

### Supporting Information

Fig. s1.  $^1\text{H}$  NMR spectrum of Poly (VAc-co-Eu(DBM)<sub>2</sub>(Phen)(MA)) (PVEDPM2)

Fig. s2.  $^{13}\text{C}$  NMR spectrum of Poly (VAc-co-Eu(DBM)<sub>2</sub>(Phen)(MA)) (PVEDPM2)

Fig. s3.  $^1\text{H}$  NMR spectrum of Poly (VA-co-Eu(DBM)<sub>2</sub>(Phen)(MA)) (PVAEDPM2)

Fig. s4.  $^{13}\text{C}$  NMR spectrum of Poly (VA-co-Eu(DBM)<sub>2</sub>(Phen)(MA)) (PVAEDPM2)

Fig. s5. The hydrophilic photos of PVAEDPM2 hydrogels (a) before contacting with water droplet (b) after contacting with water droplet.

Fig. s6. Representative stress-strain curves for polymer hydrogels of (a) PVAEDPM2 (solid content 10%, PVAEDPM 2:PVA=4:1) and (b) PVA (solid content 10%).

Table s1. Water content of the PVAEDPM2 hydrogels.

Table s2. Swelling ratio of the PVAEDPM2 hydrogels.

Table s3. Analytical results of  $\text{Eu}^{3+}$  in SBF solution after soaking PVAEDPM2 hydrogels for a month.

Fig. s1.

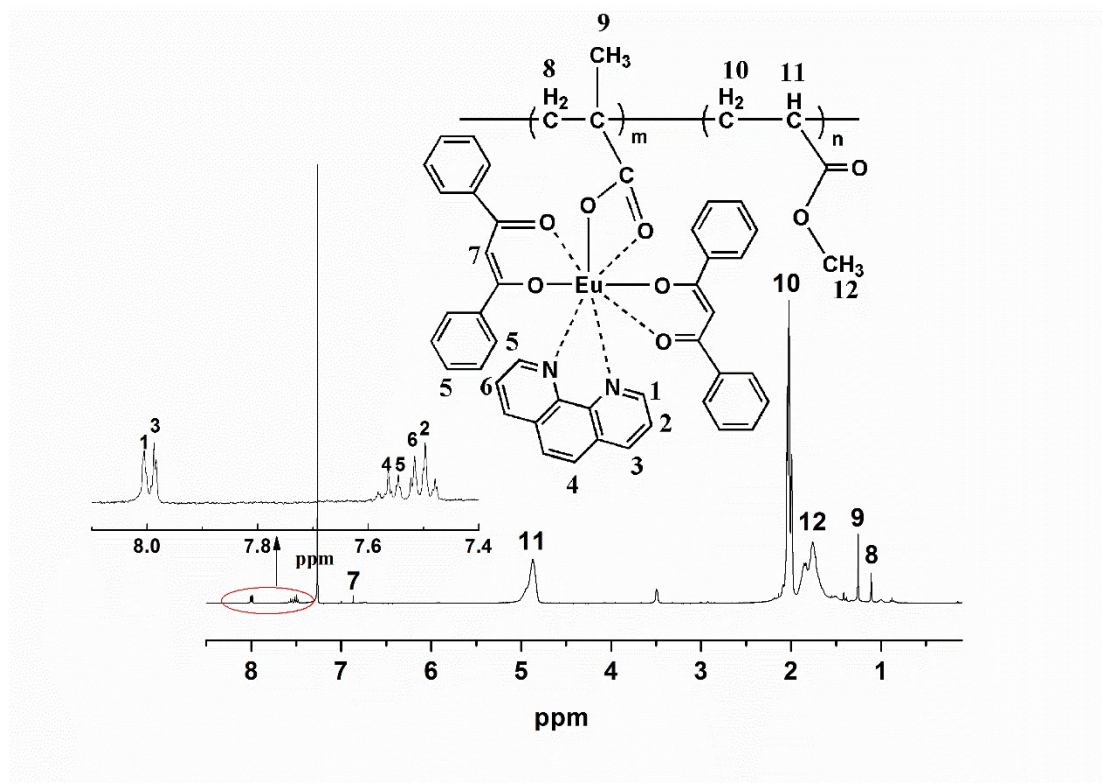


Fig. s2.

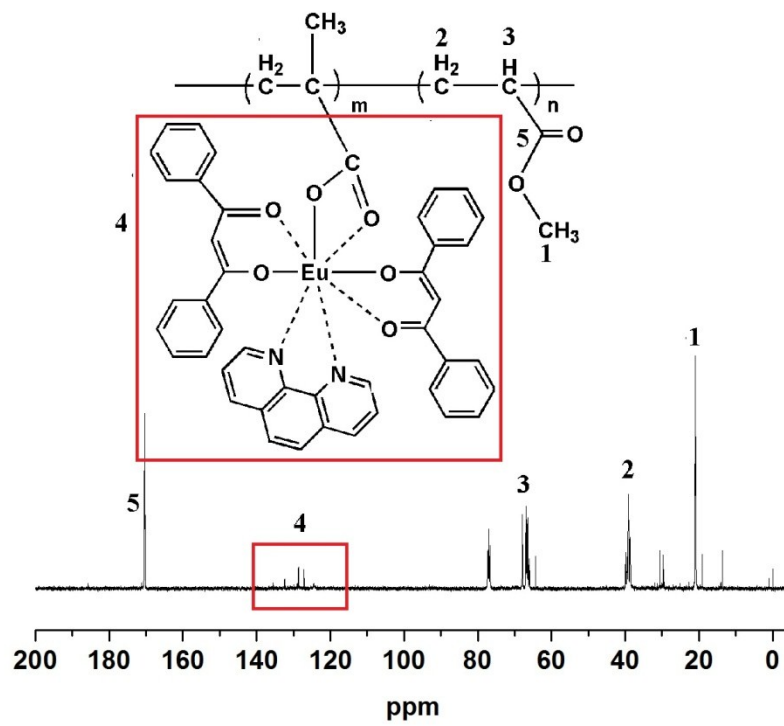


Fig. s3.

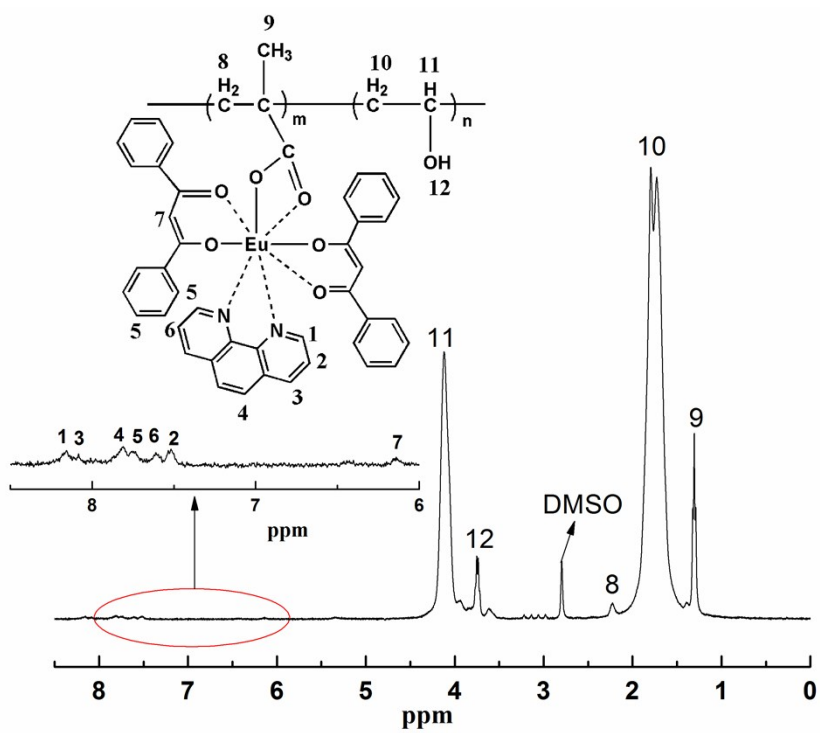


Fig. s4.

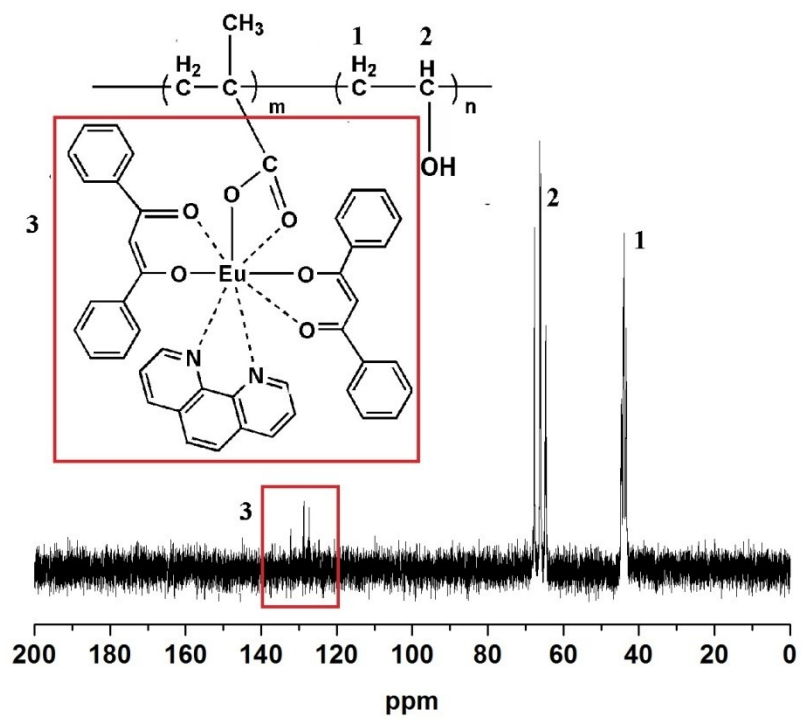


Fig. s5.

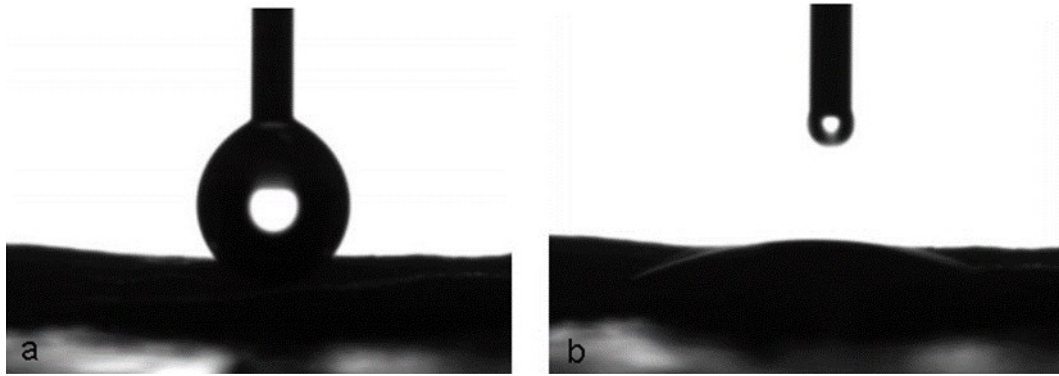


Fig. s6.

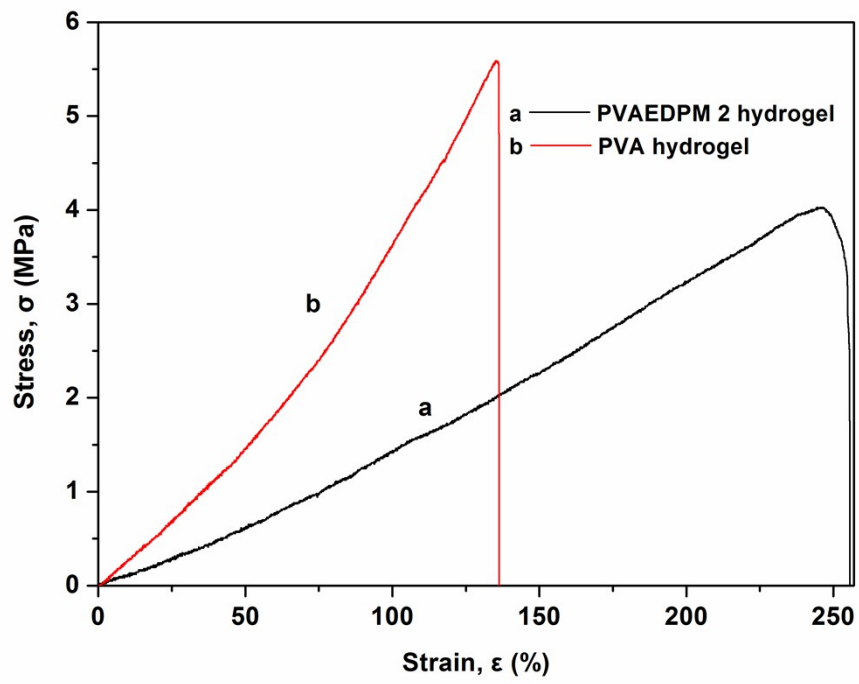


Table s1.

Polymer		Weight (g)					Water content (%)
PVAEDPM 2	$W_0$	0.0537	0.0902	0.0748	0.1643	0.2043	79.66±1.52
hydrogels	$W_1$	0.0121	0.0172	0.0156	0.0337	0.0382	

$W_0$  is the weight of the PVAEDPM 2 hydrogels before drying

$W_1$  is the weight of the dried PVAEDPM 2 hydrogels



Table s2.

Polymer	Soaking times (d)		Weight (g)					Swelling ratio (%)
PVAEDPM 2 hydrogels	7	$W_0$	0.0121	0.0172	0.0156	0.0337	0.0382	283.8±38.58
		$W_1$	0.0432	0.0735	0.0652	0.1312	0.1271	
	14	$W_0$	0.0123	0.0174	0.0159	0.0336	0.0383	289.2±35.60
		$W_1$	0.0452	0.0780	0.0632	0.1254	0.1381	
	21	$W_0$	0.0122	0.0179	0.0155	0.0342	0.0388	346.6±22.50
		$W_1$	0.0513	0.0852	0.0715	0.1521	0.1671	
	28	$W_0$	0.0124	0.0176	0.0160	0.0339	0.0391	354.8±28.12
		$W_1$	0.0516	0.0866	0.0712	0.1534	0.1831	

$W_0$  is the weight of the dried PVAEDPM 2 hydrogels

$W_1$  is the weight of the soaked PVAEDPM 2 hydrogels

Table s3.

Lab. No	PVAEDPM 2 hydrogel dry weight (g)	SBF volume(mL)	Eu <sup>3+</sup> concentration (mg/L)
1	0.012	10	—
2	0.017	10	—
3	0.015	10	—
4	0.033	10	—
5	0.038	10	—

—, Not detected