Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supplementary Information

Synthesis, Characterization and Solid State Conductivity of Nano- Size Ionic Schiff Base Polymers of Cu^{2+}, Zn^{2+} and VO^{2+} Containing Viologen Moiety

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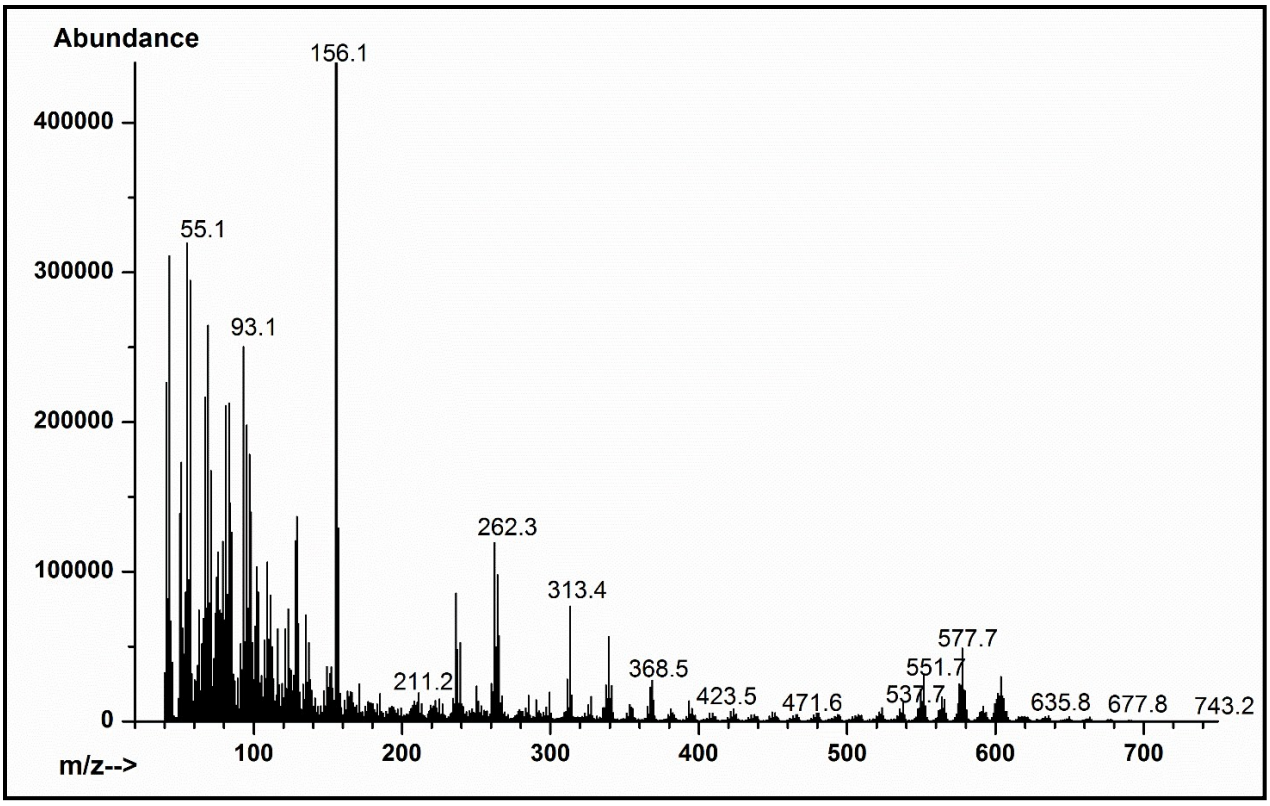


Figure **S1**. Mass spectrum of **IVSP**

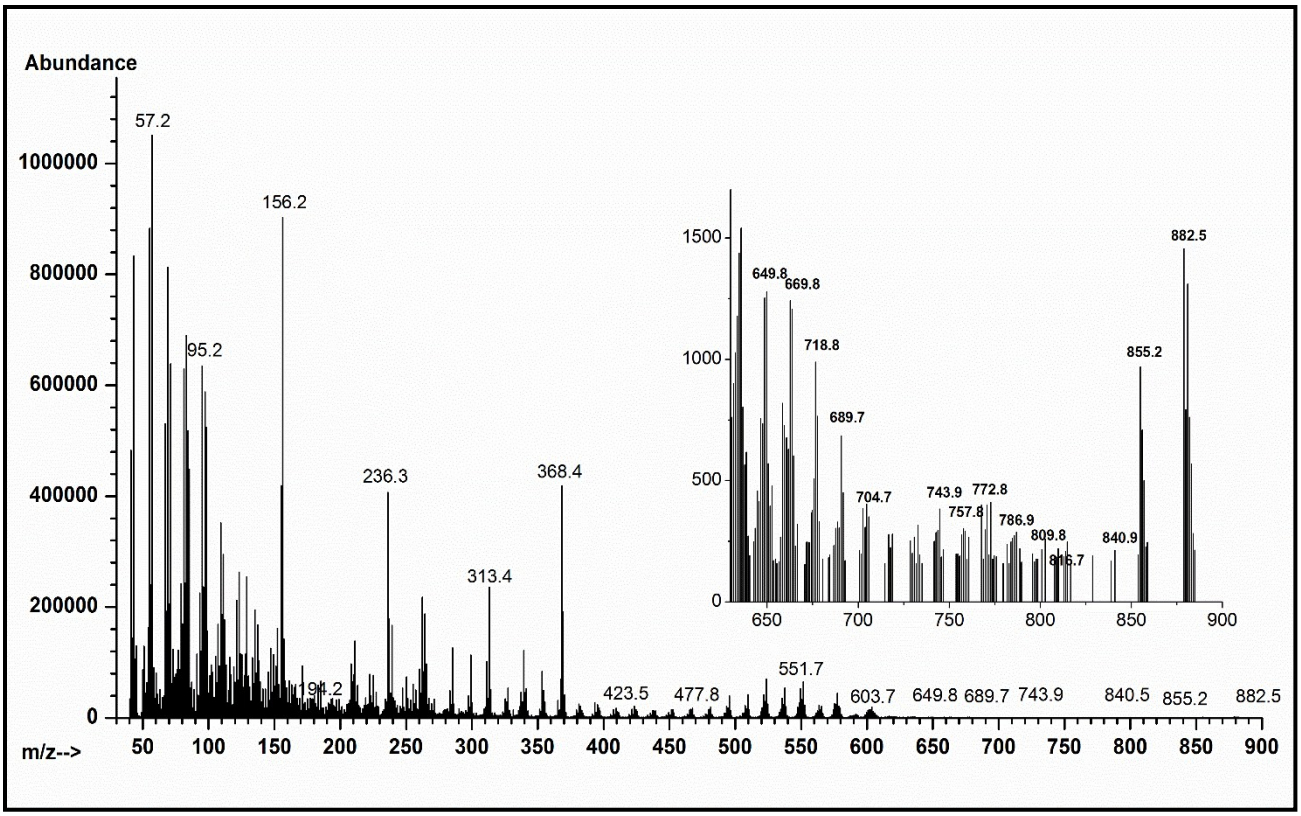


Figure S2. Mass spectrum of **IZSP**

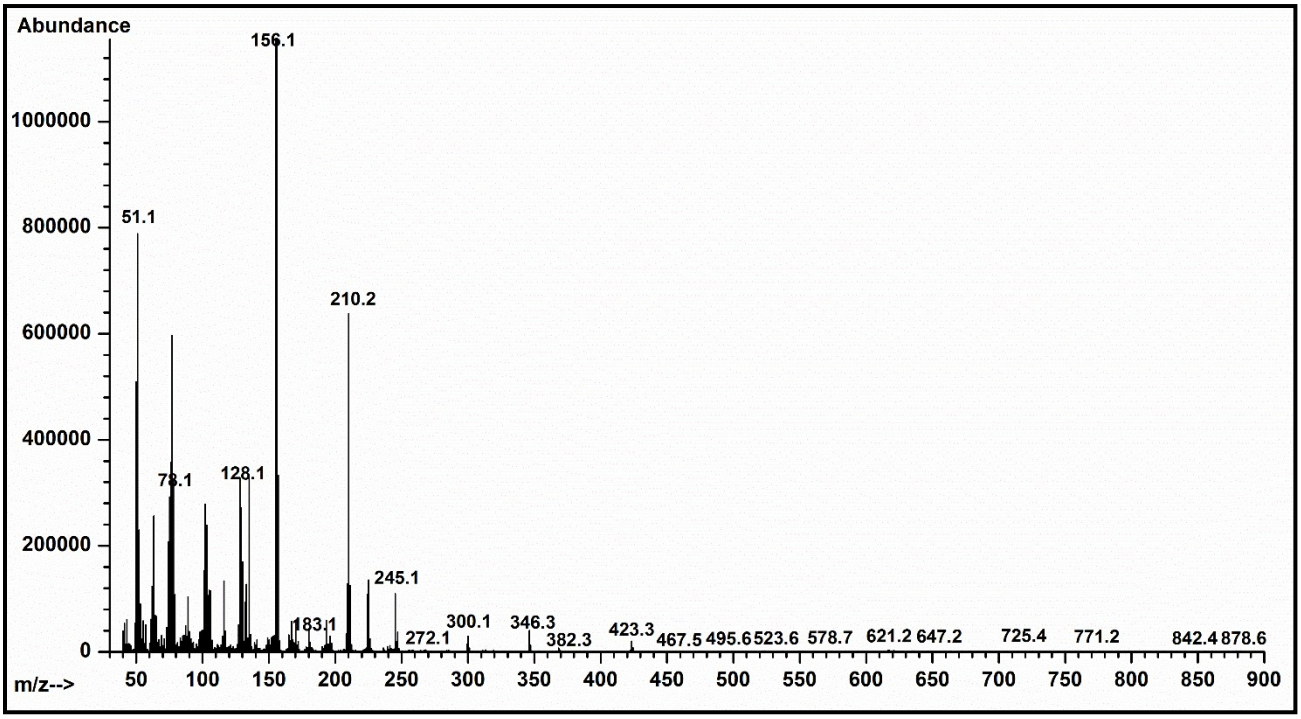


Figure S3. Mass spectrum of **ICSP**

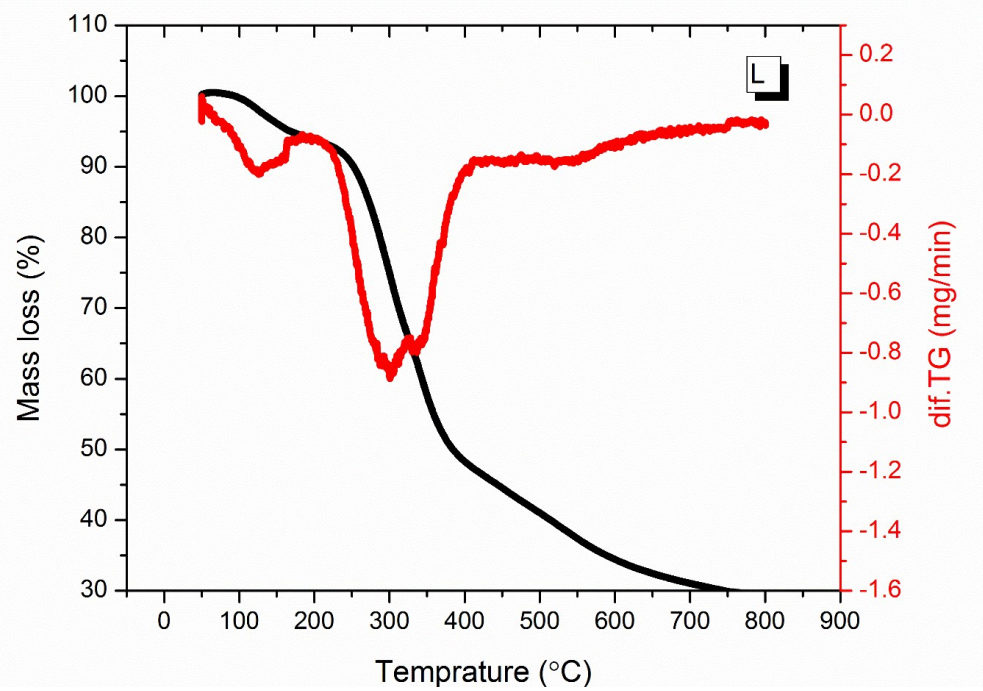


Figure S4. TGA and DTA curves of L.

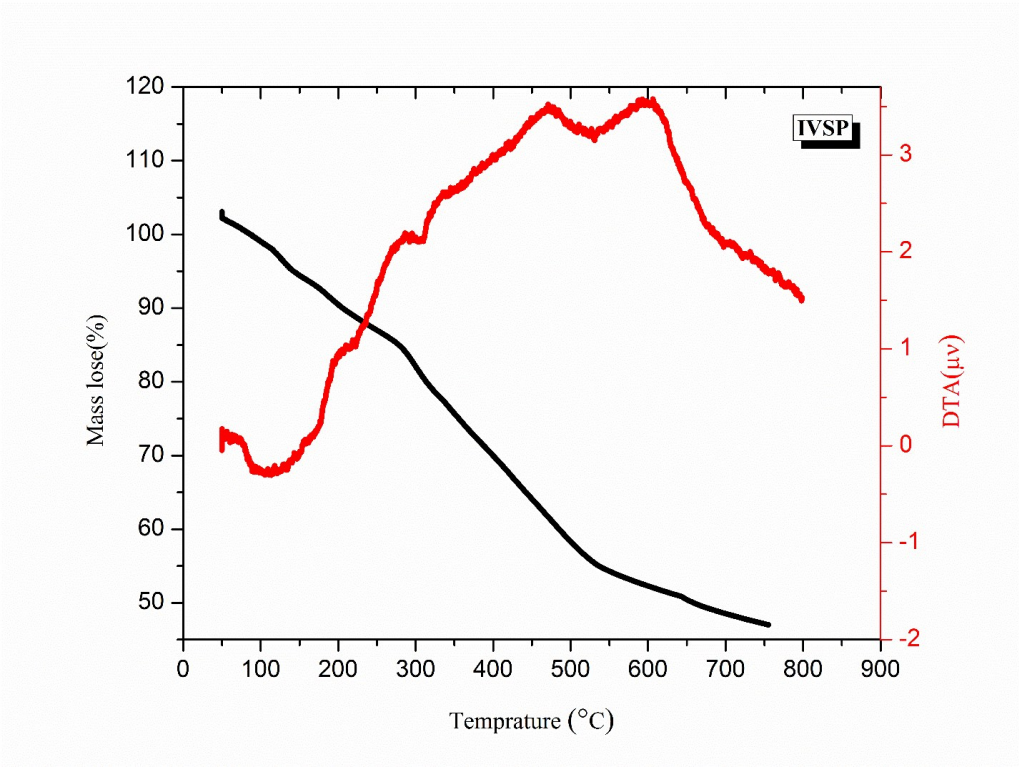


Figure S5. TGA and DTA curves of IVSP.

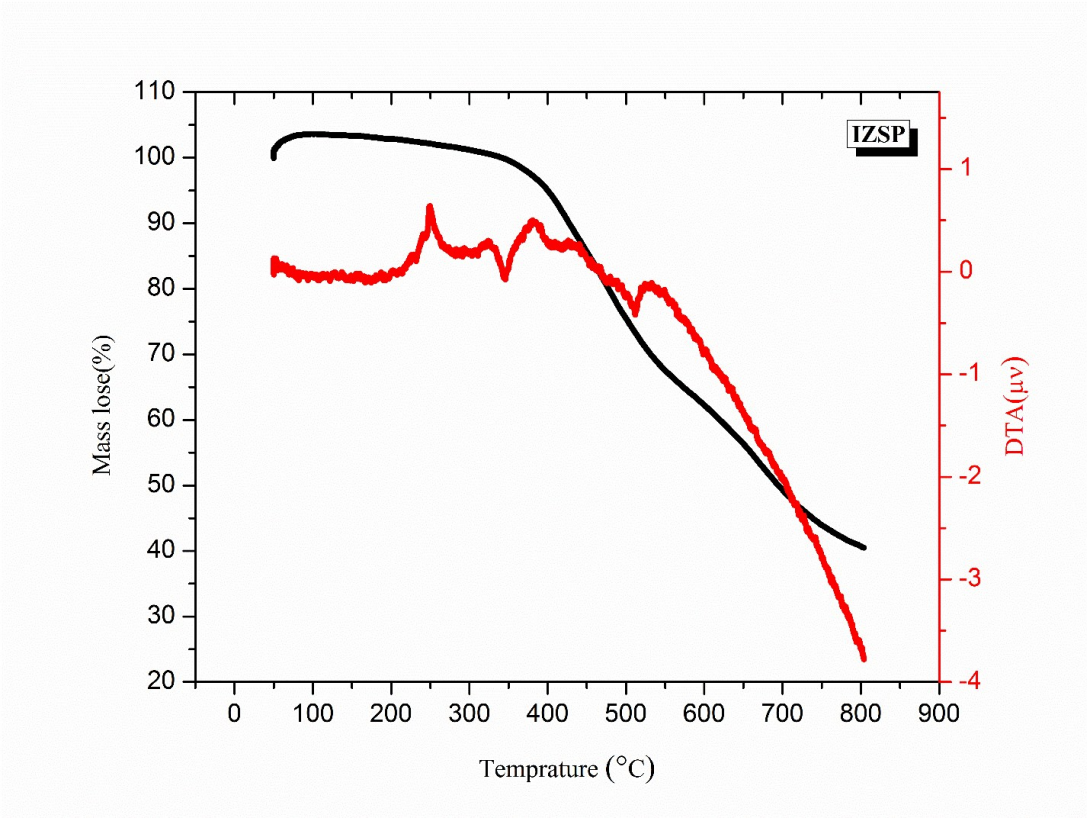


Figure S6. TGA and DTA curves of IZSP.

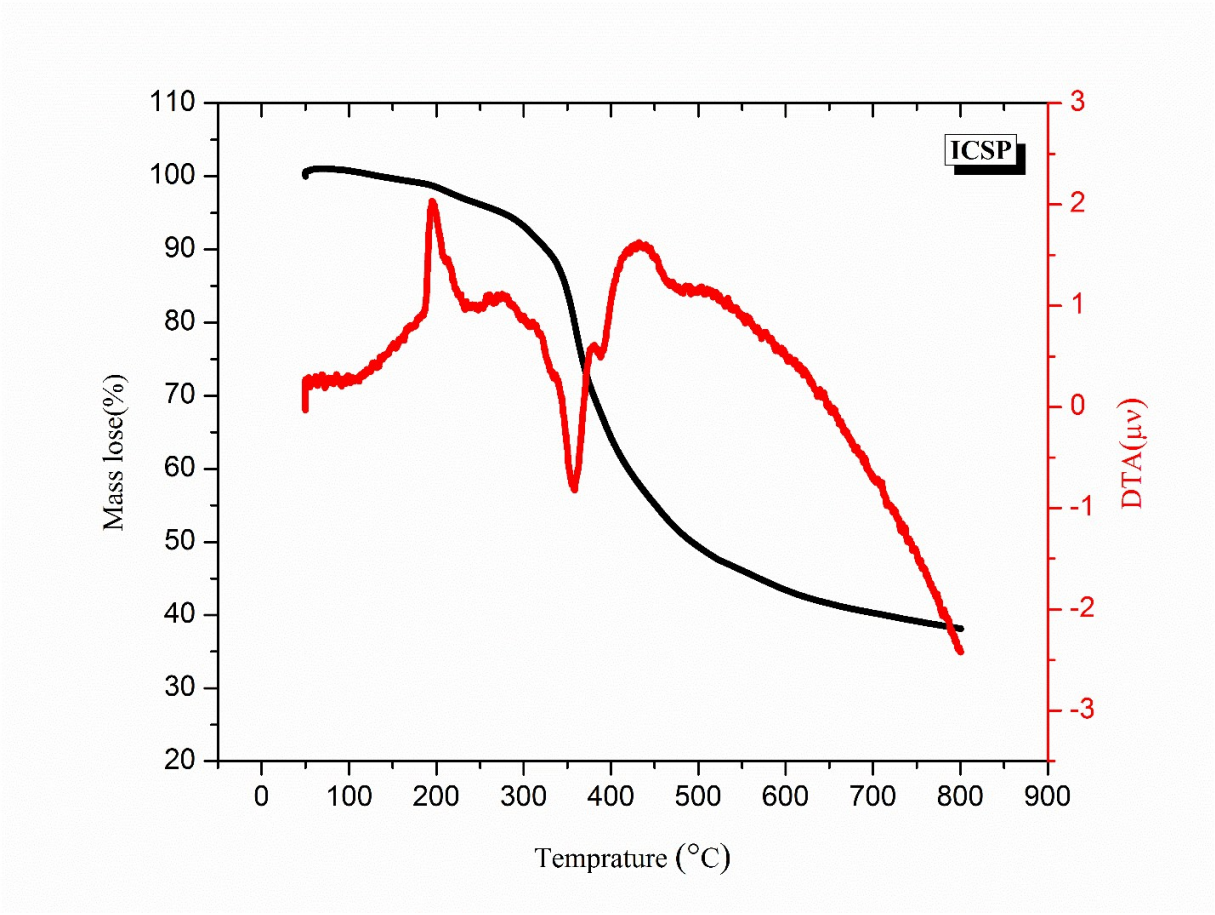
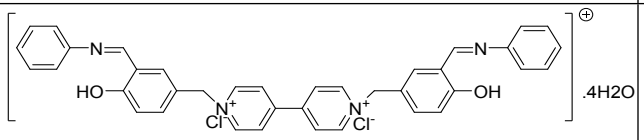
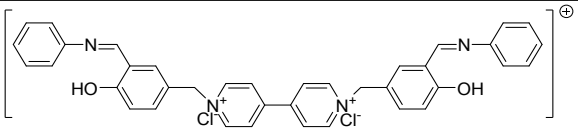
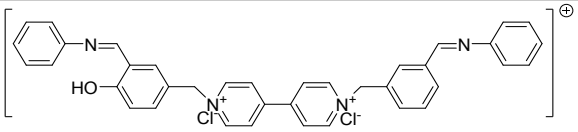
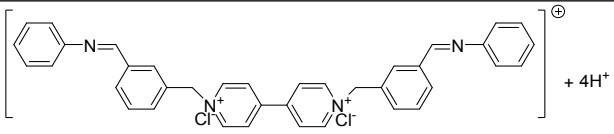
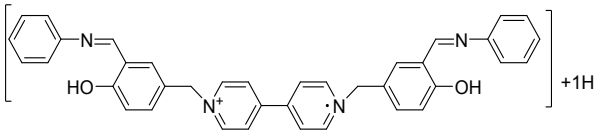
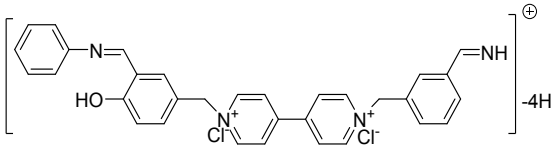
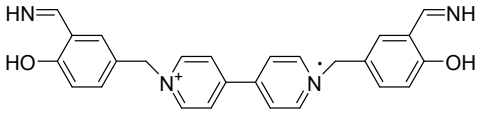
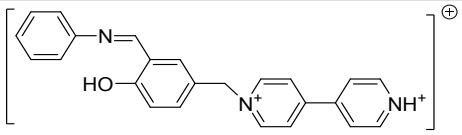
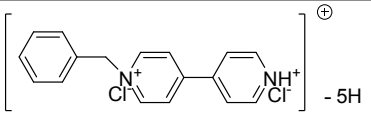
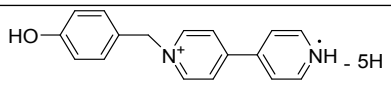


Figure S7. TGA and DTA curves of PSBL and ICSP.

Table S1. Some main signals of the mass spectrum of the **L**

Number	M	Z	M/Z	Structure	Chemical formula
1	719	+1	719		$C_{38}H_{32}N_4O_2Cl_2.$ $4H_2O$
2	647.7	+1	647.7		$C_{38}H_{32}N_4O_2Cl_2$
3	630.5	+1	630.5		$C_{38}H_{32}N_4OCl_2$
4	617.7	+1	617.7		$C_{38}H_{32}N_4Cl_2$
5	577.7	+1	577.7		$C_{38}H_{32}N_4O_2$
6	551.7	+1	551.7		$C_{32}H_{28}ON_4Cl_2$
7	423.5	+1	423.5		$C_{26}H_{24}O_2N_4$
8	368.4	+1	368.4		$C_{24}H_{20}ON_3$
9	313.4	+1	313.4		$C_{17}H_{15}N_2Cl_2$
10	262.3	+1	262.3		$C_{17}H_{15}N_2Cl_2$

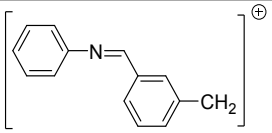
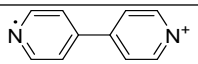
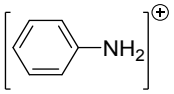
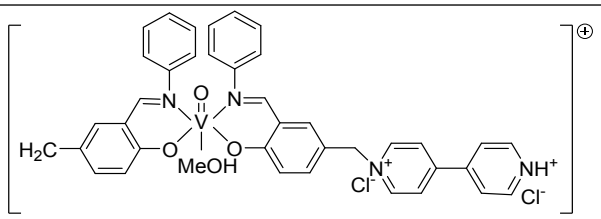
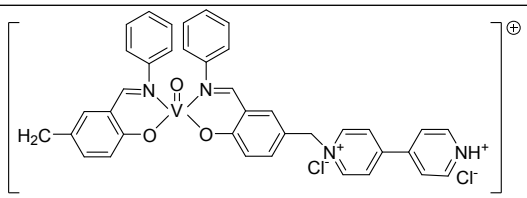
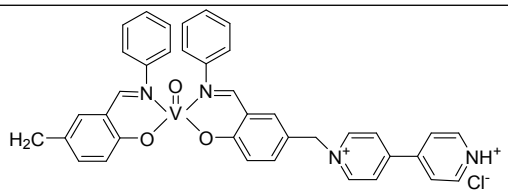
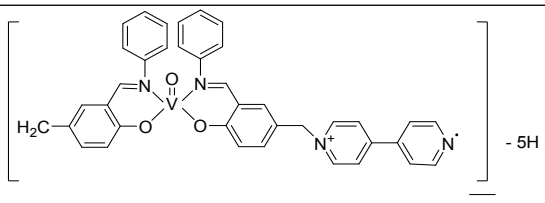
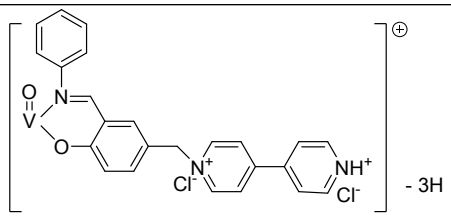
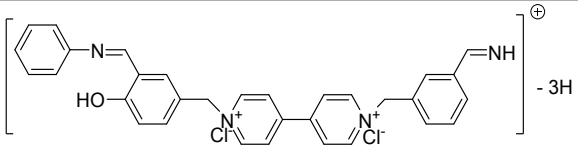
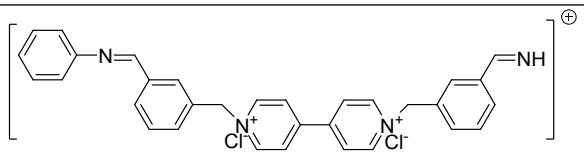
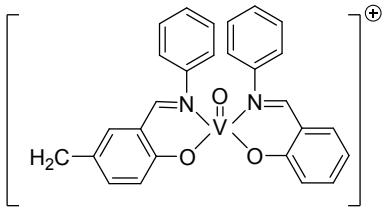
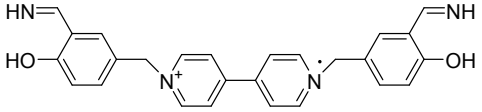
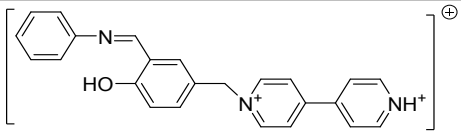
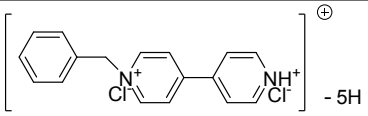
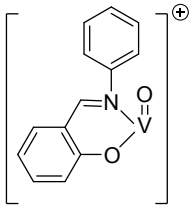
11	193.2	+1	193.2		$C_{14}H_{11}N$
12	156.2	+1	156.2		$C_{10}H_8N_2$
13	93.1	+1	93.1		C_6H_7N
14	51.1	+1	51.1	$[OCl]^+$	OCl

Table S2. Some main signals of the mass spectrum of the **IVSP**

Number	M	Z	M/Z	Structure	Chemical formula
1	743	+1	743		$C_{39}H_{34}N_4O_3Cl_2V$
2	712	+1	712		$C_{38}H_{30}N_4O_3Cl_2V$
3	677.8	+1	677.8		$C_{38}H_{30}N_4O_3ClV$
4	635.8	+1	635.8		$C_{38}H_{30}N_4O_3V$

5	577.7	+1	577.7		$C_{30}H_{21}N_3O_2Cl_2V$
6	551.7	+1	551.7		$C_{32}H_{27}ON_4Cl_2$
7	537.7	+1	537.7		$C_{32}H_{26}N_4Cl_2$
8	471.6	+1	471.6		$C_{27}H_{20}O_3N_2V$
9	423.5	+1	423.5		$C_{26}H_{24}O_2N_4$
10	368.5	+1	368.5		$C_{24}H_{20}ON_3$
11	313.4	+1	313.4		$C_{17}H_{15}N_2Cl_2$
12	262.3	+1	262.3		$C_{13}H_9NO_2V$

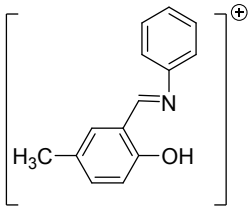
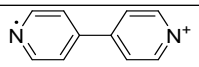
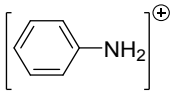
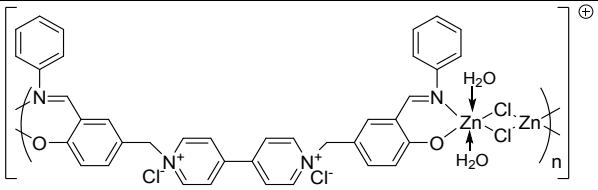
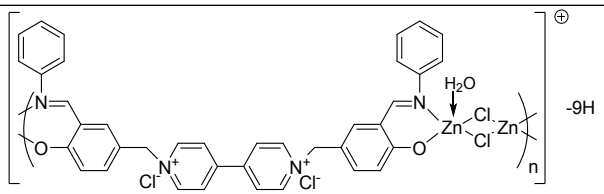
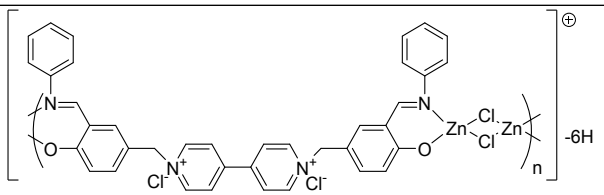
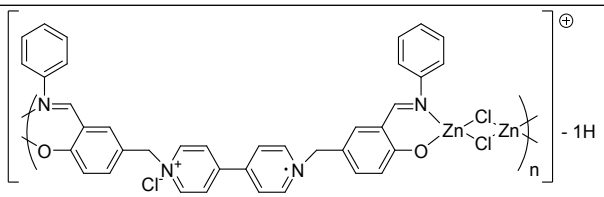
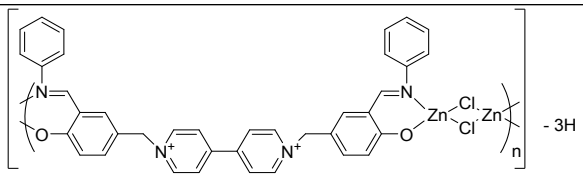
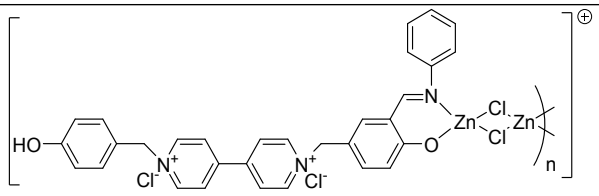
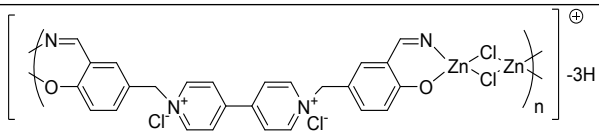
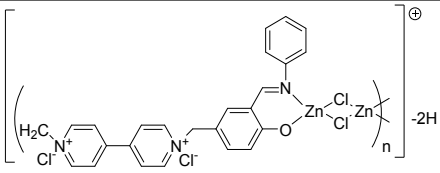
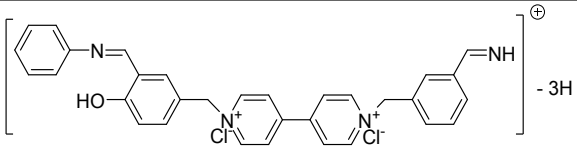
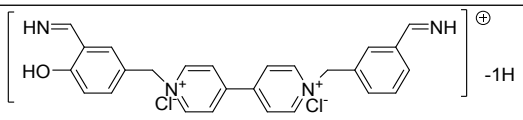
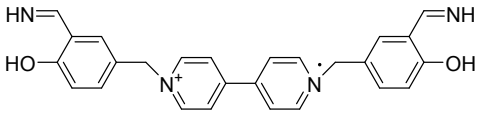
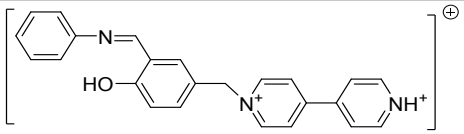
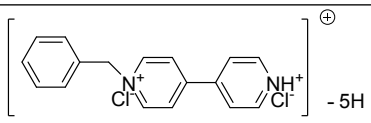
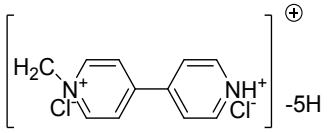
13	211.2	+1	211.2		$C_{14}H_{13}NO$
14	156.1	+1	156.1		$C_{10}H_8N$
15	93.1	+1	93.1		C_6H_7N
16	55.1	+1	55.1	$[OCl]^+$	OCl

Table S3. Some main signals of the mass spectrum of the **IZSP**

Number	M	Z	M/Z	Structure	Chemical formula
1	882.5	+1	882.5		$C_{38}H_{30}Cl_4N_4O_2Zn_2$. 2HO
2	864.2	+1	864.2		$C_{38}H_{30}Cl_4N_4O_2Zn_2$. H_2O -9H
3	846.5	+1	846.5		$C_{38}H_{30}Cl_4N_4O_2Zn_2$
4	809.8	+1	809.8		$C_{38}H_{30}Cl_3N_4O_2Zn_2$

5	772	+1	772		$C_{38}H_{30}Cl_2N_4O_2Zn_2$
6	743.9	+1	743.9		$C_{31}H_{25}Cl_4N_3O_2Zn_2$
7	689.7	+1	689.7		$C_{26}H_{20}Cl_4N_4O_2Zn_2$
8	649.8	+1	649.8		$C_{25}H_{21}Cl_4N_3OZn_2$
9	551.7	+1	551.7		$C_{32}H_{27}ON_4Cl_2$
10	477.8	+1	477.8		$C_{26}H_{24}ON_4Cl_2$
11	423.5	+1	423.5		$C_{26}H_{24}O_2N_4$
12	368.4	+1	368.4		$C_{24}H_{20}ON_3$
13	313.4	+1	313.4		$C_{17}H_{15}N_2Cl_2$
14	236.3	+1	236.3		$C_{11}H_{10}N_2Cl_2$

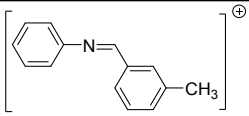
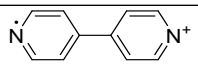
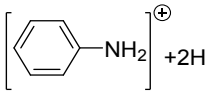
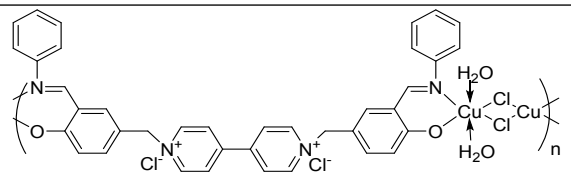
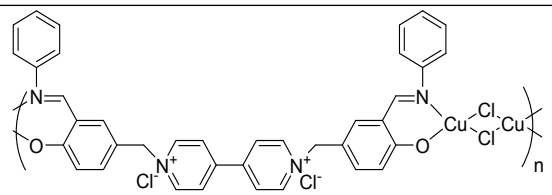
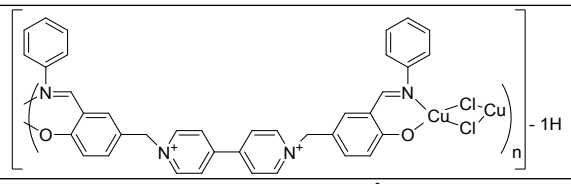
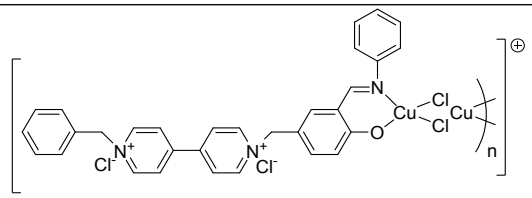
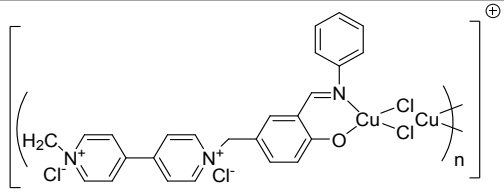
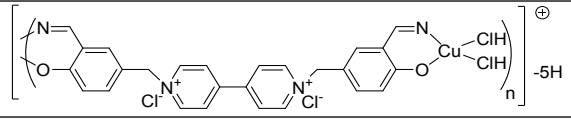
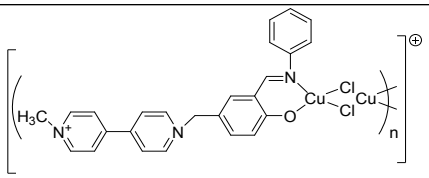
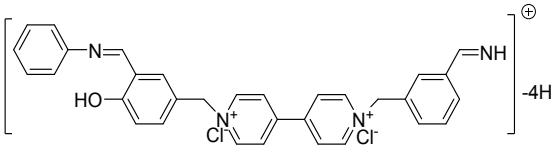
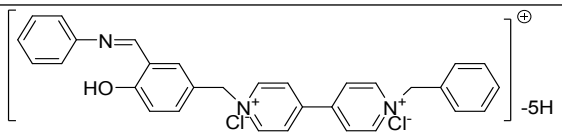
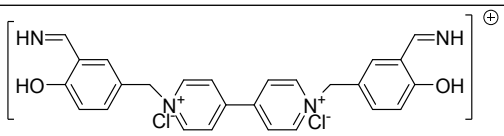
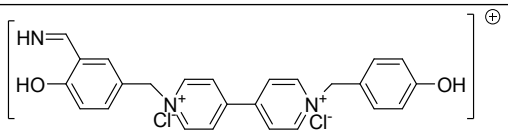
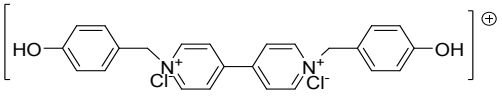
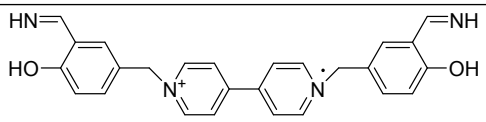
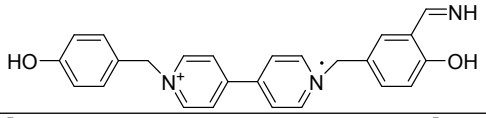
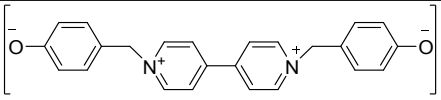
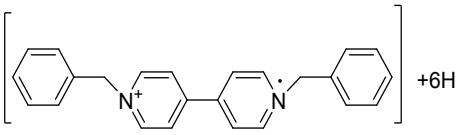
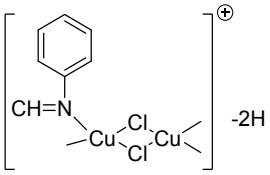
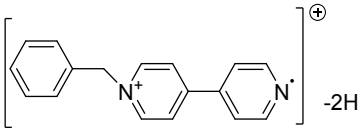
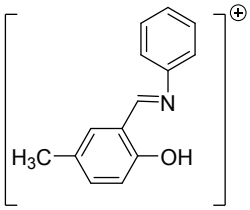
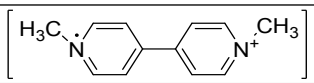
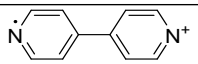
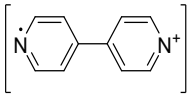
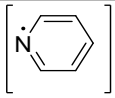
15	194.2	+1	194.2		$C_{14}H_{11}N$
16	156	+1	156		$C_{10}H_8N$
17	95	+1	95		C_6H_9N

Table S4. Some main signals of the mass spectrum of the **ICSP**

Number	M	Z	M/Z	Structure	Chemical formula
1	878.6	+1	878.6		$C_{38}H_{30}Cl_4N_4O_2Cu_2$. $2H_2O$
2	842.4	+1	842.4		$C_{38}H_{30}Cl_4N_4O_2Cu_2$
3	771.2	+1	771.2		$C_{38}H_{30}Cl_2N_4O_2Cu_2$
4	725.4	+1	725.4		$C_{31}H_{26}Cl_4N_3OCu_2$
5	647.6	+1	647.6		$C_{25}H_{21}Cl_4N_3OCu_2$
6	621.4	+1	621.4		$C_{26}H_{22}Cl_4N_4O_2Cu$

7	577.8	+1	577.8		$C_{25}H_{22}Cl_2N_3OCu_2$
8	551.6	+1	551.6		$C_{32}H_{28}ON_4Cl_2$
9	523.6	+1	523.6		$C_{31}H_{27}ON_3Cl_2$
10	495.6	+1	495.6		$C_{26}H_{24}O_2N_4Cl_2$
11	467.5	+1	467.5		$C_{25}H_{22}O_2N_3Cl_2$
12	440.4	+1	440.4		$C_{24}H_{22}O_2N_2Cl_2$
13	423.3	+1	423.3		$C_{26}H_{24}O_2N_4$
14	397.4	+1	397.4		$C_{25}H_{23}O_2N_3$
15	368.4	+1	368.4		$C_{24}H_{20}N_2O_2$
16	346.3	+1	346.3		$C_{24}H_{24}N_2$
17	300.1	+1	300.1		$C_7H_6NCu_2Cl_2$

18	245.1	+1	245.1	 -2H	$C_{17}H_{15}N_2$
19	210.2	+1	210.2		$C_{14}H_{12}NO$
20	183.1	+1	183.1	 -3H	$C_{12}H_{14}N_2$
21	156.1	+1	156.1		$C_{10}H_8N_2$
22	128.1	+1	128.1	 - NH=CH	C_9H_7N
23	78.1	+1	78.1		C_5H_5N
24	51.1	+1	51.1	$[OCl]^+$	OCl