

## Supporting information

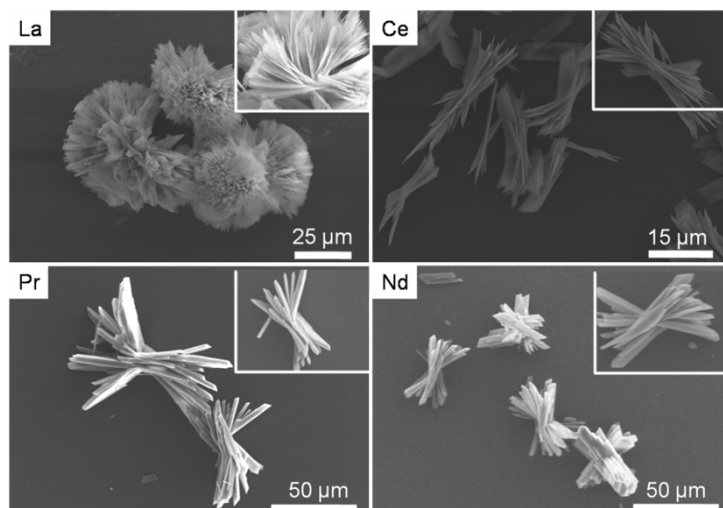
### **Straw-sheaf-like terbium-based coordination polymer architectures: Microwave-assisted synthesis and their application as selective luminescent probes for heavy metal ions**

Mengmeng Shi, Zeng Chenghui, Lei Wang, Zhiwen Nie, Yongxia Zhao,

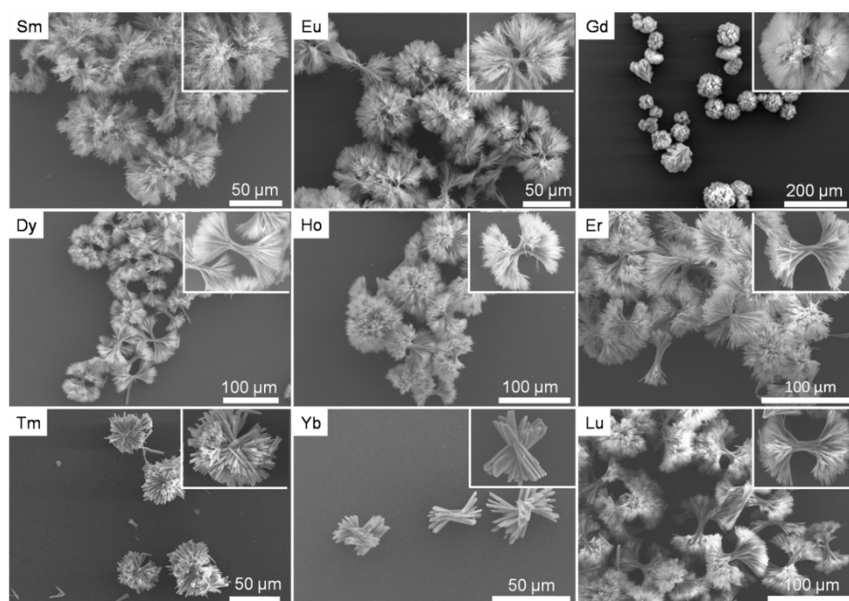
Shengliang Zhong\*

Table S1 summarizes crystal structures, morphologies and sizes of the Ln-H<sub>4</sub>BTC

Ln-H <sub>4</sub> BTC	microwave power [W]	time [min]	morphology	middle diameter [μm]	length [μm]
La	80	15	rod-sheaf	15-25	50-70
Ce	80	15	rod-sheaf	3-6	15-35
Pr	80	15	rod-sheaf	10-15	60-90
Nd	80	15	rod-sheaf	10-15	35-45
Sm	80	15	straw-sheaf	5-8	50-90
Eu	80	15	straw-sheaf	4-7	50-70
Gd	80	15	straw-sheaf	4-6	40-70
Tb	80	15	straw-sheaf	5-8	70-90
Dy	80	15	straw-sheaf	6-9	70-90
Ho	80	15	straw-sheaf	5-8	60-80
Er	80	15	straw-sheaf	6-8	60-90
Tm	80	15	rod-sheaf	8-15	45-50
Yb	80	15	rod-sheaf	10-20	30-50
Lu	80	15	straw-sheaf	7-10	50-80



**Fig. S1 SEM images of the Ln-H<sub>4</sub>BTC (Ln = La, Ce, Pr, Nd).**



**Fig. S2 SEM images of the Ln-H<sub>4</sub>BTC (Ln = Sm, Eu, Gd, Dy, Ho, Er, Tm, Yb, Lu).**

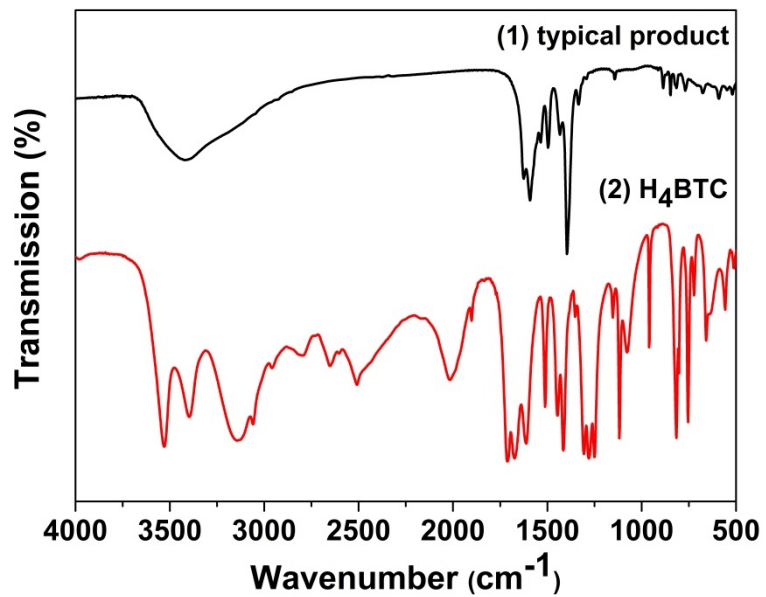


Fig. S3 FT-IR spectra of the typical product (1) and H<sub>4</sub>BTC (2).

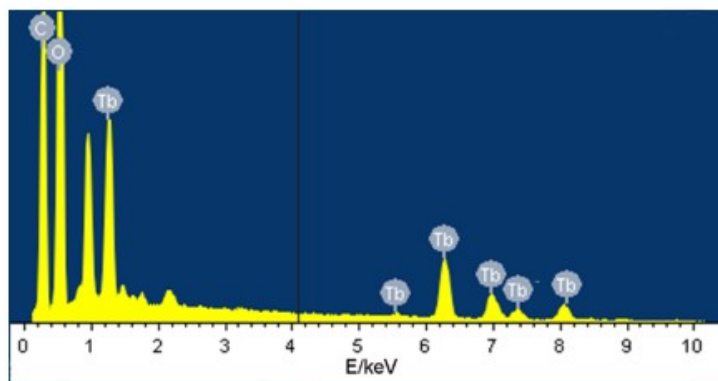


Fig. S4 EDX spectrum of the typical product.

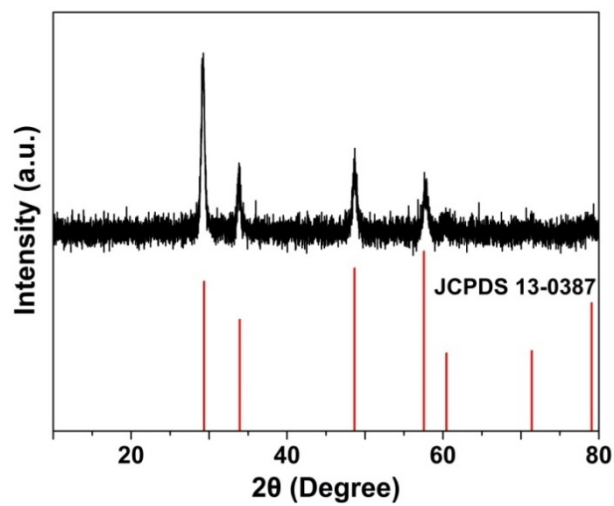


Fig. S5 XRD pattern of the product prepared after calcining the typical product at 600 °C for 4 h.

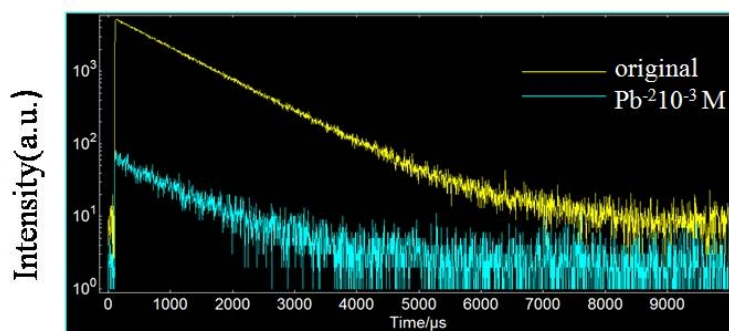


Fig. S6 Comparison of the luminescence lifetime studies of  $Tb^{3+}$  in original suspension and  $Pb^{2+} 10^{-3} M$  aqueous solution.