

Revised Supplementary Information

Surface-decorated porphyrinic zirconium-based metal-organic frameworks (MOFs) using post-synthetic self-assembly for photodegradation of methyl orange dye

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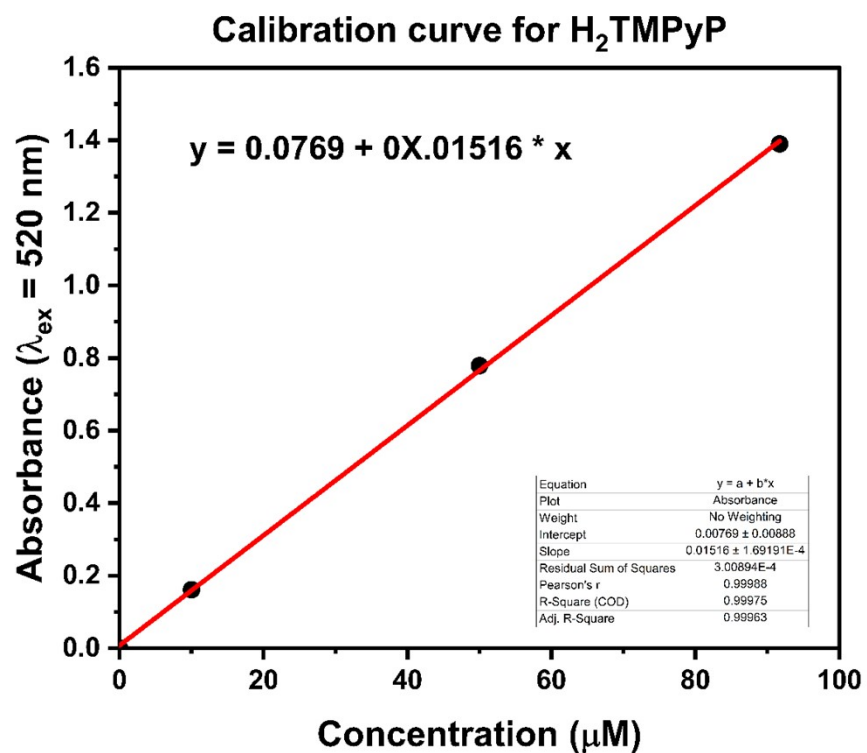


Fig. S1 Calibration curve for different concentrations of H₂TMPyP at 520 nm in an aqueous medium.

Quantitation method : Cliff Lorimer thin ratio section.
Processing option : All elements analyzed (Normalised)
Number of iterations = 1

Standardless

| Elem... | Weight% | Atomic% |
|---------|---------|---------|
| C K | 38.07 | 74.50 |
| O K | 7.87 | 11.56 |
| S K | 0.02 | 0.02 |
| Zr K | 54.03 | 13.92 |

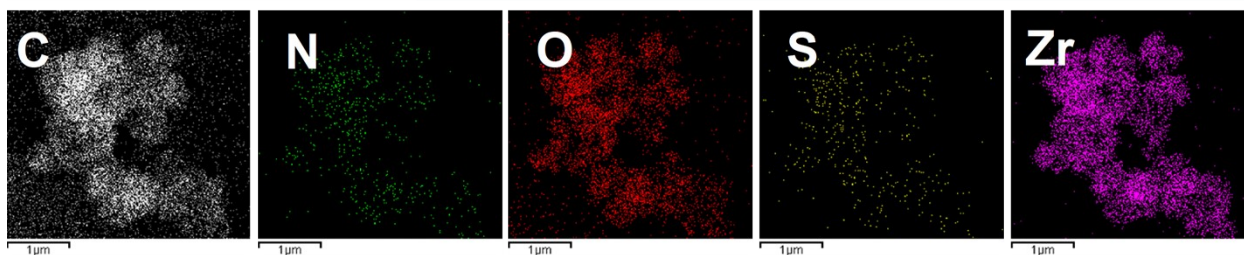
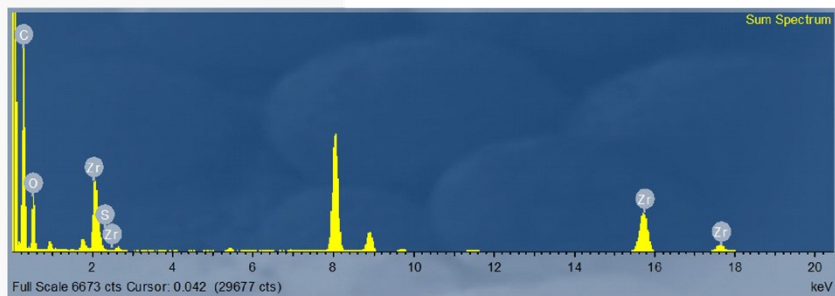


Fig. S2 TEM-EDS spectra and elemental mapping for H₂TMPyP@UiO-66-NH₂

Quantitation method : Cliff Lorimer thin ratio section.
Processing option : All elements analyzed (Normalised)
Number of iterations = 1

Standardless

| Elem... | Weight% | Atomic% |
|---------|---------|---------|
| C K | 67.90 | 89.95 |
| O K | 5.40 | 5.37 |
| S K | 0.08 | 0.04 |
| Zr K | 26.62 | 4.64 |
| Totals | 100.00 | |

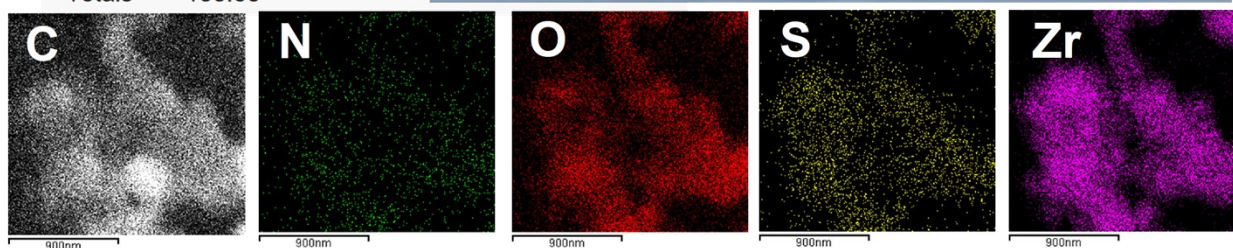
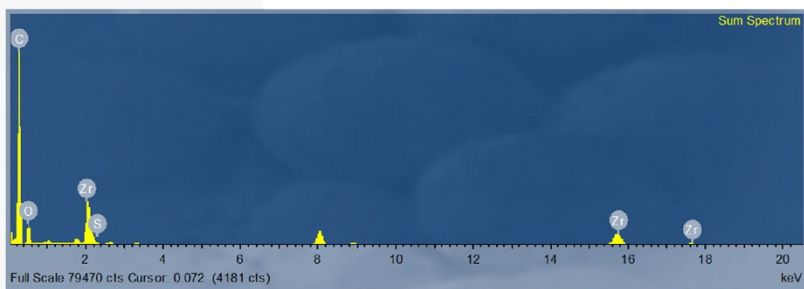


Fig S3 TEM-EDS spectra and elemental mapping for H₂TMPyP@UiO-66.

Spectrum processing :
Peaks possibly omitted : 0.940, 2.840, 3.689, 8.037, 8.906, 9.705 keV

Quantitation method : Cliff Lorimer thin ratio section.
Processing option : All elements analyzed (Normalised)
Number of iterations = 1

Standardless

| Elem... | Weight% | Atomic% |
|---------|---------|---------|
| C K | 55.86 | 81.23 |
| O K | 11.41 | 12.46 |
| S K | 0.13 | 0.07 |
| Zr K | 32.59 | 6.24 |

Totals 100.00

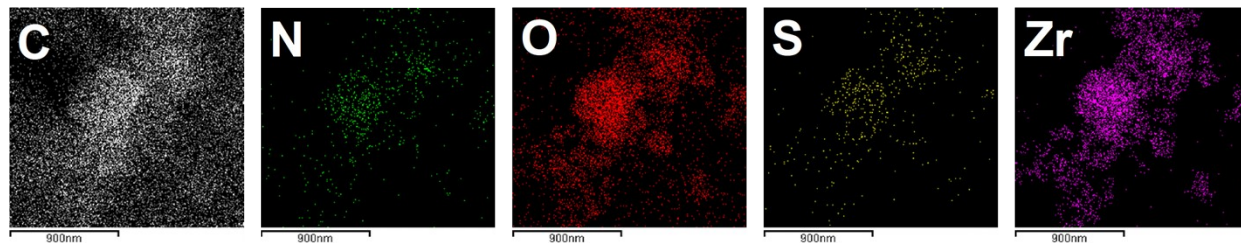
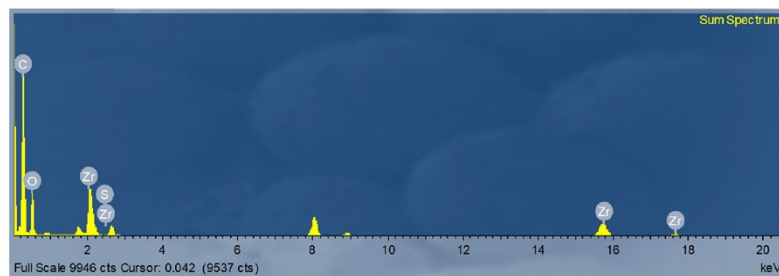


Fig. S4 TEM-EDS spectra and elemental mapping for H₂TMPyP@MIP-202.

Quantitation method : Cliff Lorimer thin ratio section.
Processing option : All elements analyzed (Normalised)
Number of iterations = 1

Standardless

| Elem... | Weight% | Atomic% |
|---------|---------|---------|
| C K | 36.83 | 69.16 |
| O K | 13.09 | 18.45 |
| Zr K | 50.08 | 12.38 |
| Totals | 100.00 | |

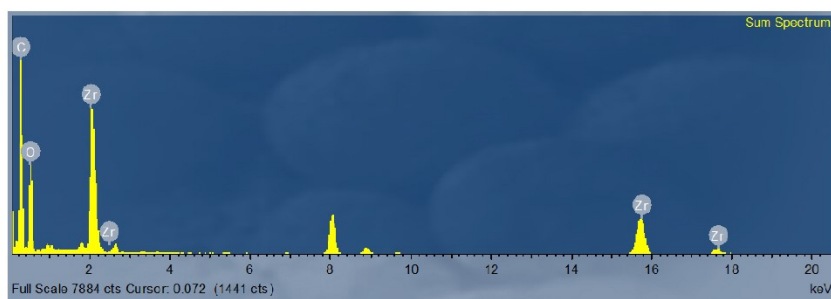


Fig. S5 TEM-EDS spectra for UiO-66-NH₂

Quantitation method : Cliff Lorimer thin ratio section.
Processing option : All elements analyzed (Normalised)
Number of iterations = 1

Standardless

| Elem... | Weight% | Atomic% |
|---------|---------|---------|
| C K | 61.07 | 86.64 |
| O K | 6.93 | 7.38 |
| Zr K | 31.99 | 5.98 |

Totals 100.00

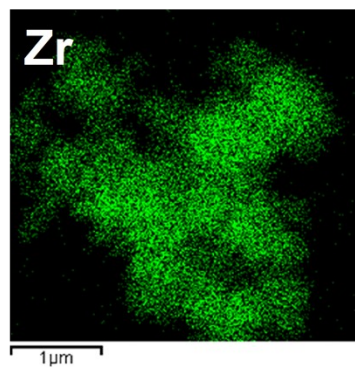
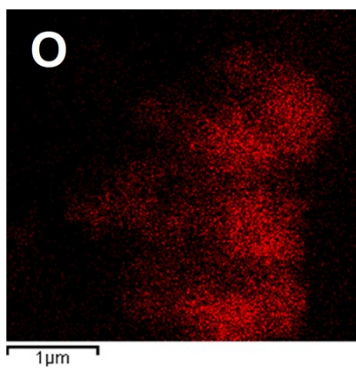
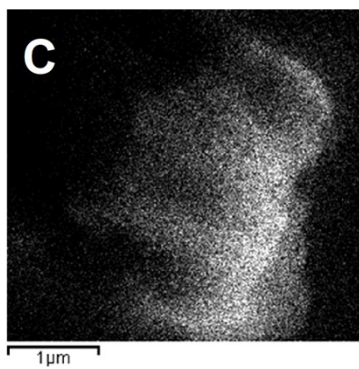
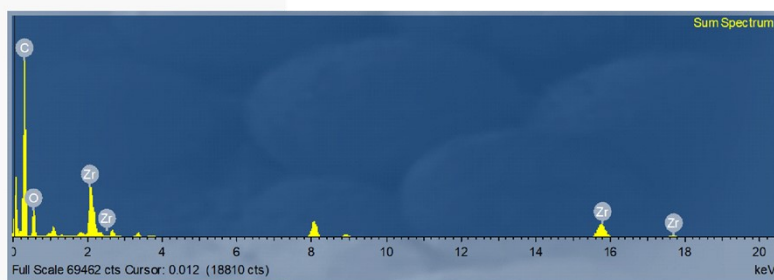


Fig. S6 TEM-EDS spectra for UiO-66.

Spectrum processing :
Peaks possibly omitted : 0.926, 2.831, 8.035, 8.899, 9.679 keV

Quantitation method : Cliff Lorimer thin ratio section.
Processing option : All elements analyzed (Normalised)
Number of iterations = 1

Standardless

| Elem... | Weight% | Atomic% |
|---------|---------|---------|
| C K | 61.81 | 85.52 |
| O K | 8.78 | 9.12 |
| Zr K | 29.40 | 5.36 |

Totals 100.00

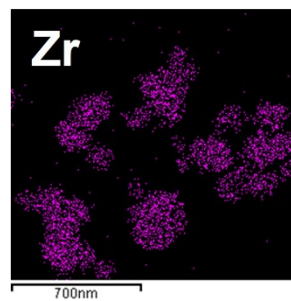
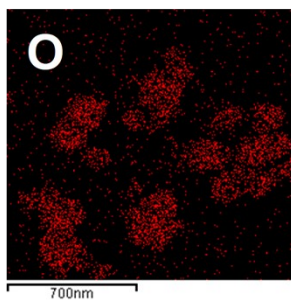
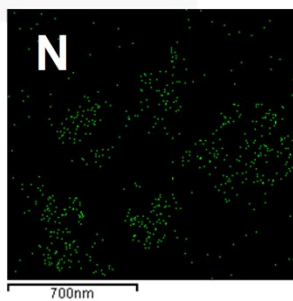
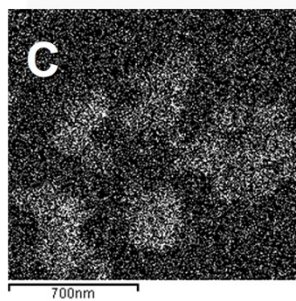
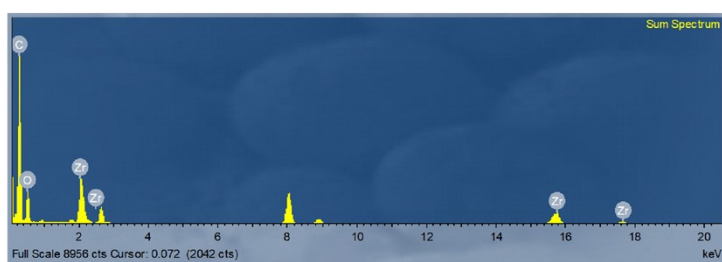


Fig. S7 TEM-EDS spectra for MIP-202.

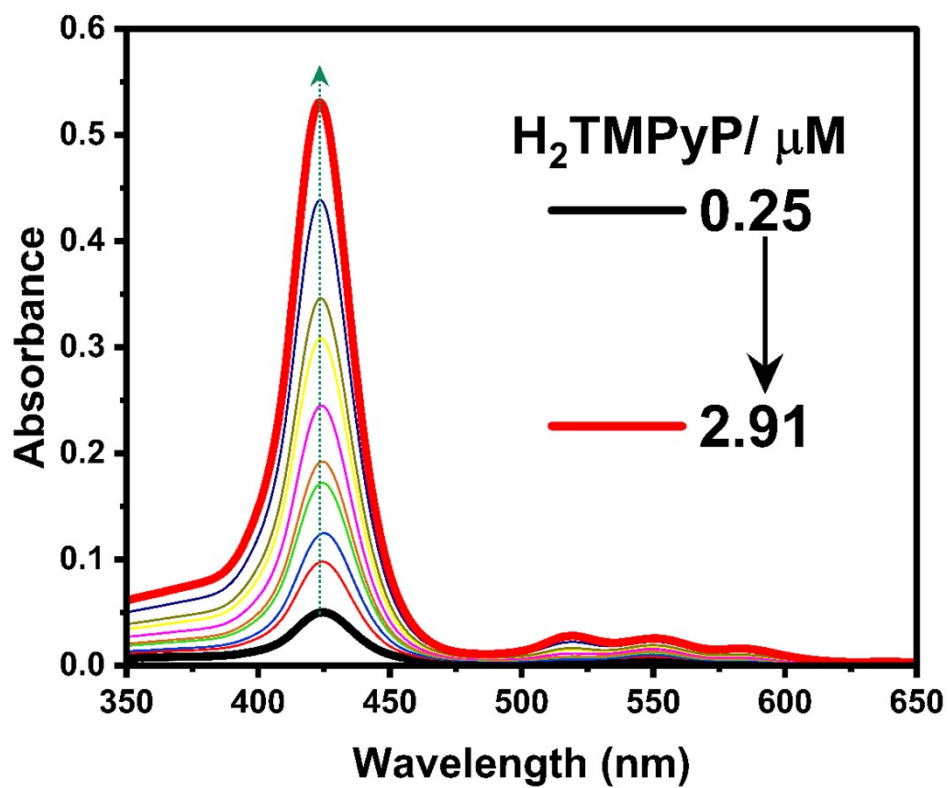
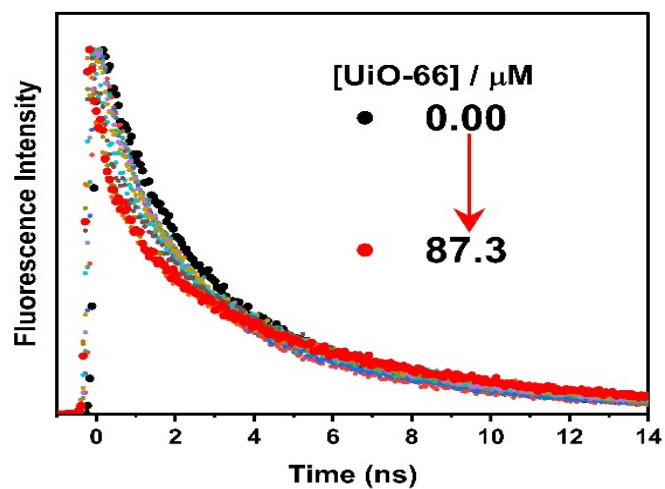


Fig. S8 Steady-state absorption spectra of different concentrations of H₂TMPyP.

(a)



(b)

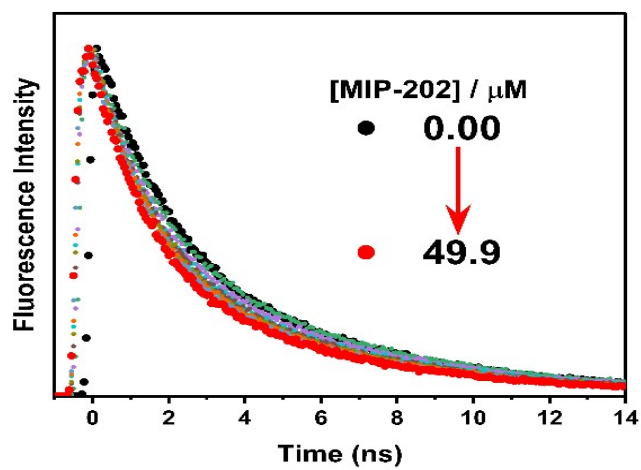


Fig. S9 TCSPC decay profiles for titration of H₂TMPyP (3.0 μM) with (a) UiO-66-NH₂ (0-87.3 μM), and (b) MIP-202 (0-49.9 μM). The excitation light was fixed at 439 nm.

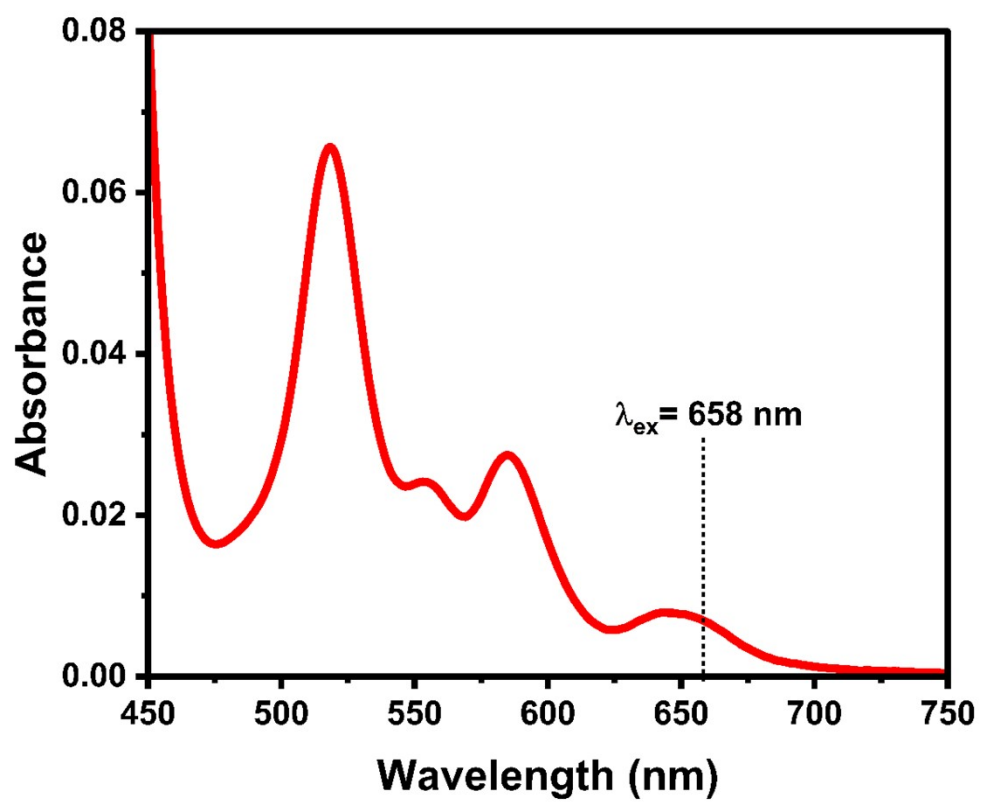


Fig. S10 Q-band of H₂TMPyP.