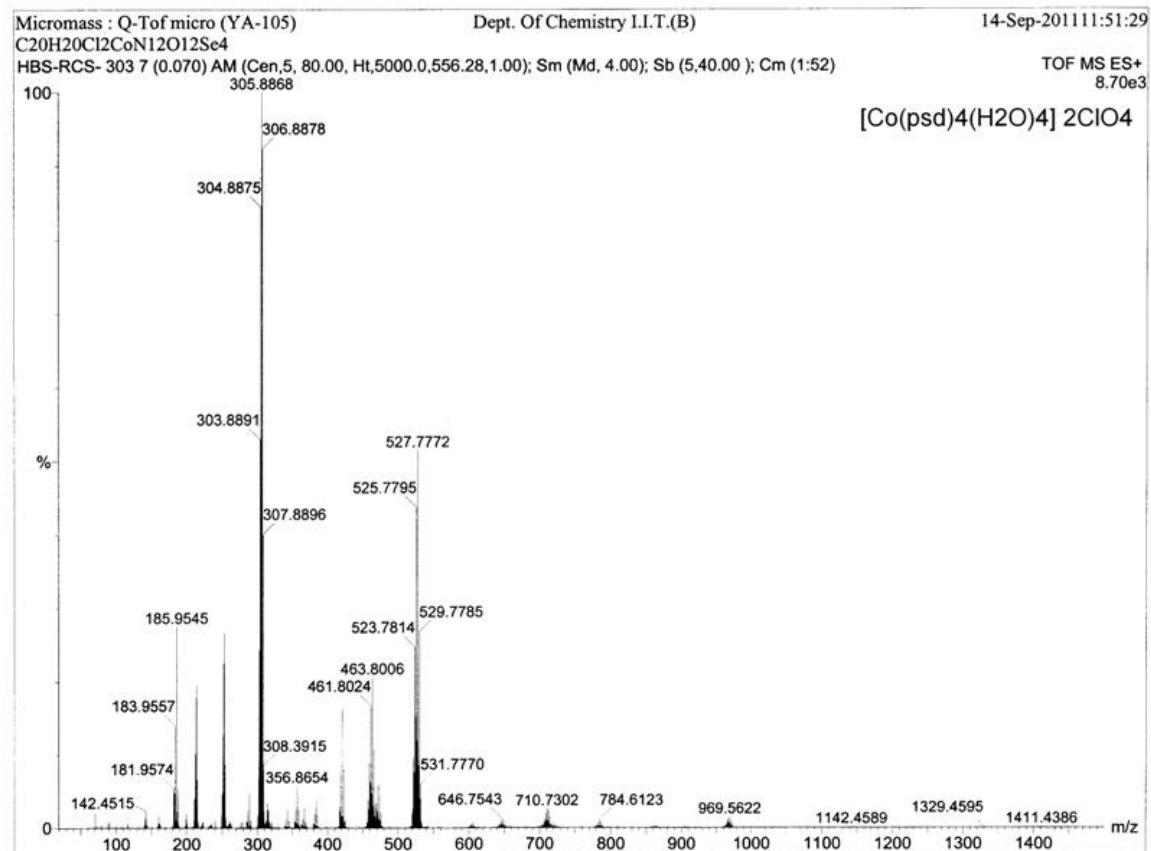


Figure S1. ESI spectrum of **14**.

HBS-RCS-31
exp4 PROTON

SAMPLE		SPECIAL	
date	Sep 10 2010	temp	not used
solvent	CDCL3	gain	not used
file		spin	not used
ACQUISITION		hst	8.000
sw	10010.0	pw90	8.500
at	1.996	alfa	20.000
np	39962	FLAGS	
fb	not used	il	n
bs	4	in	n
d1	0	dp	y
nt	400	hs	nn
ct	56	fn	not used
TRANSMITTER		DISPLAY	
tn	H1	op	-130.0
sfrq	399.883	wp	4301.0
tof	200.0	rfl	2743.3
tpwr	55	rfl	0
pw	4.250	rp	41.6
DECOUPLER		rp	-130.4
dn	C13	lp	
dof	0	PLOT	250
da	nnn	vc	0
dnn	c	sc	0
dpwr	51	vs	53
dnt	17100	ch	4
	nm	ph	

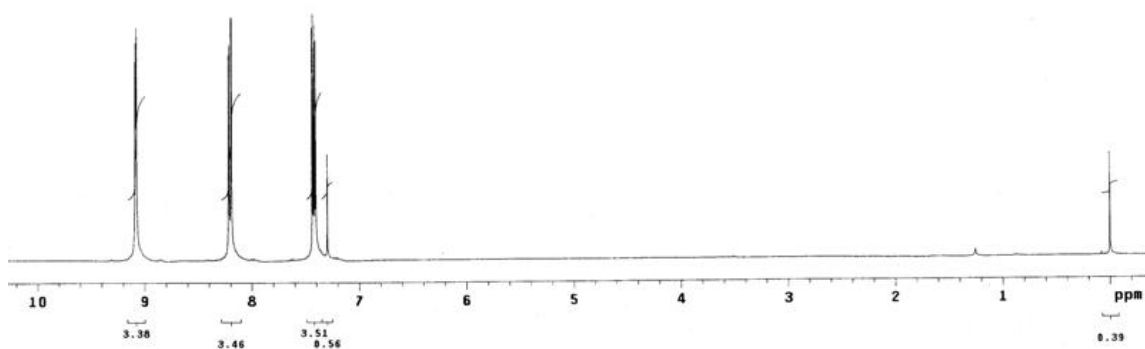
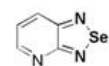


Figure S2. ^1H NMR spectrum of 5 in CDCl_3 .

HBS-RCS-PSD



164.63
156.96
153.48
131.60
123.86

77.52
77.20
76.88

NAME HBS-RCS-PSD
EXPNO 59
PROCNO 1
Date_ 20101021
Time 18.24
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 428
DS 4
SWH 27173.912 Hz
FIDRES 0.414641 Hz
AQ 1.2059124 sec
RG 2050
OW 18.400 usec
DE 6.50 usec
TE 293.9 K
D1 1.0000000 sec
D11 0.0300000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 8.75 usec
PL1 -2.00 dB
PL1W 56.53121948 W
SFO1 100.6238364 MHz

===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -1.00 dB
PL12 14.50 dB
PL13 14.50 dB
PL2W 10.56200695 W
PL12W 0.29767781 W
PL13W 0.29767781 W
SFO2 400.1316005 MHz
S1 32768
SF 100.6127638 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.20

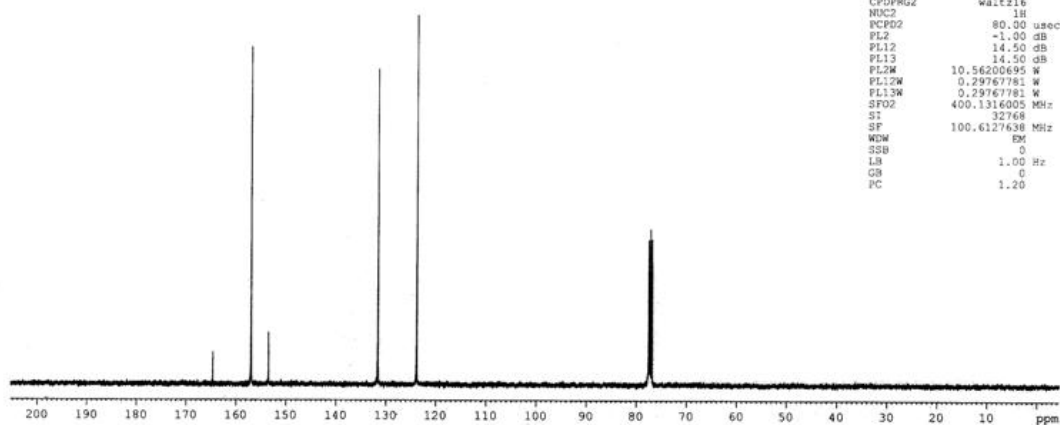


Figure S3. ^{13}C NMR spectrum of **5** in CDCl_3 .

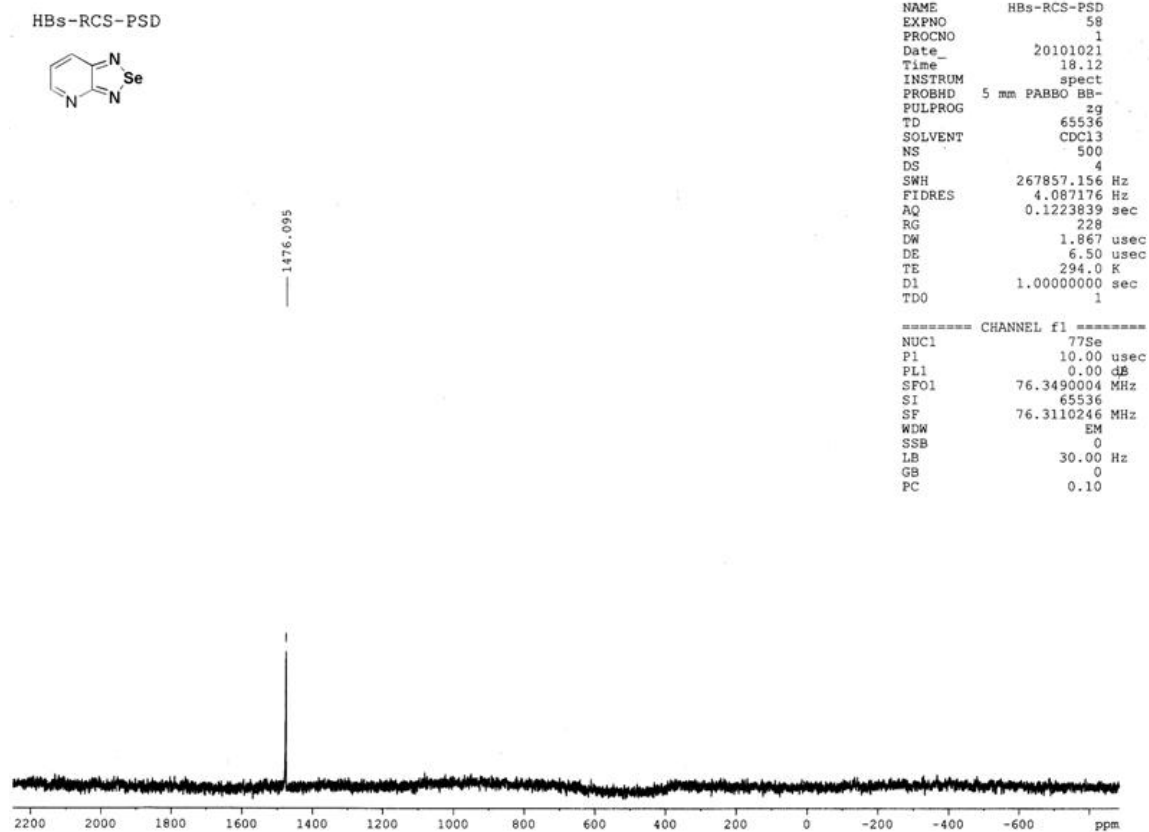


Figure S4. ^{77}Se NMR spectrum of **5** in CDCl_3 .

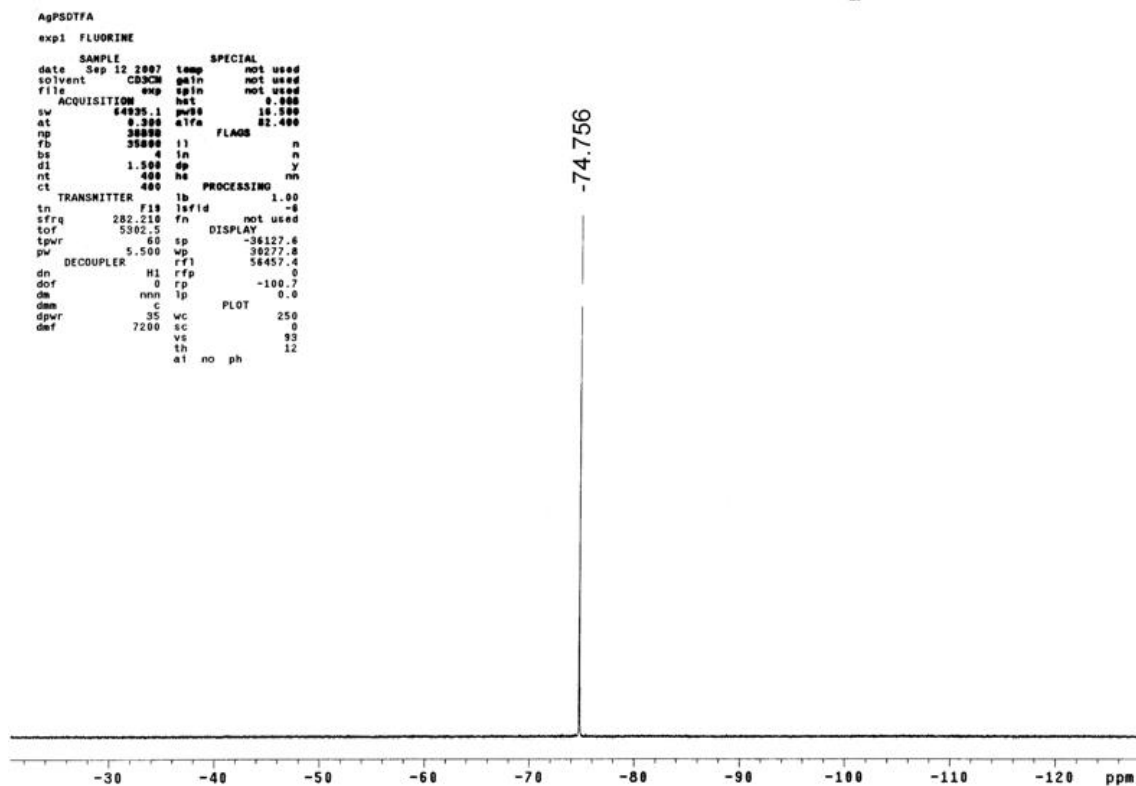


Figure S5. ^{19}F NMR Spectrum of **10** in CD_3CN .

HBS-GW-AOPSD
 Poor Solubility
 Scanned for 2 hours
 exp7 s2pul

SAMPLE		DEC. & VT	
date	Feb 20 2007	dn	H1
solvent	DMSO	dof	0
file	exp	dm	nnn
ACQUISITION		dm	C
sfrq	57.300	dmf	200
tn	3e77	PROCESSING	
at	0.640	lb	30.00
np	128000	fn	not used
sw	100000.0		
fb	55000	werr	
bs	2	wexp	
pw	3.0	wbs	
pv	3.0	wnt	
tpwr	58	DISPLAY	
d1	0	sp	57368.6
tof	80000.0	wp	37902.6
nt	64000	vs	10924
ct	13794	sc	0
alock	n	wc	250
gain	6	hzmm	151.81
FLAGS		ls	837641.33
l1	n	rfl	-45726.2
in	n	rtp	0
dp	y	th	7
		ins	65.734
		al	cdc ph

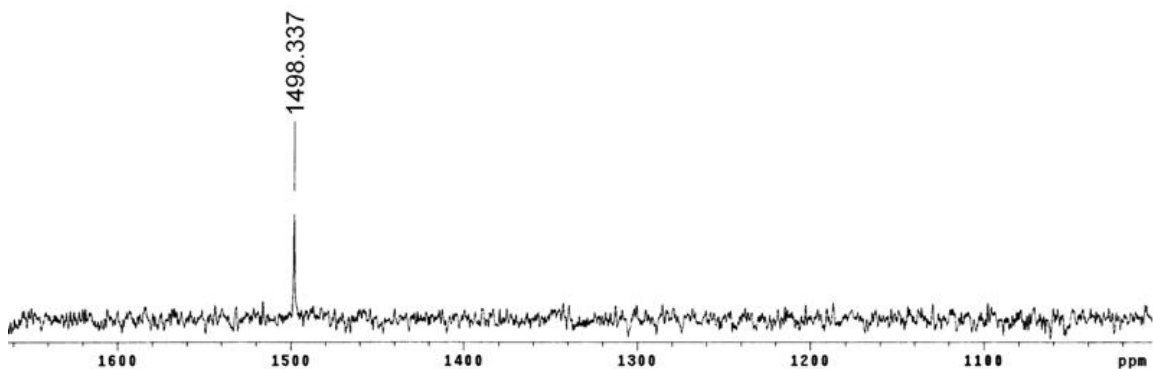


Figure S6. ^{77}Se NMR spectrum of **9** in DMSO- d_6 .

HBS-GW-AgPSDTFA
 exp8 s2pul

SAMPLE		DEC. & VT	
date	Apr 12 2007	dn	H1
solvent	DMSO	dof	0
file	exp	dm	nnn
ACQUISITION		dm	C
sfrq	57.275	dmf	200
tn	3e77	PROCESSING	
at	0.640	lb	10.00
np	128000	fn	not used
sw	100000.0		
fb	55000	werr	
bs	2	wexp	
pw	3.0	wbs	
pv	3.0	wnt	
tpwr	58	DISPLAY	
d1	0	sp	57158.0
tof	55000.0	wp	40199.3
nt	64000	vs	5195
ct	568	sc	0
alock	n	wc	250
gain	6	hzmm	160.80
FLAGS		ls	837641.33
l1	n	rfl	-20726.2
in	n	rtp	0
dp	y	th	7
		ins	65.734
		al	cdc ph

[Ag(psd) $_2$](CF $_3$ COO)

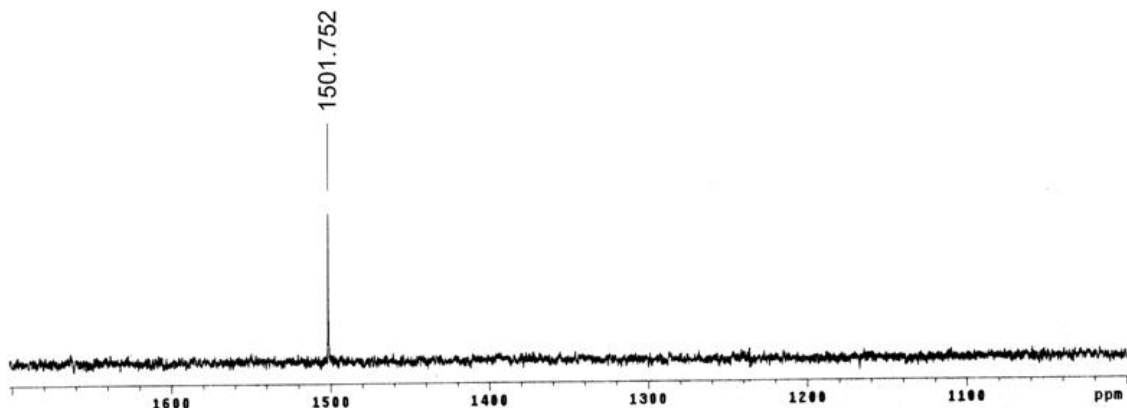
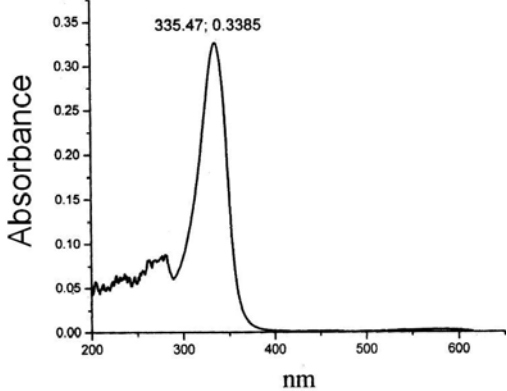
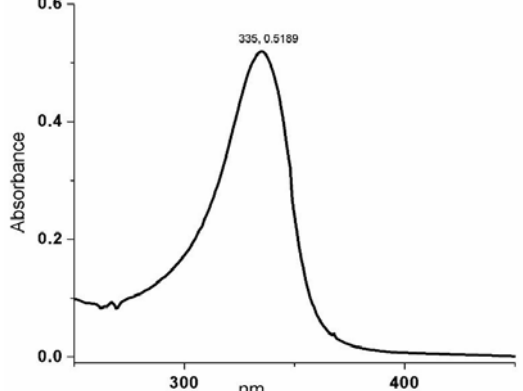
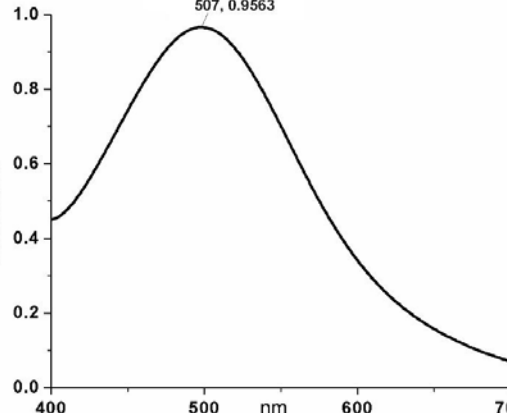
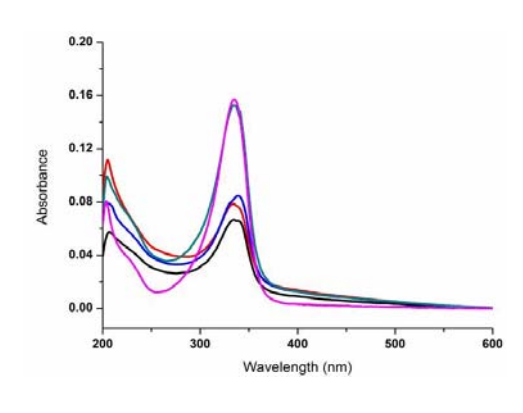
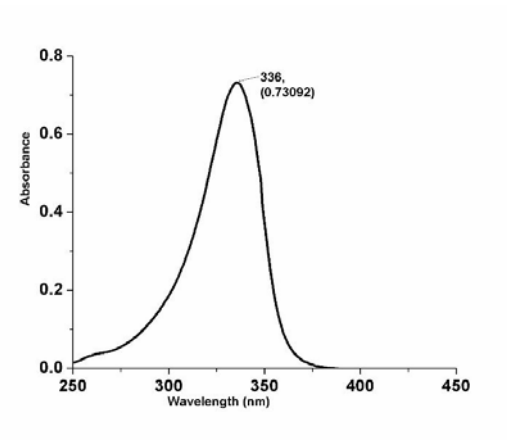
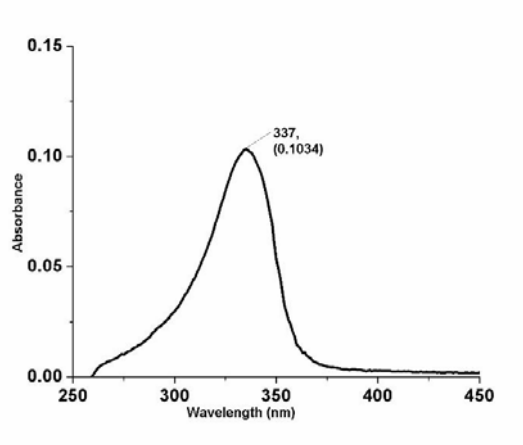


Figure S7. ^{77}Se NMR spectrum of **10** in DMSO- d_6 .

Table S1. UV spectrum of Ligand and Complexes:

	
(a) Ligand 5 in MeOH; λ_{max} 335 nm, (ϵ: $1.42 \times 10^7 \text{ cm}^2 \text{ mol}^{-1}$).	(b) Complex 6 in MeOH λ_{max} 335 nm (ϵ: $6.06 \times 10^4 \text{ cm}^2 \text{ mol}^{-1}$)
	
(c) Complex 6 in MeOH λ_{max} 507 nm, (ϵ: $2.26 \times 10^3 \text{ cm}^2 \text{ mol}^{-1}$).	(d) Complexes in MeOH solution. 7; λ_{max} 336 nm, (ϵ: $7.50 \times 10^4 \text{ cm}^2 \text{ mol}^{-1}$), 8; λ_{max} 335 nm, (ϵ: $8.04 \times 10^4 \text{ cm}^2 \text{ mol}^{-1}$), 11; λ_{max} 334 nm, (ϵ: $2.19 \times 10^6 \text{ cm}^2 \text{ mol}^{-1}$), 12; λ_{max} 334 nm, (ϵ: $7.80 \times 10^4 \text{ cm}^2 \text{ mol}^{-1}$), 14; λ_{max} 335 nm, (ϵ: $1.79 \times 10^5 \text{ cm}^2 \text{ mol}^{-1}$).
	
(c) Complex 9 in MeOH λ_{max} 336 nm, (ϵ: $5.375 \times 10^4 \text{ cm}^2 \text{ mol}^{-1}$)	(c) Complex 10 in MeOH λ_{max} 337 nm, (ϵ: $8.510 \times 10^3 \text{ cm}^2 \text{ mol}^{-1}$)

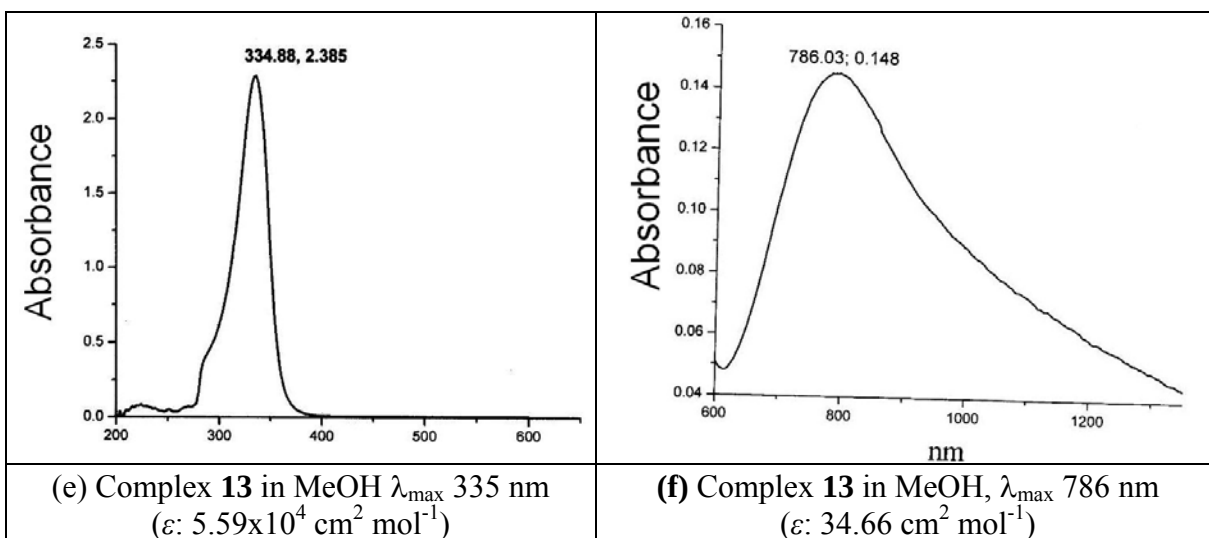
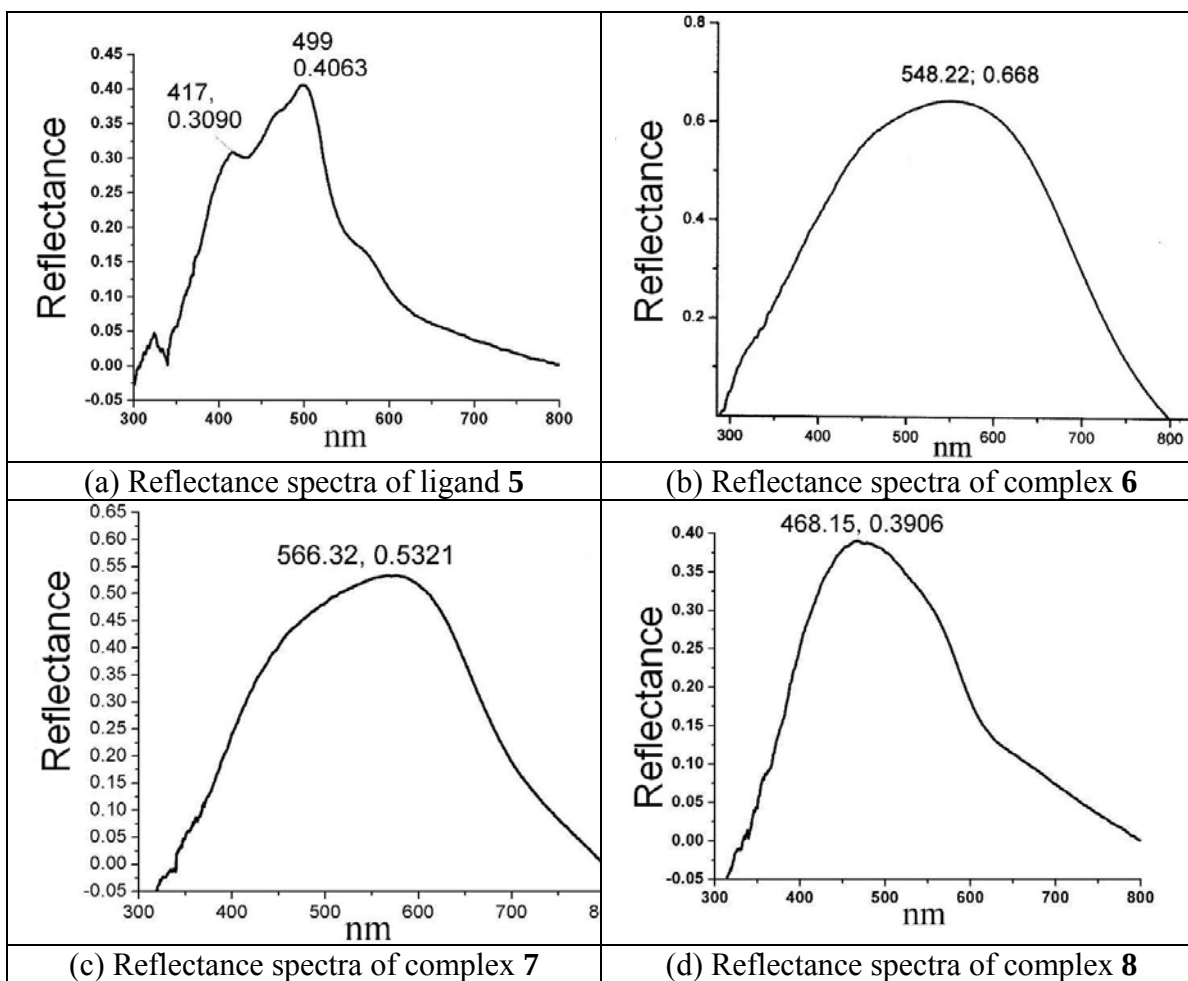
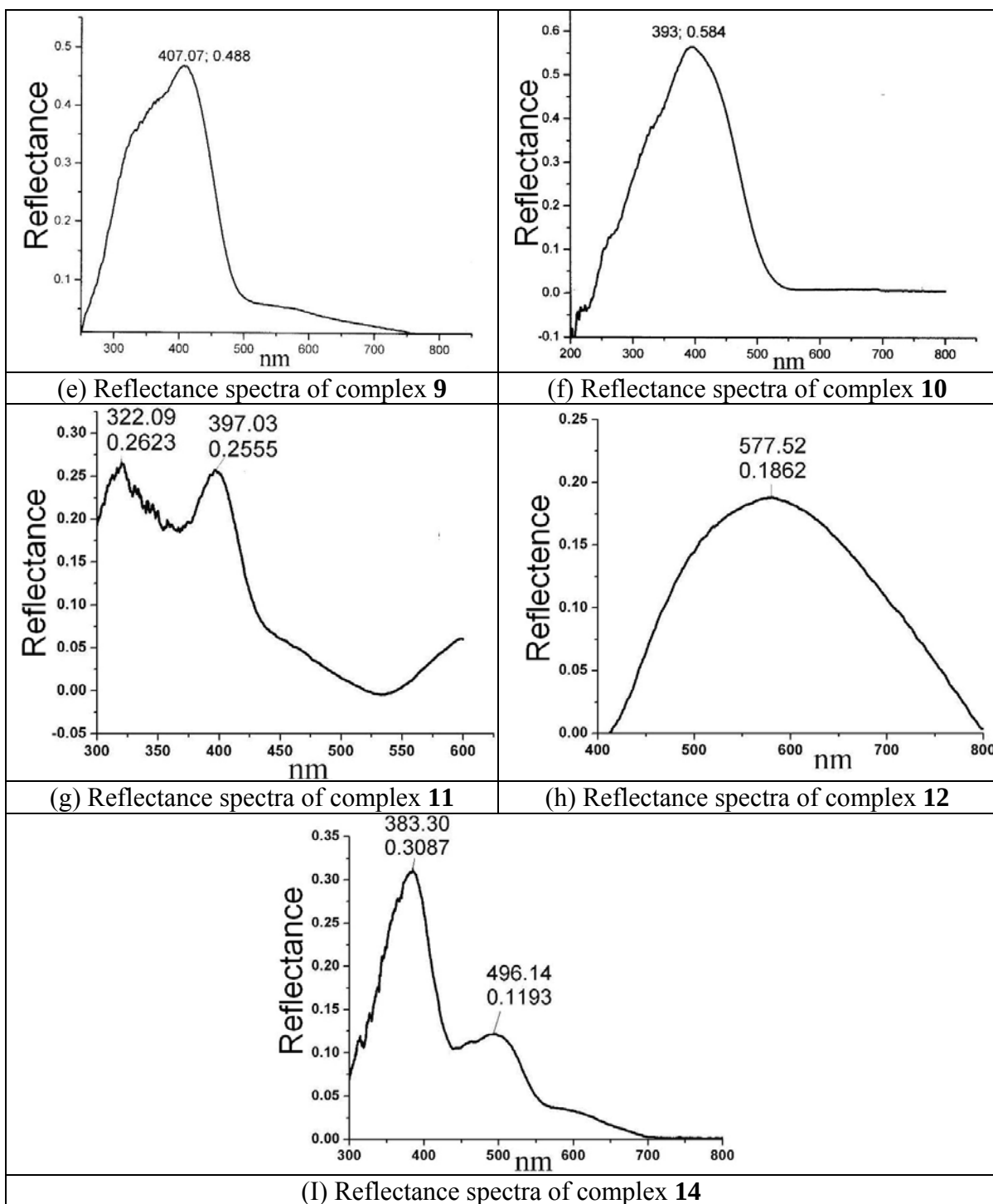


Table S2. Reflectance spectrum of ligand and Complexes .





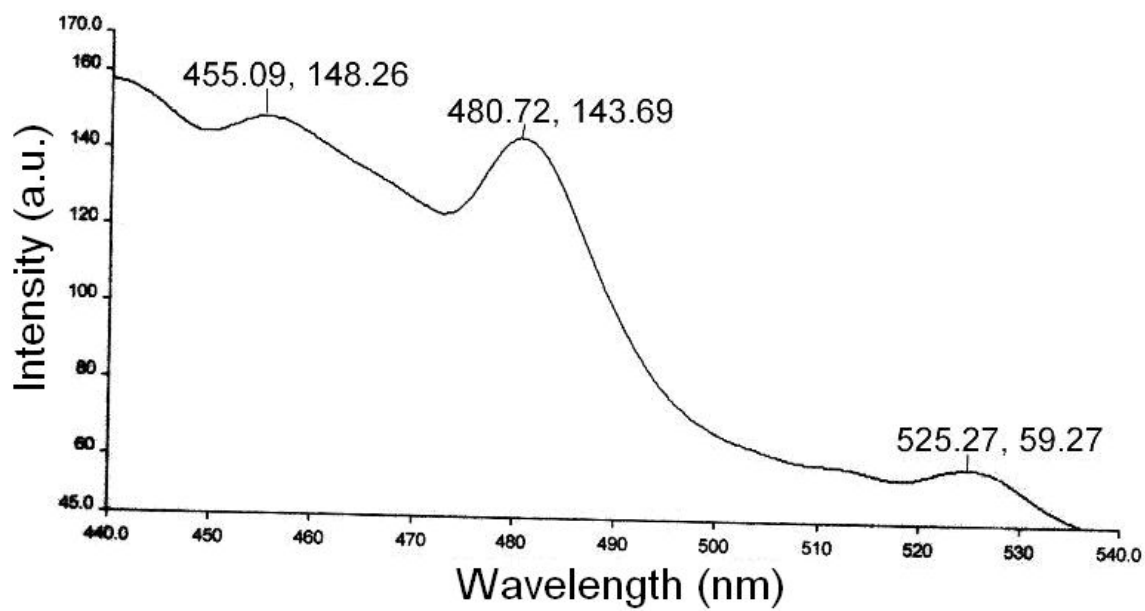


Figure S8. Emission Spectra of Complexes 9.

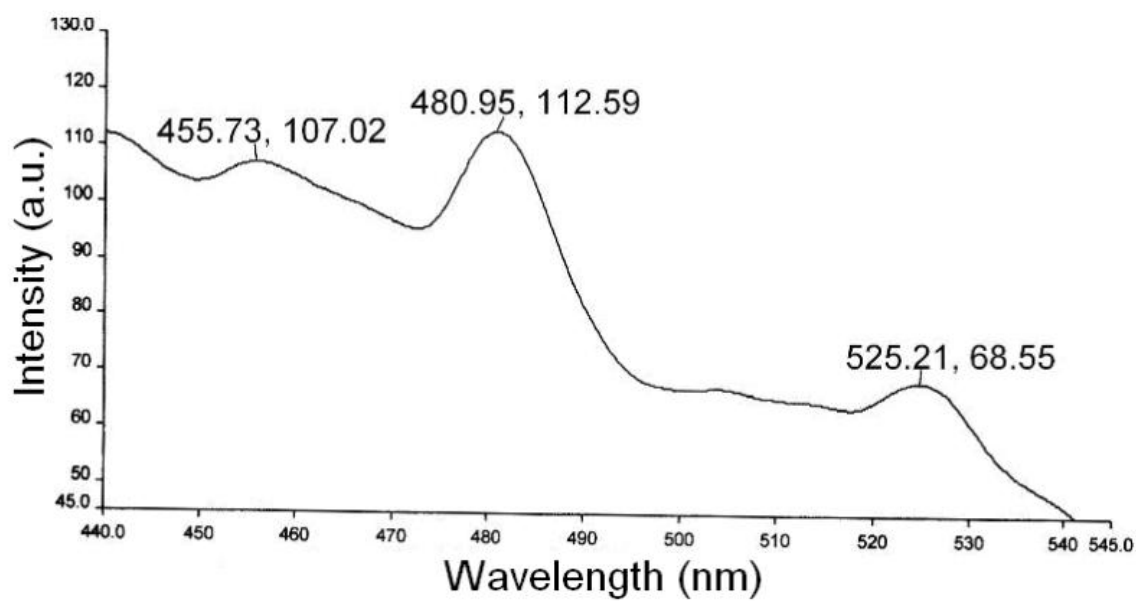


Figure S9. Emission Spectra of Complexes 10.

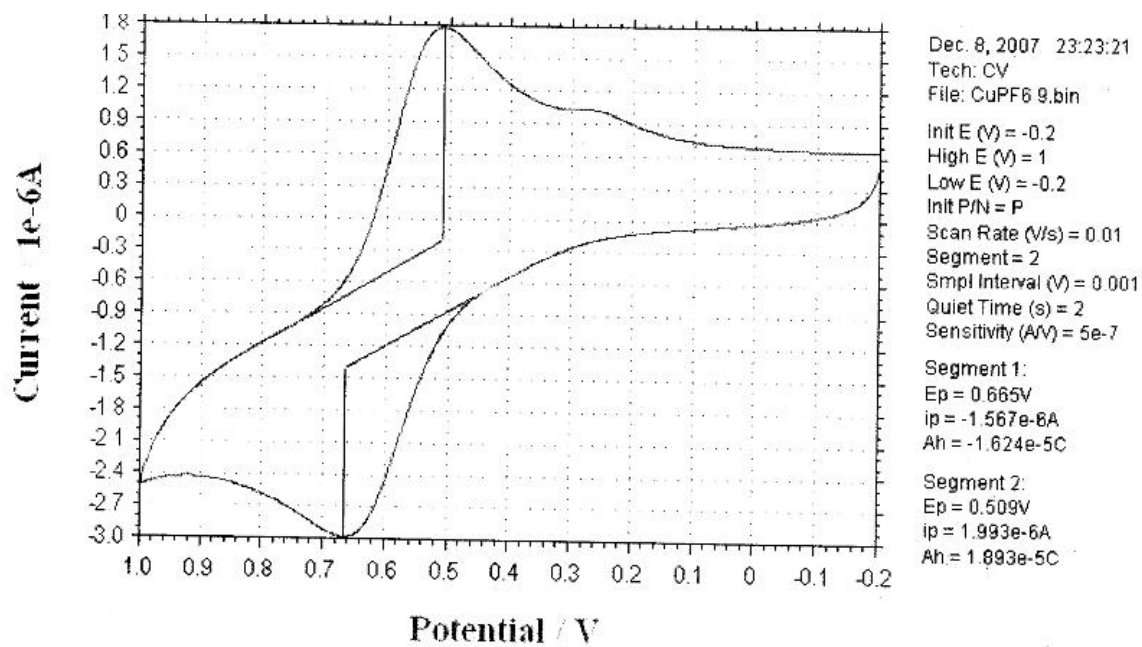


Figure S10. Cyclic Voltammogram of 6.

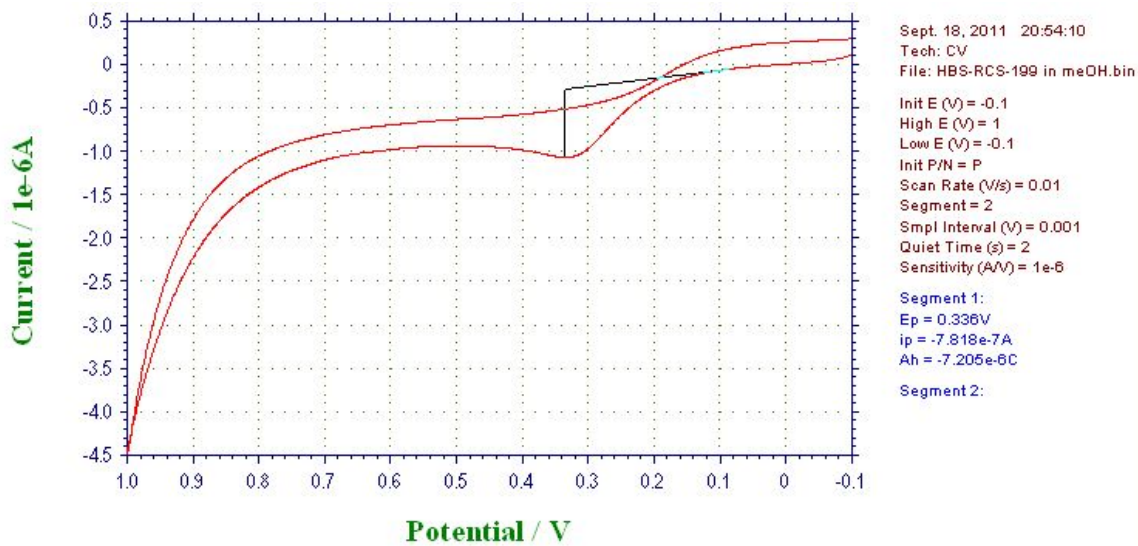


Figure S11. Cyclic Voltammogram of 8.

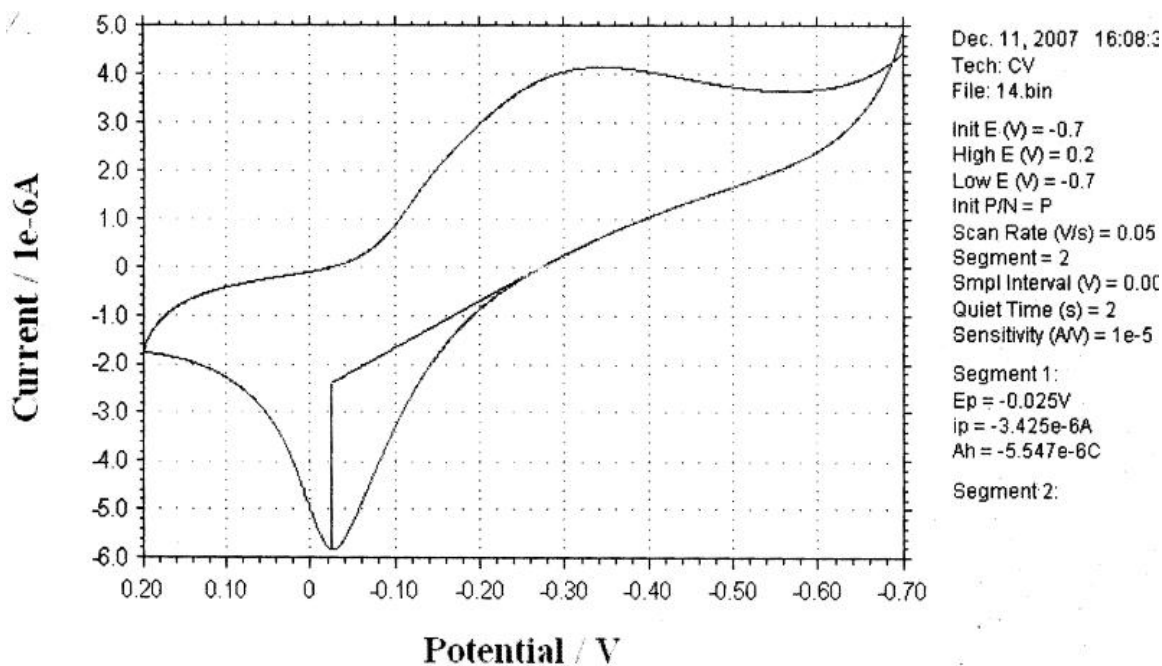


Figure S12. Cyclic Voltammogram of 13.

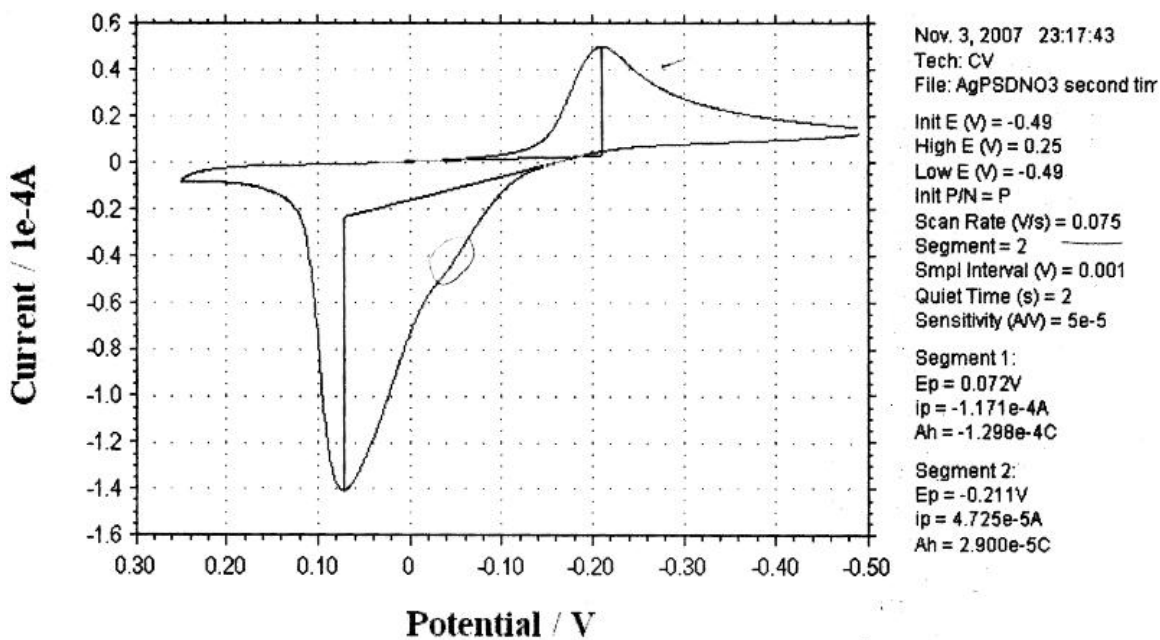


Figure S13. Cyclic Voltammogram of 9.

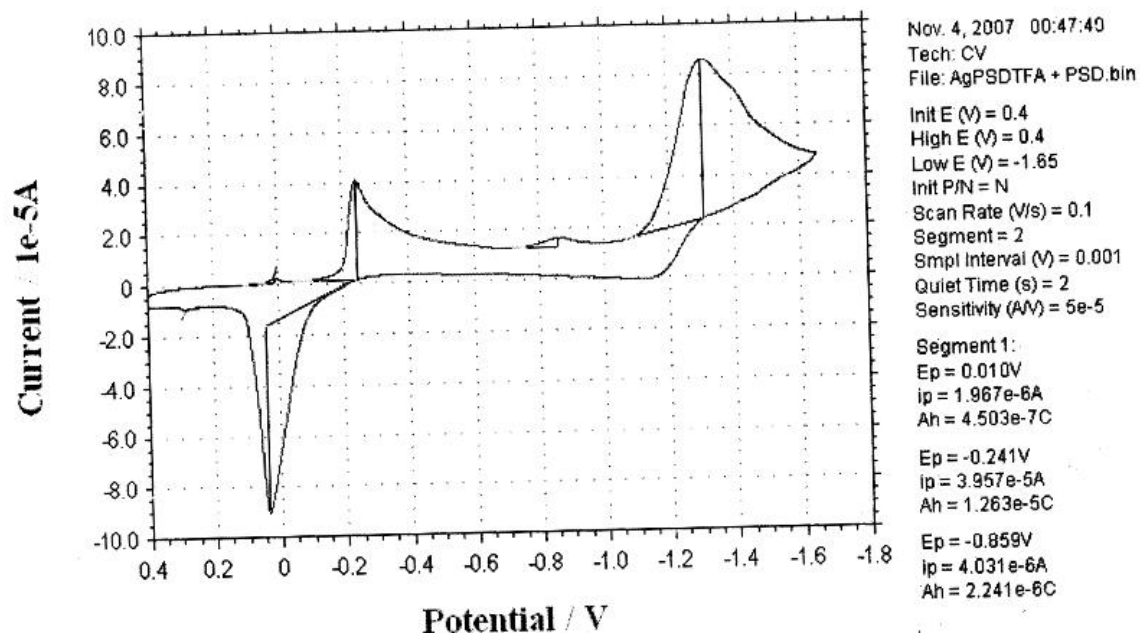


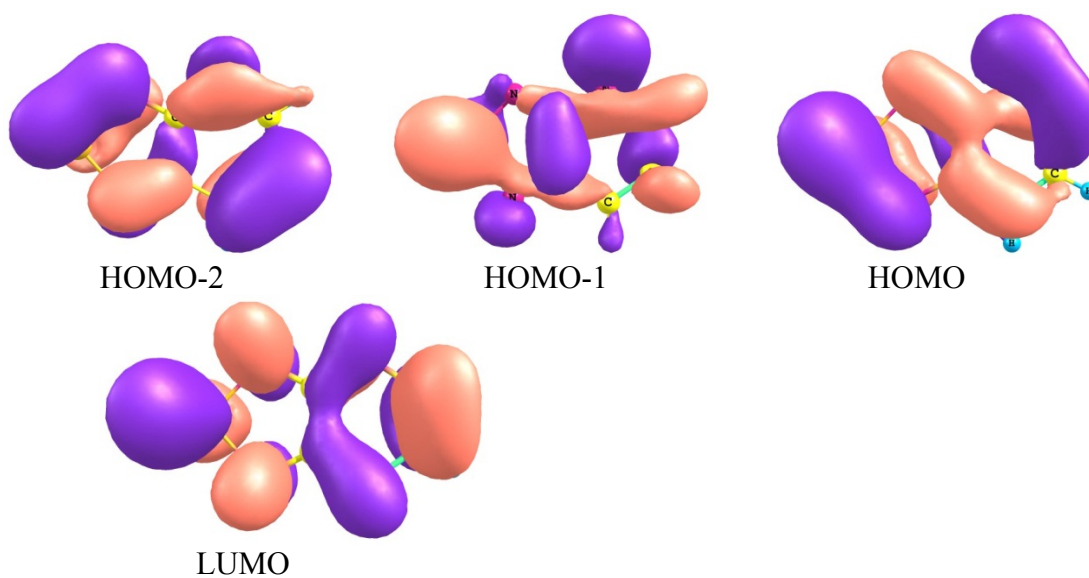
Figure S14. Cyclic Voltammogram of **10**.

Representative examples of TD-DFT (B3LYP/6-31G(d)) analysis:

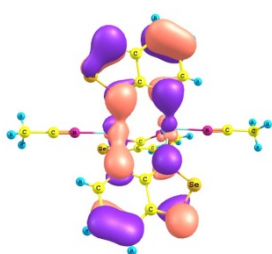
Compound 5: $\lambda = 288 \text{ nm}$ ($f = 0.234$);

The major contributing MO's are as follows

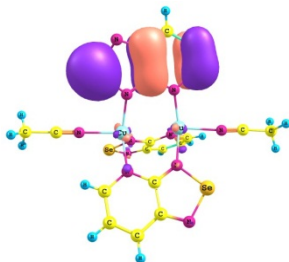
HOMO-2 $\rightarrow$ LUMO ; HOMO-1 $\rightarrow$ LUMO ; HOMO $\rightarrow$ LUMO



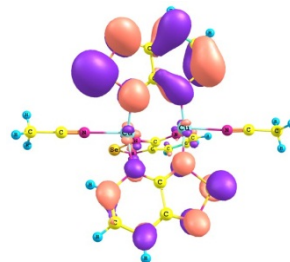
Compound 6: $\lambda = 296 \text{ nm}$ ($f = 0.138$); 549 nm ($f = 0.040$),
For transition at 296 nm , the major contributing MO's are shown below:
HOMO-15 $\rightarrow$ LUMO+2; HOMO-13 $\rightarrow$ LUMO+1



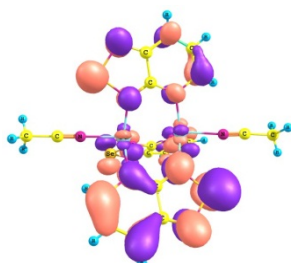
HOMO-15



HOMO-13

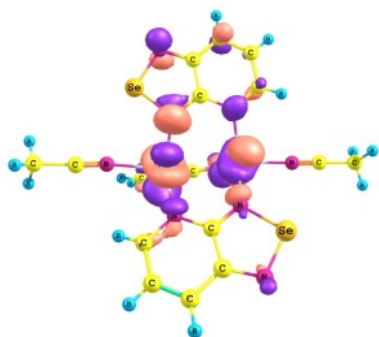


LUMO+1



LUMO+2

For transition at 547 nm , the major contributing MO's are:
HOMO-3 $\rightarrow$ LUMO+1 ; HOMO-3 $\rightarrow$ LUMO+2

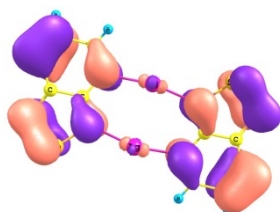


Compound 9: $\lambda = 295 \text{ nm}$ ($f = 0.312$);

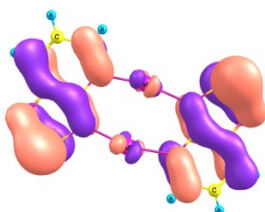
The major contributing MO's are shown below:

HOMO-4 $\rightarrow$ LUMO+1; HOMO-2 $\rightarrow$ LUMO; HOMO-1 $\rightarrow$ LUMO+1

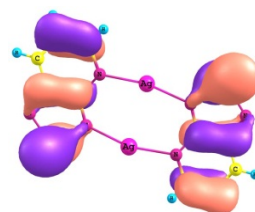
HOMO $\rightarrow$ LUMO



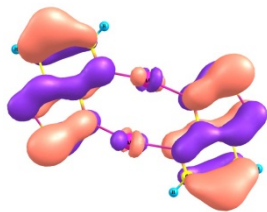
HOMO-4



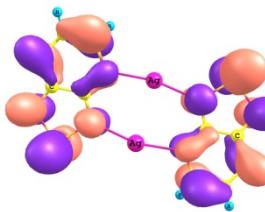
HOMO-2



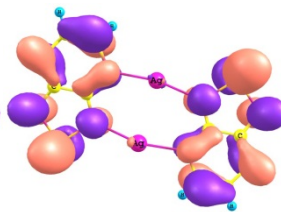
HOMO-1



HOMO



LUMO



LUMO+1

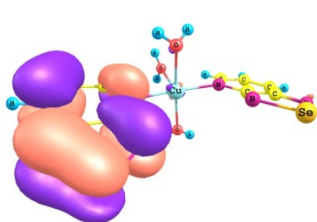
Compound 13: $\lambda = 293 \text{ nm}$ ($f = 0.321$); and 786 nm ($f = 0.0001$);

For transition at 293 nm, the contributing MO's are as follows

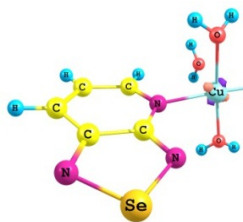
$(\text{HOMO}-3)\alpha \rightarrow (\text{LUMO})\alpha$; $(\text{HOMO}-2)\alpha \rightarrow (\text{LUMO}+1)\alpha$; $(\text{HOMO}-1)\alpha \rightarrow (\text{LUMO})\alpha$;

$(\text{HOMO})\alpha \rightarrow (\text{LUMO}+1)\alpha$; $(\text{HOMO}-2)\beta \rightarrow (\text{LUMO}+2)\beta$; $(\text{HOMO}-1)\beta \rightarrow (\text{LUMO}+1)\beta$;

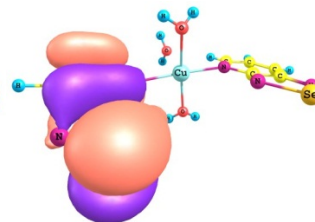
$(\text{HOMO})\beta \rightarrow (\text{LUMO}+2)\beta$;



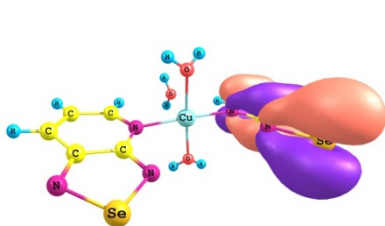
$(\text{HOMO}-3)\alpha$



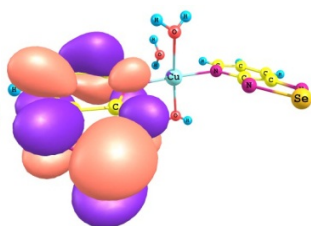
$(\text{HOMO}-2)\alpha$



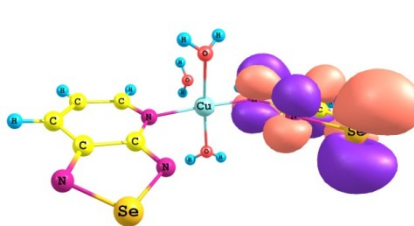
$(\text{HOMO}-1)\alpha$



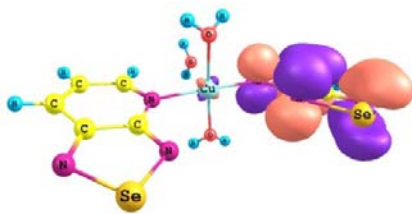
$(\text{HOMO})\alpha$



$(\text{LUMO})\alpha$



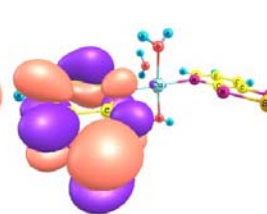
$(\text{LUMO}+1)\alpha$



$(\text{HOMO}-2)\beta$



$(\text{HOMO})\beta$

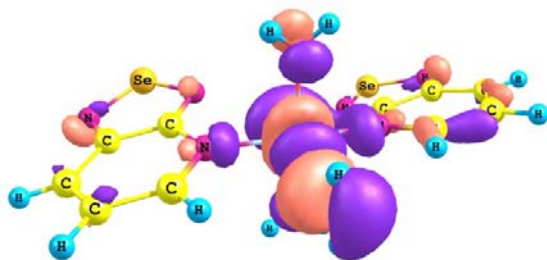
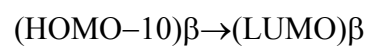


$(\text{LUMO}+1)\beta$

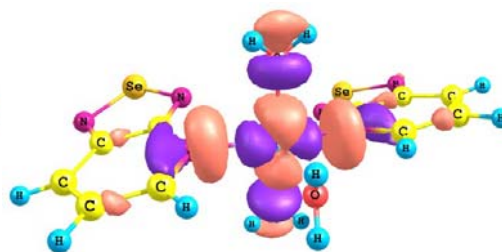


$(\text{LUMO}+2)\beta$

For transition at 786 nm, the contributing MO's are as follows



(HOMO-10)β



(LUMO)β

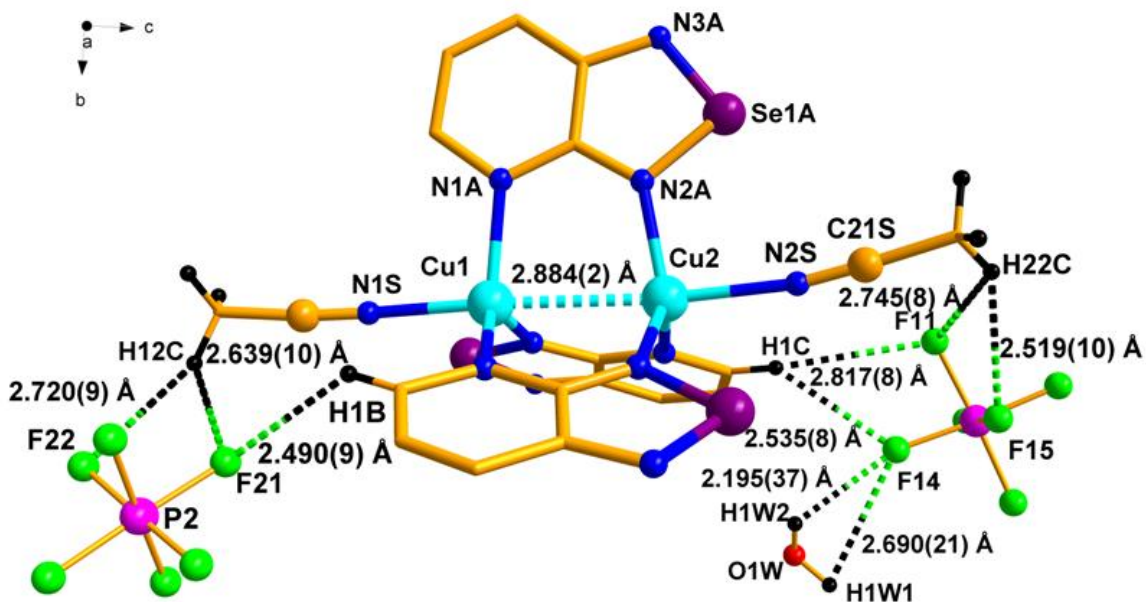


Figure S15. 1-D Supramolecular motif via C—H $\cdots$ F and H $\cdots$ F hydrogen bonding in the lattices of **6**. Only relevant hydrogen atoms are shown for clarity.

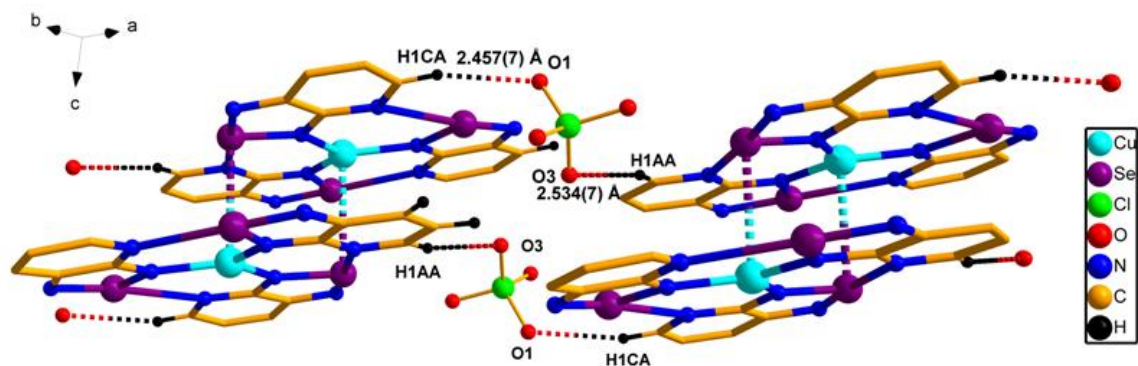
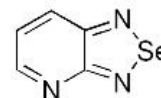


Figure S16. 1-D Supramolecular motif via C—H $\cdots$ O hydrogen bonding in the lattices of **8**. Only relevant hydrogen atoms are shown for clarity.

Eager 300 Report

Page: 1 Sample: HBS-GM-PSD (HBS-GM-PSD)



Method Name : sp300307
Method File : G:\eager300\Eager 300 EA1112\SP300307.mth
Chromatogram : HBS-GM-PSD
Operator ID : sp
Analysed : 03/26/2007 14:54
Sample ID : HBS-GM-PSD (# 23)
Analysis Type : UnkNown (Area)
Company Name : C.E. Instruments
Printed : 3/26/2007 15:43
Instrument N. : Instrument #1
Sample weight : 1.835

Calib. method : using 'K Factors'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Nitrogen	23.0663	44	437473	RS	3.515000	.103357E+07
Carbon	32.5558	67	1537718	RS	1.000000	.256616E+07
Hydrogen	1.2850	181	140745	RS	10.925560	.596870E+07
Totals	56.9071		2115936			

Figure S17. Elemental analysis of 5.

Eager 300 Report

Page: 1 Sample: GMCU-I (GMCU-I)



Method Name : sp210807
Method File : G:\eager300\Eager 300 EA1112\SP210807.mth
Chromatogram : GMCU-I
Operator ID : sp
Analysed : 08/21/2007 13:28
Sample ID : GMCU-I (# 15)
Analysis Type : UnkNown (Area)
Company Name : C.E. Instruments
Printed : 8/21/2007 16:31
Instrument N. : Instrument #1
Sample weight : 1.703

Calib. method : using 'K Factors'

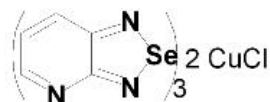
!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Nitrogen	14.2528	44	272496	FU	3.400539	.112265E+07
Carbon	21.8245	68	926632	FU	1.000000	.249315E+07
Hydrogen	0.8188	190	67237	RS	13.781580	.482178E+07
Totals	36.8961		1266365			

Figure S18. Elemental analysis of 6.

Eager 300 Report

Page: 1 Sample: CG-A-19-10 (CG-A-19-10)



Method Name : SP040310
Method File : D:\CHNS2008\SP040310.mth
Chromatogram : CG-A-19-10
Operator ID : MP
Analysed : 03/04/2010 13:03
Sample ID : CG-A-19-10 (# 17)
Analysis Type : UnkNown (Area)
Company Name : C.E. Instruments
Printed : 3/4/2010 14:57
Instrument N. : Instrument #1
Sample weight : .968

Calib. method : using 'K Factors'

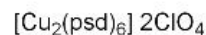
!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Nitrogen	16.0849	43	201688	RS	3.143881	.129535E+07
Carbon	24.2663	67	634082	RS	1.000000	.267545E+07
Hydrogen	1.6114	172	155521	RS	4.077144	.695246E+07
Totals	41.9626		991290			

Figure S19. CH Analysis of Complexes 7.

Eager 300 Report

Page: 1 Sample: CG-A-19-15 (CG-A-19-15)



Method Name : SP010410
Method File : D:\CHNS2008\SP010410.mth
Chromatogram : CG-A-19-15
Operator ID : MP
Analysed : 04/01/2010 12:24
Sample ID : CG-A-19-15 (# 10)
Analysis Type : UnkNown (Area)
Company Name : C.E. Instruments
Printed : 4/1/2010 15:19
Instrument N. : Instrument #1
Sample weight : .372

Calib. method : using 'K Factors'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Nitrogen	17.8329	43	79667	RS	3.120633	.120092E+07
Carbon	25.6627	68	248612	RS	1.000000	.250885E+07
Hydrogen	1.1233	175	87932	RS	2.827315	.640465E+07
Totals	44.6190		416211			

Figure S20. CH Analysis of Complexes 8.

Eager 300 Report

[Ag₂(psd)₂] 2NO₃

Page: 1 Sample: HBSGM-Ag (HBSGM-Ag)

Method Name : sp130207R
Method File : G:\eager300\Eager 300 EA1112\SP130207R.mth
Chromatogram : HBSGM-Ag
Operator ID : MANOJA
Analysed : 02/13/2007 03:00
Sample ID : HBSGM-Ag (# 18)
Analysis Type : UnkNown (Area)

Company Name : C.E. Instruments
Printed : 2/13/2007 10:19
Instrument N. : Instrument #1
Sample weight : 1.61

Calib. method : using 'K Factors'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
1	0.0000	7	77624	RS		0.0000
Nitrogen	15.7559	43	255175	RS	2.701908	.100593E+07
Carbon	17.0832	68	689458	RS	1.000000	.249398E+07
Hydrogen	0.5883	187	51368	RS	13.421940	.542356E+07
Totals	33.4274		1073625			

Figure S21. Elemental analysis of 9.

Eager 300 Report

[Ag₂(psd)₂] 2CF₃COOO

Page: 1 Sample: HBS-GM-AgPSD (HBS-GM-AgPSD)

Method Name : sp300307
Method File : G:\eager300\Eager 300 EA1112\SP300307.mth
Chromatogram : HBS-GM-AgPSD
Operator ID : sp
Analysed : 03/26/2007 14:44
Sample ID : HBS-GM-AgPSD (# 22)
Analysis Type : UnkNown (Area)

Company Name : C.E. Instruments
Printed : 3/26/2007 15:43
Instrument N. : Instrument #1
Sample weight : 2.474

Calib. method : using 'K Factors'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Nitrogen	10.4302	44	266706	RS	4.943953	.103357E+07
Carbon	20.6954	67	1318580	RS	1.000000	.256616E+07
Hydrogen	0.5716	187	84413	RS	15.620570	.596870E+07
Totals	31.6973		1669698			

Figure S22. Elemental analysis of 10.

Eager 300 Report

[Cu(psd)₄(H₂O)₃] 2ClO₄

Page: 1 Sample: CGA19-4 (CGA19-4)

Method Name : SP290110
Method File : D:\CHNS2008\SP290110.mth
Chromatogram : CGA19-4
Operator ID : SP
Analysed : 01/29/2010 15:10
Sample ID : CGA19-4 (# 30)
Analysis Type : UnkNown (Area)
Company Name : C.E. Instruments
Printed : 1/29/2010 16:35
Instrument N. : Instrument #1
Sample weight : .469

Calib. method : using 'K Factors'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Nitrogen	15.8810	43	83258	RS	3.372543	.111783E+07
Carbon	22.5965	68	280790	RS	1.000000	.264952E+07
Hydrogen	1.1410	187	42659	RS	6.582187	.592042E+07
Totals	39.6185		406706			

Figure S23. CH Analysis of Complexes 11.

Eager 300 Report

[Cu(psd)₄(H₂O)] 2ClO₄(CHCl₃)

Page: 1 Sample: CGA19-5-2 (CGA19-5-2)

Method Name : SP290110
Method File : D:\CHNS2008\SP290110.mth
Chromatogram : CGA19-5-2
Operator ID : SP
Analysed : 01/29/2010 13:12
Sample ID : CGA19-5-2 (# 19)
Analysis Type : UnkNown (Area)
Company Name : C.E. Instruments
Printed : 1/29/2010 16:32
Instrument N. : Instrument #1
Sample weight : .763

Calib. method : using 'K Factors'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
1	0.0000	18	5442	RS		0.0000
Nitrogen	14.6562	43	125003	RS	3.601458	.111783E+07
Carbon	22.2693	68	450193	RS	1.000000	.264952E+07
Hydrogen	1.0546	184	58618	RS	7.680115	.592042E+07
Totals	37.9802		639256			

Figure S24. CH Analysis of Complexes 12.

Eager 300 Report

[Cu(psd)₄(H₂O)₄] 2NO₃

Page: 1 Sample: HBS-GM-CUNO3 (HBS-GM-CUNO3)

Method Name : sp200307
Method File : G:\eager300\Eager 300 EA1112\SP200307.mth
Chromatogram : HBS-GM-CUNO3
Operator ID : MANOJA Company Name : C.E. Instruments
Analysed : 03/11/2007 10:43 Printed : 3/11/2007 16:57
Sample ID : HBS-GM-CUNO3 (# 26) Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 2.332

Calib. method : using 'K Factors'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Nitrogen	20.4559	45	485811	RS	2.992232	.101841E+07
Carbon	24.2050	68	1453659	RS	1.000000	.254181E+07
Hydrogen	1.4374	178	198990	RS	7.305186	.593640E+07
Totals	46.0983		2138460			

Figure S25. Elemental analysis of 13.

Eager 300 Report

[Co(psd)₄(H₂O)₄] (ClO₄)₂

Page: 1 Sample: RCS-303 (RCS-303)

Method Name : SD080911
Method File : D:\CHNS2011\SD080911.mth
Chromatogram : RCS-303
Operator ID : SD Company Name : C.E. Instruments
Analysed : 09/08/2011 14:18 Printed : 9/8/2011 16:03
Sample ID : RCS-303 (# 21) Instrument N. : Instrument #1
Analysis Type : UnkNown (Area) Sample weight : 1.066

Calib. method : using 'K Factors'

!!! Warning missing one or more peaks.

Element Name	%	Ret.Time	Area	BC	Area ratio	K factor
Nitrogen	12.9064	43	210796	FU	2.880464	.153215E+07
Carbon	22.9596	67	607189	FU	1.000000	.248087E+07
Hydrogen	1.8123	181	117413	RS	5.171398	.607763E+07
Totals	37.6782		935398			

Figure S26. Elemental analysis of 14.

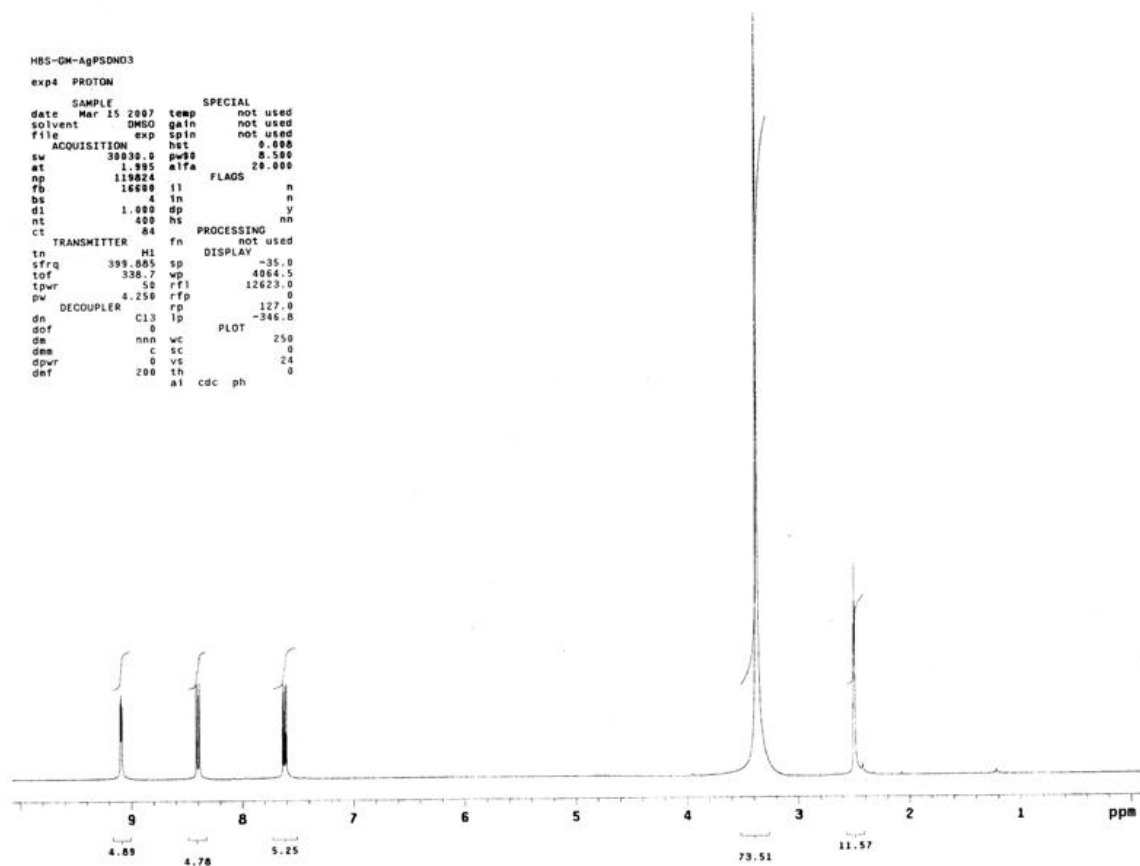


Figure S27. ^1H NMR spectrum of **9** in DMSO-d_6 .

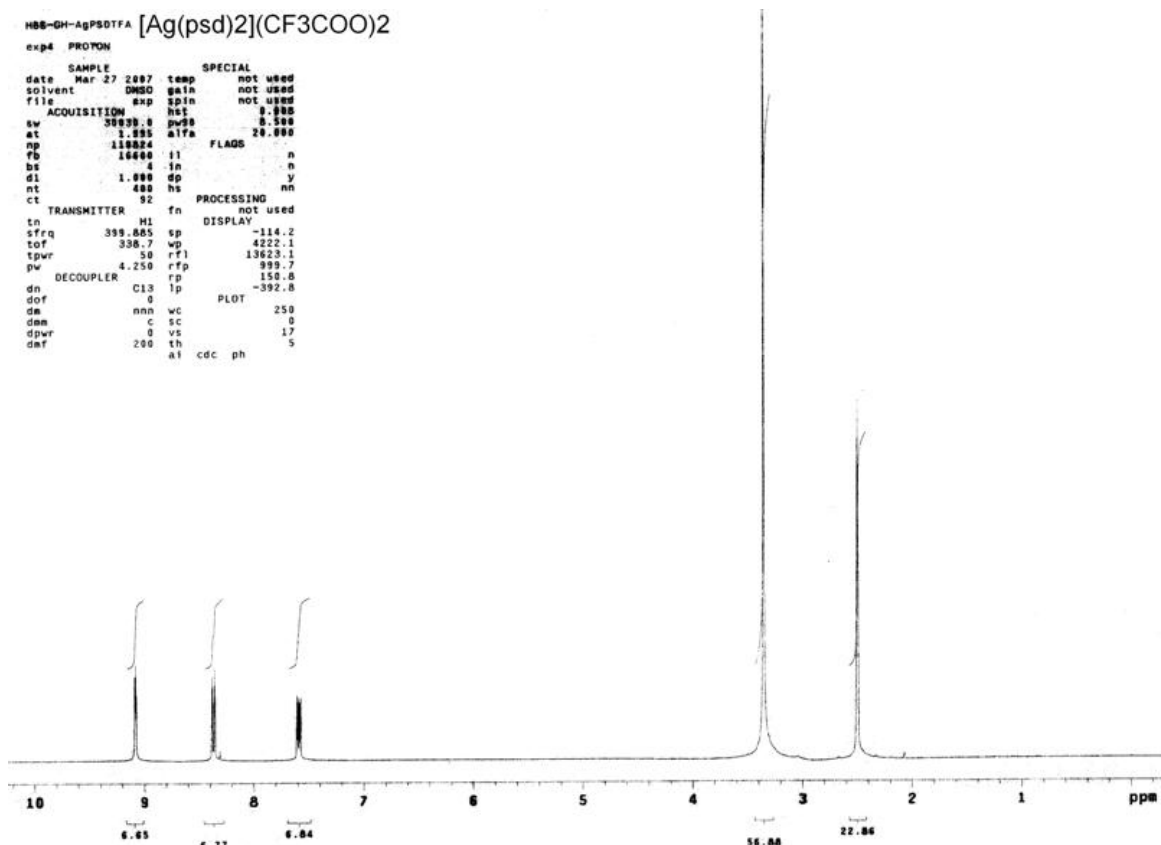


Figure S28. ^1H NMR spectrum of **10** in $\text{DMSO}-d_6$.

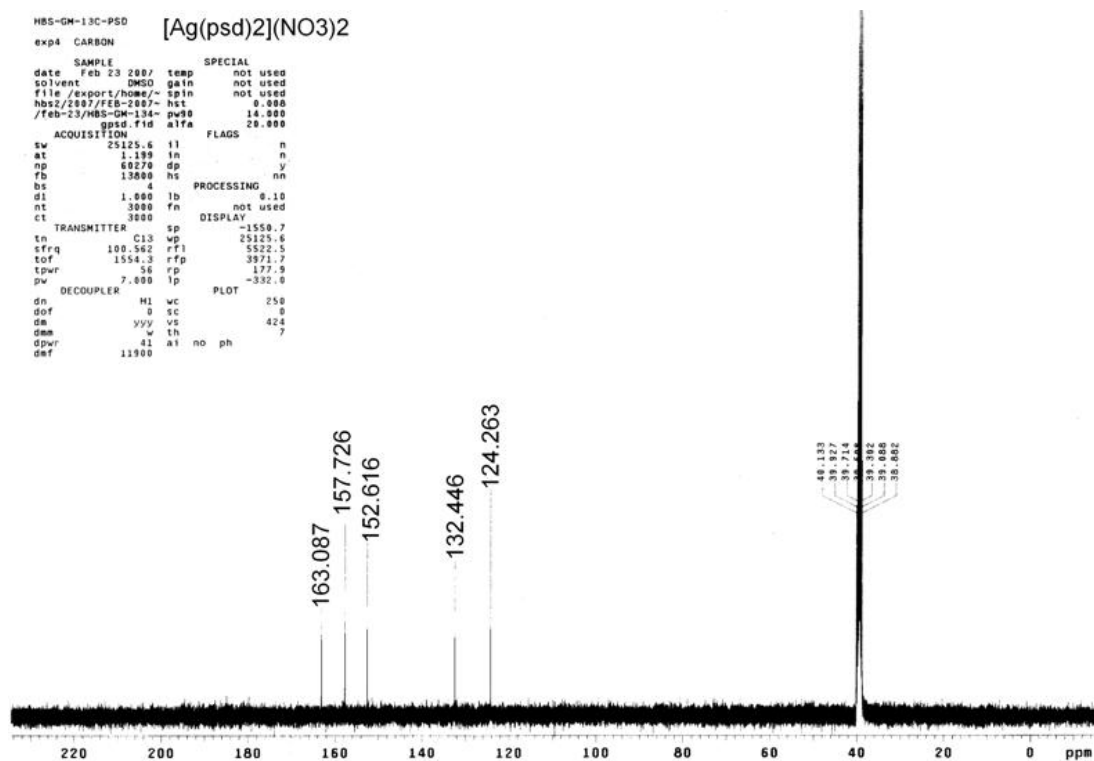


Figure S29. ^{13}C NMR spectrum of **9** in $\text{DMSO}-d_6$.

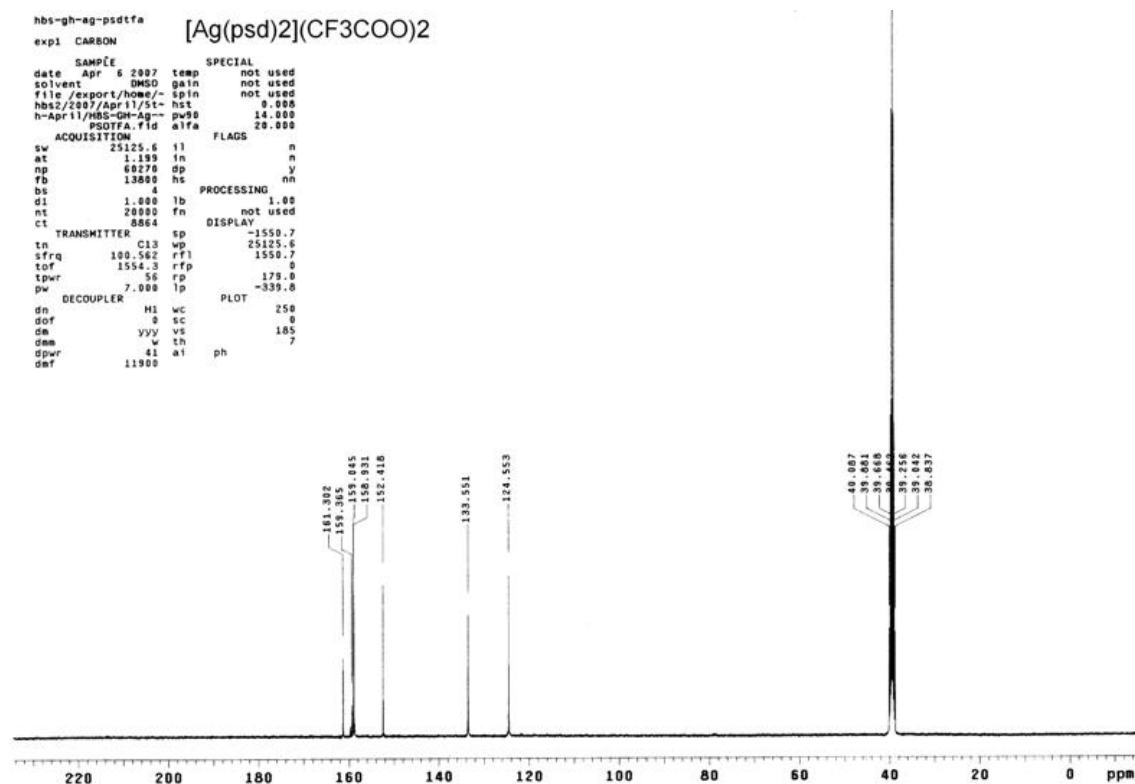


Figure S30. ¹³C NMR spectrum of **10** in DMSO-d₆.

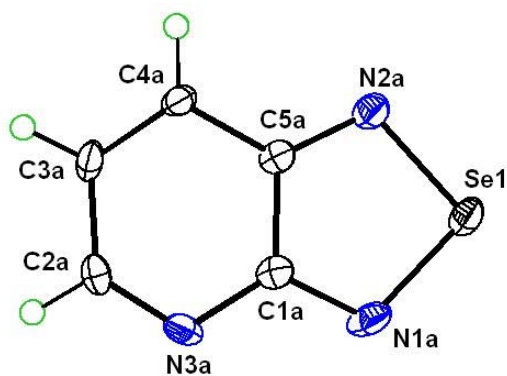


Figure S31. ORTEP diagram of **5**.

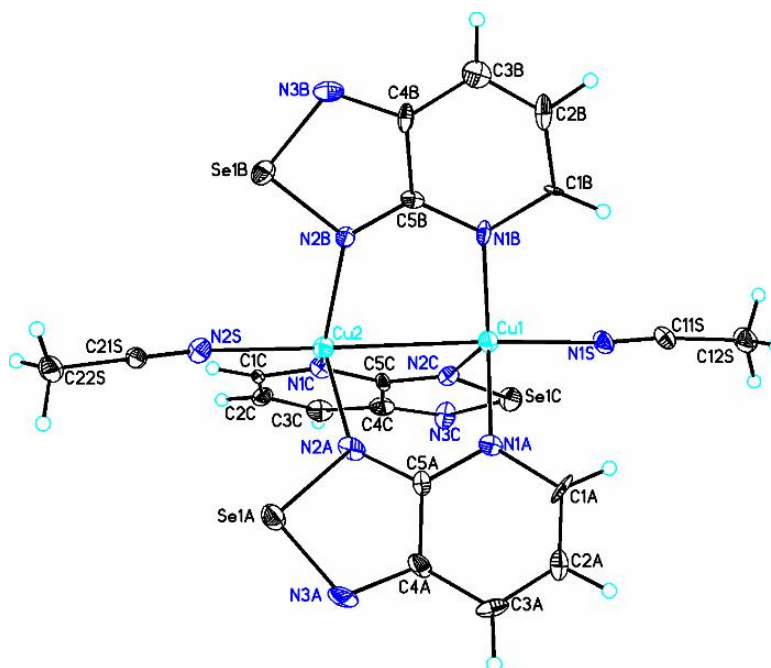


Figure S32. ORTEP diagram of the cationic part of **6**.

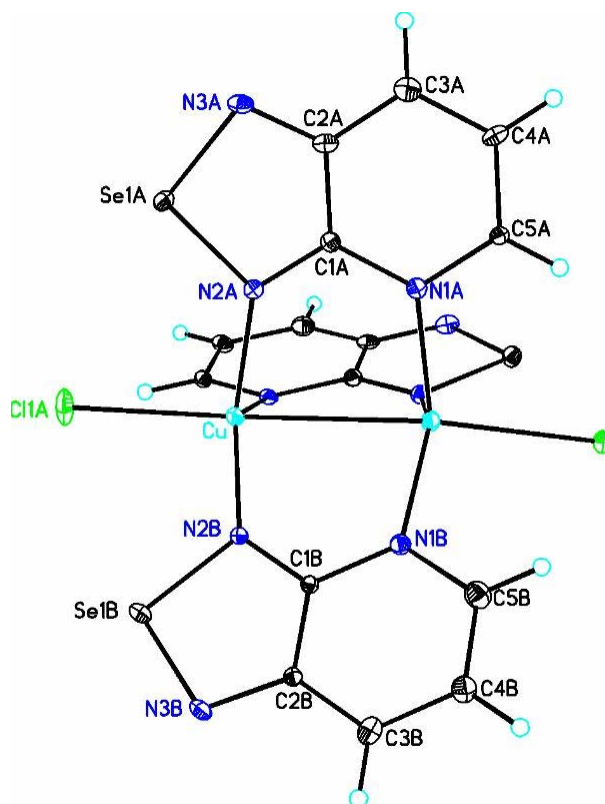


Figure S33. ORTEP diagram of the **7**.

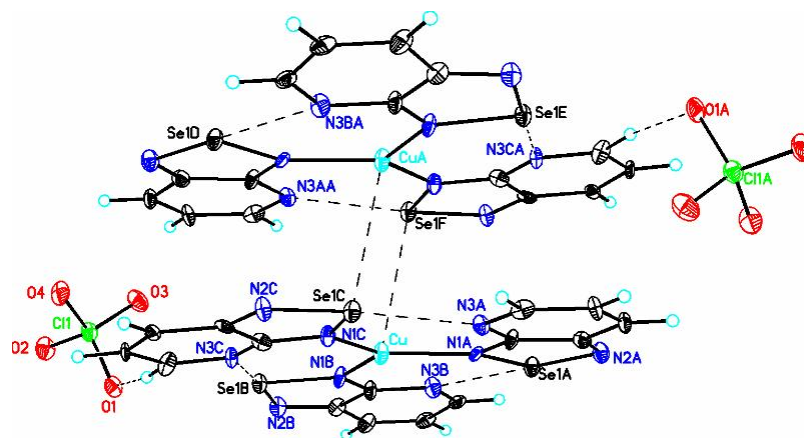


Figure S34. ORTEP diagram of **8**.

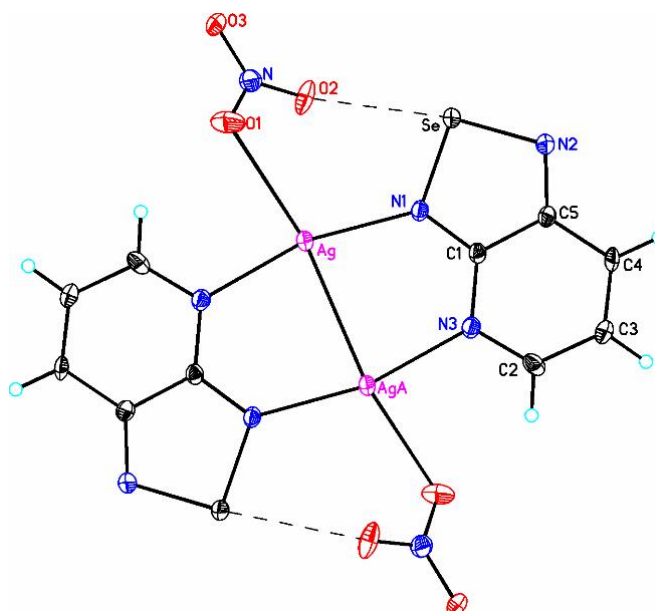


Figure S35. ORTEP diagram of **9**.



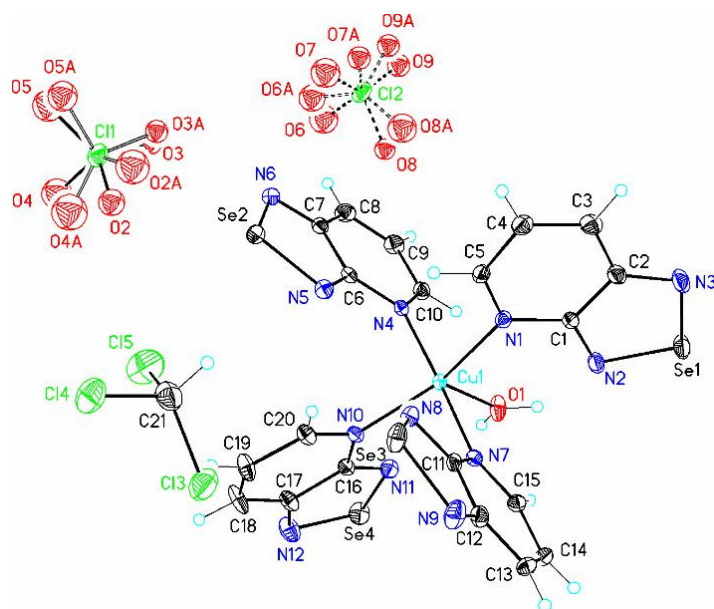


Figure S38. ORTEP diagram of **12**.

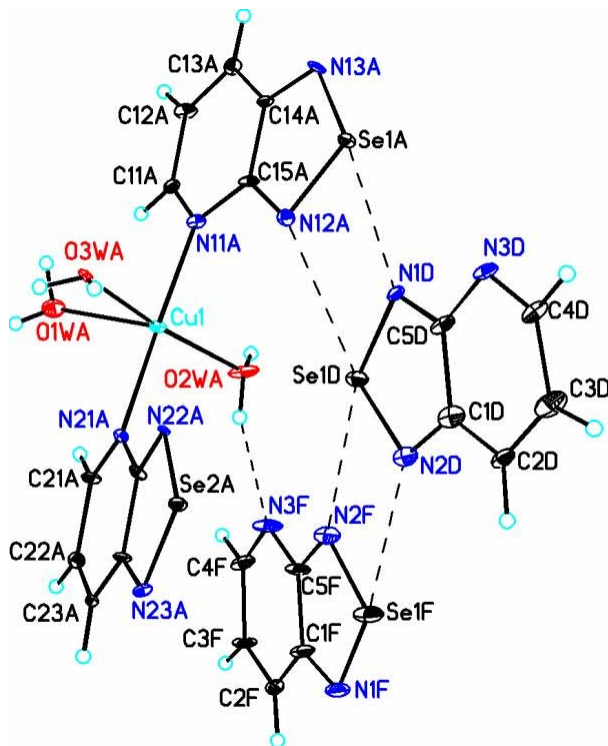


Figure S39. ORTEP diagram of the cationic part of **13**. Selected bond distances [Å] and angles [°]: Cu(2)–N(11B) 2.038(5), Cu(2)–N(21B) 2.060(5), Cu(2)–O(1WB) 2.259(4), Cu(2)–O(2WB) 1.956(3), Cu(2)–O(3WB) 1.927(3), Se(2B)···N(1C) 2.877(5), Se(1C)···N(2B) 3.031(5), Se(1C)···N(1E)

3.006(6), Se(1E)•••N(2C) 2.869(6), O(2WB)–H(2WD)•••N(2E) 2.035(5),;
O(1WB)–Cu(2)–O(3WB) 100.59(17), O(1WB)–Cu(2)–O(2WB)
96.67(19), O(2WB)–Cu(2)–O(3WB) 162.7(2).

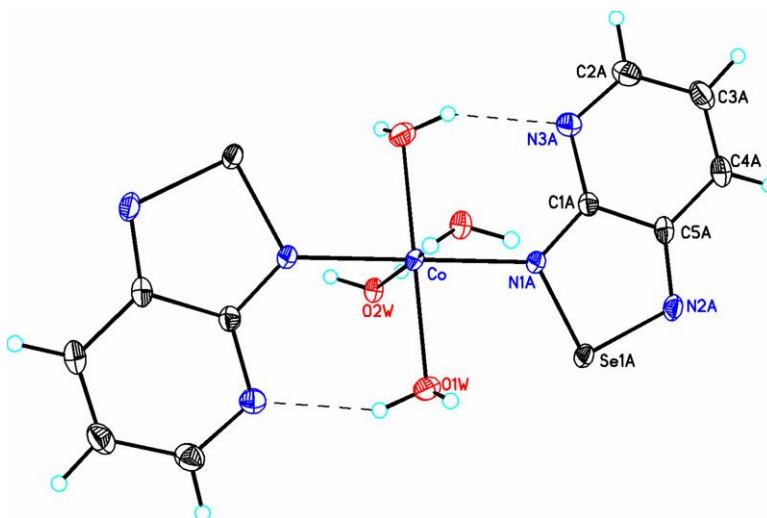


Figure S40. ORTEP diagram of the cationic part of **14**.

Table S3. Hydrogen bonds for **6**, **8** to **14** [Å and °].

D–H•••A	d(D–H)	d(H•••A)	d(D•••A)	<(DHA)	Symmetry
6					
O(1W)–H(1W1)•••F(33)	0.822(18)	2.40(2)	3.187(18)	159(4)	x+1/2,-y+3/2,-z+1
O(1W)–H(1W1)•••F(32)	0.822(18)	2.65(3)	3.242(18)	131(3)	x+1/2,-y+3/2,-z+1
O(1W)–H(1W2)•••F(14)	0.823(17)	2.20(4)	2.663(17)	116(4)	
O(1W)–H(1W2)•••Se(1E)	0.823(17)	2.54(4)	2.913(15)	109(4)	-x+3/2,y+1/2,z
8					
C(1A)–H(1AA)•••O(3)	0.95	2.53	3.451(12)	162.4	x+1/2,y+1/2,z
C(2A)–H(2AA)•••O(3)	0.95	2.62	3.504(12)	155.4	-x+1,-y+1,-z+1
C(3B)–H(3BA)•••O(1)	0.95	2.53	3.405(13)	153.1	-x+1/2,y-1/2,-z+3/2
C(1C)–H(1CA)•••O(1)	0.95	2.46	3.384(12)	164.7	
C(3C)–H(3CA)•••O(1)	0.95	2.52	3.149(12)	123.8	-x+1/2,y+1/2,-z+3/2
9					
C(2)–H(2A)•••O(1)	0.95	2.42	3.138(4)	132.2	-x+1,-y+1,-z+1
C(3)–H(3A)•••O(3)	0.95	2.45	3.146(4)	129.8	x+1/2,-y+1/2,z+1

C(3)–H(3A)···N(2)	0.95	2.55	3.449(4)	158.3	-x+3/2,y+1/2,-z+2
10					
C(3)–H(3A)···O(4)	0.95	2.46	3.297(7)	147.2	x,y,z+1
C(4)–H(4A)···O(2)	0.95	2.49	3.412(7)	164.0	
C(5)–H(5A)···F(3A)	0.95	2.54	3.134(7)	120.4	
C(5)–H(5A)···F(6B)	0.95	2.28	3.193(7)	161.5	
C(7)–H(7A)···F(2A)	0.95	2.39	3.290(8)	158.4	
11					
O(1W)–H(1W1)···N(1C)	0.808(17)	1.908(17)	2.710(3)	172(3)	-x+1,-y+1,-z+1
O(1W)–H(1W2)···O(21)	0.819(16)	2.023(18)	2.822(3)	165(3)	
O(2W)–H(2W1)···O(22)	0.826(17)	2.149(18)	2.966(4)	170(3)	
O(2W)–H(2W2)···O(24)	0.784(17)	2.06(2)	2.807(3)	158(4)	
O(3W)–H(3W1)···N(1D)	0.798(17)	1.959(17)	2.746(3)	169(3)	
O(3W)–H(3W2)···O(12)	0.828(16)	1.961(17)	2.781(3)	171(3)	
12					
O(1)–H(1OB)···N(2)	0.84(2)	2.28(4)	2.778(6)	118(4)	-x+1,-y,-z
O(1)–H(1OB)···O(8)	0.84(2)	2.33(3)	3.133(8)	158(5)	
O(1)–H(1OA)···O(2)	0.84(2)	2.44(4)	3.209(9)	153(5)	
O(1)–H(1OA)···N(11)	0.84(2)	2.22(4)	2.798(6)	126(4)	
C(5)–H(5)···N(5)	0.95	2.59	3.378(6)	141.0	
C(8)–H(8)···O(8)	0.95	2.58	3.149(9)	118.9	x+1,y,z
C(9)–H(9)···O(8)	0.95	2.49	3.118(9)	123.5	
C(10)–H(10)···O(1)	0.95	2.43	3.051(7)	123.1	
C(13)–H(13)···O(6)	0.95	2.49	3.363(11)	152.7	
C(15)–H(15)···O(1)	0.95	2.51	3.107(7)	121.1	
C(15)–H(15)···O(9)	0.95	2.57	3.294(10)	133.3	
C(20)–H(20)···N(8)	0.95	2.51	3.188(6)	128.5	
C(21)–H(21)···O(9)	1.00	2.26	3.177(10)	152.5	
13					
O(1WA)–H(1WB)···O(23S)	0.82	2.09	2.896(10)	166.1	-x+1,-y+2,-z+1
O(1WC)–H(1WE)···O(23T)	0.82	2.06	2.794(12)	148.7	
O(2WA)–H(2WB)···O(1W)	0.82	1.88	2.674(8)	163.1	
O(3WA)–H(3WA)···N(22A)	0.82	2.67	3.185(6)	122.5	
O(3WA)–H(3WB)···O(21T)	0.82	1.90	2.597(11)	142.4	
O(3WA)–H(3WB)···O(21S)	0.82	2.09	2.807(8)	146.1	

O(3WA)–H(3WB)···O(23T)	0.82	2.41	3.169(11)	155.2	
O(1WB)–H(1WC)···O(33S)	0.82	2.07	2.821(11)	152.2	
O(1WB)–H(1WC)···O(32T)	0.82	2.28	2.924(16)	136.2	
O(1WB)–H(1WC)···O(32S)	0.82	2.53	3.103(12)	128.4	
O(1WB)–H(1WC)···O(33T)	0.82	2.45	3.261(17)	168.2	
O(1WB)–H(1WD)···O(12S)	0.82	2.01	2.812(7)	167.2	
O(2WB)–H(2WC)···O(43S)	0.82	1.97	2.790(8)	176.1	
O(3WB)–H(3WC)···O(11S)	0.82	2.04	2.718(7)	140.0	-x,-y+1,-z+2
O(1W)–H(1W1)···O(42S)	0.82	1.94	2.639(12)	142.0	x+1,y,z
O(1W)–H(1W2)···O(31S)	0.82	2.42	3.065(12)	136.5	x+1,y,z
O(1W)–H(1W2)···O(33T)	0.82	2.36	2.877(18)	121.8	x+1,y,z
O(1W)–H(1W2)···O(31T)	0.82	1.90	2.605(14)	142.9	x+1,y,z
O(2W)–H(2W1)···O(22S)	0.82	2.10	2.825(19)	148.1	-x,-y+2,-z+1
O(2W)–H(2W2)···O(43S)	0.82	1.97	2.583(15)	131.4	
14					
O(1W)–H(1W1)···N(3A)	0.826(18)	2.02(3)	2.767(4)	151(3)	-x+1,-y+2,-z+1
O(1W)–H(1W2)···N(1C)	0.805(18)	2.55(3)	3.267(5)	150(4)	-x+1,-y+2,-z+1
O(1W)–H(1W2)···O(1A)	0.805(18)	2.60(2)	3.145(8)	126(2)	x-1,y+1,z
O(2W)–H(2W1)···N(3C)	0.799(17)	2.006(17)	2.799(4)	172(4)	
O(2W)–H(2W2)···N(3B)	0.817(17)	1.974(18)	2.790(4)	176(3)	
C(4A)–H(4AA)···O(4A)	0.93	2.62	3.118(7)	114.1	
C(2B)–H(2BA)···O(1A)	0.93	2.56	3.367(7)	145.1	-x+2,-y+1,-z+1
C(4B)–H(4BA)···O(4B)	0.93	2.23	3.148(7)	169.7	
C(4C)–H(4CA)···O(3A)	0.93	2.58	3.278(6)	132.4	x-1,y+1,z-1
C(2C)–H(2CA)···O(2W)	0.93	2.53	3.380(5)	152.6	-x,-y+2,-z+1