Electronic Supplementary Material (ESI) for RSC Advances.

Electronic Supplementary Information

Two New Photochromic Coordination Compounds with Nonphotochromic Ligands and Different Metal Centers

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Table S1. Selected bond lengths (Å) and angles (°) for compounds **1-2**.

1			
Zn(1)-O(2)	1.929(2)	Zn(2)-O(6)	2.019(2)
Zn(1)-O(3)	1.976(2)	Zn(2)-O(7)	2.116(2)
Zn(1)-N(2)	2.053(2)	Zn(2)-O(8)	2.019(2)
Zn(1)-N(3)	2.076(2)	Zn(2)-N(1)	2.040(2)
Zn(2)-O(5)	2.082(2)		
O(2)-Zn(1)-O(3)	118.12(10)	O(7)-Zn(2)-N(1)	98.46(9)
O(2)-Zn(1)-N(2)	115.99(10)	O(5)-Zn(2)-N(1)	101.46(9)
O(2)-Zn(1)-N(3)	110.30(10)	O(6)-Zn(2)-O(7)	90.43(10)
O(3)-Zn(1)-N(2)	110.80(10)	O(6)-Zn(2)-O(8)	159.87(9)
O(3)-Zn(1)-N(3)	96.53(10)	O(6)-Zn(2)-N(1)	98.67(9)
N(2)-Zn(1)-N(3)	102.03(9)	O(7)-Zn(2)-O(8)	84.40(9)
O(5)-Zn(2)-O(6)	90.60(9)	O(8)-Zn(2)-N(1)	101.32(9)
O(5)-Zn(2)-O(7)	159.67(9)	O(7)-Zn(2)-N(1)	98.46(9)
O(5)-Zn(2)-O(8)	87.70(9)	O(8)-Zn(2)-N(1)	101.32(9)

Symmetry transformations used to generate equivalent atoms: for **1**: (#1) -1-x, 1-y, -z; (#2) 1-x, 3-y, 1-z.

2			
Zn(1)-O(2)	2.033(2)	Zn(1)-O(1)#2	2.037(2)
Zn(1)-O(4)	2.064(2)	Zn(1)-O(3)#2	2.0706(19)
Zn(1)-N(1)	2.039(2)		
O(2)-Zn(1)-O(4)	88.96(8)	O(4)-Zn(1)-O(1)#2	88.19(8)
O(2)-Zn(1)-N(1)	98.11(9)	O(4)-Zn(1)-O(3)#2	160.85(9)
O(2)-Zn(1)-O(1)#2	160.76(9)	N(1)-Zn(1)-O(1)#2	101.12(8)
O(2)-Zn(1)-O(3)#2	89.72(8)	N(1)-Zn(1)-O(3)#2	99.10(8)
O(4)-Zn(1)-N(1)	100.00(8)	O(1)#2-Zn(1)-O(3)#2	86.79(8)

Symmetry transformations used to generate equivalent atoms: for **2**: (#1) 1-x, 2-y, -z; (#2) 2-x, 2-y, 1-z.

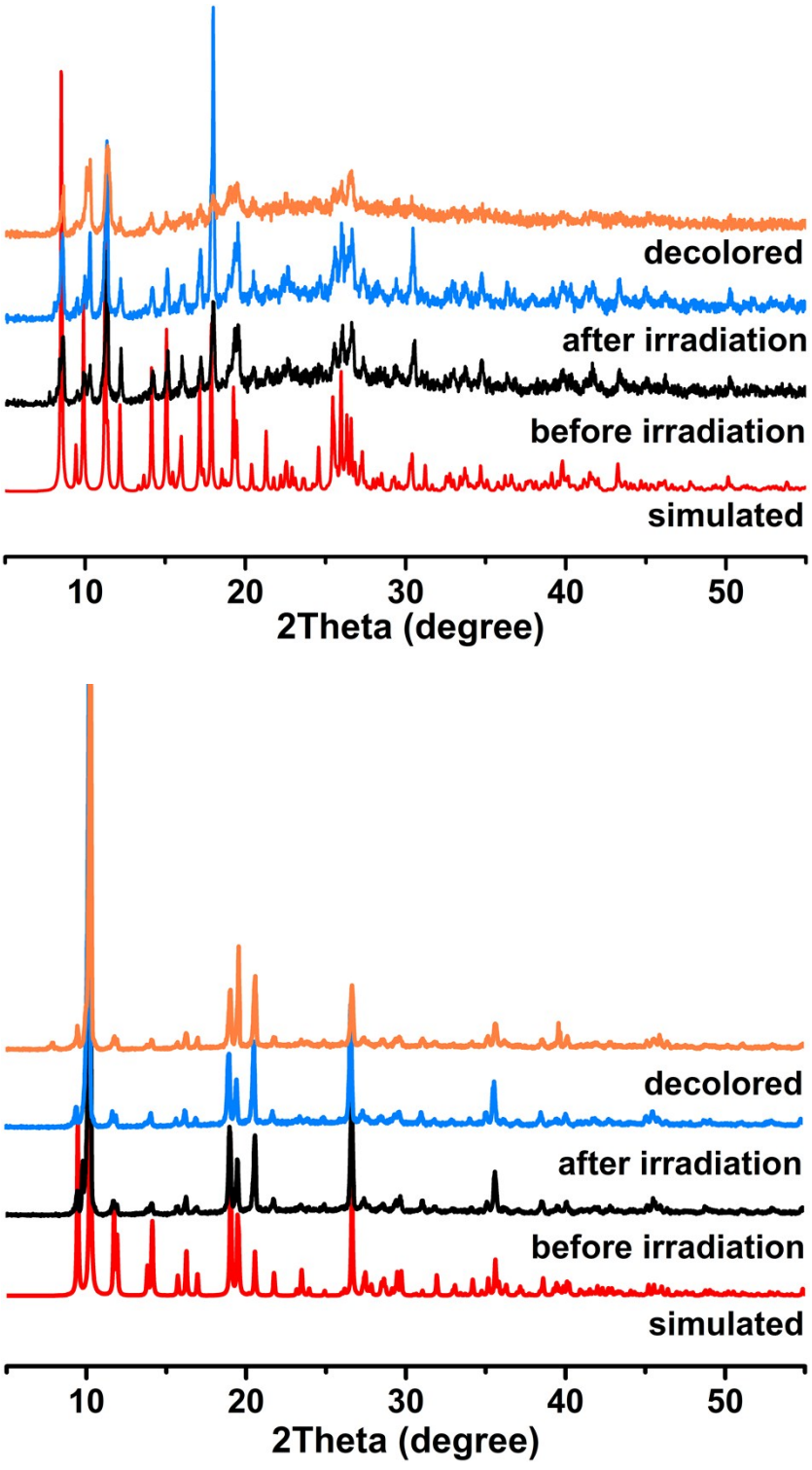


Fig. S1 PXRD patterns for the as-synthesized compounds **1** (top), **2** (bottom) and the simulated one from single-crystal X-ray diffraction data.

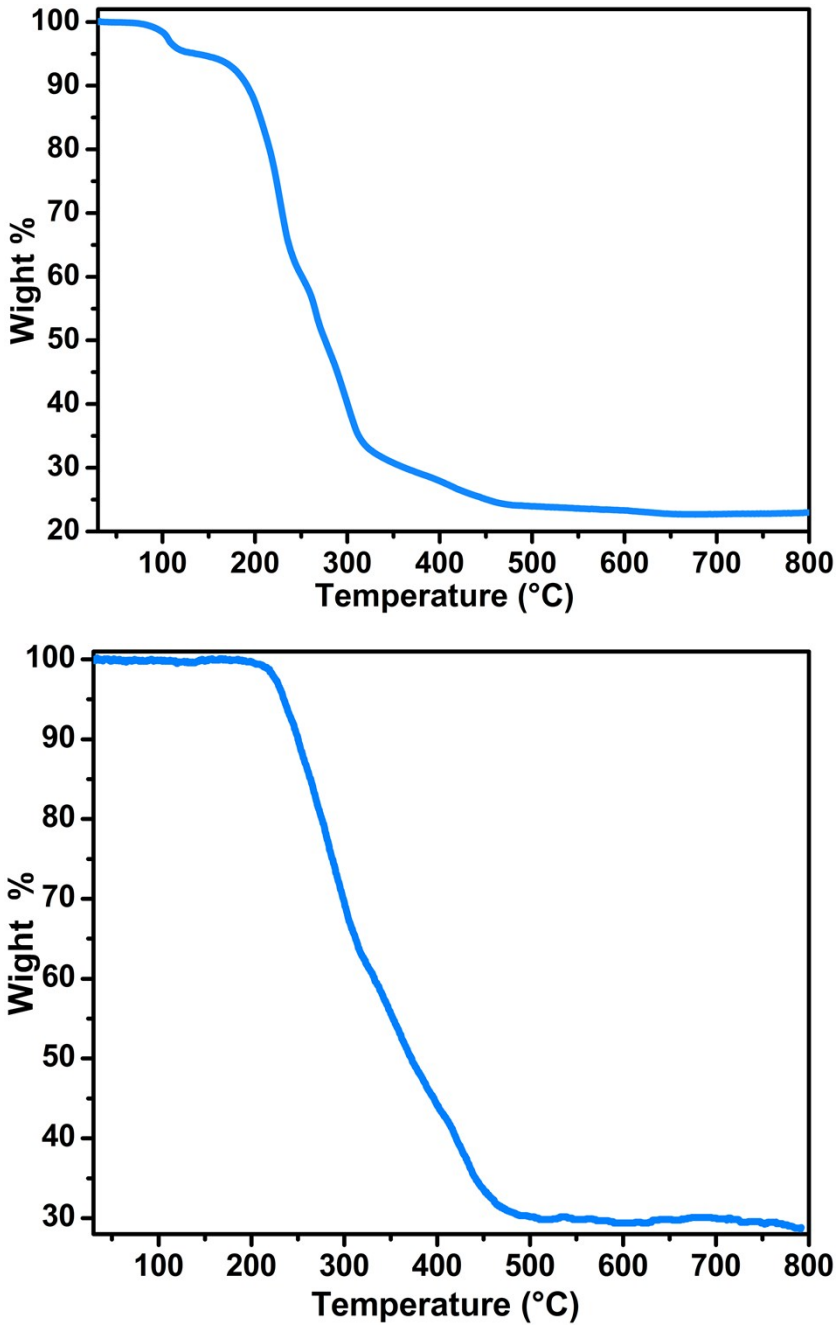


Fig. S2 Thermal gravimetric curve of **1** (top) and **2** (bottom).

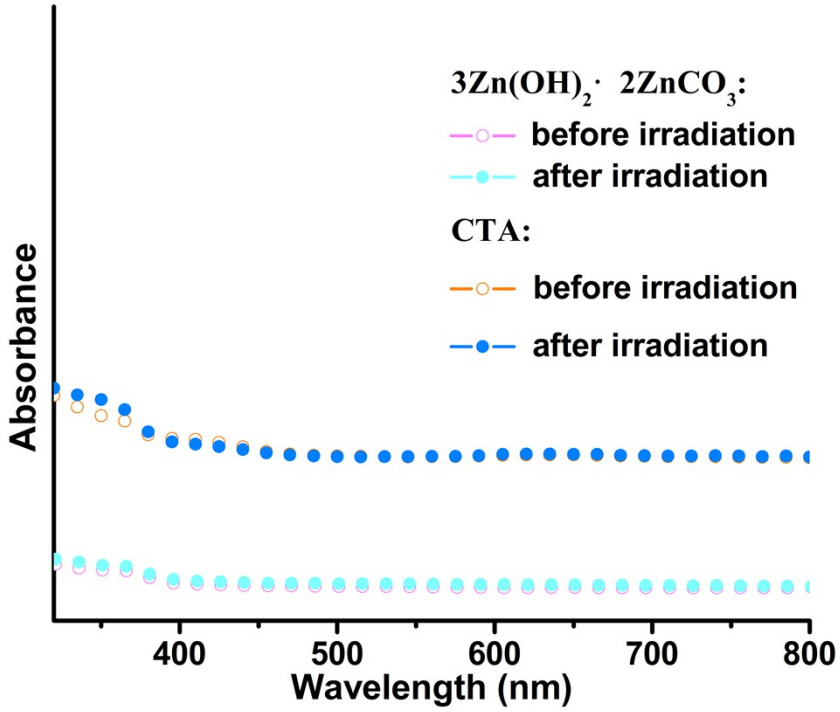
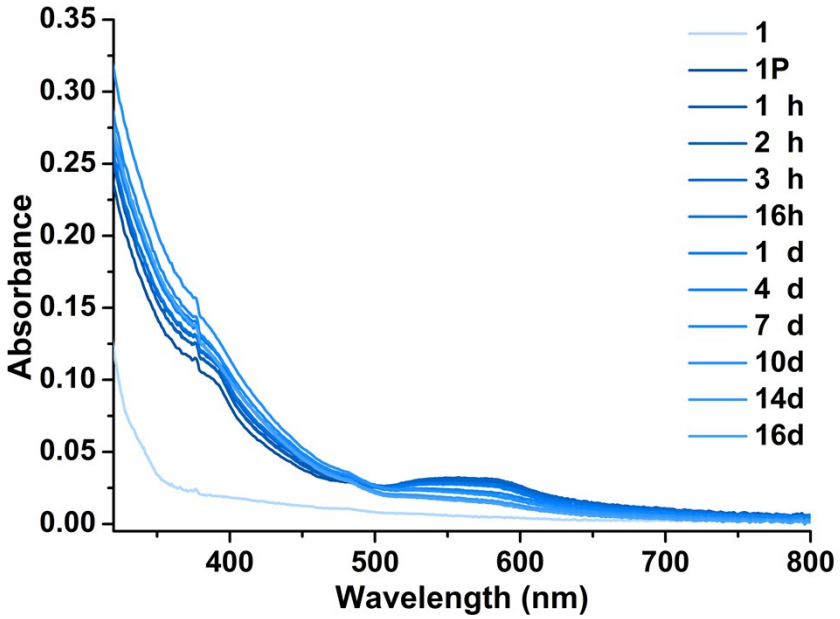


Fig. S3 UV-vis spectra of $3Zn(OH)_2 \cdot 2ZnCO_3$, and crotonic acid (CTA) before and after irradiation for 2h.



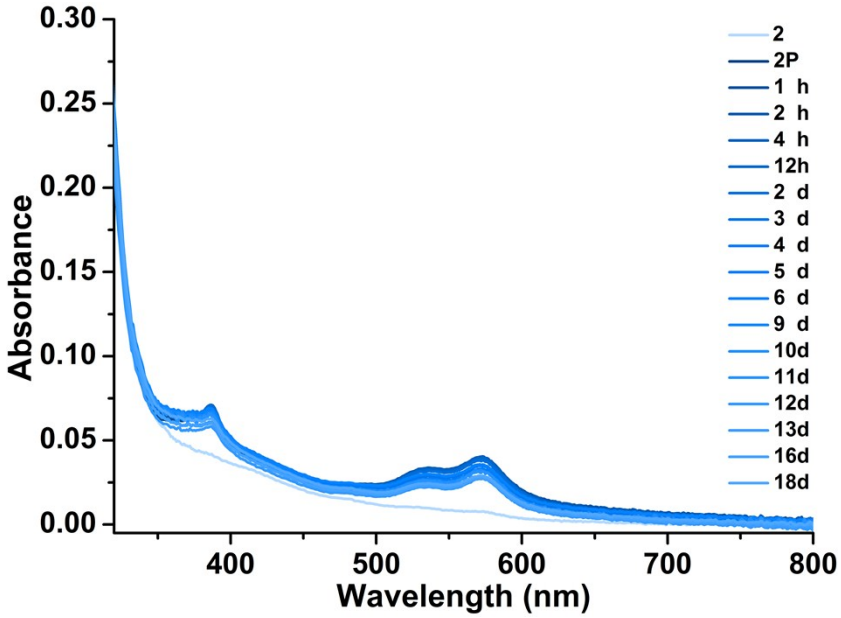


Fig. S4 The UV-vis spectra of **1** (top) and **2** (bottom) in the dark at room temperature .

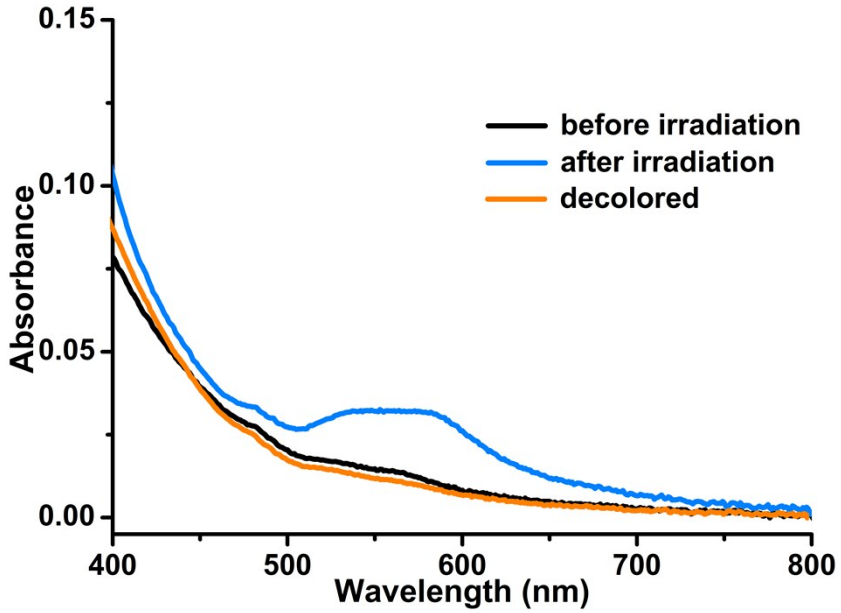


Fig. S5 UV-vis absorption spectra of **1** before, after irradiation and decolored at 70℃ under O_2 condition for 30min.

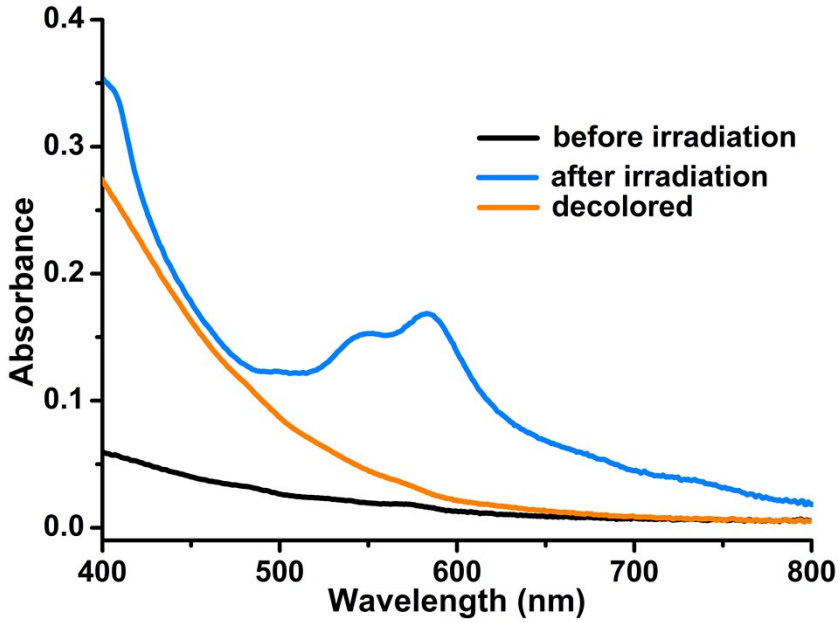


Fig. S6 UV-vis absorption spectra of **2** before, after irradiation and decolored at 130℃ under O_2 1MPa condition for 30min.

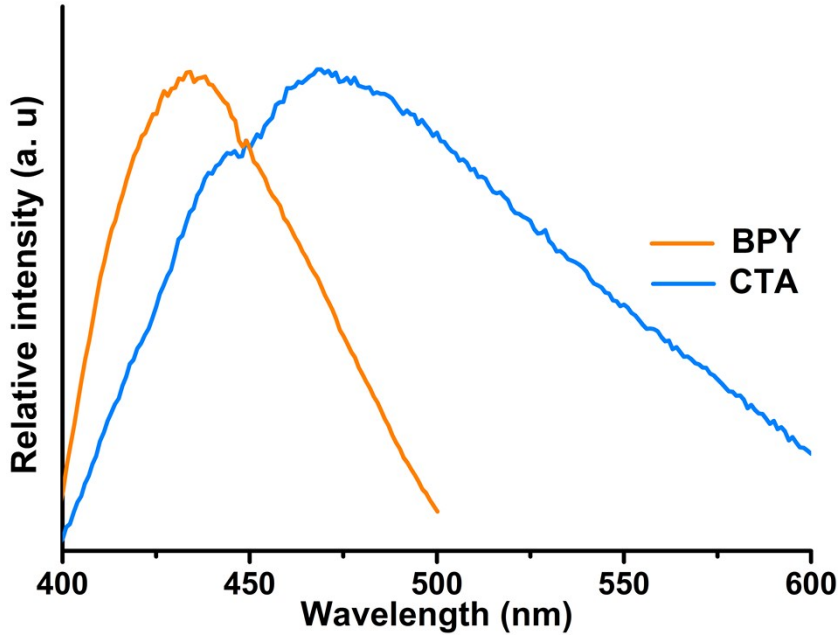


Fig. S7 The luminescence spectra of BPY and CTA ($\lambda_{ex} = 370nm$) in the solid state at room temperature.