Electronic Supplementary Information (ESI)

A Copper-Based Layered Coordination Polymer: Synthesis, Magnetic Property and Electrochemical Performance in Supercapacitors

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Table S1. Selected bond lengths (Å) and bond angles (°) of Cu-LCP

Cu(1)- O(1)	1.928(4)	Cu(1)- N(1)	2.305(5)
Cu(1)- O(1C)	1.928(4)	Cu(1)- N(1C)	2.305(5)
Cu(1)- O(1W)	1.751(6)		
O(1W)-Cu(1)-O(1)	90.29(13)	O(1)-Cu(1)-N(1C)	89.85(7)
O(1)- Cu(1)-O(1C)	179.4(3)	O(1W)-Cu(1)-N(1)	122.03(13)
O(1)- Cu(1)- N(1)	89.85(7)	O(1 C) -Cu(1)-N(1)	89.85(7)
O(1W)-Cu(1)-N(1C)	122.03(13)	N(1)-Cu(1)-N(1C)	115.9(3)

Symmetry codes: C: x, –y+3/2, z

Table S2. Hydrogen bond distances (Å) and angles(°) in Cu-LCP

D-H--A	D-H	H---A	D---A	D-H--A
C(5)-H(5A)---O(1W) [i]	0.97	2.49	2.948(10)	108
C(5)-H(5A)---O(2) [i]	0.97	2.51	3.457(7)	166
C(5)-H(5B)---O(2) [ii]	0.97	2.51	3.457(7)	166
C(6)-H(6B)---F(1) [iii]	0.97	2.45	3.351(5)	155

Symmetry codes: i : 1/2+x, 3/2-y, 1/2-z ii : 3/2-x, y, 1/2-z iii: 1-x, -1/2+y, 1-z

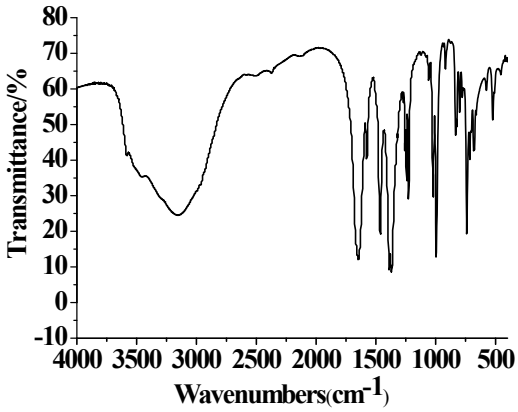

Fig. S1 IR spectra of as-synthesized [Cu(hmt)(tfbdc)(H_2O)] (Cu-LCP)

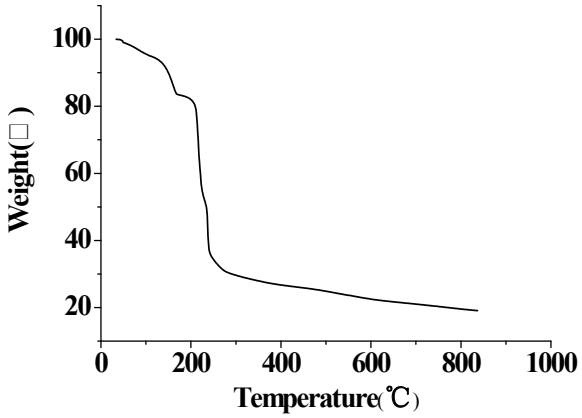

Fig. S 2. The TG curve of Cu-LCP

Chemical stability of Cu-LCP. The as-synthesized sample (ca. 35 mg) was dispersed in 10 mL water and left at room temperature. After immersion, the sample was filtered and dried in air at room temperature for PXRD measurement (see Fig. S3).

The as-synthesized sample (ca. 35 mg) was suspended in 10 mL LiOH water solution (pH = 11), at ambient temperature for at one hour. Then, the sample was filtered and dried in air at room temperature for PXRD measurement (see Fig. S3).

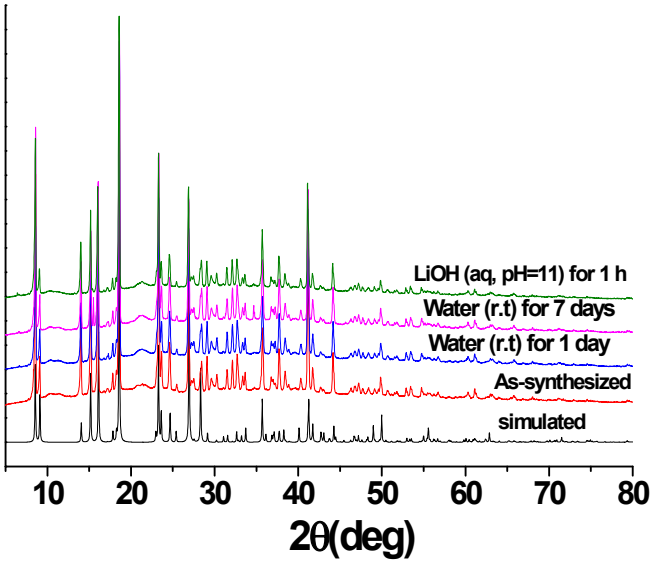

Fig. S3. PXRD patterns of Cu-LCP via treating in water at room temperature for 1 day and 7 days, and in LiOH water solutions of pH = 11 for one hour.

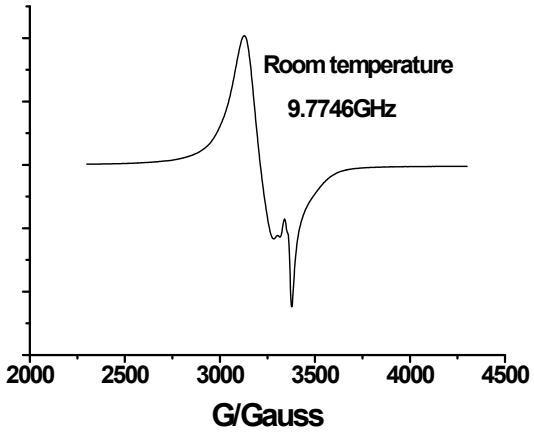

Fig. S4. X-band EPR spectrum for Cu-LCP.

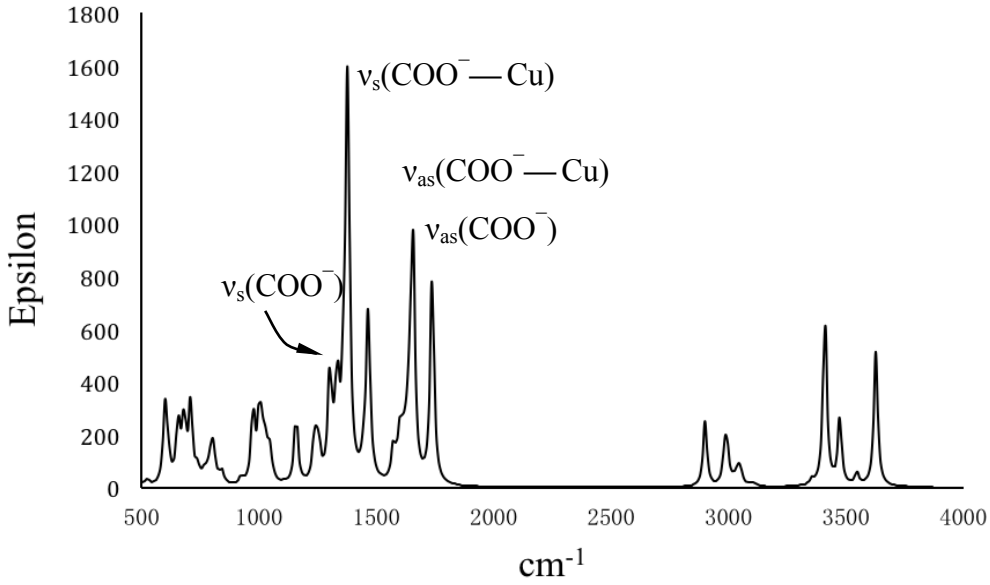

Fig. S 5. IR spectrum predicted at the mPW1PW91/6-31+G(d,p) level of theory. Calculations based on the fully optimized model complex. Frequencies have been scaled by 0.98.

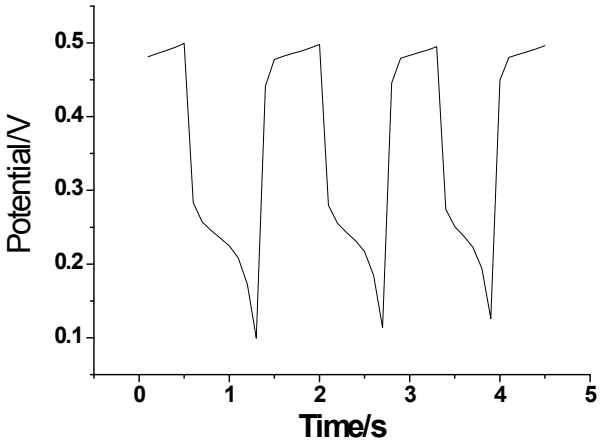

Fig. S6. Galvanostatic charge-discharge curve of the Ni foam at 1 A g^{-1} in 1M LiOH solution.

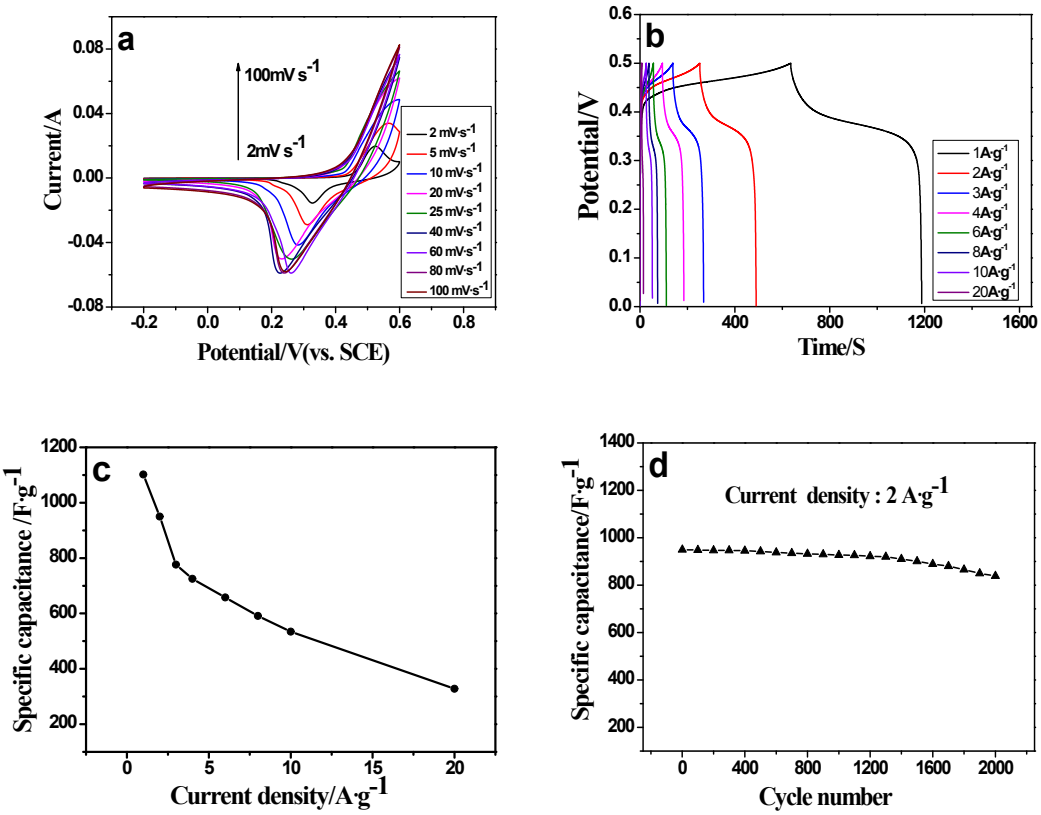

Fig. S7. (a) CV curves of the Cu-LCP electrode at various scan rates ranging from 2 to 100 mV s^{-1} in 1M KOH solution. (b) Galvanostatic charge-discharge curves of the Cu- LCP electrode at various current densities ranging from 1 to 20 A g^{-1}. (c) Specific capacitances of the Cu- LCP electrode at various current densities ranging from 1 to 20 A g^{-1}. (d) Capacitance cyclic performance of the Cu- LCP electrode in 1M KOH

solution within the potential window of 0–0.5V at a current density of 2A g^{-1}.