Electronic Supplementary Information (ESI)

In situ synthesis of Cu₂O-CuO-C supported on copper foam as superior binder-free anode for long-cycle lithium-ion batteries

Xiaoming Lin,^{*a} Jia Lin,^a Jiliang Niu,^a Jinji Lan,^a R. Chenna Krishna Reddy,^a Yuepeng Cai^{*a}, Jincheng Liu^b and Gang Zhang^c

^a School of Chemistry and Environment, South China Normal University, Guangzhou Key Laboratory of Materials for Energy Conversion and Storage, 510006, P.R. China, E-mail: linxm@scnu.edu.cn; caiyp@scnu.edu.cn
^b EVE Energy Co. Ltd, Huizhou, Guangdong 516006, PR China
^c State Key Laboratory of Supramolecular Structure and Materials, College of Chemistry, Jilin University, Changchun 130012, PR China



Fig. S1 PXRD patterns of simulated Cu-BDC and as-prepared Cu-BDC samples.



Fig. S2 TGA curve of as-prepared Cu-BDC/Cu under air atmosphere.



Fig. S3 TGA curve of pure copper foam under air atmosphere.



Fig. S4 Raman spectrum of as-prepared Cu₂O-CuO-C/Cu.



Fig. S5 EDS profile of Cu₂O-CuO-C sample.



Fig. S6 Nitrogen adsorption-desorption isotherm at 77 K of Cu-BDC/Cu.



Fig. S7 XRD pattern of the final product by annealing of Cu-BDC/Cu at 800 °C under air flow.



Fig. S8 Cycling performance of CuO electrode at a current density of 0.1 A g^{-1} .



Fig. S9 Cycling performance of CuO/Cu foam electrode at a current density of 0.1 A g^{-1} .



Fig. S10 Cycling performance of Cu₂O/Cu foam electrode at a current density of 0.1 A g^{-1} .



Fig. S11 Cycling performance of Cu foam after the hydrothermal process (without the MOF source) and sintering at 300 °C at a current density of 0.1 A g⁻¹.