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Electronic Supplementary Information for

Heterometallic alkali-lanthanide Na^{I}-Eu^{III} metal-organic frame- work as multi-chemosensor for antibiotics and organic explosives in water

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Table S1. Selected Bond Lengths (Å) and Angles ( ) for **CTGU-7**.

Eu1-O2	2.451(3)	Eu1-O1#1	2.512(3)
Eu1-O1#2	2.512(3)	Eu1-O1	2.512(3)
Eu1-O3#1	2.357(3)	Eu1-O3#2	2.357(3)
Eu1-O3	2.357(3)	Na1-O2	2.410(3)
Na1-O2#1	2.410(3)	Na1-O2#5	2.410(3)
Na1-O2#6	2.410(3)	Na1-O2#2	2.410(3)
Na1-O2#7	2.410(3)		
O2#1-Eu1-O22	72.26(10)	O3#1-Eu1-O2#1	126.01(11)
O2#1-Eu1-O2	72.26(10)	O3-Eu1-O2	126.01(11)
O2#2-Eu1-O2	72.26(10)	O3-Eu1-O2#1	89.83(14)
O2#1-Eu1-O11	52.73(9)	O3#2-Eu1-O2#1	149.82(12)
O2-Eu1-O12	74.32(10)	O3#1-Eu1-O2#2	89.82(14)
O2-Eu1-O11	121.85(10)	O3#2-Eu1-O2#2	126.01(11)
O2#2-Eu1-O1#1	74.32(10)	O3-Eu1-O2#2	149.82(12)
O2#1-Eu1-O1	74.32(10)	O3#1-Eu1-O2	149.82(12)
O2#2-Eu1-O1#2	52.73(9)	O3#2-Eu1-O1#1	147.82(14)
O2#2-Eu1-O1	121.85(10)	O3#1-Eu1-O1	147.82(14)
O2-Eu1-O1	52.73(9)	O3-Eu1-O1#1	75.51(13)
O2#1-Eu1-O1#2	121.85(10)	O3-Eu1-O1	73.59(11)
O1-Eu1-O1#1	117.54(4)	O3#1-Eu1-O1#2	75.50(13)
O1-Eu1-O1#2	117.54(4)	O3#1-Eu1-O1#1	73.59(11)
O1#1-Eu1-O1#2	117.54(4)	O3-Eu1-O1#2	147.82(14)
O3#2-Eu1-O2	89.83(14)	O3#2-Eu1-O1#2	73.59(11)
O3#2-Eu1-O1	75.50(13)	O3#1-Eu1-O3#2	81.22(18)
O3#1-Eu1-O3	81.22(18)	O3#2-Eu1-O3	81.22(18)
O2#7-Na1-O2#2	180.0	O2-Na1-O2#2	73.70(10)
O2#6-Na1-O2#2	106.30(10)	O2-Na1-O2#6	106.30(10)
O2-Na1-O2#1	73.70(10)	O2#6-Na1-O2#1	180.00(3)
O2#7-Na1-O2#5	73.70(10)	O2#6-Na1-O2#7	73.70(10)
O2#1-Na1-O2#2	73.70(10)	O2#1-Na1-O2#5	106.30(10)
O2#1-Na1-O2#7	106.30(10)	O2#5-Na1-O2#2	106.30(10)
O2-Na1-O2#5	180.0	O2-Na1-O2#7	106.30(10

O2#6-Na1-O2#5	73.70(10)

Symmetry codes: #1, Y, Z, X; #2, Z, X, Y; #3, 1 - Y, 1/2 + Z, 1/2 - X; #4, 1/2 - Z, 1 - X, - 1/2 + Y; #5, 1 - X, 1 - Y, 1 - Z; #6, 1 - Y, 1 - Z, 1 - X; #7, 1 - Z, 1 - X, 1 - Y.

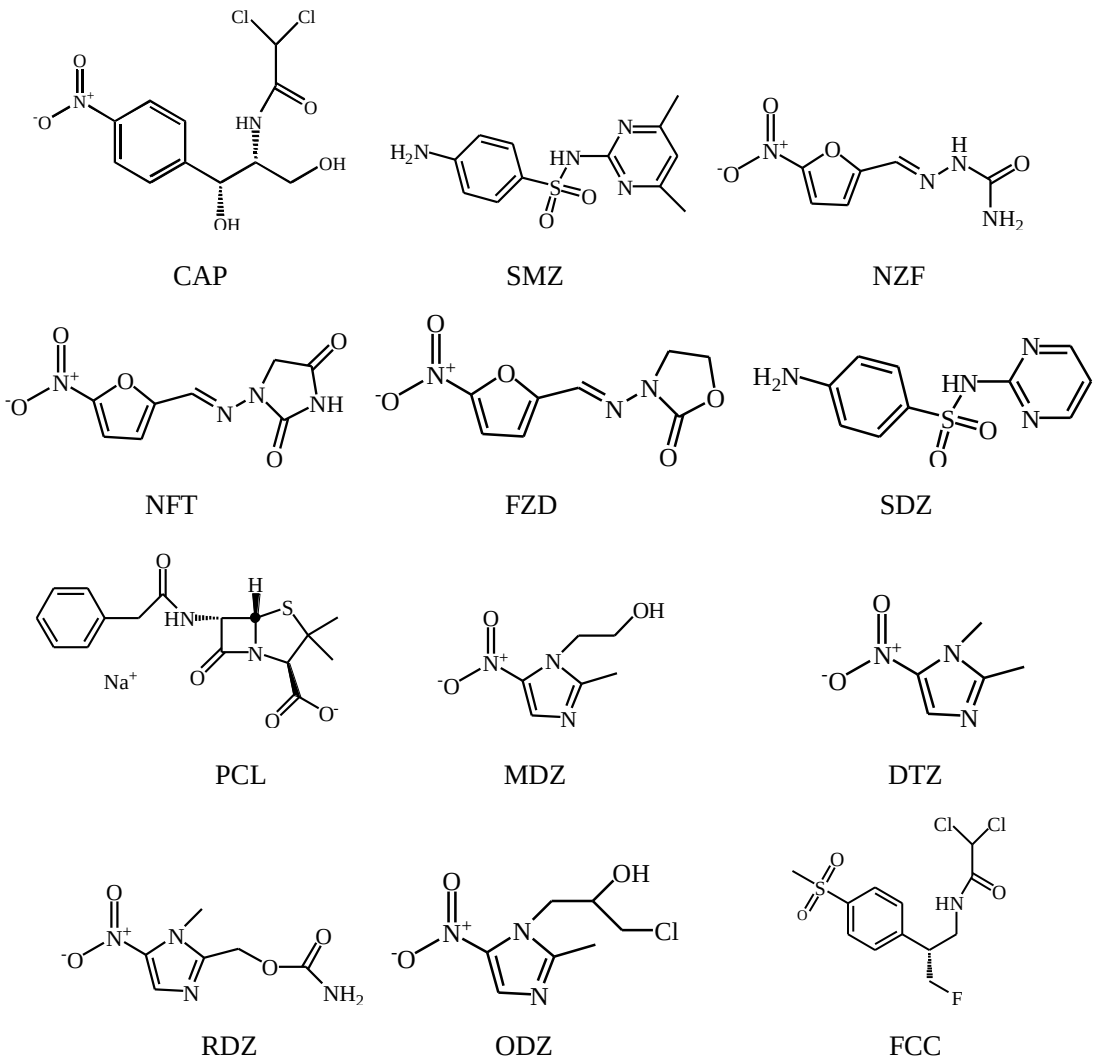


Fig. S1. Chemical structures of selected antibiotics.

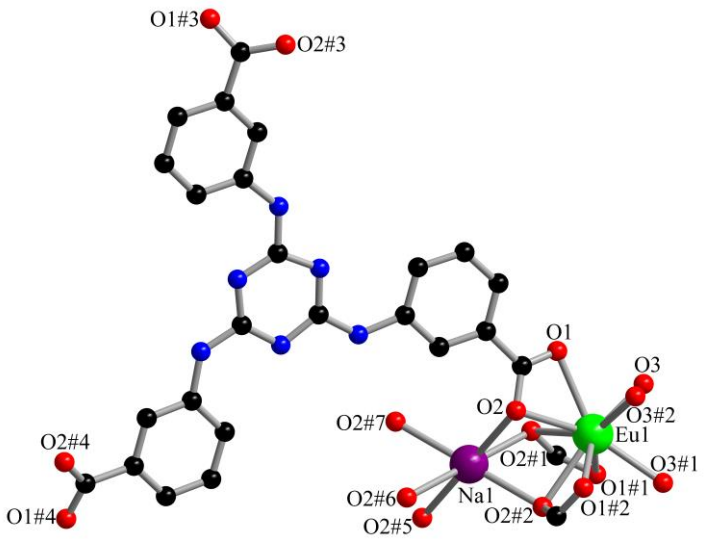


Fig. S2. Coordination environments of Eu(III) and Na(I) ions in **CTGU-7**. O3, O3#1, and O3#2 represent DMF molecule.

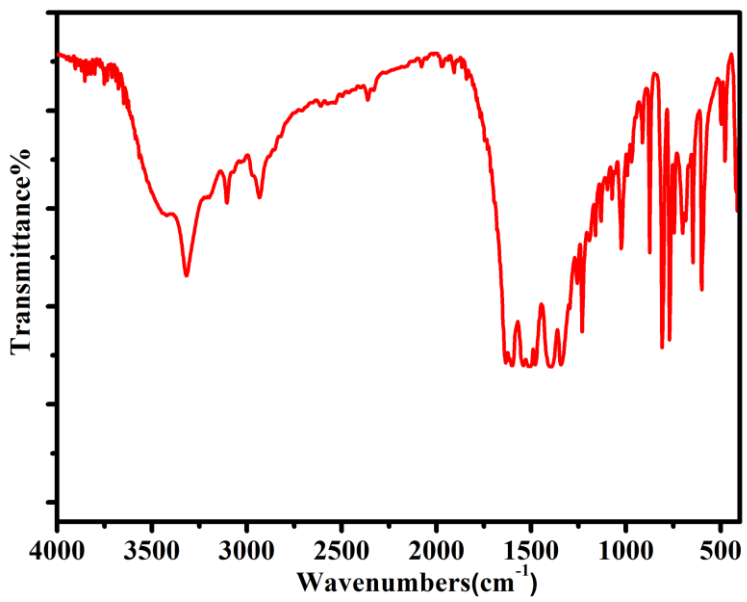


Fig. S3. The FT-IR spectra of **CTGU-7**.

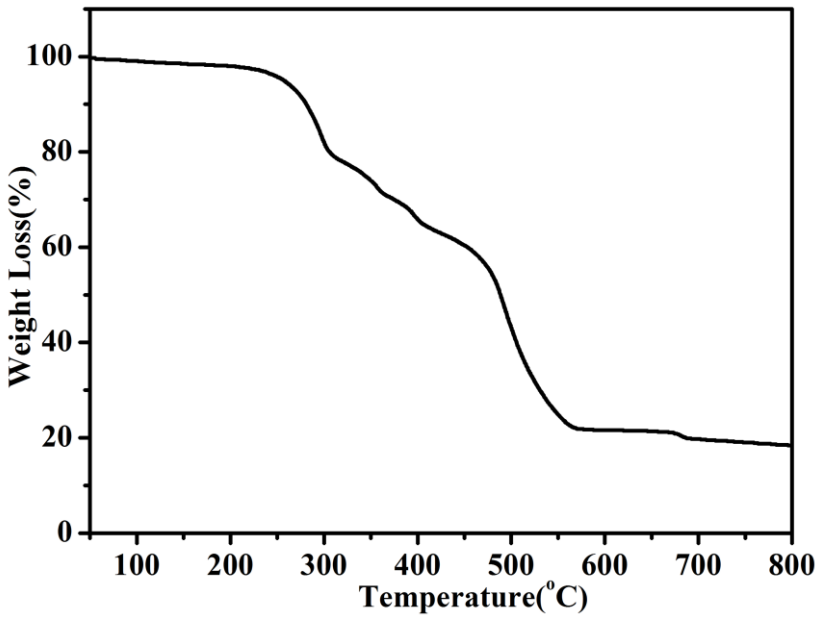


Fig. S4. TGA plot of complex **CTGU-7**.

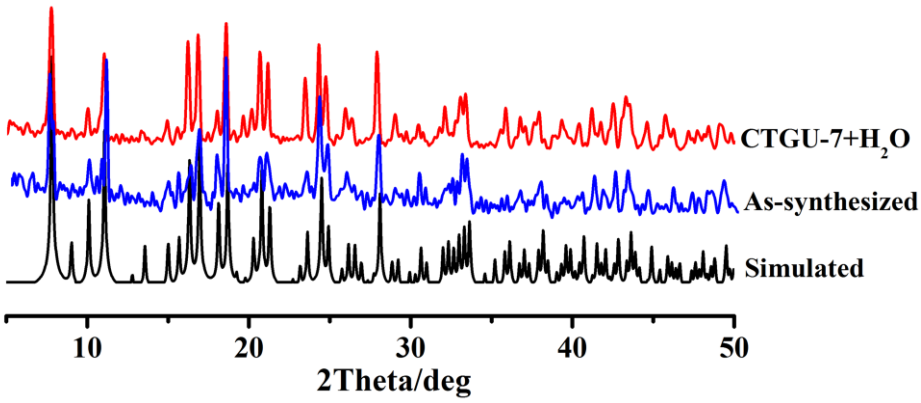


Fig. S5. PXRD patterns of **CGTU-7**; the simulated, as-synthesized, and immersed in water for five days.

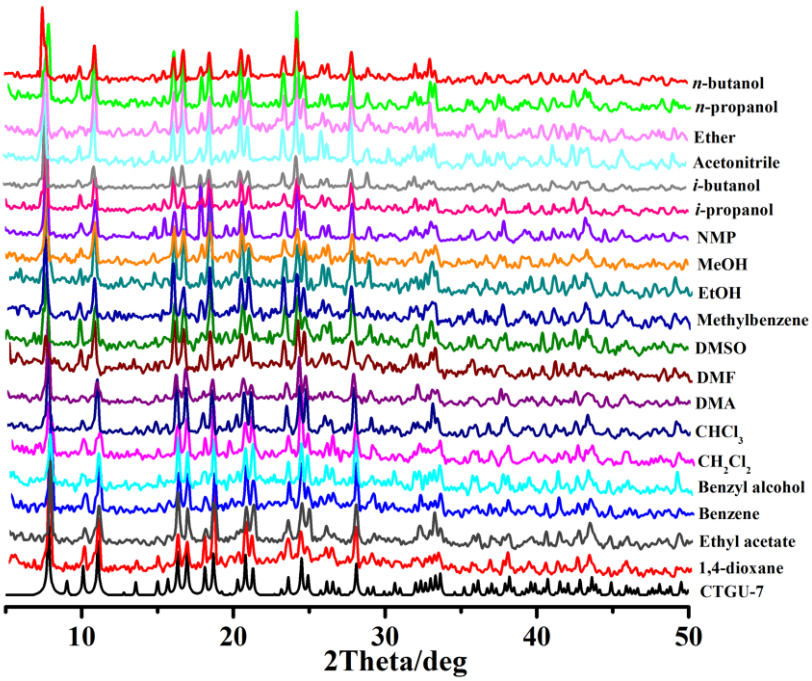


Fig. S6. PXRD patterns of **CGTU-7**; the simulated, and immersed in organic solvent for five days.

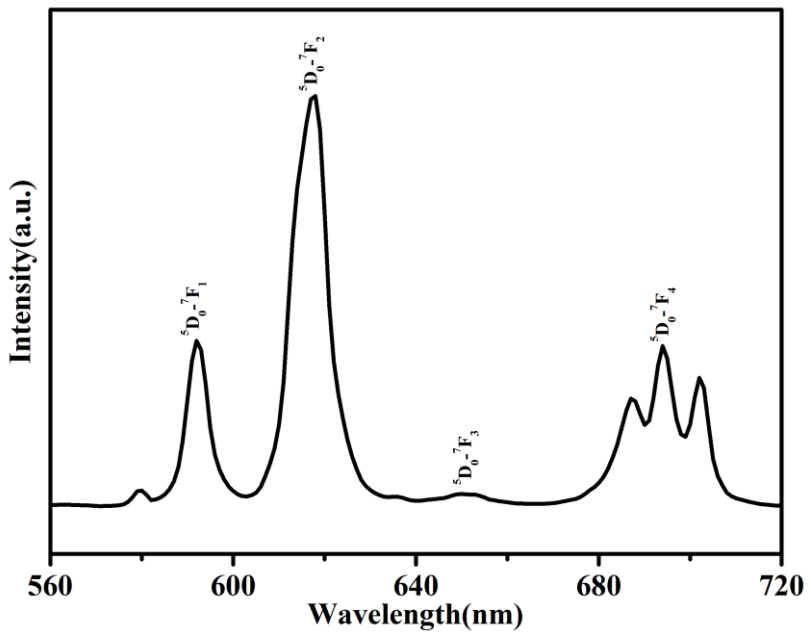


Fig. S7. The luminescent emission spectra of **CTGU-7** in the solid state at room temperature.

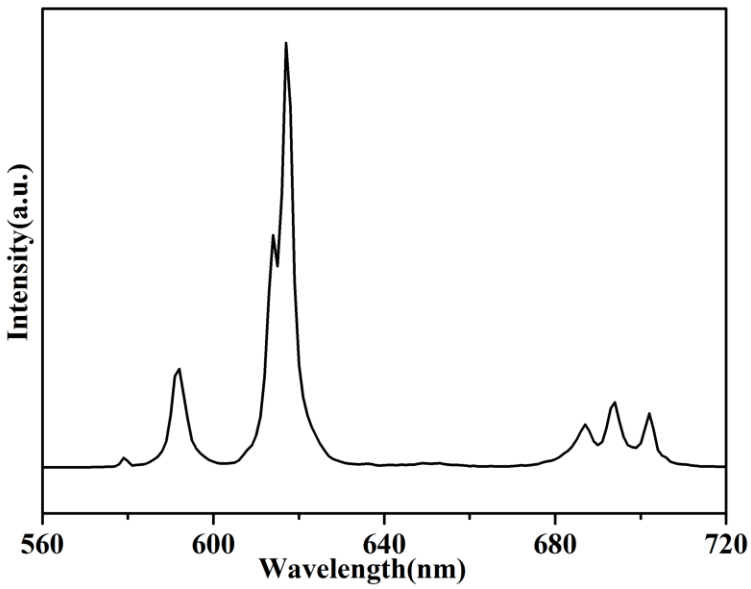


Fig. S8. The luminescent emission spectra for **CTGU-7** dispersed in H_2O at room temperature.

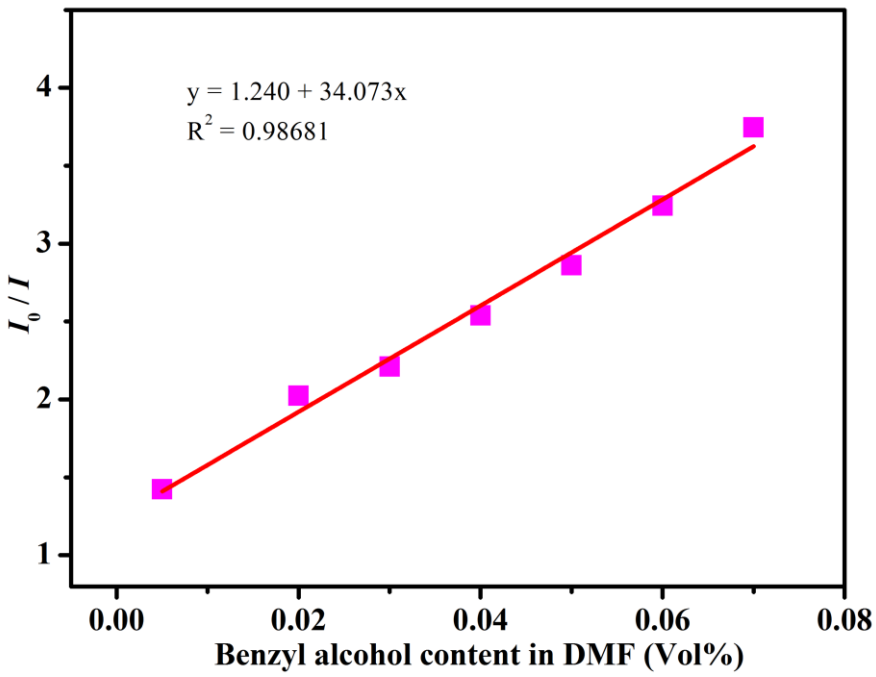


Fig. S9. The plot of I_0/I of **CTGU-7** at 617 nm with the concentration over a benzyl alcohol concentration range of 0.005−0.07 vol%.

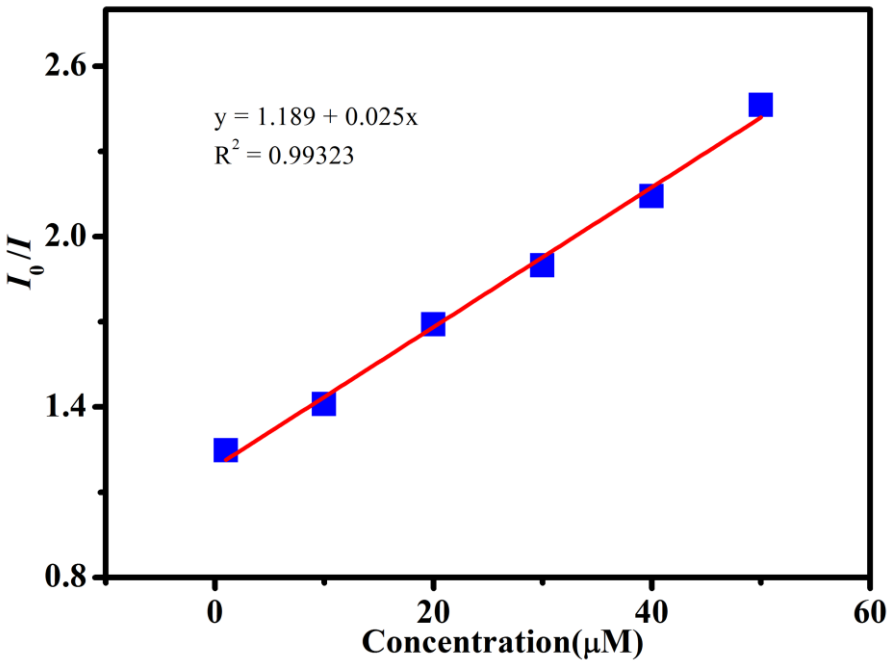
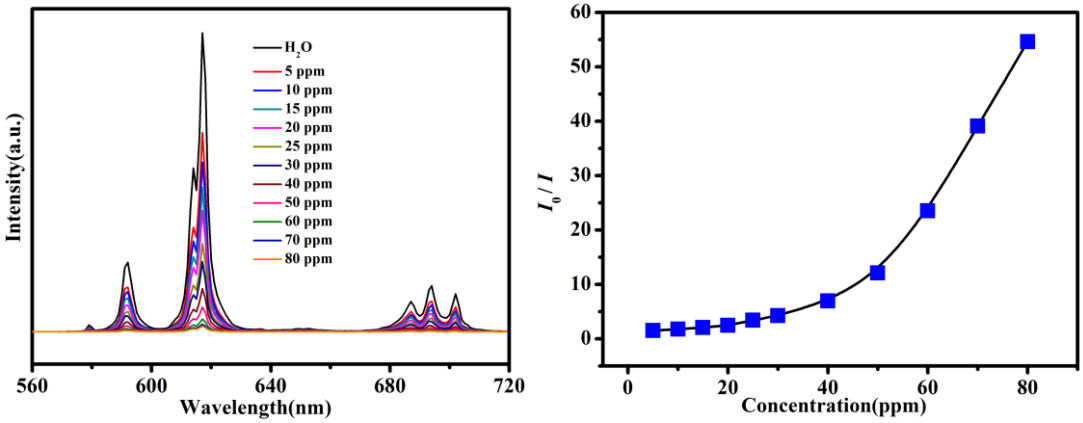
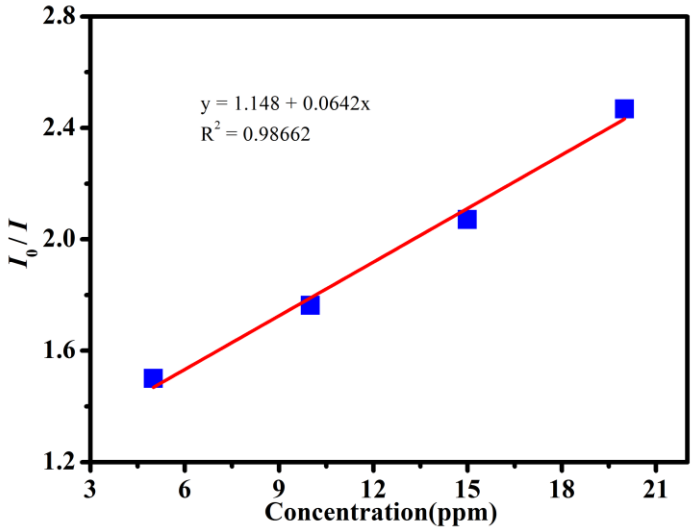


Fig. S10. The plot of I_0/I of **CTGU-7** at 617 nm with the concentration over a ODZ concentration range of 1−50 μM.



(a) (b)



(c)

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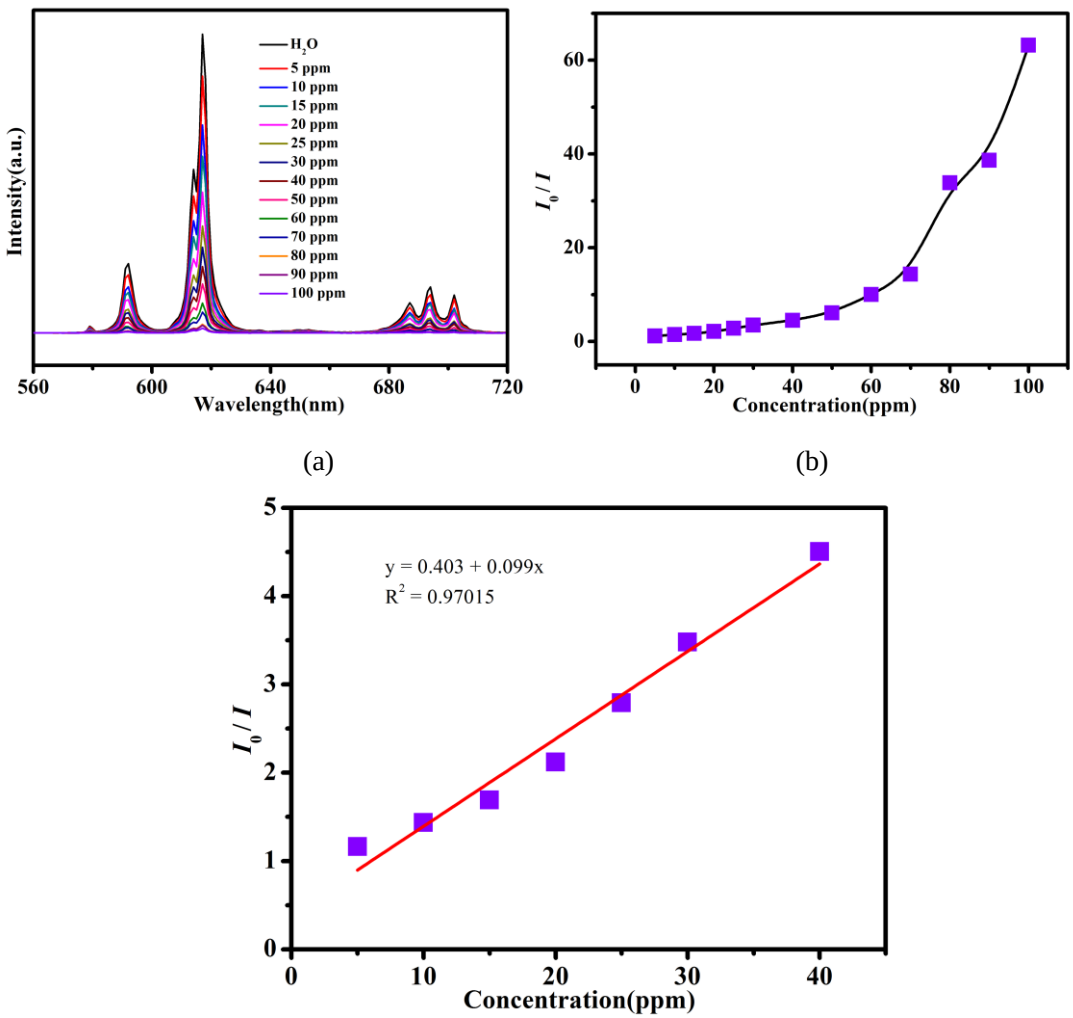

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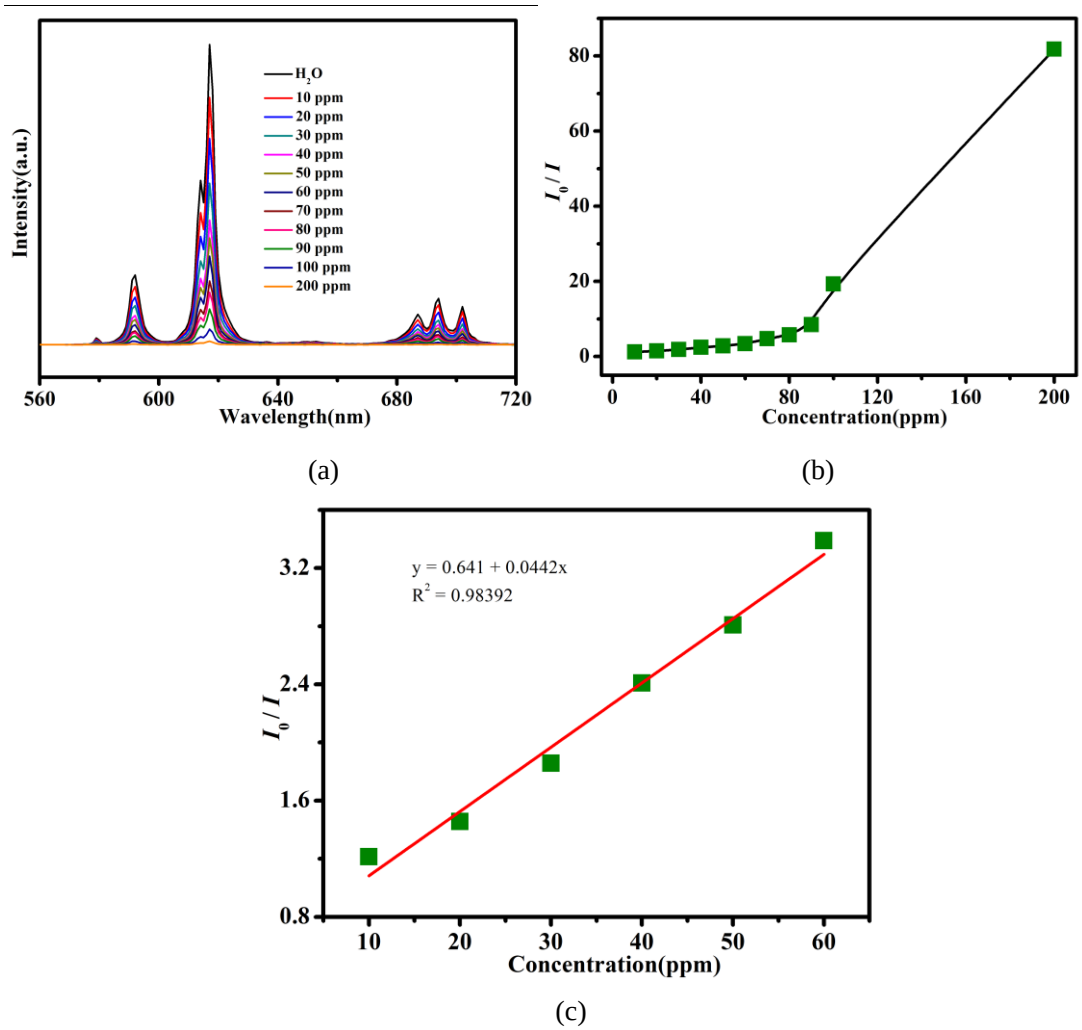

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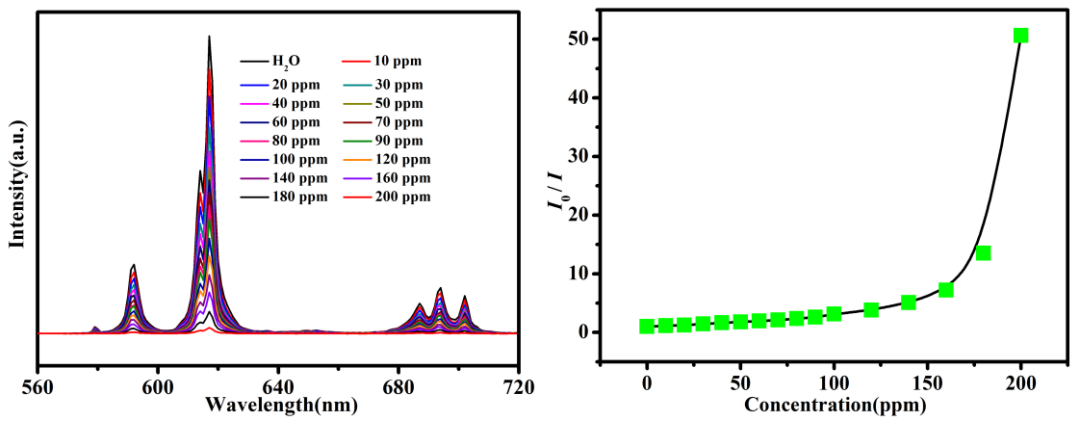
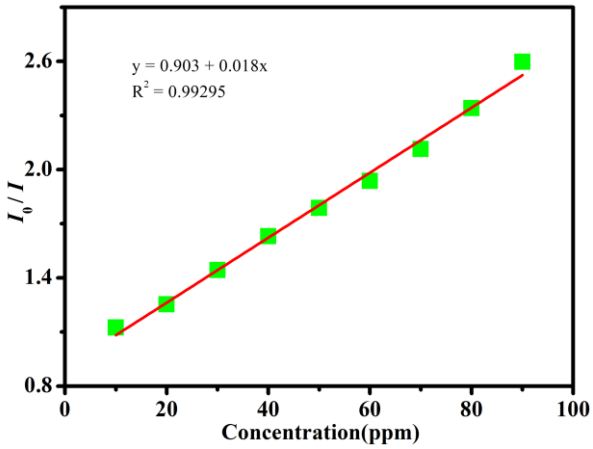


(a) (b)



(c)

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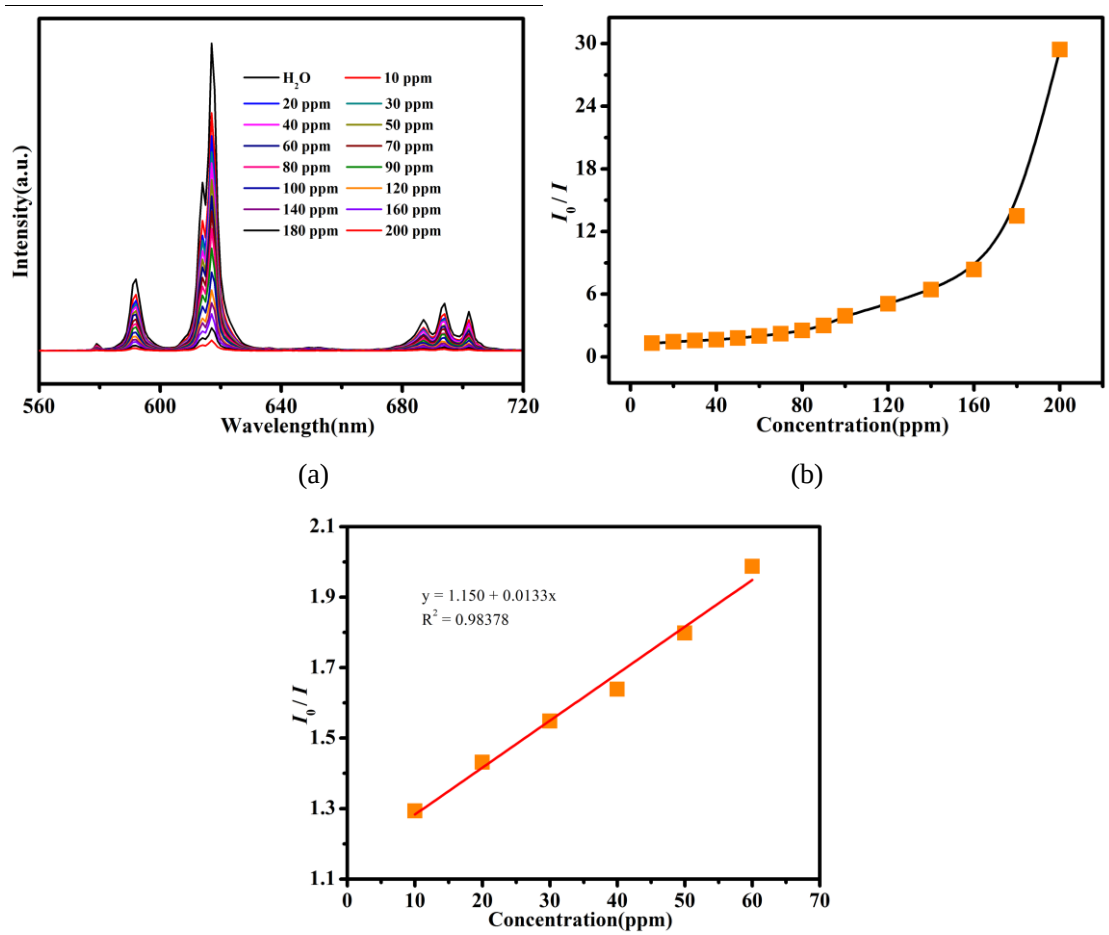

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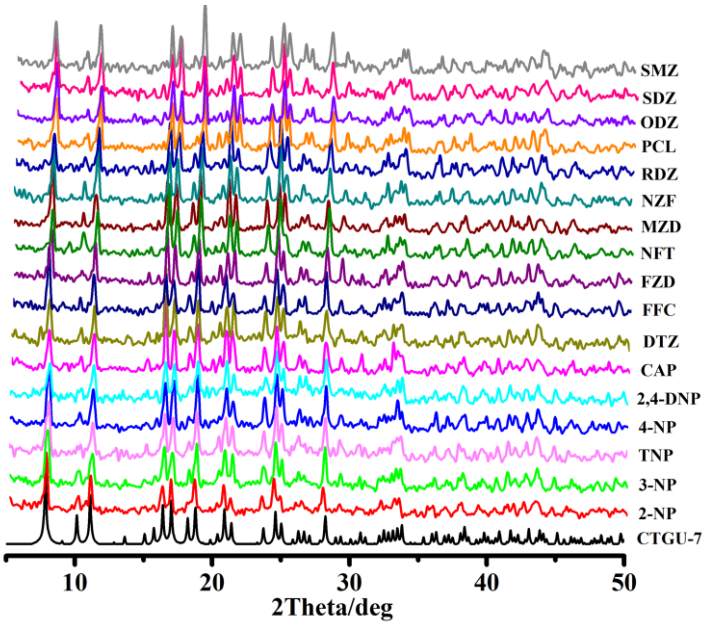

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