

## Supplementary Information

### A Novel Transparent Luminous Hydrogel with Self-healing Property

Table s1. Water content of the different quality 10Eu-PVA 2 hydrogels

Polymer		Weight (g)			Water content (%)
<b>Eu-PVA hydrogel</b>	<b>W<sub>0</sub></b>	0.853	0.866	0.869	0.885
					$83.495 \pm 0.283$
	<b>W<sub>1</sub></b>	0.145	0.141	0.143	0.145
					0.146

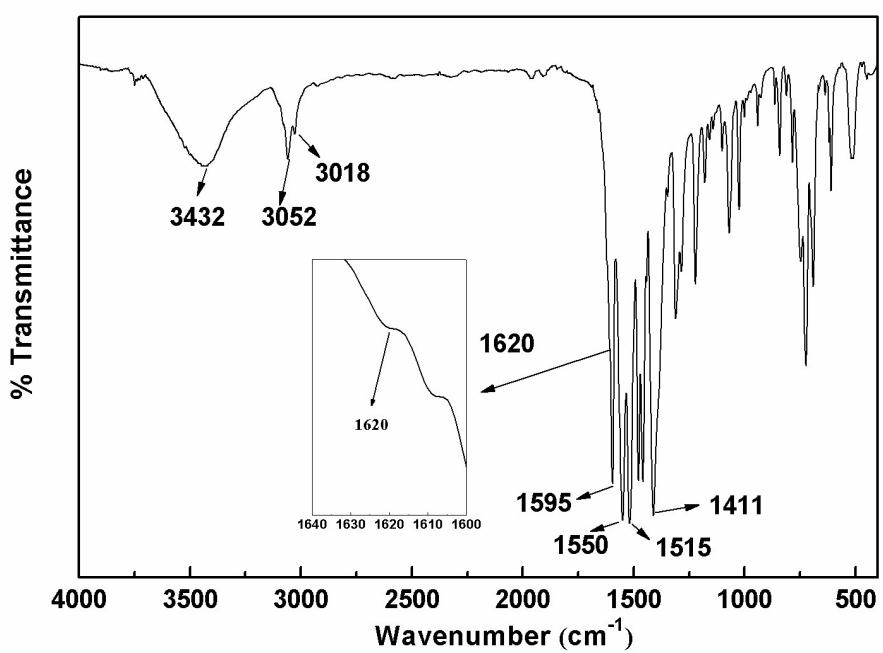


Fig. s1 FT-IR spectrum of Eu(DBM)<sub>2</sub>(Phen)(MA) (EDPM)

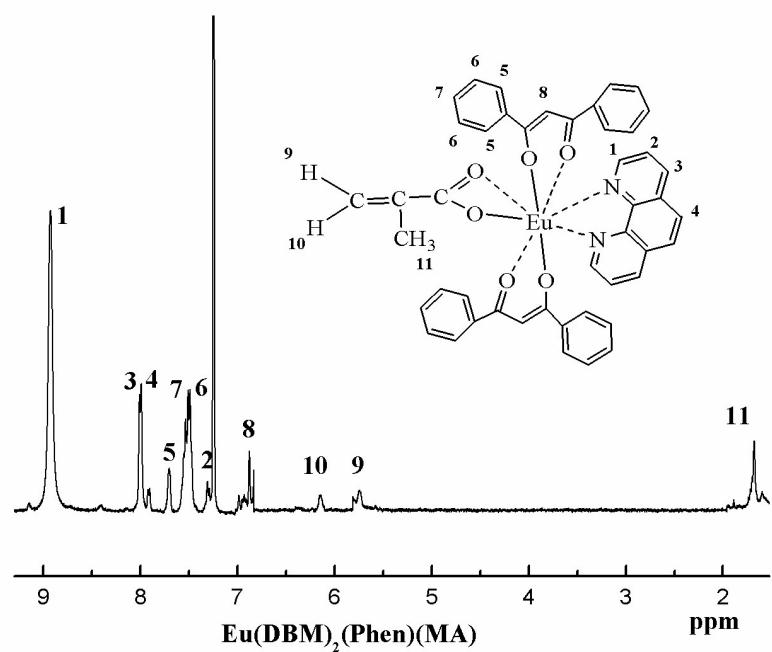


Fig. s2 <sup>1</sup>H NMR spectrum of Eu(DBM)<sub>2</sub>(Phen)(MA)

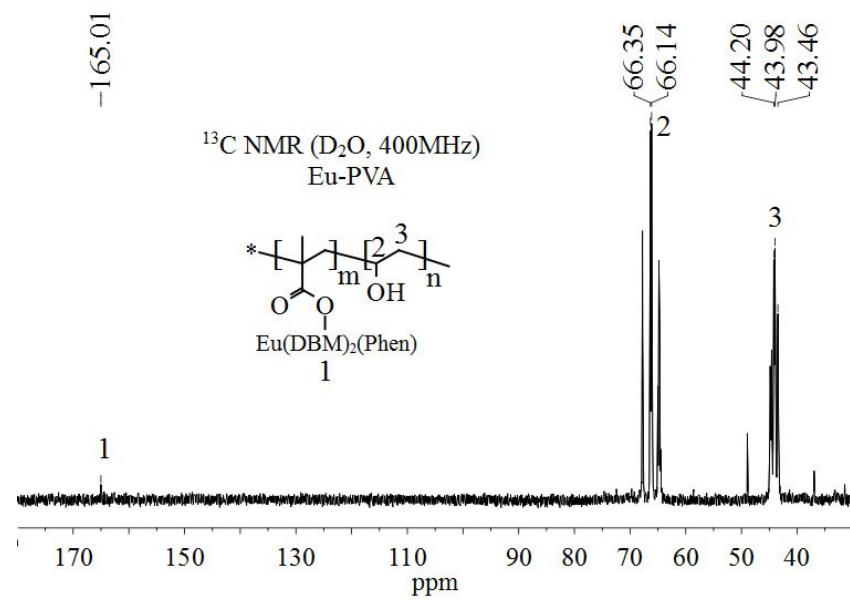


Fig. s3 <sup>13</sup>C NMR spectrum of Eu-PVA.

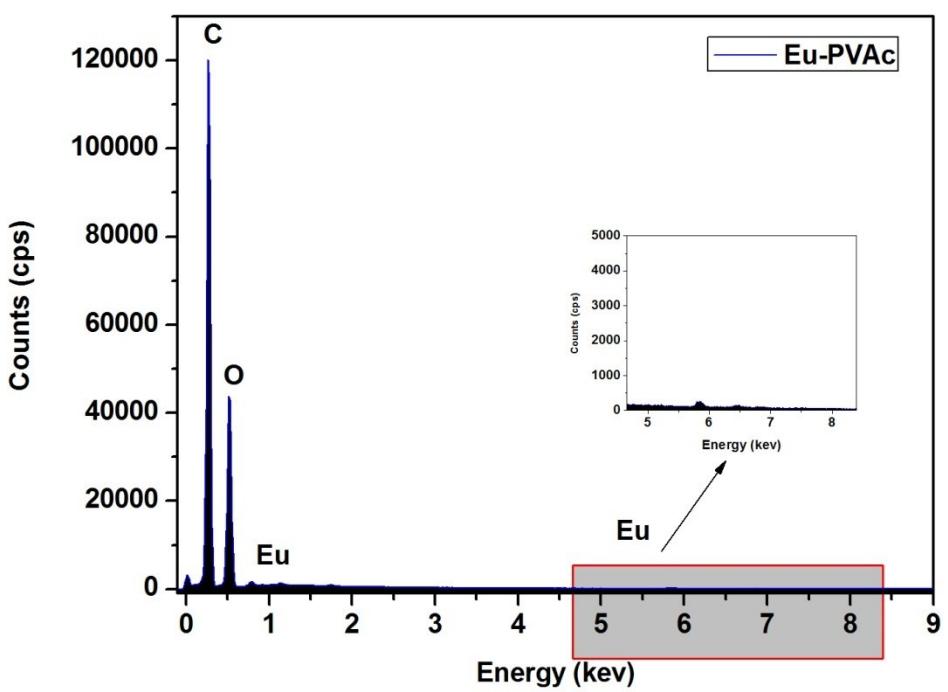


Fig. s4. EDS spectrum of Eu-PVAc

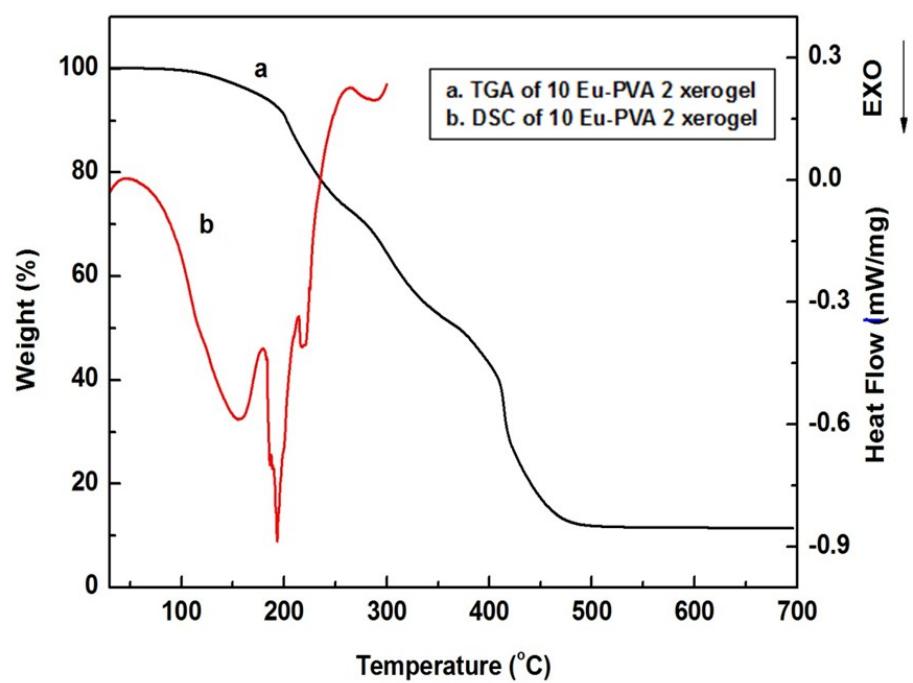


Fig. s5. (a) TGA curves of 10 Eu-PVA 2 xerogel, (b) DSC curves of 10 Eu-PVA 2 xerogel