

Electronic Supplementary Information

Solid Nanoarchitecture – Cu(II) Solution: Dynamics of the Chemical Communication

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Figure S1. Set-up for UV-vis measurements of the quartz substrate bearing a porphyrin monolayer.

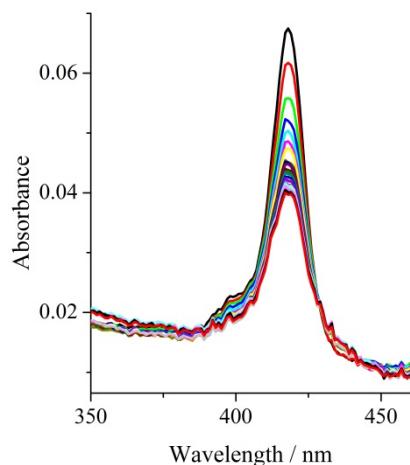


Figure S2. UV-vis measurements of the 1.37×10^{-7} M acetonitrile solution (2 mL) of the 5,10,15,20-tetrakis(4-hydroxyphenyl)-21H,23H-porphine during the additions (5-200 μ L) of the 3.62×10^{-4} M acetonitrile solution of $\text{Cu}(\text{AcO})_2$.

Table S1. Additions of copper(II) acetate acetonitrile solutions for the conversion of the H₂TTP_SAM in CuTTP_SAM.

Addition	Mol of porphyrin in H ₂ TTP_SAM	μL of $\text{Cu}(\text{AcO})_2$ 2.5×10^{-6} M	$[\text{Cu}(\text{AcO})_2]$ (mol/L)	Mol of $\text{Cu}(\text{AcO})_2$ / Mol of porphyrin in H ₂ TTP_SAM
0	4.57E-11	0	0	0
1	4.57E-11	5	5.00E-9	0.27

2	4.57E-11	10	1.00E-8	0.54
3	4.57E-11	20	2.00E-8	1.09
4	4.57E-11	40	4.00E-8	2.19
5	4.57E-11	60	6.00E-8	3.28
6	4.57E-11	100	1.00E-7	5.47
7	4.57E-11	140	1.40E-7	7.66

	Mol of porphyrin in H ₂ TTP_SAM	μL of (CuAcO) ₂ 2.5 x 10 ⁻⁴ M	[Cu(AcO) ₂] (mol/L)	Mol of Cu(AcO) ₂ / Mol of porphyrin in H ₂ TTP_SAM
8	4.57E-11	16.4	1.63E-6	89.72
9	4.57E-11	31.4	3.10E-6	171.77
10	4.57E-11	46.4	4.55E-6	253.83
11	4.57E-11	61.4	5.99E-6	335.89
12	4.57E-11	76.4	7.41E-6	417.94
13	4.57E-11	91.4	8.82E-6	500.00
14	4.57E-11	106.4	1.05E-5	582.05
15	4.57E-11	121.4	1.16E-5	664.11
16	4.57E-11	136.4	1.29E-5	746.17
17	4.57E-11	151.4	1.43E-5	828.23
18	4.57E-11	166.4	1.56E-5	910.28
19	4.57E-11	181.4	1.69E-5	992.34
20	4.57E-11	196.4	1.82E-5	1074.40
21	4.57E-11	211.4	1.95E-5	1156.45
22	4.57E-11	226.4	2.07E-5	1238.51
23	4.57E-11	241.4	2.20E-5	1320.57
24	4.57E-11	256.4	2.32E-5	1402.62
25	4.57E-11	271.4	2.45E-5	1484.68
26	4.57E-11	286.4	2.57E-5	1566.74
27	4.57E-11	301.4	2.69E-5	1648.80
28	4.57E-11	316.4	2.81E-5	1730.85

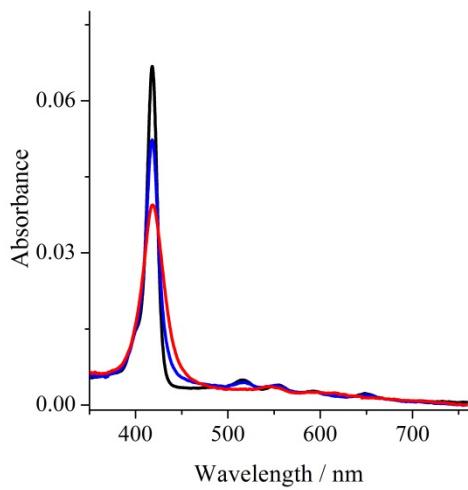


Figure S3. UV-vis measurements of the 1.37×10^{-7} M acetonitrile solution (2 mL) of the 5,10,15,20-tetrakis(4-hydroxyphenyl)-21H,23H-porphine (black line) and after the additions of 24 (blue line) and 200 (red line) μL of the 3.62×10^{-4} M acetonitrile solution of $\text{Cu}(\text{AcO})_2$.

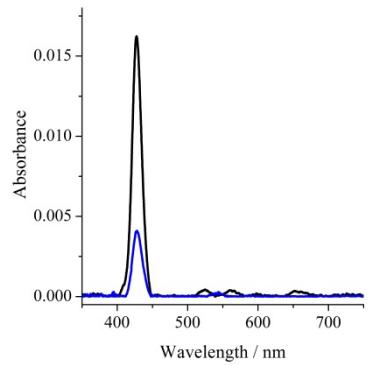


Figure S4. UV-vis spectra of the starting $\text{H}_2\text{TTP-SAM}$ and upon 2.81×10^{-5} mol/L of $\text{Cu}(\text{AcO})_2$.