Supporting Information

Structural conversion of three Copper(II) complexes with snapshot observation based on the different crystal colours and morphology

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Fig. S1. $^1$H NMR spectra of L.

Fig. S2. IR spectra of L, 1, 2 and 3.
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Fig. S4. Simulation and experiment PXRD pattern of 1, 2 and 3.

Fig. S5. TG curves of 1, 2 and 3.
### Table S1. Selected bond distances (Å) and angles (°) for 1.

| Bond/Distance      | Value   | Bond/Distance      | Value   |
|---------------------|---------|---------------------|---------|
| Cu(1)–N(2)          | 1.929(2)| Cu(1)–O(2)          | 1.958(2)|
| Cu(1)–O(1)          | 1.9659(18)| Cu(1)–O(1)          | 1.9983(18)|
| Cu(1)–O(5)          | 2.252(2)| N(2)–Cu(1)–O(2)     | 82.94(9)|
| N(2)–Cu(1)–O(2)     | 171.02(8)| N(2)–Cu(1)–O(1)     | 93.11(8)|
| O(2)–Cu(1)–O(1)     | 103.59(8)| O(1)–Cu(1)–O(1)     | 167.65(9)|
| N(2)–Cu(1)–O(5)     | 100.02(9)| O(2)–Cu(1)–O(5)     | 93.53(9)|
| O(1)–Cu(1)–O(5)     | 95.10(8)| O(1)–Cu(1)–O(5)     | 90.13(8)|

### Table S2. Selected bond distances (Å) and angles (°) for 2.

| Bond/Distance      | Value   | Bond/Distance      | Value   |
|---------------------|---------|---------------------|---------|
| Cu(1)–O(3)          | 1.906(6)| Cu(1)–N(1)          | 1.920(8)|
| Cu(1)–O(2)          | 1.959(6)| Cu(1)–O(1)          | 1.962(6)|
| Cu(1)–O(3)          | 2.433(6)| O(3)–Cu(1)–N(1)     | 94.9(3)|
| O(3)–Cu(1)–N(1)     | 171.2(3)| O(3)–Cu(1)–O(2)     | 85.2(3)|
| N(1)–Cu(1)–O(2)     | 83.7(3)| O(2)–Cu(1)–O(1)     | 95.8(3)|
| N(1)–Cu(1)–O(3)     | 90.1(2)| N(1)–Cu(1)–O(3)     | 95.0(3)|
| O(3)–Cu(1)–O(3)     | 93.8(3)| O(1)–Cu(1)–O(3)     | 92.2(2)|

### Table S3. Selected bond distances (Å) and angles (°) for 3.

| Bond/Distance      | Value   | Bond/Distance      | Value   |
|---------------------|---------|---------------------|---------|
| Cu(1)–O(1)          | 1.883(2)| Cu(1)–N(1)          | 1.921(2)|
| Cu(1)–O(2)          | 1.931(2)| Cu(1)–O(5)          | 1.933(2)|
| O(1)–Cu(1)–N(1)     | 95.62(9)| O(1)–Cu(1)–O(2)     | 176.21(10)|
| N(1)–Cu(1)–O(2)     | 84.01(10)| O(1)–Cu(1)–O(5)     | 93.52(10)|
| N(1)–Cu(1)–O(5)     | 169.80(10)| O(2)–Cu(1)–O(5)     | 87.16(10)|
**Fig. S6.** 2D layer structure of 2.

**Fig. S7.** The rhombus-shaped crystals of 2 convert quickly to rod-shaped crystals of 1 in methanol solution within 10 min.
Fig. S8. PXRD pattern of 2 after soaking in MeOH solution.