Supporting Information

for

Solvent free mechanochemical synthesis of Eu^{3+} complex and its luminescent sensing for trace water and temperature

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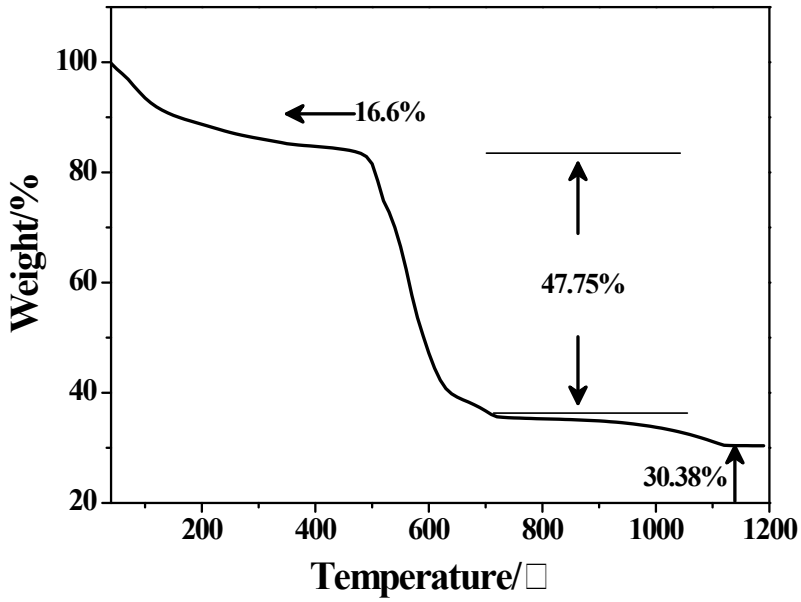

Fig. S1 TG analysis of 1:1 Eu(**L**) complex.

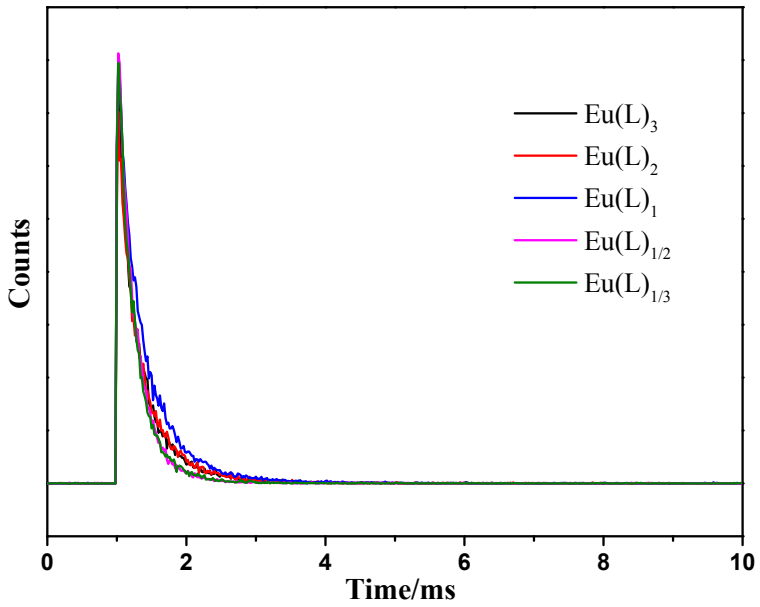

Fig. S2 Luminescence decay curves of Eu(**L**)$_n$ measured at 613 nm and well-fitted by a mono-exponential function.

Table S1. The variable intensity ratio ***R*** and luminescence decay time with the increasing water content in anhydrous ether.

	Ether	0.1%	0.2%	0.3%	0.5%	1%	2%	3%	5%
R	2.68	2.46	2.14	1.71	1.62	1.56	1.43	1.32	1.16
τ[ms]	0.24	0.22	0.21	0.19	0.8	0.17	0.16	0.13	0.10

Table S2. The calibration equations of Eu(**L**)$_1$ in different organic solvents with increasing amount of water.

Solvents	Range of v (%)	Calibration equations	R^2
ether	0%-0.3%	R=−3.23v+2.73	0.993
ether	0.5%-5%	R=−0.11v+1.67	0.993
THF	0%-5%	R=−0.33v+2.92	0.995

Table S3. The variable intensity ratio ***R*** and luminescence decay time with the increasing water content in anhydrous THF.

	THF	0.1%	0.3%	0.5%	1%	2%	3%	5%
R	2.94	2.90	2.83	2.73	2.61	2.26	1.84	1.30
τ[ms]	0.27	0.26	0.26	0.24	0.22	0.19	0.18	0.15

Table S4. The calibration equations of Eu(**L**)$_1$ within the temperature ranging from 80-300 K and the temperature in heating cooling process from 300-420 K and cooling process from 400-300 K.

Range of T (K)	Calibration equations	R^2	S (% K^{-1})
80-300	T_1=491.1 − 405I_1	0.995	0.24%
300-420	T_2 = 427.4 – 125I_2	0.998	0.77%
400-300	T_3 = 409.4 – 167I_3	0.998	0.59%

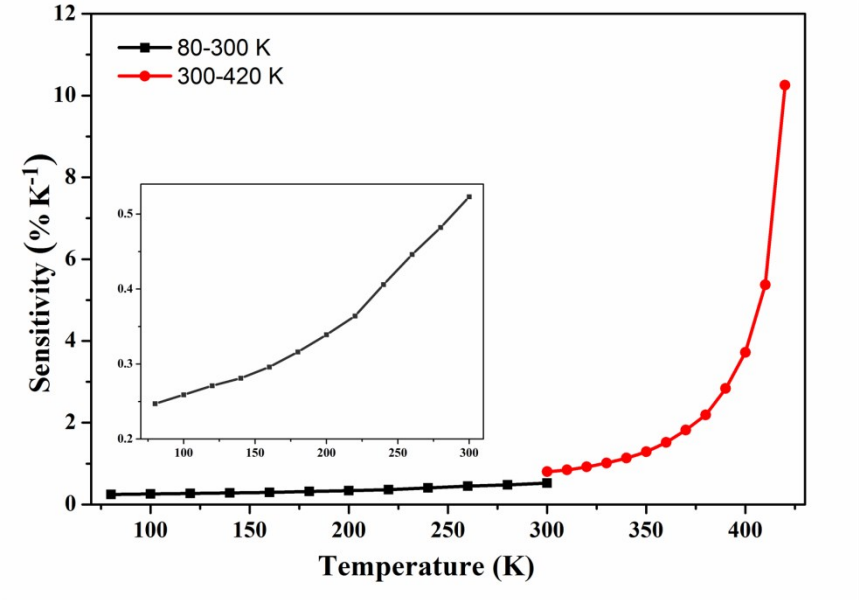

Fig. S3 Temperature dependence of the relative sensitivity values for Eu(**L**)$_1$ within the temperatures range 80-300 K and 300-420 K.