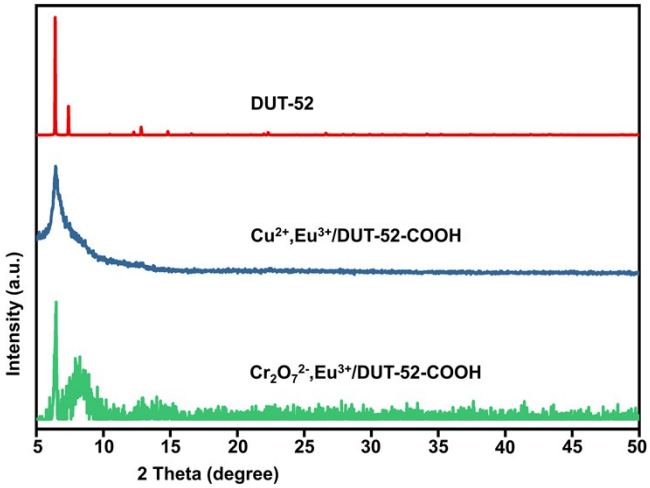

Figure S9. XRD patterns of DUT-52 and Cu^{2+}, Eu^{3+}/DUT-52-COOH composite and $Cr_2O_7^{2-}$, Eu^{3+}/DUT-52-COOH.

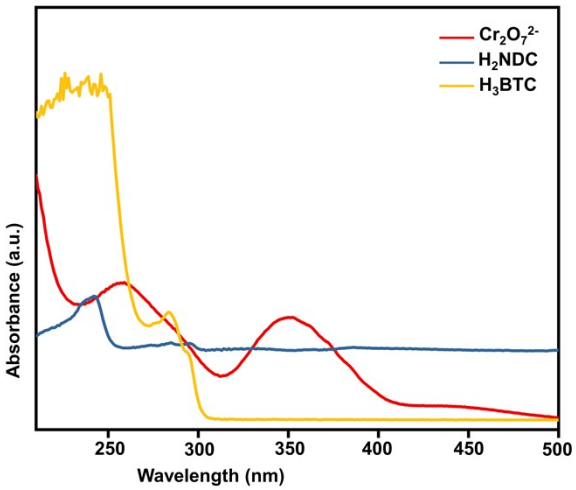

Figure S10. Spectral overlap between absorption spectra of the ligands of Eu^{3+}/DUT-52-COOH and $Cr_2O_7^{2-}$ ions in water.

Table S2. Performance comparison between other sensors based on MOFs for Cu^{2+} ions

Sensor	Detection Limits	Ref.
CDs@Eu-DPA	26.3 nM	44
$Zn_3(\mu_3\text{-Hbptc})_2(\mu_2\text{-4,4′-bpy})_2(H_2O)_4]_n \cdot 2nH_2O$	32.4 nM	45
Eu-DATA/BDC	0.15 μM	25
$[Zn_{1.5}(dttz)(Hdpa)]_n$	1.66 μM	46
Tb-MOFs	10 μM	47
TMU-16	62 μM	32
Eu^{3+}/DUT-52-COOH	3.43 μM	This work

Table S3. Performance comparison between other sensors based on MOFs for $Cr_2O_7^{2-}$ ions

Sensor	Detection Limits or quenching constants	Ref.
$[Eu_2(HICA)(BTEC)(H_2O)_2]_n$	Ksv= 1.141 × 10^4 M^{-1}	48
$[Tb_2(HICA)\text{-}(BTEC)(H_2O)_2]\cdot 2.5H_2O\}_n$	Ksv= 8.23 ×10^3 M^{-1}	
R@D3	Ksv= 4.7×10^4 M^{-1}	29
$[Zr_6O_4(OH)_4L_4(H_2O)_2(HCOO)_4]\cdot 9DMF\cdot 12H_2O$	Ksv=4.99×10^4 M^{-1}	49
$[Tb_{10}(DBA)_6(OH)_4(H_2O)_5]\cdot(H_3O)_4$	LOD= 10^{-9} M	50
$[Eu_7\ (mtb)_5(H_2O)_{16}]\cdot NO_3$ 8DMA·$18H_2O$	LOD=5.73 nM	51
Dyes⊂MOF-801	LOD=0.03 mM	52
Eu^{3+}/DUT-52-COOH	LOD=25.7 nM	This work