Electronic Supplementary Information

Cationic and Anionic 1-D Chains Based on $NH^{+}\cdots N$ Charge-Assisted Hydrogen Bond in Bipyridyls Derivatives and Polyiodides

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Figure S1. View of the packing diagram of $(Q_2S_2\cdot I_2)_n$ along [010]. pg. …….. S2

Figure S2. View of the asymmetric unit of compound (**HL2**)IBr_2. S3

Table S1. Selected bond distances (Å) for compounds **L1**$\cdot 2I_2$, (**HL1**)I_3, (**HL2**)I_3, (**HL1**)IBr_2, (**HL2**)IBr_2, and (**HL1**)I_5. S4

Table S2. Selected bond angles (°) for compounds **L1**$\cdot 2I_2$, (**HL1**)I_3, (**HL2**)I_3, (**HL1**)IBr_2, (**HL2**)IBr_2, and (**HL1**)I_5. S5

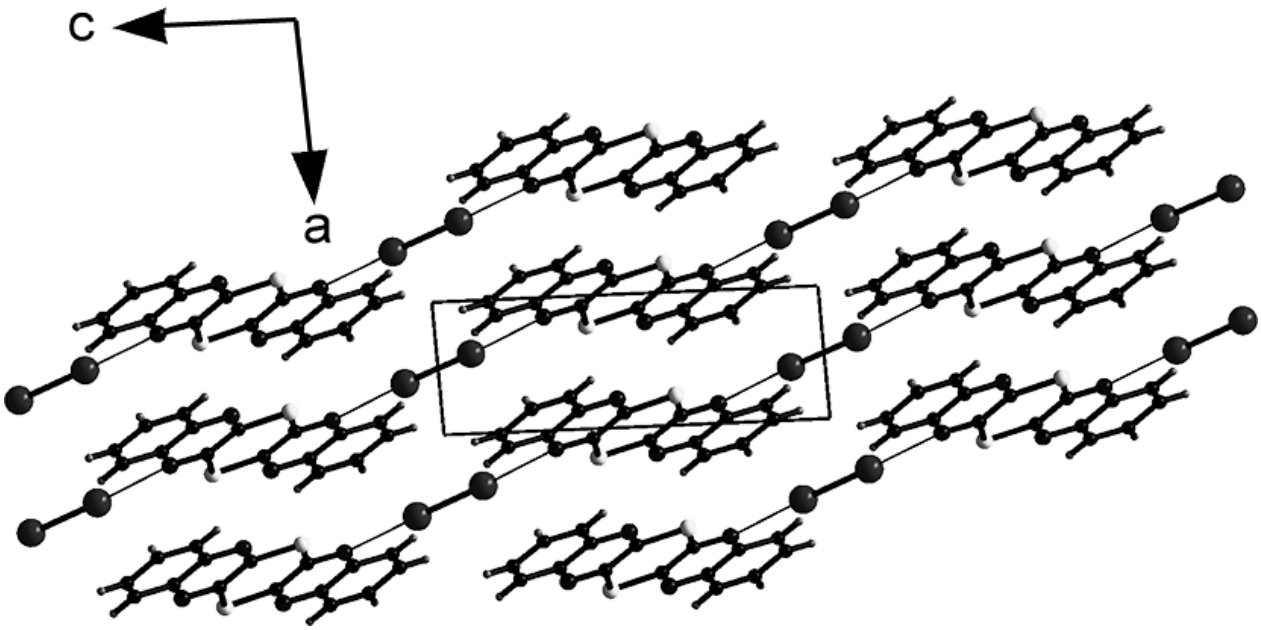

Figure S1 View of the packing diagram of $(Q_2S_2 \cdot I_2)_n$ along [010]. [Q_2S_2 = *bis*(quinoxaline)-2,2′,3,3′-disulfide)]. F. Isaia et al., *Eur. J. Inorg. Chem*., 2009 2667–2672.

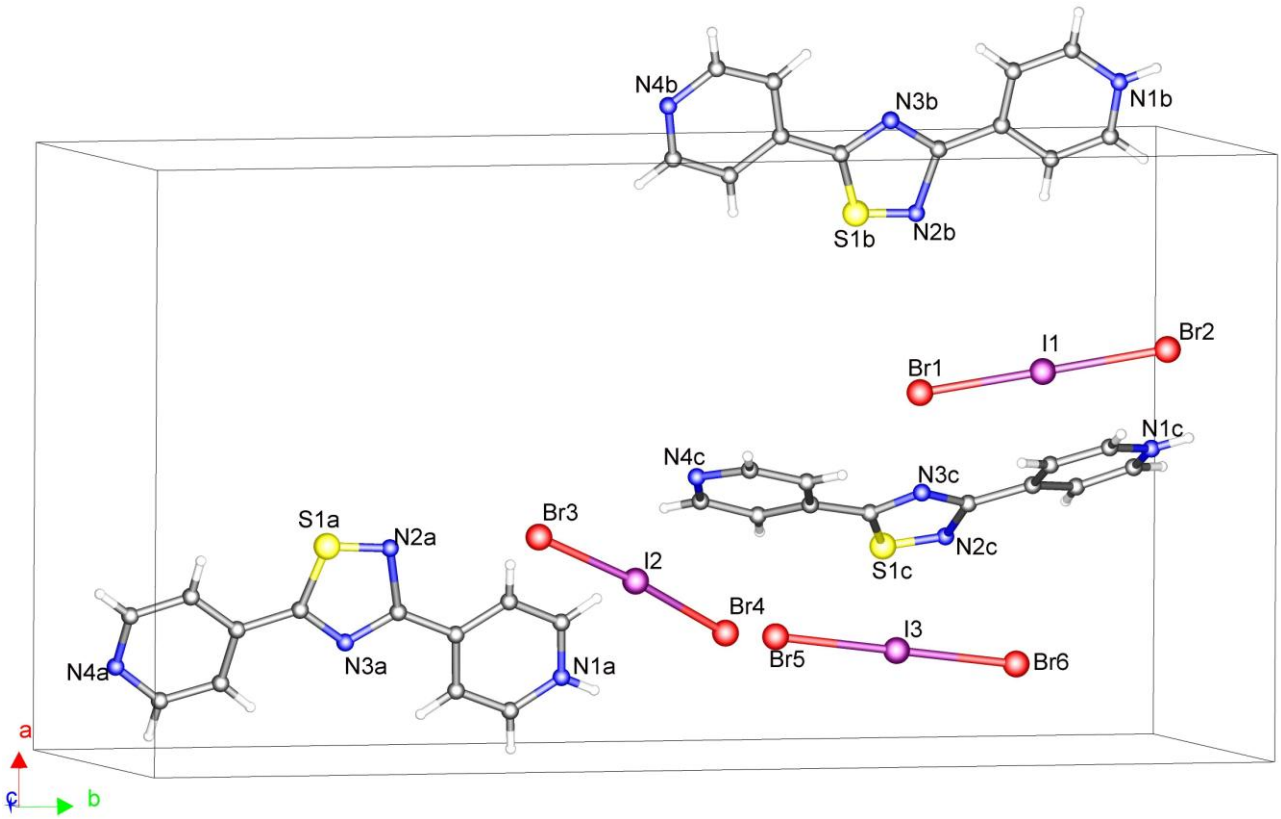

Figure S2 View of the asymmetric unit of compound (**HL2**)IBr_2.

Table S1 Selected bond distances (Å) for compounds **L1**-$2I_2$, **(HL1)**I_3, **(HL2)**I_3, **(HL1)**IBr_2, **(HL2)**IBr_2, and **(HL1)**I_5.

	L1-$2I_2$	**(HL1)**I_3	**(HL2)**I_3	**(HL1)**IBr_2	**(HL2)**IBr_2	**(HL1)**I_5
N1─C1/C3[b]	1.336(7)	1.320(7)	1.307(7)[a]	1.335(7)	1.355(13)[a]	1.308(6)
N1─C2	1.328(7)	1.331(8)	1.331(7)[a]	1.334(7)	1.332(13)[a]	1.334(6)
N2/S'─C6	1.578(6)	1.387(7)	1.666(5)[a]	1.526(6)	1.656(11)[a]	1.501(6)
N3─C6	1.345(7)	1.363(7)	1.318(6)[a]	1.344(7)	1.350(12)[a]	1.340(6)
N3─C7		1.314(7)	1.354(6)[a]	1.343(7)	1.341(13)[a]	1.315(6)
N4─C11		1.344(8)	1.346(6)[a]	1.342(8)	1.352(14)[a]	1.330(7)
N4─C12/C10[b]		1.321(7)	1.317(7)[a]	1.338(7)	1.355(14)[a]	1.305(6)
N1─H		0.86		0.86	0.86	0.86
N1─I1	2.505(5)					
S─N2	1.505(5)	1.573(5)	1.520(3)[a]	1.520(4)	1.379(7)[a]	1.482(4)
S─C7		1.713(5)	1.487(6)[a]	1.668(6)	1.637(11)[a]	1.662(5)
I1─I2	2.761(1)	2.931(1)	2.919(2)			2.864(1)
I2─I3			2.891(2)			2.968(1)
I3─I4		2.932(1)				3.232(1)
I4─I5			2.872(2)			2.761(1)
I5─I6			2.969(2)			
I1─Br1				2.733(1)	2.717(1)	
I1─Br2				2.695(1)	2.761(1)	
I2─Br3					2.713(1)	
I2─Br4					2.738(1)	
I3─Br5					2.805(1)	
I3─Br6					2.747(1)	

[a] Average of the corresponding distances in the different independent molecules; [b] Numbering scheme relative to **L2**

Table S2 Selected bond angles (°) for compounds **L1**-$2I_2$, **(HL1)**I_3, **(HL2)**I_3, **(HL1)**IBr_2, **(HL2)**IBr_2, and **(HL1)**I_5.

	L1-$2I_2$	**(HL1)**I_3	**(HL2)**I_3[a]	**(HL1)**IBr_2	**(HL2)**IBr_2[a]	**(HL1)I_5**
N1─C2─C3/N1─C2─C1[b]	122.2(6)	121.7(6)	121.9(5)[a]	119.2(6)	122.1(10)[a]	118.9(6)
N1─C1─C5/N1─C3─C4[b]	122.3(6)	123.4(6)	124.15(4)[a]	120.8(5)	121.0(9)[a]	121.9(5)
N2─C6─C5	126.2(4)	123.3(5)	125.9(4)[a]	123.7(5)	125.5(8)[a]	124.4(5)
N2─C6─N3	114.4(4)	116.7(5)	113.0(3)[a]	115.0(5)	112.2(7)[a]	114.6(5)
N3─C6─C5	119.4(5)	120.0(5)	121.0(4)[a]	121.3(5)	122.4(8)[a]	121.0(4)
N3─C7─C8	-	123.0(5)	117.0(4)[a]	125.6(4)	121.9(9)[a]	123.3(5)
N4─C11─C10/N4─C11─C12[b]	-	121.8(6)	120.8(4)[a]	122.8(6)	122.0(9)[a]	122.4(6)
N4─C12─C8/N4─C10─C9[b]	-	121.7(5)	123.7(5)[a]	122.9(5)	120.3(9)[a]	123.8(5)
N2─S─C7	-	93.7(3)	106.0(2)[a]	99.6(3)	105.3(5)[a]	98.6(3)
C1─N1─C2/C3─N1─C2[b]	118.9(5)	119.3(5)	119.1(4)[a]	122.4(5)	119.2(8)[a]	121.8(5)
C6─N3─C7	107.1(6)	108.4(5)	108.0(4)[a]	109.4(5)	108.3(8)[a]	108.5(5)
C11─N4─C12/C11─N4─C10[b]	-	120.1(5)	119.7(4)[a]	118.4(5)	119.7(8)[a]	118.6(5)
S─C7─C8	-	124.7(4)	122.9(4)[a]	123.7(5)	126.6(8)[a]	124.5(4)
S─C7─N3	-	112.2(4)	115.1(4)[a]	115.0(5)	111.5(8)[a]	112.2(5)
S─N2─C6	102.1(3)	108.9(3)	97.4(2)[a]	104.5(3)	102.8(5)[a]	106.1(3)
N1─I1─I2	179.65(12)	-	-	-	-	-
I2─I1─I2_a		180.00				
I4─I3─I4_b		180.00				
I1─I2─I3			176.57(5)[a]			174.38(2)
I2─I3─I4						94.4
Br1─I─Br2				176.91(3)	179.04(5)	
Br3─I2─Br4					174.55(5)	
Br5─I3─Br6					178.49(5)	

[a] Average of the crystallographic units; [b] Numbering scheme relative to **L2**