Supporting Information

Luminescent 2D bismuth-cadmium-organic frameworks with tunable and white light emission by doping different lanthanide ions

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Materials and methods. All chemicals were purchased commercially and used without further purification. Elemental analyses were performed on a Vario EL III elemental analyzer. The Fourier transform infrared (FT-IR) spectra (KBr pellets) were recorded on an Nicolet NEXUS670 spectrometer. Thermogravimetric analyses (TGA) were performed on a Netzsch STA 449C analyzer with a heating rate of 10 °C/min under an air atmosphere. Powder X-ray diffraction (PXRD) data were obtained by using a Philips PW3040/60 diffractometer with CuKa radiation (λ = 1.54056 Å). UV-visible spectra on solid samples were recorded using Thermo Nicolet Evolution 500 UV/vis spectrometer. Photoluminescence analyses were performed on an Edinburgh Instrument FLS920 fluorescence spectrometer. The CIE-1931 chromaticity coordinates were calculated using a ColorCoordinate.exe program.

Table S1. Selected Bond Lengths (Å) for Compound **1**.

Bi(1)-O(1)	2.198(4)	Bi(2)-O(11)	2.400(3)	Cd-OW1	2.260(4)
Bi(1)-N(1)	2.411(4)	Bi(2)-N(4)	2.473(4)	Cd-O(6B)	2.275(4)
Bi(1)-O(7)	2.430(3)	Bi(2)-N(3)	2.483(4)	Cd-O(10)	2.291(4)
Bi(1)-N(2)	2.495(4)	Bi(2)-O(9)	2.525(3)	Cd-O(8)	2.293(4)
Bi(1)-O(12A)	2.504(4)	Bi(2)-O(4)	2.627(4)	Cd-OW2	2.294(4)

Bi(1)-O(5)	2.510(3)	Bi(2)-O(13A)	2.632(3)	Cd-O(7)	2.646(3)
Bi(1)-O(4)	2.540(4)	Bi(2)-O(13)	2.634(3)		
Bi(2)-O(15)	2.289(3)	Bi(2)-O(3)	2.674(4)		

[a]Symmetry codes: (A) -*x* + 1, -*y*, -*z* + 1; (B) -*x* + 3/2, *y* + 1/2, *z*.

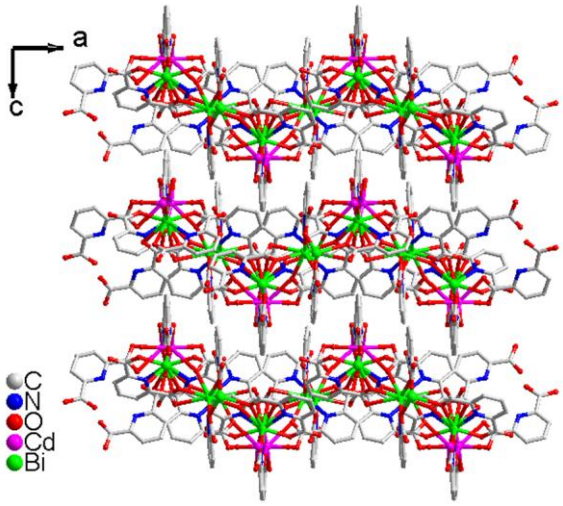

Fig S1. The view of 3-D supramolecular compounds stacked along the *c* axis in **1**, involving a week pi-pi interaction from the pyridyl rings of the adjacent layers.

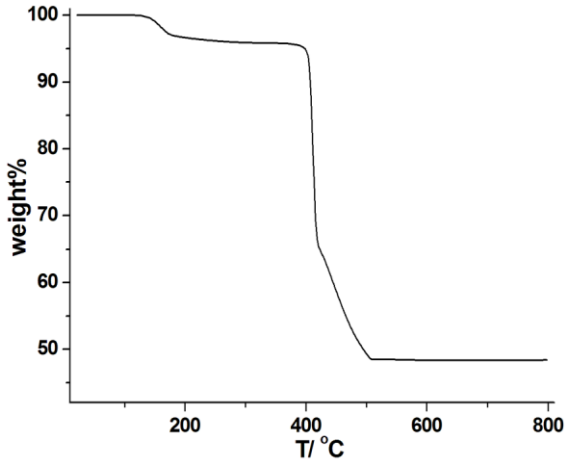

Fig S2. TGA curves of **1**.

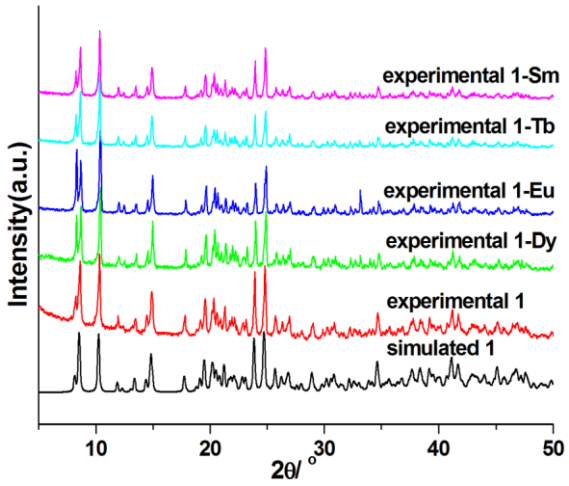

Fig S3. Simulated and experimental PXRD patterns of **1,** as well as experimental PXRD patterns of Ln-doped compound **1**.

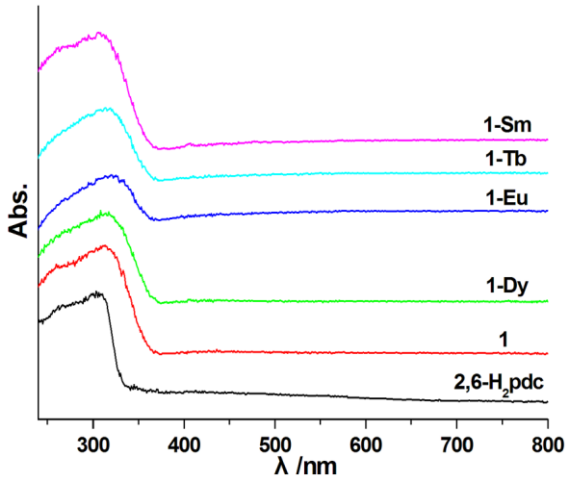

Fig S4. UV-Vis spectra of as received 2,6-H_2pdc, compound **1** and Ln-doped compound **1**.

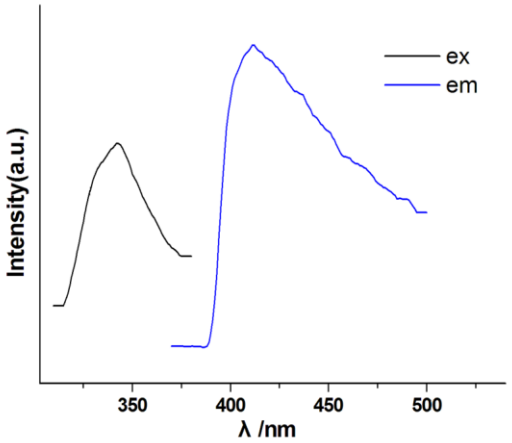

Fig S5. The excitation and emission spectra of as received 2,6-H_2pdc in solid state at room temperature.

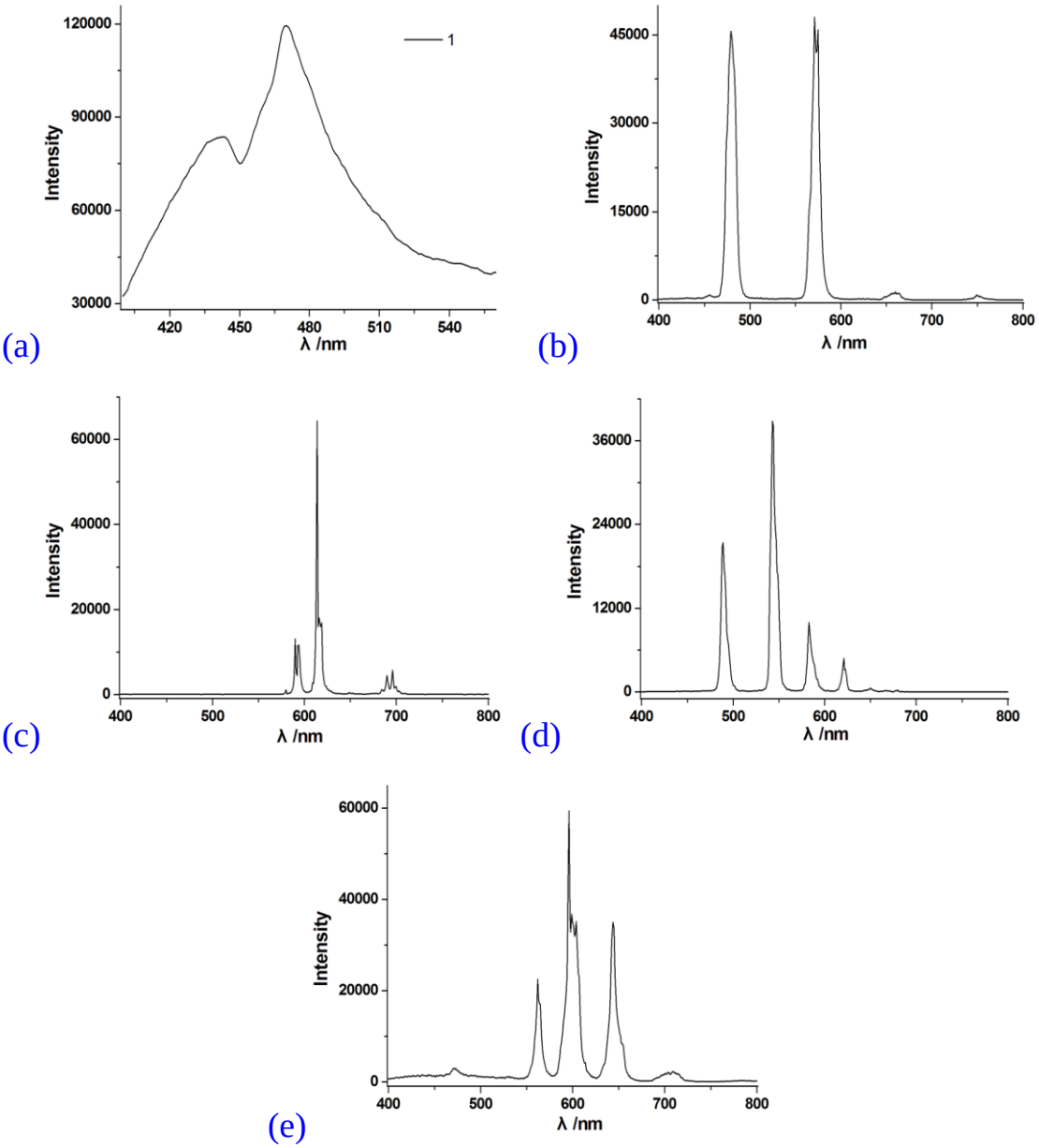

Fig S6. Emission spectra of (a) **1** (ex = 324 nm); (b) Dy- (ex = 325 nm), (c) Eu- (ex = 322 nm), (d) Tb- (ex = 322 nm) and (e) Sm- (ex = 325 nm) doped **1**, in solid state at room temperature.

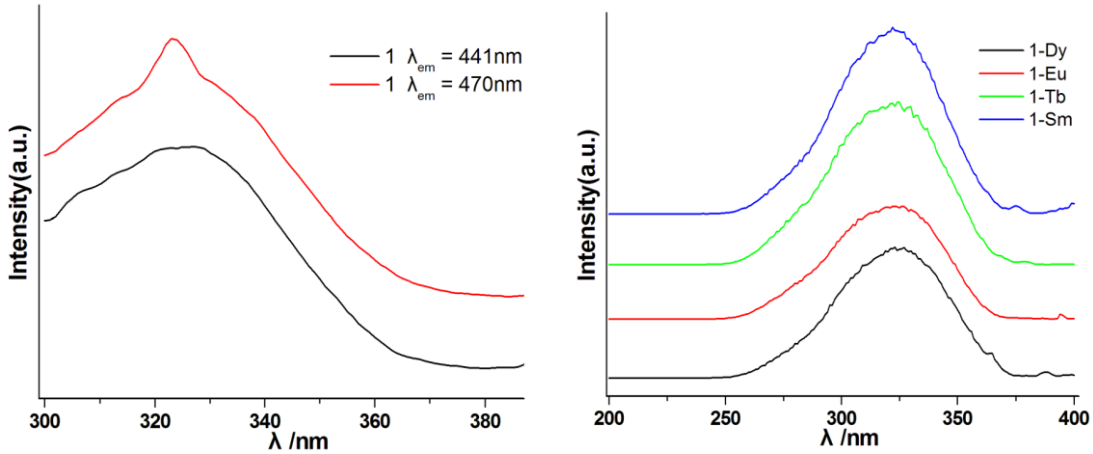

Fig S7. (left) The excitation spectra of **1** (emission at 441 nm and 470 nm , respectively), (right) and Ln-doped **1** (emission at 571 nm, 614 nm, 544 nm and 596 nm for Dy-, Eu-, Tb- and Sm-doped **1**, respectively) in solid state at room temperature.

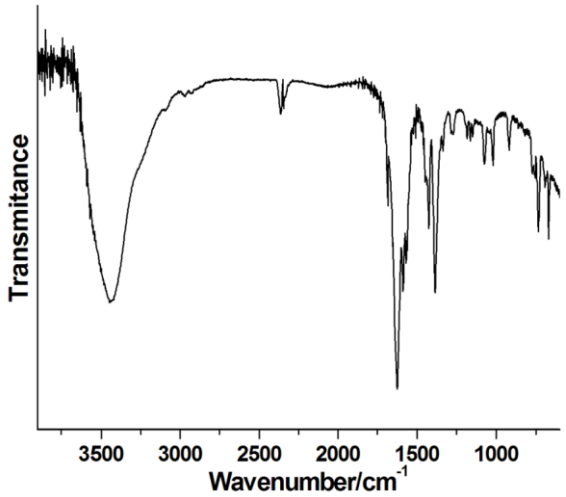

Fig S8. The IR spectra of **1**.