

Electronic Supporting Information

Luminescence-Colour-Changing Sensing Toward Neurological Drug Carbamazepine in Water and Biofluids Based on a White- Light-Emitting CD/Ln-MOF/PVA Test Paper

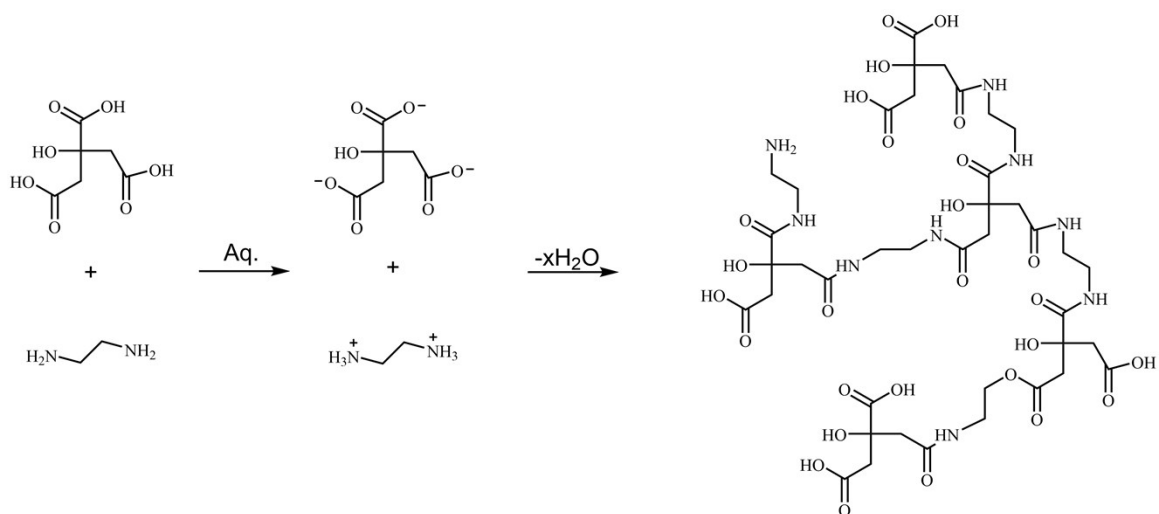
Yuxin Li, Mingao Sun, Yang Yang, Hong Meng, Qiaoe Wang, Chensha Li, Guangming Li

Table S1. Ratio of lanthanide ions by ICP for MOF-76(Eu_xTb_{1-x})/PVA.

| Material | Weight ratio (%) | | Measured ratio (%) | |
|--|------------------|----|--------------------|-------|
| | Eu | Tb | Eu | Tb |
| MOF-76(Eu _{0.01} Tb _{0.99})/PVA | 1 | 99 | 0.97 | 99.03 |
| MOF-76(Eu _{0.03} Tb _{0.97})/PVA | 3 | 97 | 2.95 | 97.05 |
| MOF-76(Eu _{0.05} Tb _{0.95})/PVA | 5 | 95 | 4.88 | 95.12 |
| MOF-76(Eu _{0.07} Tb _{0.93})/PVA | 7 | 93 | 6.92 | 93.08 |
| MOF-76(Eu _{0.09} Tb _{0.91})/PVA | 9 | 91 | 8.87 | 91.13 |

Table S2. Elemental analysis of C, H, O, N atoms for mCD/MOF-76(Eu_{0.05}Tb_{0.95})/PVA.

| Material | Weight ratio | C (%) | H (%) | O (%) | N (%) |
|---|--------------|-------|-------|-------|-------|
| | | | | | |
| CD:MOF-76(Eu _{0.05} Tb _{0.95})/PVA | 6:994 | 50.92 | 4.75 | 43.75 | 0.58 |
| CD:MOF-76(Eu _{0.05} Tb _{0.95})/PVA | 12:988 | 51.35 | 4.91 | 42.60 | 1.14 |
| CD:MOF-76(Eu _{0.05} Tb _{0.95})/PVA | 18:982 | 51.58 | 4.87 | 41.86 | 1.69 |
| CD:MOF-76(Eu _{0.05} Tb _{0.95})/PVA | 24:976 | 51.73 | 4.84 | 41.12 | 2.31 |
| CD:MOF-76(Eu _{0.05} Tb _{0.95})/PVA | 30:970 | 51.79 | 4.78 | 40.46 | 2.97 |



Scheme S1. A synthetic route using citric acid and ethylenediamine: from ionization to condensation and polymerization.

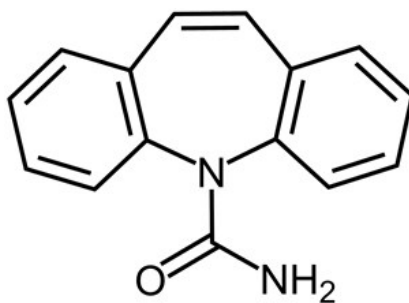


Figure S1. The molecule formula of CBZ molecule.

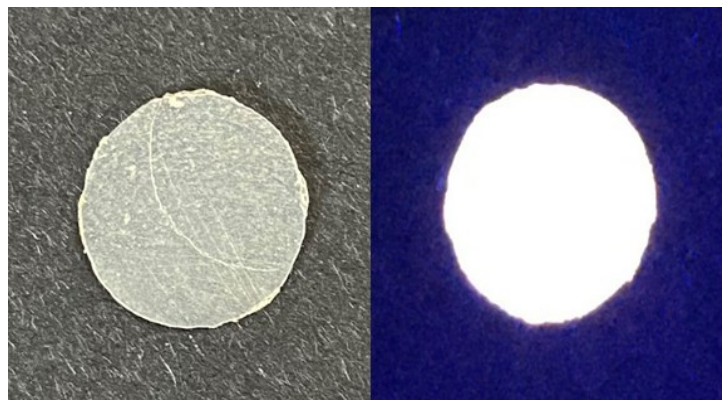


Figure S2. Photo images under daylight (left) and a UV lamp (right).

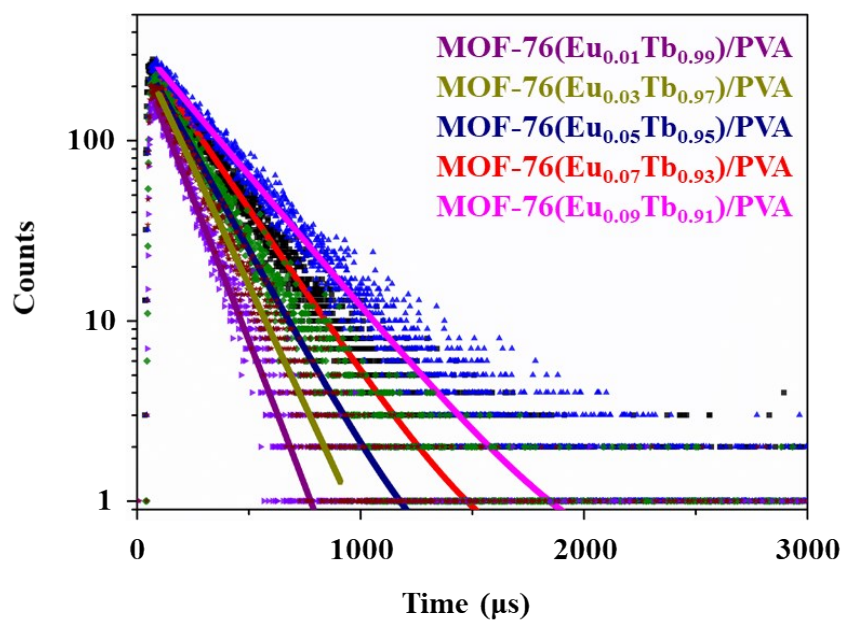


Figure S3. Time-dependent decaying curves of MOF-76(Eu_xTb_{1-x})/PVA under 614 nm.

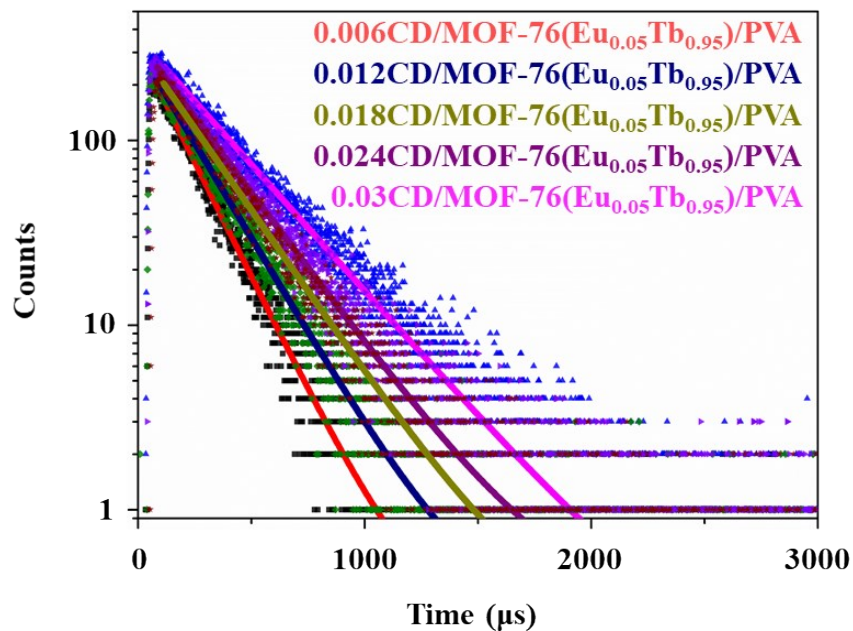


Figure S4. Decay curves of mCD/MOF-76(Eu_{0.05}Tb_{0.95})/PVA under 614 nm.

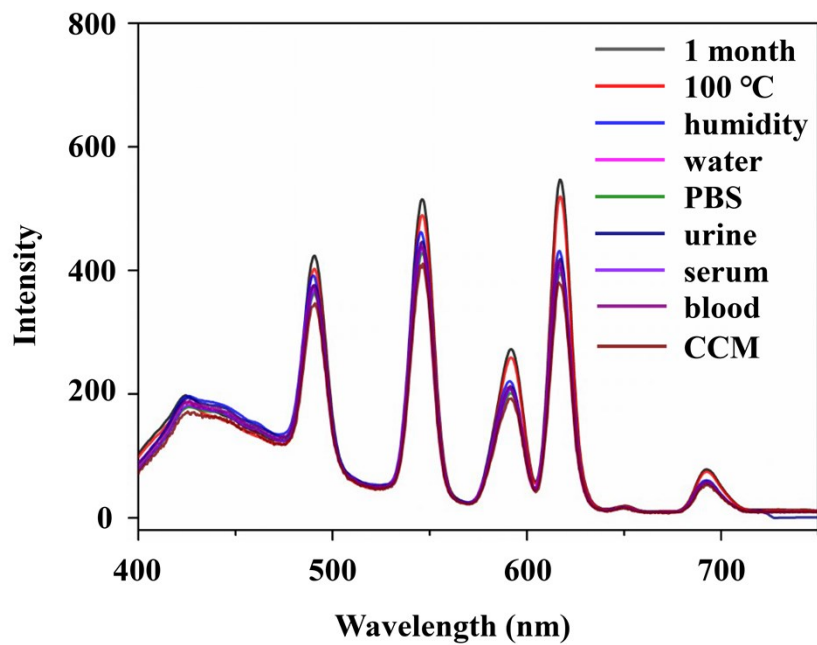


Figure S5. Emission spectra of WLE-TP under 9 kinds of solutions.

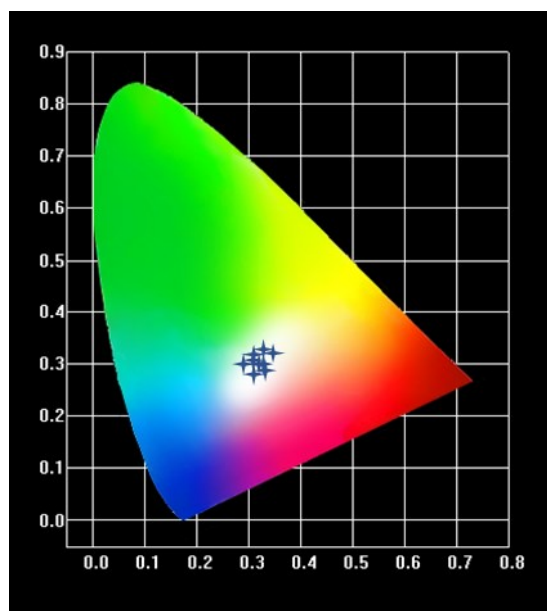


Figure S6. CIE of WLE-TP under 9 kinds of solutions.

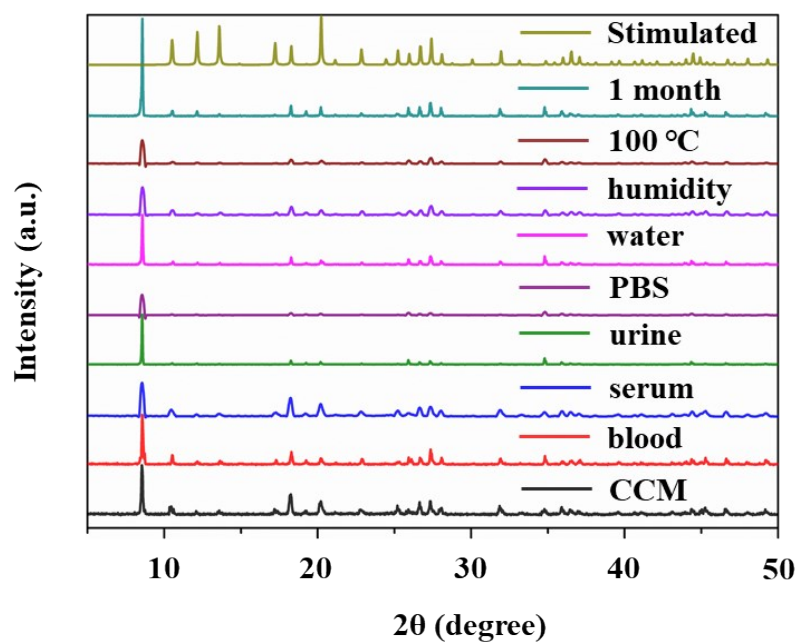


Figure S7. PXRD patterns of WLE-TP after soaking and drying in nine solutions.

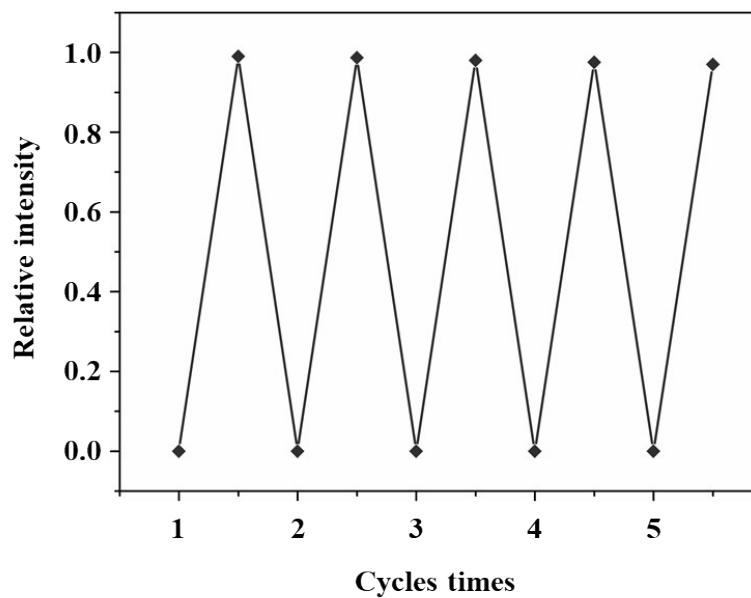


Figure S8. Recyclability tests of WLE-TP implemented with CBZ solution.

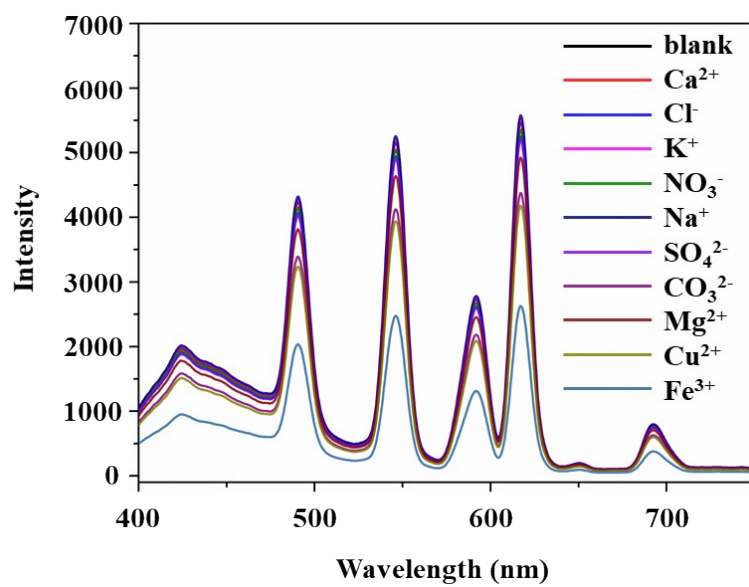


Figure S9. Selective fluorescence detection of inorganic ions in water by WLE-TP.

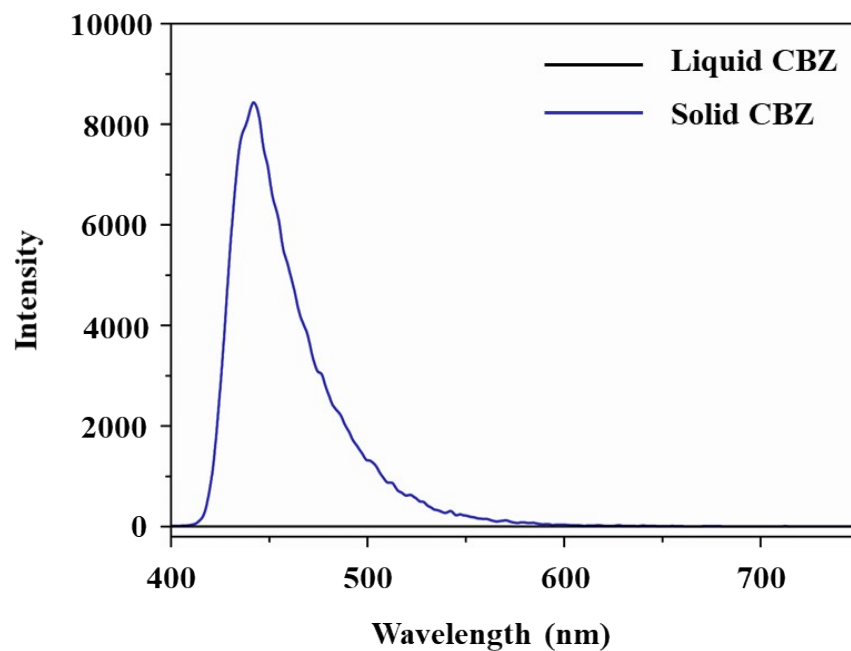


Figure S10. Emission spectrum of CBZ.

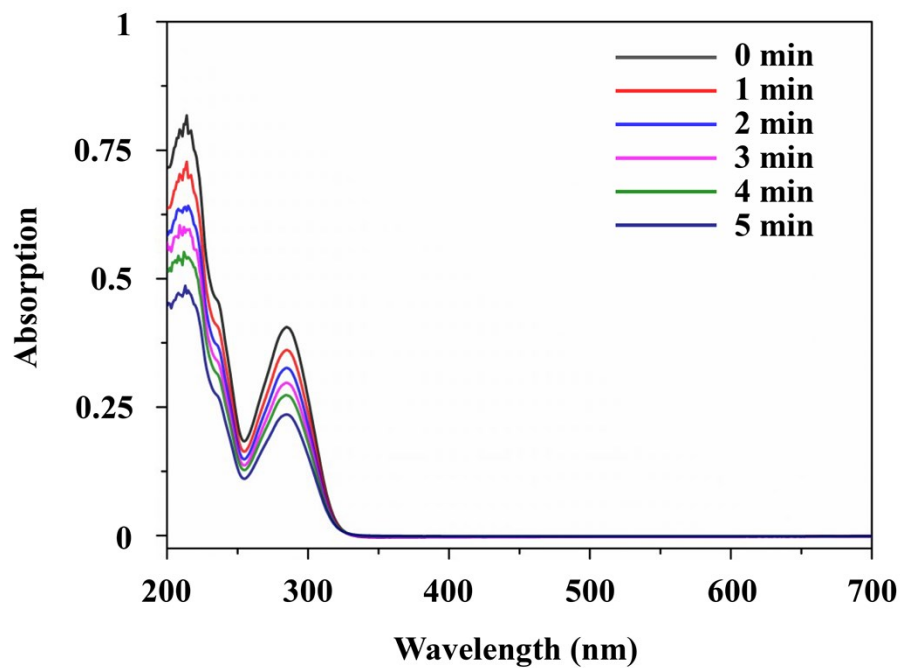


Figure S11. UV-vis spectra of 1mM CBZ solution immersed in WLE-TP for different times.

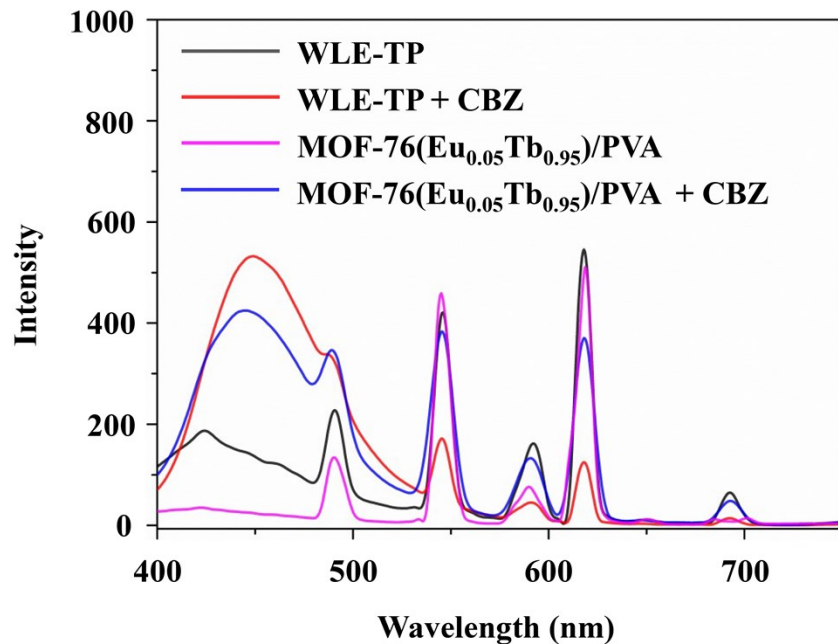


Figure S12. Fluorescence spectra of WLE-TP and MOF-76(Eu_{0.05}Tb_{0.95})/PVA after immersion in 1 mM CBZ solution.