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# **Supporting information**

# Synthesis:

# 3{5}-amino-5{3}-(pyrid-2-yl)-1H-pyrazole

The compound was prepared according to the previously reported procedure <sup>[17]</sup>.

### N<sup>2</sup>, N<sup>6</sup>-bis (3-(pyridin-2-yl)-1H-pyrazole-5-yl)pyridine-2,6-dicarboxamide (BP3DA)

2,6-Pyridinedicarbonyl dichloride (2.04 g, 10 mmol) was dissolved in dry acetonitrile and to it was added an acetonitrile solution of  $3{5}$ -amino- $5{3}$ -(pyrid-2-yl)-1H-pyrazole (3.2 g, 20 mmol), giving an immediate yellow precipitate. The reaction mixture was refluxed overnight, cooled and filtered. The precipitate was washed with acetonitrile and dried in vacuum. To the suspension of the hydrochloride salt in water, was added saturated sodium bicarbonate solution till slightly basic and stirred at room temperature overnight. The precipitated solid was filtered, washed with water, dried and purified from DMF/methanol. Yield 50 % obtained as a trihydrate. Elem. Anal. For C<sub>23</sub>H<sub>23</sub>N<sub>9</sub>O<sub>5</sub>, Calcd: C, 54.65; H, 4.55; N, 24.95; Found: C, 54.89; H, 4.33; N, 24.89. <sup>1</sup>H NMR spectra/ $\delta$  (ppm) (400MHz, DMSO-d6): 13.33 (s, 2H, pz NH), 11.91 (s, 2H, amide NH), 8.65 (d, 2H, pyH), 8.38 (d, 2H, aromatic H), 8.29 (dd, 1H, aromatic H), 7.89 (m, 4H, pyH), 7.37 (m, 2H, pyH), 7.33 (s, 2H, pz C-H). IR (KBr, cm<sup>-1</sup>): 3487 (br), 1689(s), 1581(s), 1545(s), 1490(s), 1429(s), 1323(s), 1274(m).

### **Gelation Test**

To 10 mg of the ligand in 0.5 ml of DMF kept in a screw-capped sample vial, was added the corresponding amount of the metal salts dissolved in 0.5 ml water. The thixotropic gels obtained were tested by the "stable-to-inversion of the vial" method.

**SEM:** A drop of gel solution was placed on a glass cover slip, dried under vacuum and mounted on JEOL-6700F microscope instrument for SEM imaging.

FT-IR spectra were performed on a Nicolet MAGNA-IR 750 spectrometer with the KBr pellets containing the samples. 'H spectrum was recorded on Bruker spectrometers operating at 400 MHz in DMSO-d<sub>6</sub> solvent UV-visible studies were performed in Perkin Elmer Lambda 950 UV/VIS instrument. The elemental analyses were carried out using a Perkin–Elmer 2400 Series-II CHN analyser.



Figure S1: Figure depicting thixotropic behavior of a) cadmium nitrate gel and b) lead acetate gel





Figure S2: FT-IR spectra of (top to bottom) ligand, cadmium nitrate gel and lead acetate gel



Figure S3: EDTA responsiveness of lead metallogel