Electronic Supplementary Material (ESI) for New Journal of Chemistry.


# Supplementary information

## Highly selective detection and differentiation of aminophenol isomers based on a bimetallic metal-organic-framework with peroxidase-like activity

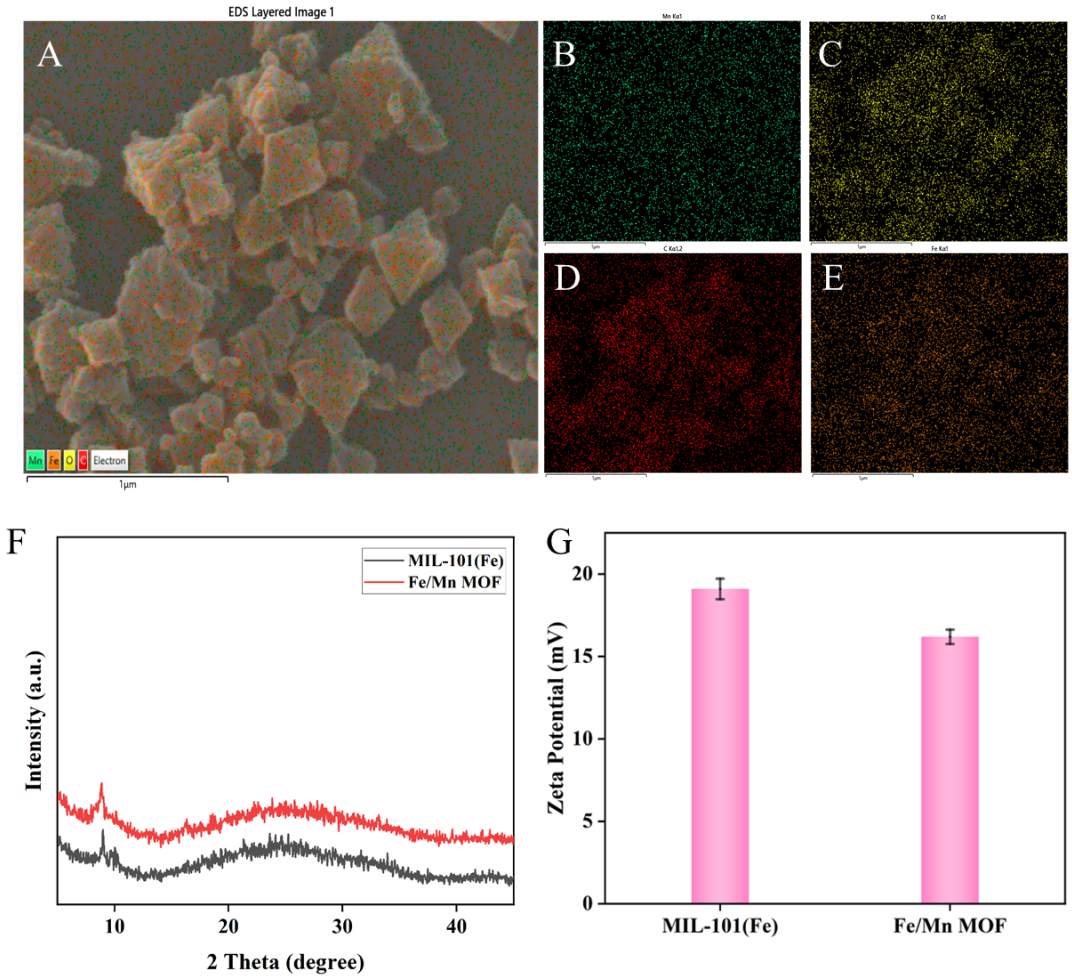


**Fig. S1** EDS diagrams of different elements in Fe/Mn MOF: (A) Fe/Mn MOF; (B) Mn; (C) O; (D) C; (E) Fe; (F) XRD pattern of MIL-101(Fe) and Fe/Mn MOF; (G) Zeta potential of MIL-101(Fe) and Fe/Mn MOF.

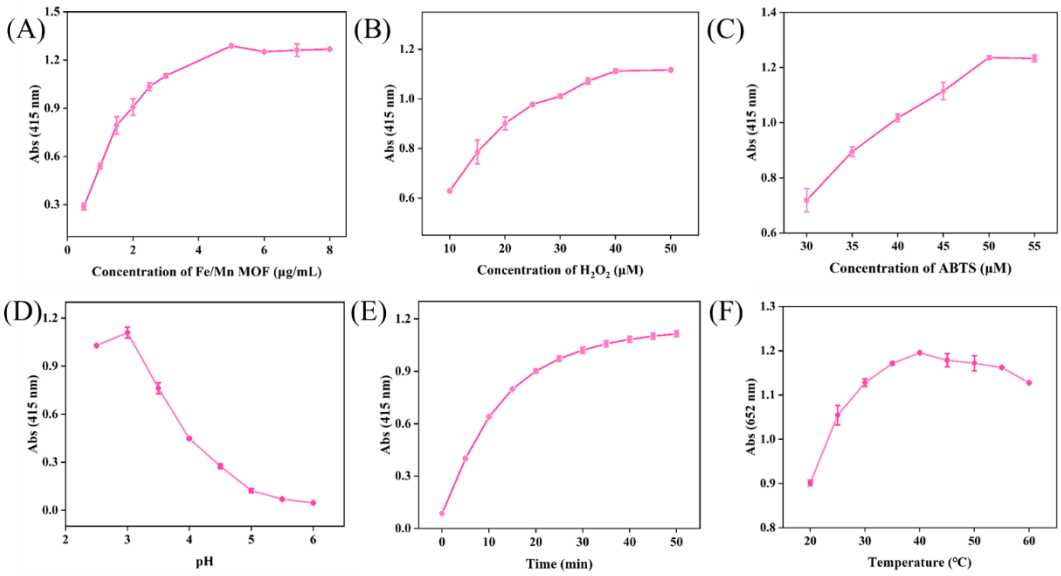


**Fig. S2** Optimization of reaction conditions. (A) Concentration of Fe/Mn MOF ($H_2O_2$ = 10 μM, ABTS = 10 μM, pH = 3); (B) Concentration of $H_2O_2$ (Fe/Mn MOF = 5 μg/mL, ABTS = 50 μM, pH = 3); (C) Concentration of ABTS (Fe/Mn MOF = 5 μg/mL, $H_2O_2$ = 40 μM , pH = 3); (D) pH (Fe/Mn MOF = 5 μg/mL, $H_2O_2$ = 40 μM, ABTS = 50 μM); (E) Time (Fe/Mn MOF = 5 μg/mL, $H_2O_2$ = 40 μM, ABTS = 50 μM, pH = 3). (F) Temperature (Fe/Mn MOF = 5 μg/mL, $H_2O_2$ = 40 μM, ABTS = 50 μM, pH = 3).

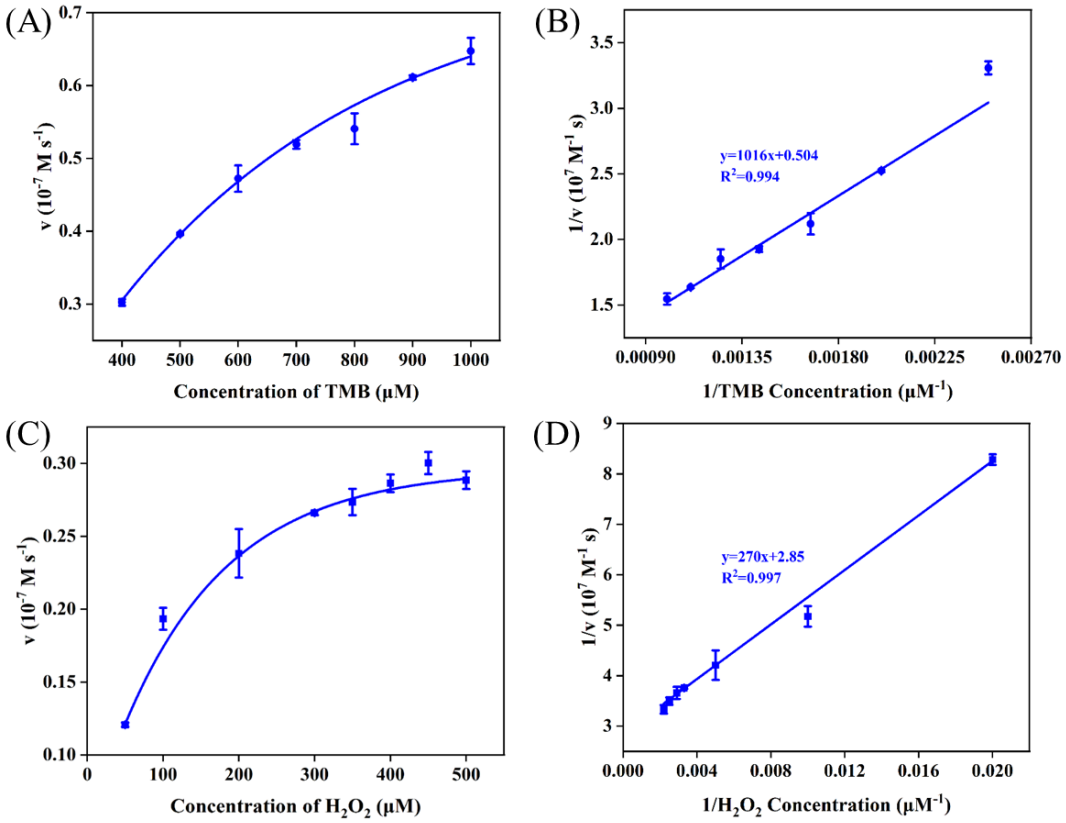


**Fig. S3** Steady-state kinetics assay for (A) TMB and (C) $H_2O_2$. Lineweaver-Burk plot of the double reciprocal for (B) TMB and (D) $H_2O_2$.

**Table S1** Detection of m-AP in the real samples (n = 3).

| Sample | Added(μM) | Found(μM) | RSD(%) | Recovery(%) |
|---|---|---|---|---|
| Lake water | 0 | Not Found | -- | -- |
| | 2.00 | 1.92 | 3.32 | 96.0 |
| | 20.0 | 20.9 | 5.23 | 104 |
| | 40.0 | 38.0 | 1.52 | 95.0 |
| Tap water | 0 | Not Found | -- | -- |
| | 2.00 | 1.88 | 3.13 | 94.0 |
| | 20.0 | 21.8 | 1.10 | 109 |
| | 40.0 | 39.4 | 2.92 | 98.5 |

**Table S2** Detection of p-AP in the real samples (n = 3).

| Sample | Added(μM) | Found(μM) | RSD(%) | Recovery(%) |
|---|---|---|---|---|
| Lake water | 0 | Not Found | -- | -- |
| | 2.00 | 1.89 | 1.91 | 94.5 |
| | 10.0 | 10.7 | 2.99 | 107 |
| | 20.0 | 21.6 | 0.90 | 108 |
| Tap water | 0 | Not Found | -- | -- |
| | 2.00 | 2.20 | 0.80 | 110 |
| | 10.0 | 9.55 | 3.93 | 95.5 |
| | 20.0 | 21.1 | 2.92 | 106 |