A family of Uranyl-aromatic dicarboxylate (pht-, ipa-, tpa-) framework hybrid materials: photoluminescent, surface photovoltage and dye adsorption

Xue Gao,[a] Che Wang,[*a] Zhong-Feng Shi,[c] Jian Song,[a] Feng-Ying Bai,[b] Ji-Xiao Wang[a] and Yong-Heng Xing[*a]

[a]*College of Chemistry and Chemical Engineering, Liaoning Normal University, Dalian City, 116029, China*

[b]*School of Life Science, Liaoning Normal University, Dalian City, 116029, China*

[c]*College of Chemistry and Chemical Engineering, Qinzhou University, Qinzhou 535099, PR China*

* Corresponding author: Associate Professor of Chemistry Che Wang
E-mail address: wangche126@126.com;

* Corresponding author: Professor of Chemistry Yong-Heng Xing
E-mail address: xingyongheng2000@163.com;

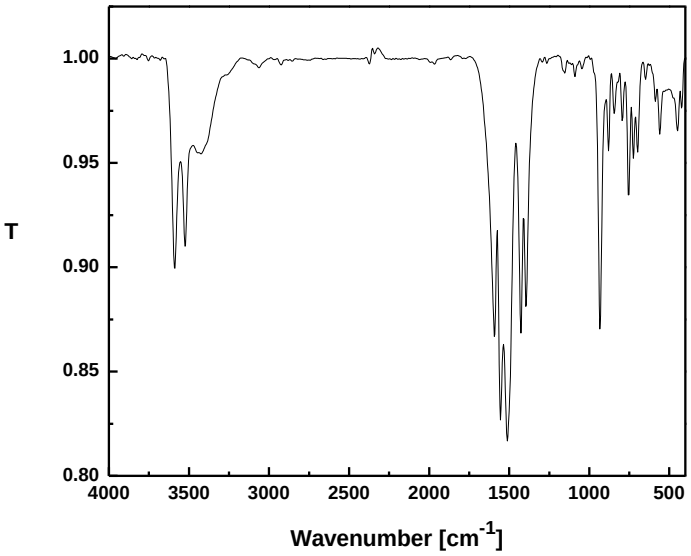

Fig. S1 The Solid-state IR spectra of complex **1** at a room temperature.

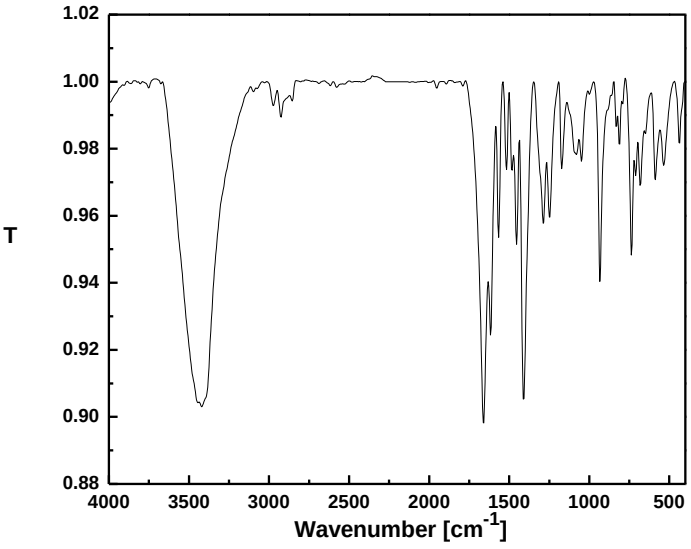

Fig. S2 The Solid-state IR spectra of complex **2** at a room temperature.

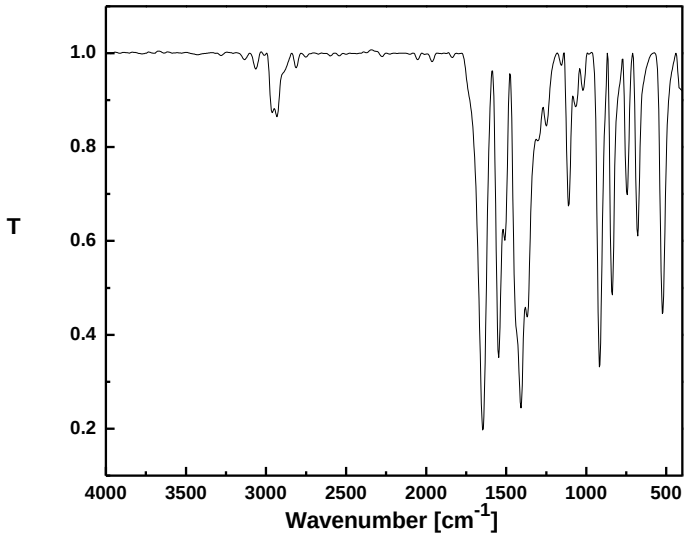

Fig. S3 The Solid-state IR spectra of complex **3** at a room temperature.

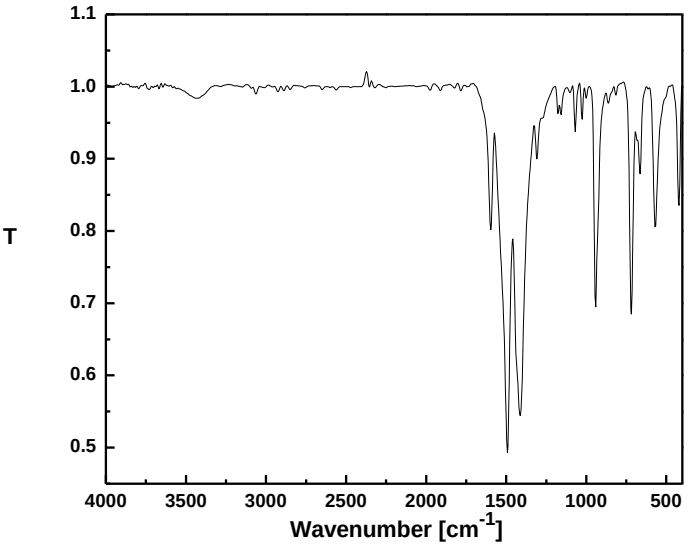

Fig. S4 The Solid-state IR spectra of complex **4** at a room temperature.

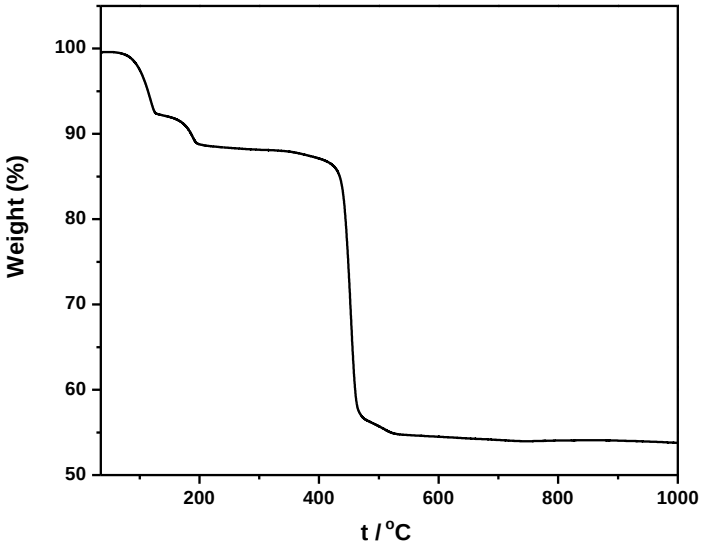

Fig. S5 The TG curve for complex **1**.

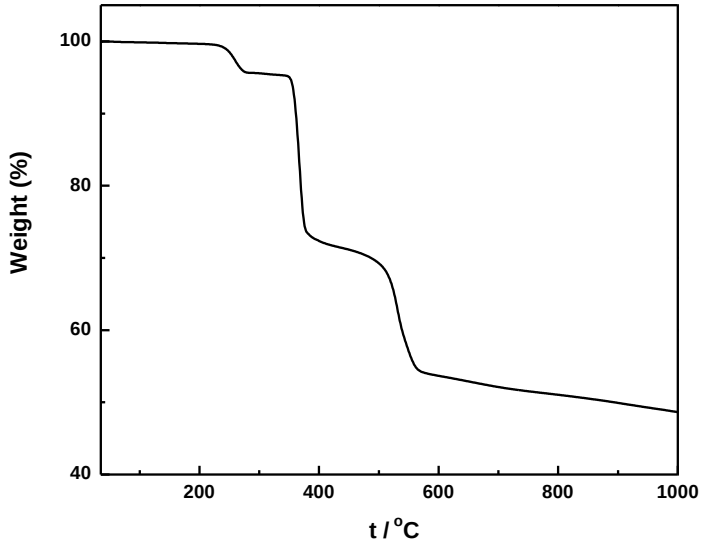

Fig. S6 The TG curve for complex **2**.

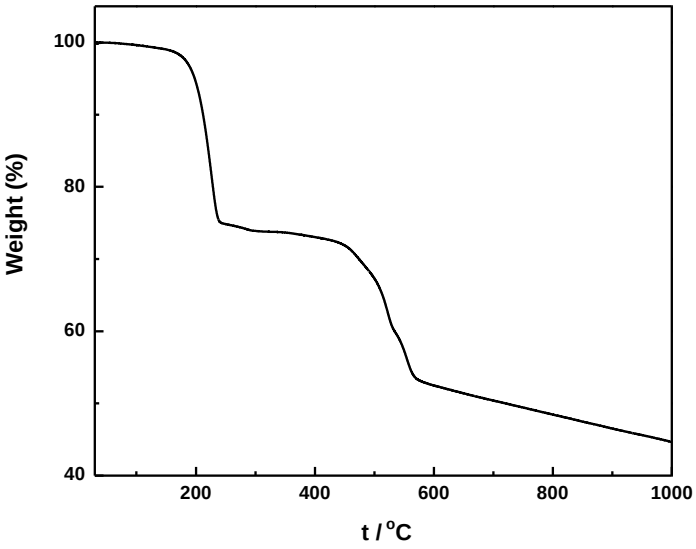

Fig. S7 The TG curve for complex **3**.

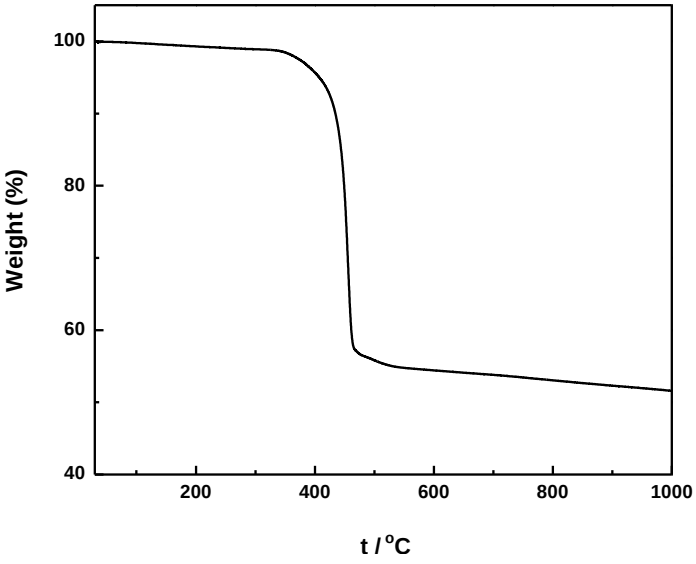

Fig. S8 The TG curve for complex **4**.

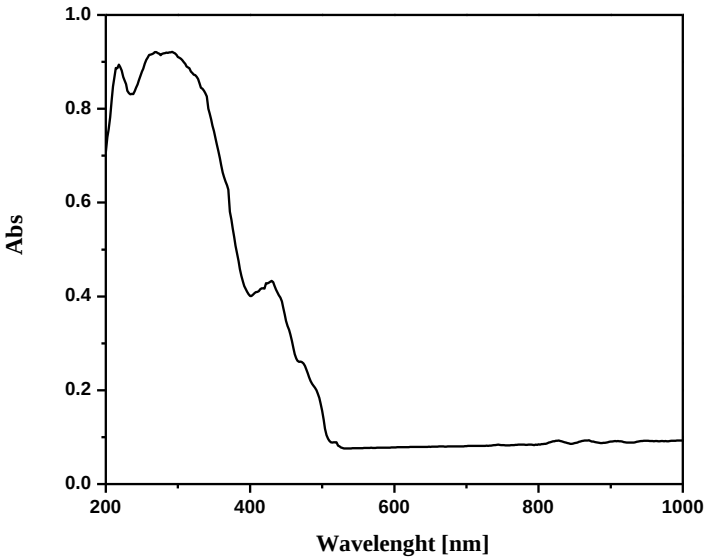

Fig. S9 The UV-Vis spectra for complex **1**.

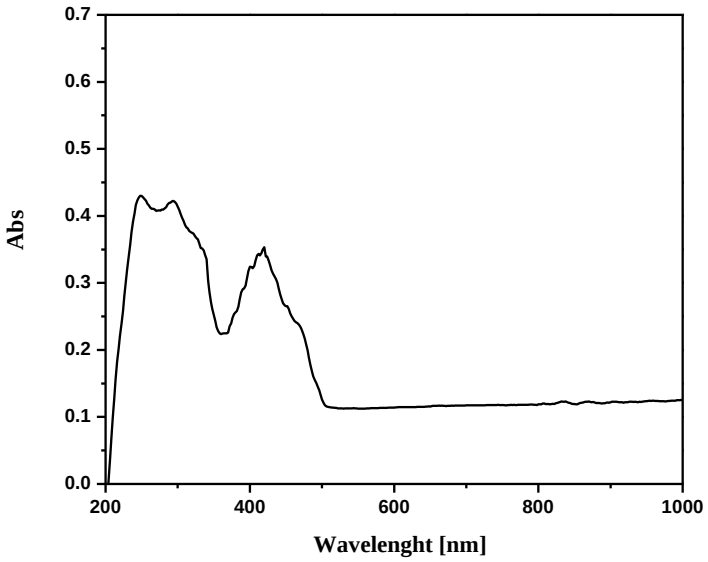

Fig. S10 The UV-Vis spectra for complex **2**.

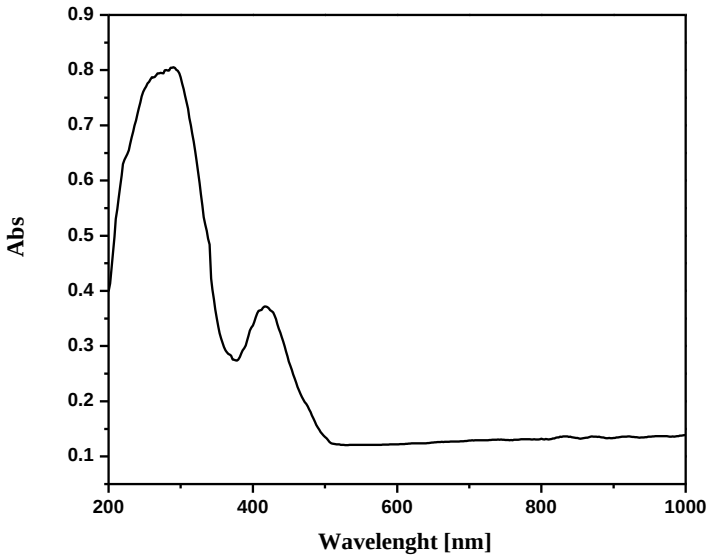

Fig. S11 The UV-Vis spectra for complex **3**.

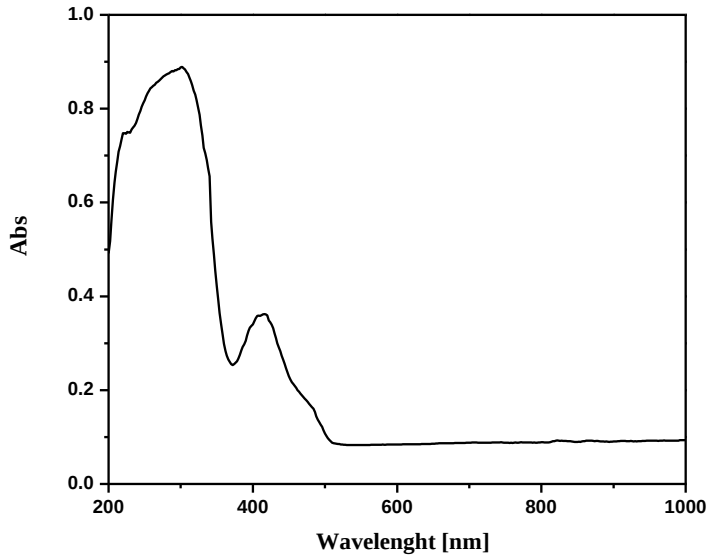

Fig. S12 The UV-Vis spectra for complex **4**.

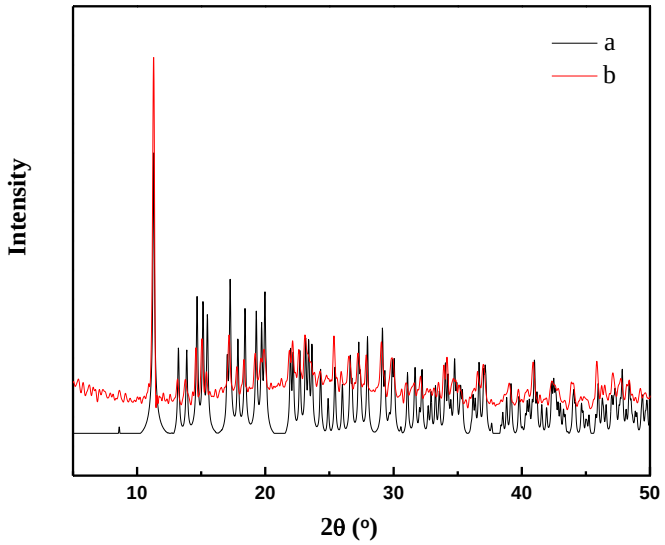

Fig. S13 PXRD powder patterns: (a) the simulated PXRD pattern calculated from single-crystal structure of coordination polymer **1**, (b) experimental PXRD for coordination polymer **1**.

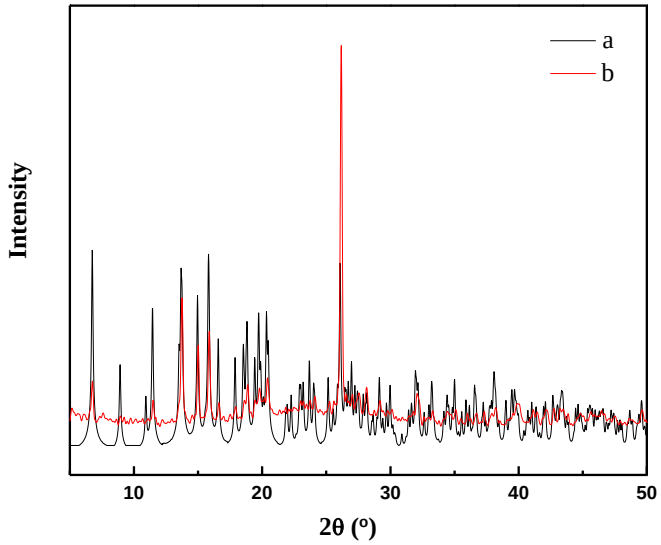

Fig. S14 PXRD powder patterns: (a) the simulated PXRD pattern calculated from single-crystal structure of coordination polymer **2**, (b) experimental PXRD for coordination polymer **2**.

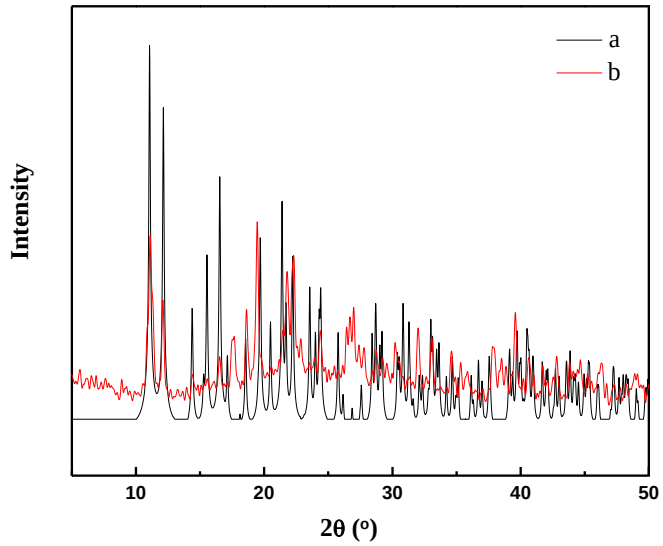

Fig. S15 PXRD powder patterns: (a) the simulated PXRD pattern calculated from single-crystal structure of coordination polymer **3**, (b) experimental PXRD for coordination polymer **3**.

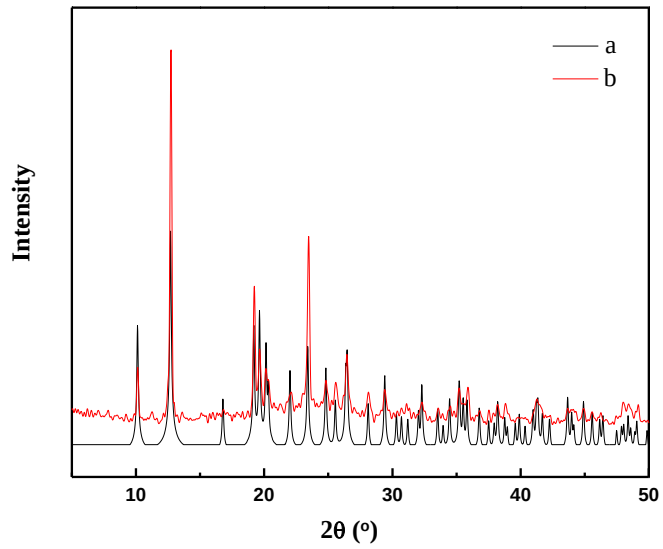

Fig. S16 PXRD powder patterns: (a) the simulated PXRD pattern calculated from single-crystal structure of coordination polymer **4**, (b) experimental PXRD for coordination polymer **4**.

Table S1 Hydrogen bond lengths (Å) and angles (°) for complexes **1**-**2***

D–H···A	d(D–H)/Å	d(H···A)/Å	d(D···A)/Å	∠D–H···A/°
Complex **1**				
O(1W)-H(1WB)···O(1)$^{\#4}$	0.85	2.07	2.866(8)	154.6
O(7)-H(7A)···O(1W)$^{\#5}$	0.85	1.98	2.687(7)	140.7
Complex **2**				
O(7)-H(7C)···O(11)$^{\#2}$	0.85	2.25	2.818(5)	124.4
O(8)-H(8)···O(3)$^{\#3}$	0.82	1.86	2.673(4)	168.3
O(10)-H(10)···O(11)$^{\#4}$	0.82	1.85	2.671(4)	175.1
C(3)-H(3)···O(4)$^{\#1}$	0.93	2.45	3.369(4)	168.8
C(13)-H(13)···O(1)$^{\#5}$	0.93	2.60	3.360(5)	139.6
C(15)-H(15)···O(8)$^{\#3}$	0.93	2.47	3.358(5)	159.3

*Symmetry transformation used to generate equivalent atoms: complex **1**: #4: x, y+1, z, #5: -x+1, -y+1, -z+1;complex **2**: #1: -x, -y+1, -z+2, #2: x-1, y+1, z, #3: -x, -y+1, -z+1, #4: -x+1, -y-1, -z+1, #5: x+1, y-1, z.