A WATER-STABLE COPPER-BASED NANOSIZED METAL-ORGANIC FRAMEWORK FOR DISCRIMINATIVE SENSING OF AMINES

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S7. FTIR spectra (KBr pellets, cm^{-1}) of **1** before and after its reaction with different amine vapors.

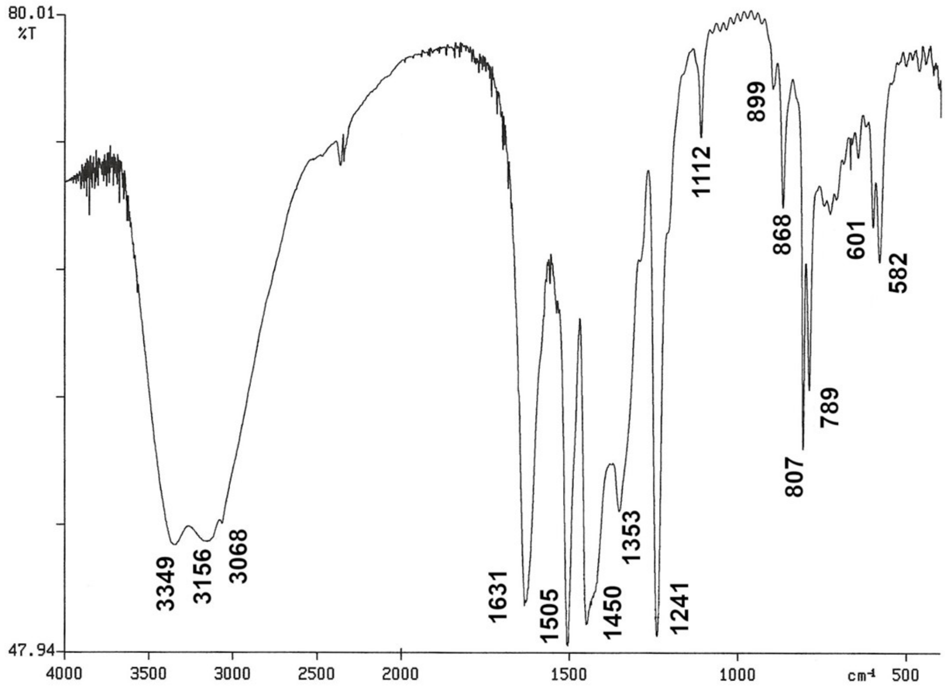

Figure S1. Infrared spectrum of **1**.

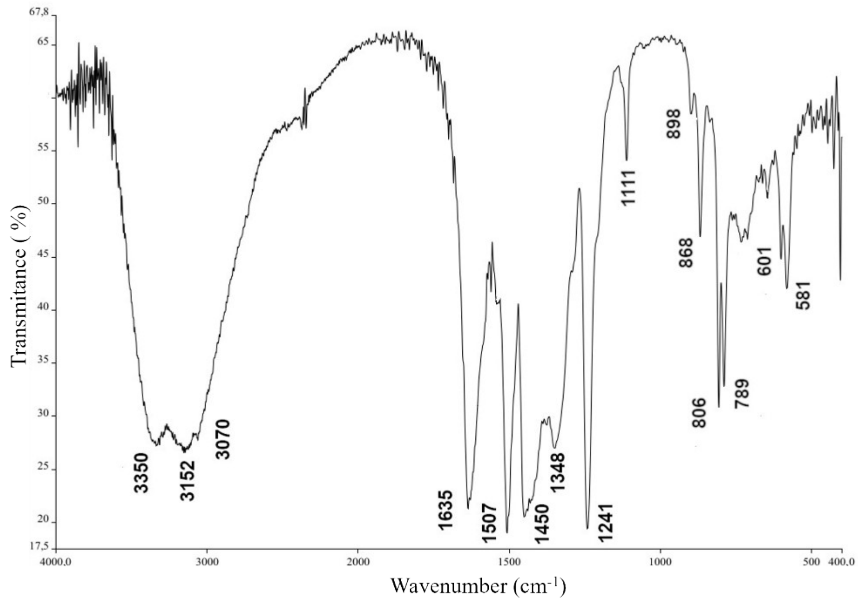

Figure S2. Infrared spectrum of **1** after stirring a water solution in air overnight.

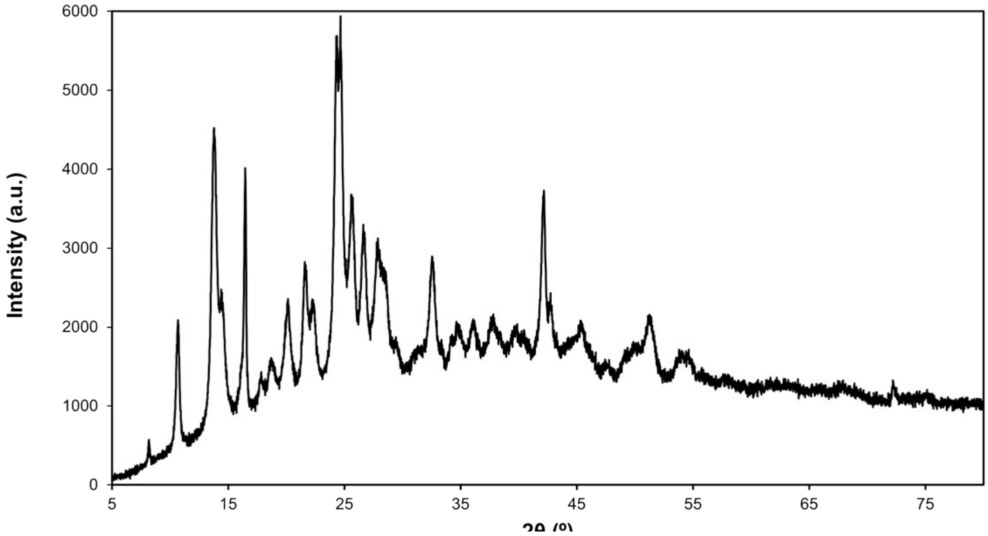

Figure S3. DRX spectrum of **1**.

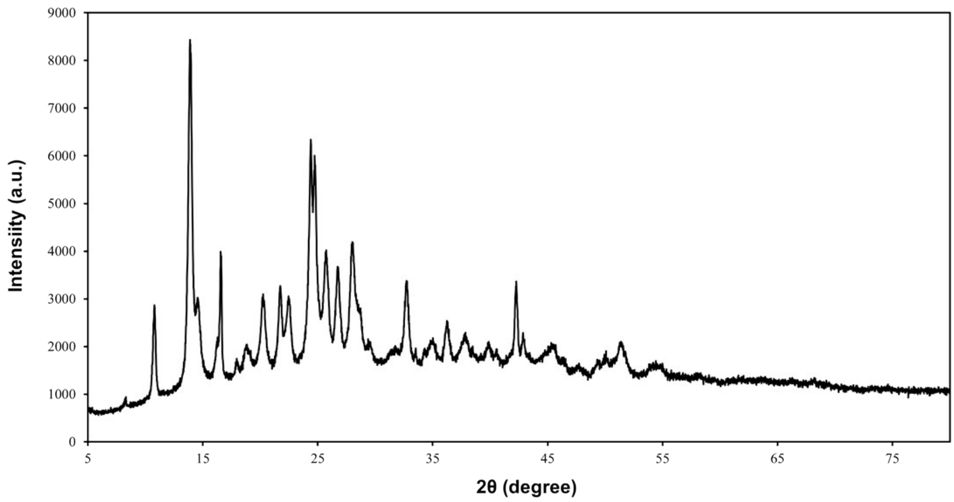

Figure S4. DRX spectrum of **1** after stirring a water solution in air overnight.

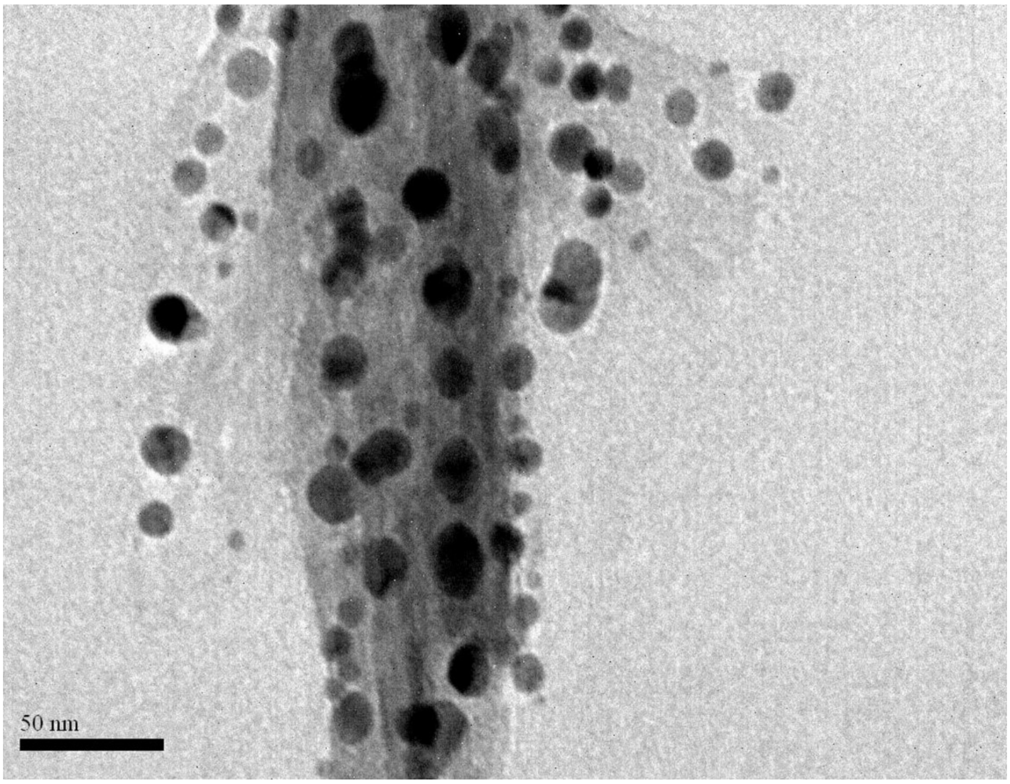

Figure S5. TEM micrograph of **1** after stirring a water solution in air overnight.

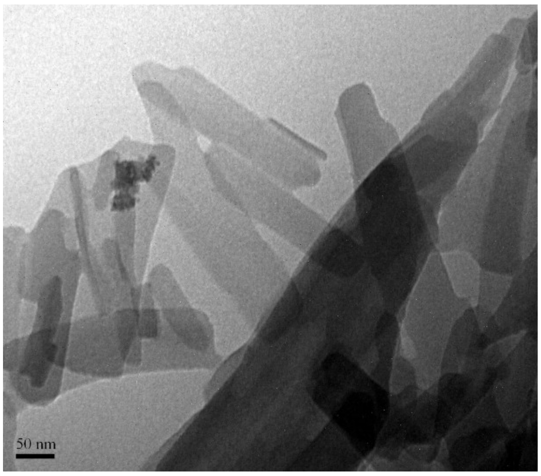

Figure S6. TEM micrograph of **1** synthesized without PAA.

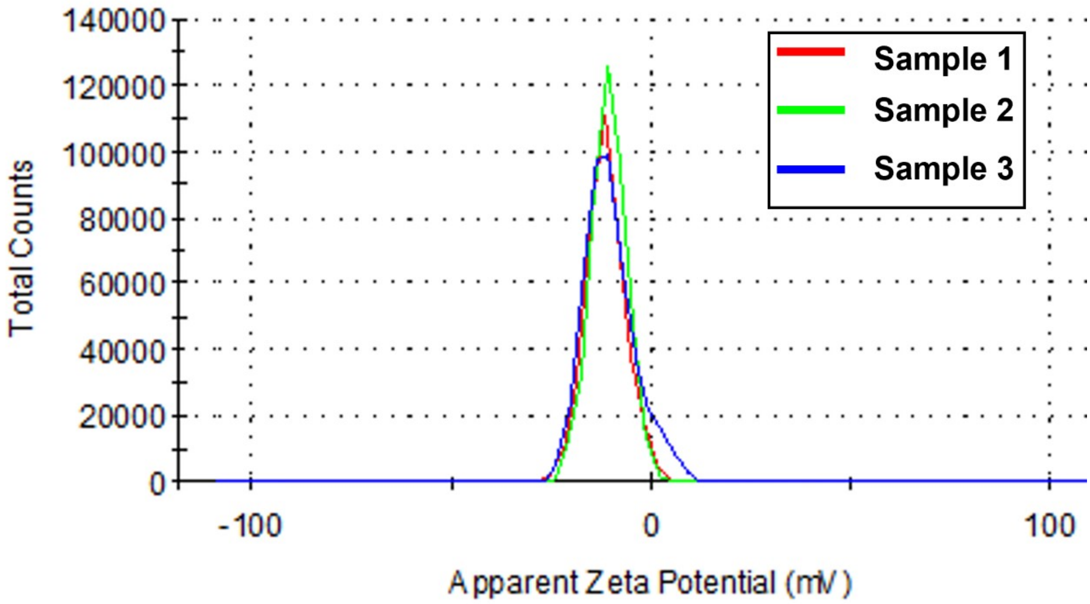

Figure S7. DLS of **1**.

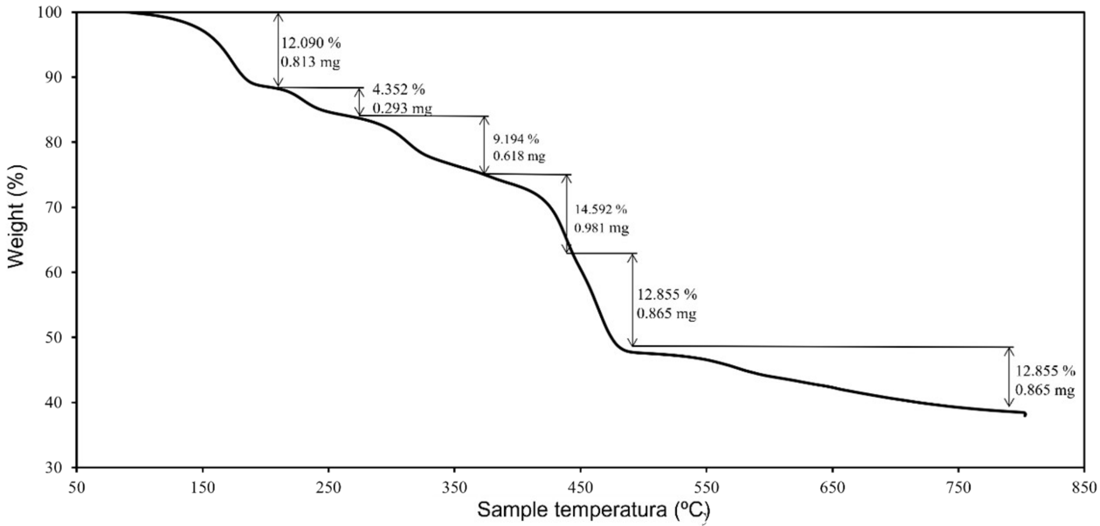

Figure S8. TGA thermogram of **1**. The first weight loss at 173 ºC is attributable to the removal of coordinated H_2O. The second step at 229 ºC should correspond to the loss of a tiny amount of coordinated DMF. The presence of rests of DMF would also explain the small percentage of N (around 0,5 %) detected in the elemental analysis. The following weight loss steps should be due to the decomposition of the framework.

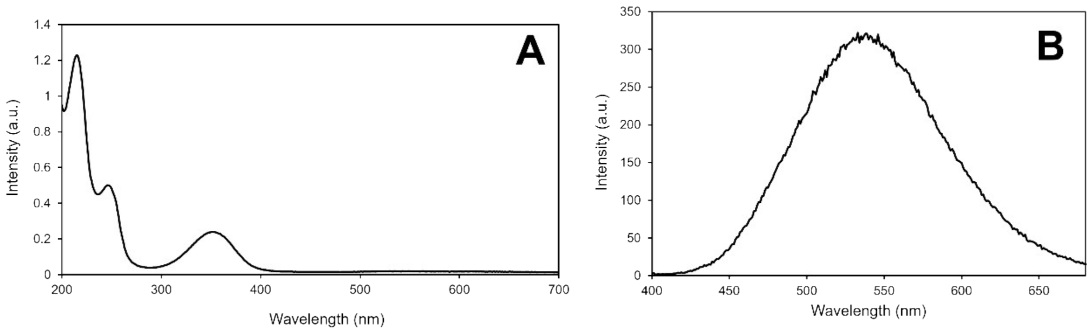

Figure S9. UV absorption (A) and emission (B) spectra of **1**.

FTIR spectra (KBr pellets, cm^{-1}) of 1 before and after its reaction with different amine vapors:

n-MOF 1: 3600-2700 s, vbr, with maxima at 3349, 3156 and 3068 (ν-OH, ν-CH); 1631 vs,1505 vs, 1450 vs, 1430 vs, sh, 1353 m (ν-COO^- and ν-C=C); 1241 vs (ν-C-O); 1209 m.sh; 1112 w; 899 vw; 868 m; 807 m; 789 m, 728 br,m; 645 vw; 601m; 582 m.
Aniline derivative: 3600-2700 s, vbr, with maxima at 3338, 3156 and 3068 (ν-OH, ν-CH); 1634 vs, 1506 vs, 1448 vs, 1430 vs, sh, 1350 m (ν-COO^- and ν-C=C); 1240 vs (ν-C-O); 1209 m.sh;1112 w; 899 vw; 868 m; 807 m; 789 m, 732 br, m; 645 vw; 601m; 581 m.
Triethylamine derivative: 3600-2700 s, vbr, with maxima at 3367, 3127, 3068 and 2931, 2685 m (ν-OH, ν-CH); 1623 vs, 1506 vs, 1448 vs, 1430 vs, sh, 1354 m (ν-COO^- and ν-C=C); 1238 vs (ν-C-O); 1209 m.sh; 1113 w; 894 vw; 868 m; 807 m; 789 m, 729 br, m; 646 vw; 601m; 580 m.
Pyridine derivative: 3600-2700 s, vbr, with maxima at 3342, 3117, 3065, and 2931(ν-OH, ν-CH); 1627 vs,1607 vs, sh (pyH^+); 1506 vs; 1486 vs, sh (Cu-py); 1449 vs; 1419 vs ($C_8H_5O_6^-$); 1379 s (pyH^+); 1353 s; 1237 vs (ν-C-O); 1155 w; 1111 w; 1070 w (Cu-py); 1046 vw (Cu-py); 901vw; 868 m; 807 m; 789 m, 757 m (pyH^+); 693 m (Cu-py); 644 vw; 600m; 580 m. (See text).
Piperidine derivative: 3400 m, br (ν-NH, $C_5H_{10}NH_2^+$); 3262 m, br, 3038 m, br (ν-OH, ν-C_{arom}H); 2944 m, 2858 m, 2744 m (ν-C_{alk}H); 2540 w; 1623 m, 1560 br, s ($C_5H_{10}NH_2^+$); 1507 m; 1450 s, sh; 1419 vs ($C_8H_5O_6^-$); 1340 m; 1237 s (ν-C-O); 1205 m; 1111 w: 1083 vw; 1029 vw ($C_5H_{10}NH_2^+$); 947 vw ($C_5H_{10}NH_2^+$); 875 w; 807 m; 578 w, 438 vw.
Propylamine derivative: 3412 m, br (ν-NH, $C_3H_7NH_3^+$); 3254 m, 3167 m, 3048 m (ν-OH, ν-C_{arom}H); 2965 s, 2878 m (ν-C_{alk}H); 1621 m, 1572 s, sh ($C_3H_7NH_3^+$); 1539 vs, br; 1514 s, sh; 1457 s; 1408 vs ($C_8H_5O_6^-$); 1347 m; 1283 m ($C_3H_7NH_3^+$); 1239 s (ν-C-O); 1210 m; 1115 w; 1077 vw ($C_3H_7NH_3^+$); 1049 w ($C_3H_7NH_3^+$); 893 w; 834 m; 813 m; 790 w; 753 w; 600 w;
Ethylamine derivative: 3436 s, vbr (ν-NH, ν-OH); 3243 m, br, 3075 m, br (ν-C_{arom}H); 2985 m, 2727 m, 2535 w, (ν-CalkH); 1639 m, sh; 1545 s, vbr; 1453 s; 1406 vs ($C_8H_5O_6^-$); 1340 m; 1288w; 1239 m; 1205 s; 1116 w; 1049 vw; 893 m; 835 s; 814 m, 601 w; 429 vw.
Diethylamine derivative: 3392 m, vbr (ν-NH, ν-OH); 3029 m (ν-C_{arom}H); 2990 m, 2943m, 2842 m, 2798 m, (ν-C_{alk}H); 1581 s; 1457 s; 1406 vs ($C_8H_5O_6^-$); 1333 m; 1243 m; 1207 s; 1117 w; 1058 vw; 890 m; 835 s; 810 m; 595 w; 526 vw; 500 vw.