Supporting Information

Facile Synthesis of Hyperbranched Eu-MOF Structures for the Construction of $CsPbBr_3$/Eu-MOF composite and Its Application as Ratiometric Fluorescent Probe

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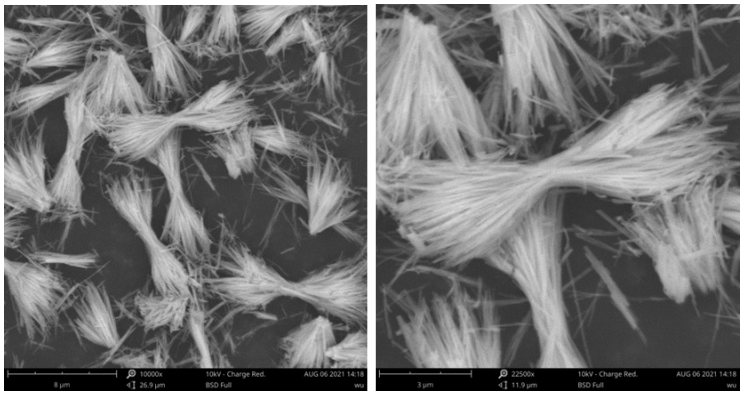

Figure S1. The SEM images of Eu-MOF synthesized without $Al(Ac)_3$ additive.

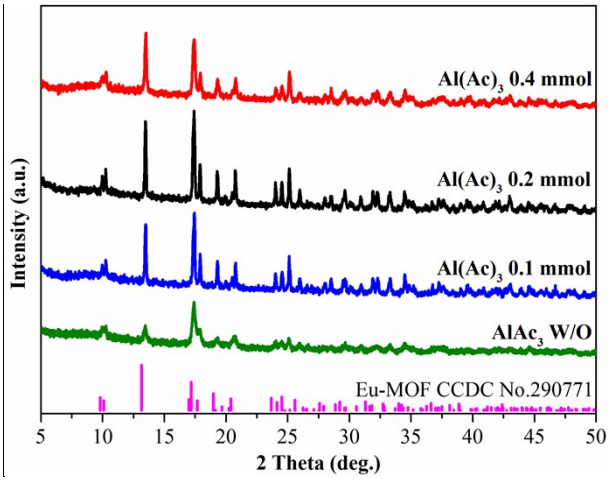

Figure S2. XRD patterns of Eu-MOF synthesized with different amounts of $Al(Ac)_3$.

Table S1. pH values of synthesis mixtures before and after crystallization

Additive	pH_1（before）	pH_2（after）
$Al(Ac)_3$	4.0	2.2
No additive	3.9	2.1

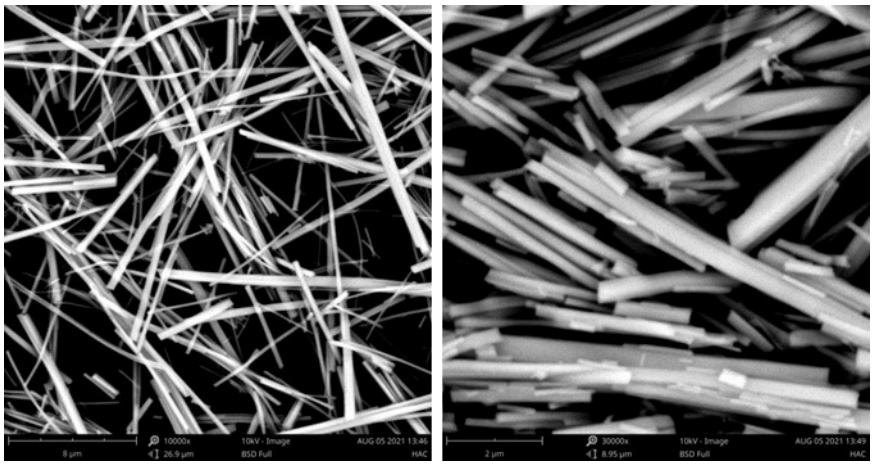

Figure S3. The SEM images of Eu-MOF synthesized with HAc additive.

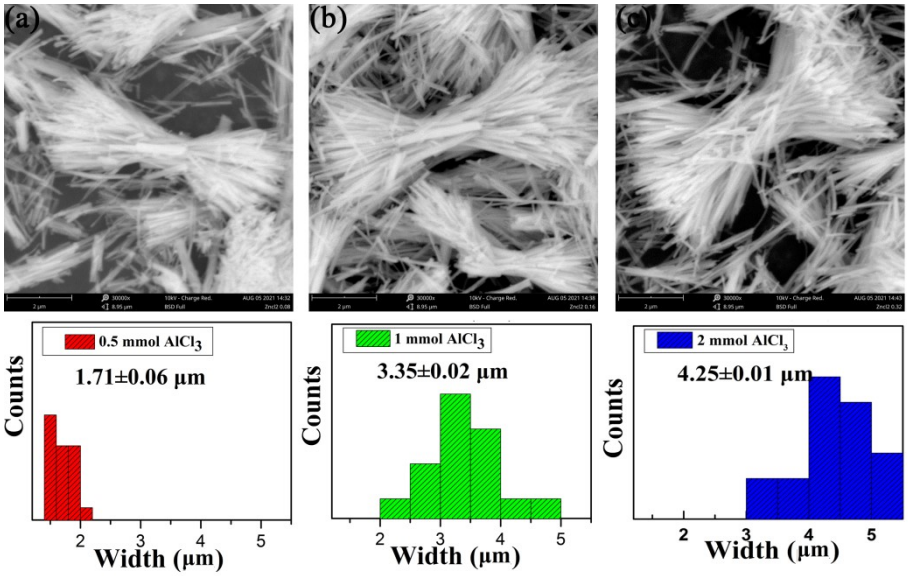

Figure S4. SEM images of Eu-MOF synthesized with different amounts of $AlCl_3$:(a) 0.5 mmol, (b) 1 mmol, (c) 2 mmol, and the corresponding dual fantails size distribution statistics.

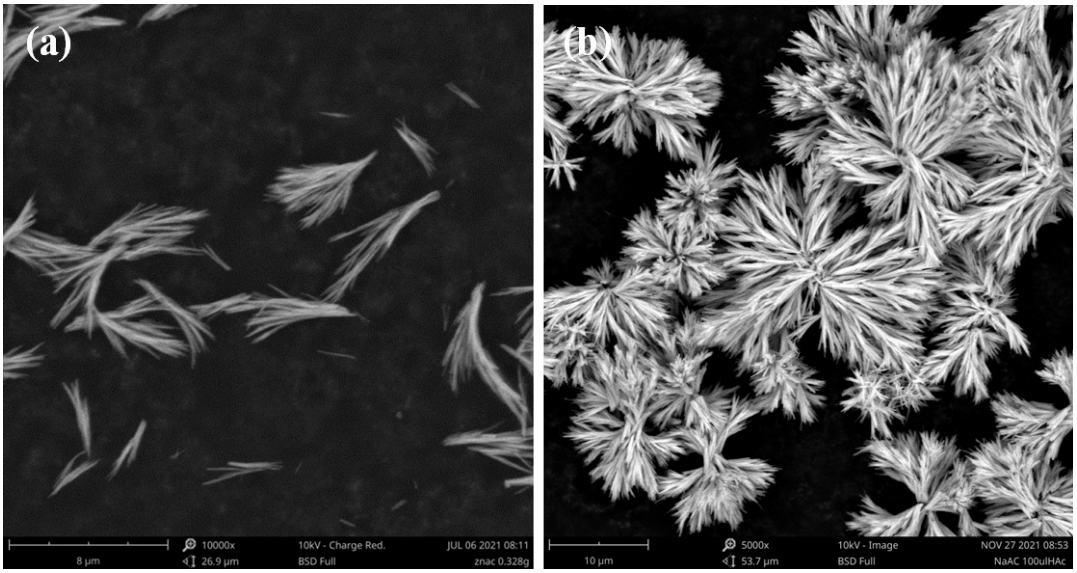

Figure S5. SEM images of Eu-MOF synthesized with different additives: (a)NaAc, (b) NaAc+HAc.

Table S2. pH Values of additives in water solution and pH values of the reaction solution before and after crystallization

Additives	pH（water solution）	pH_1（before）	pH_2（after）
$Al(Ac)_3$	4.0	4.0	2.2
$Zn(Ac)_2$	6.3	6.4	3.2
$Pb(Ac)_2$	5.9	5.6	2.2
$Cu(Ac)_2$	5.6	5.1	2.3
$Ni(Ac)_2$	6.8	6.4	2.4
$Mg(Ac)_2$	7.7	6.5	4.0
NaAc	8.2	6.6	4.2

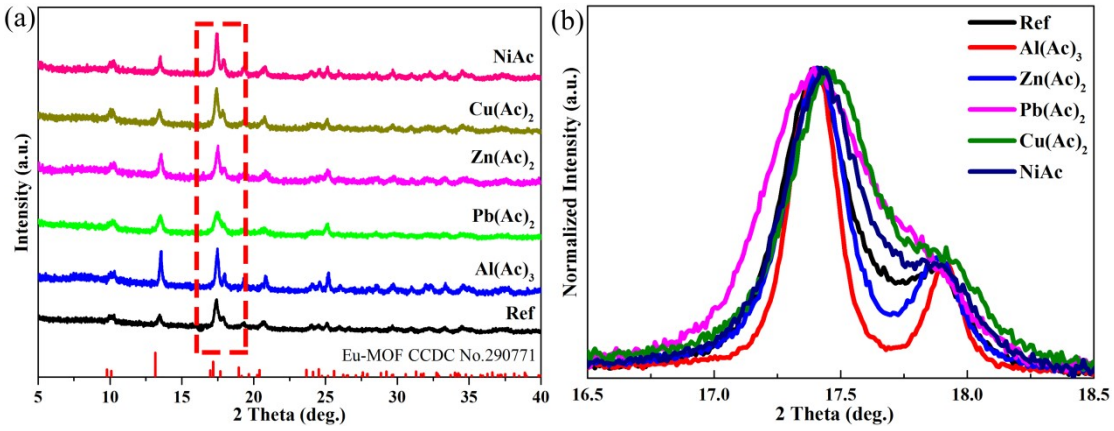

Figure S6. (a) XRD patterns of Eu-MOF synthesized with different additives; (b) Fine test of area indicated with dotted line.

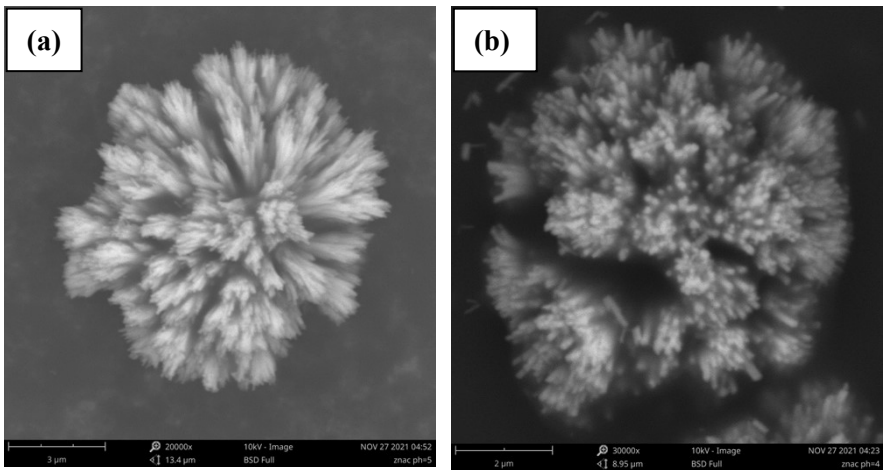

Figure S7. SEM images of Eu-MOF synthesized with $Zn(Ac)_2$+HAc: (a) PH=5 (b) PH=4.

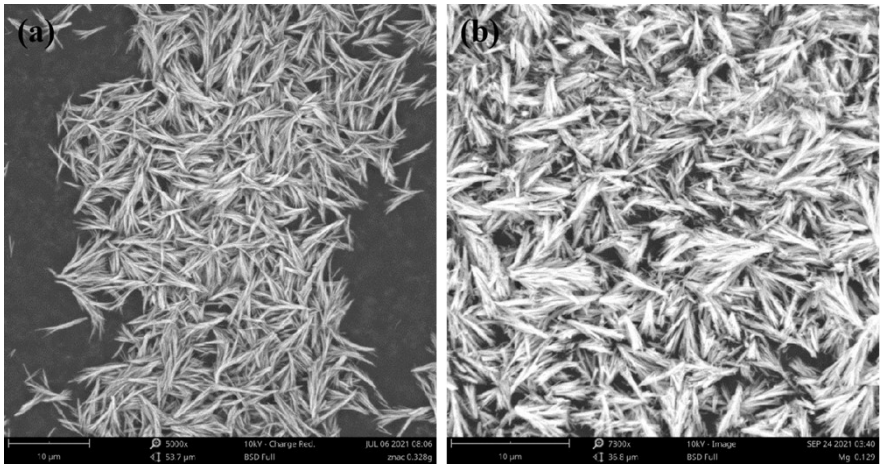

Figure S8. SEM images of Eu-MOF synthesized with different additives (a) NaAc, (b) $Mg(Ac)_2$.

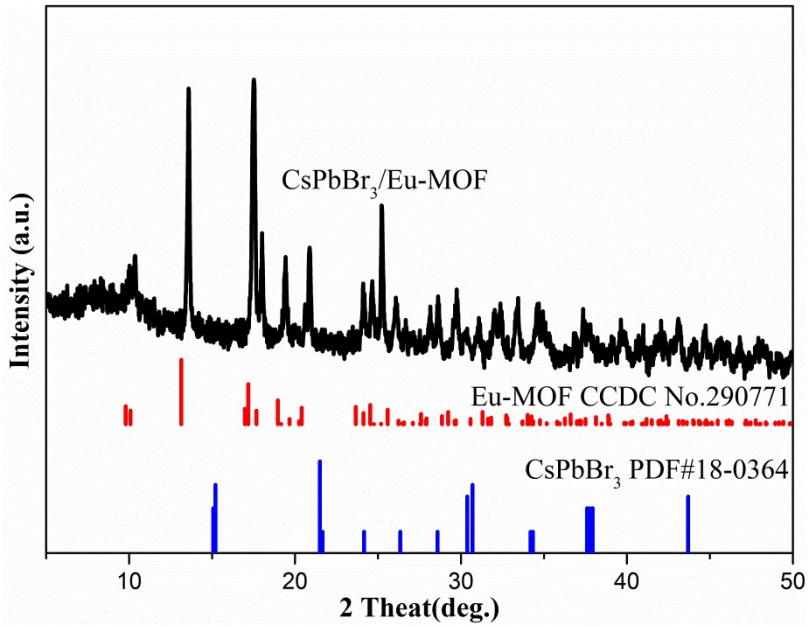

Figure S9. Simulated XRD patterns of Eu-MOF, the $CsPbBr_3$ with PDF number of 18-0364, and the experimental XRD patterns of the as-prepared $CsPbBr_3$/Eu-MOF.

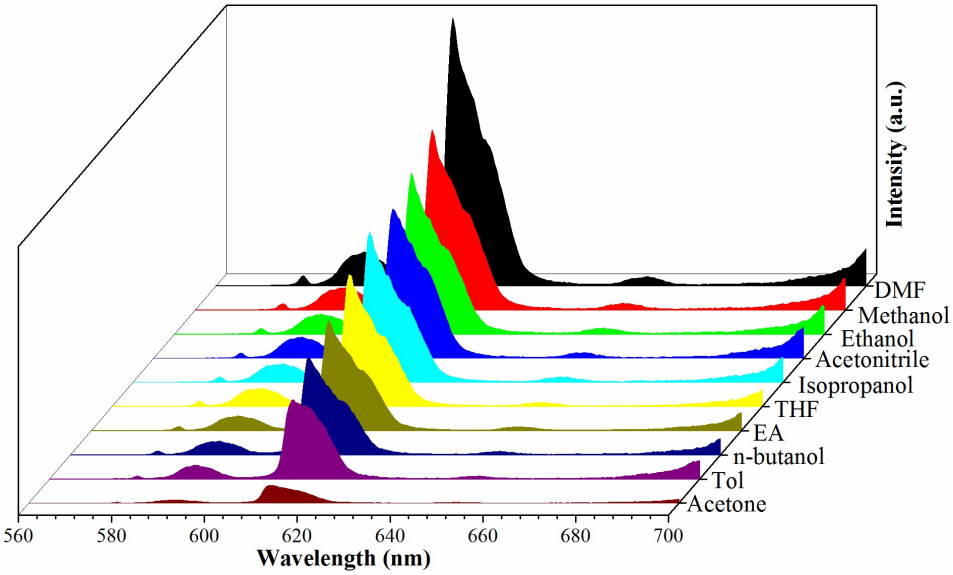

Figure S10. PL spectra of Eu-MOF introduced into various pure solvents when excited at 295 nm.