

Supporting information

**N-doped Porous Carbon Framework with Ag-Nanoparticles
Toward Stable Lithium Metal Anodes**

Yue Yu^a, Tianying Wang^a, Wang Zhao^a, Yongchang Liu^a, Donglin He^a, Hongzhou Zhang^b, Xin Song^b, Peng Liu^b, Wen Zhang^b, Ping Li^{a*}, Peng Cao^{b,c*}, and Xuanhui Qu^a

^a Beijing Advanced Innovation Center for Materials Genome Engineering, Institute for Advanced Materials and Technology, University of Science and Technology Beijing, Beijing 100083, China

^b Department of Chemical and Materials Engineering, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand

^c The MacDiarmid Institute, Victoria University of Wellington PO Box 600, Wellington 6140, New Zealand

*Corresponding author

Email address: ustbliping@126.com (Prof. Ping Li); p.cao@auckland.ac.nz (Prof. Peng cao)

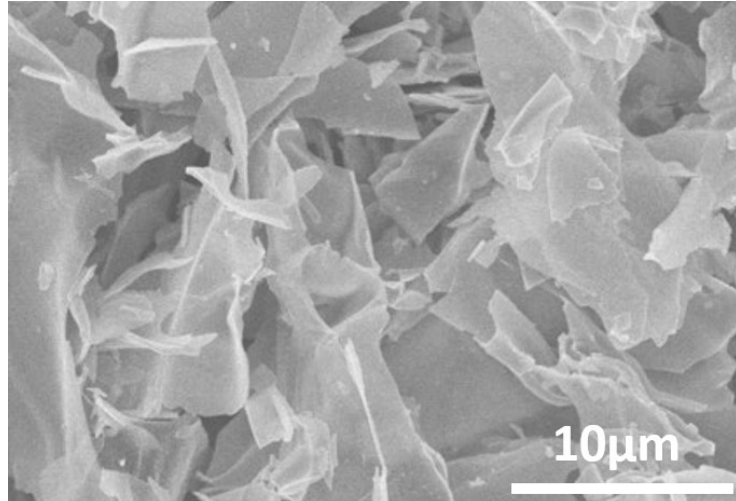


Fig. S1. SEM images of ADCN

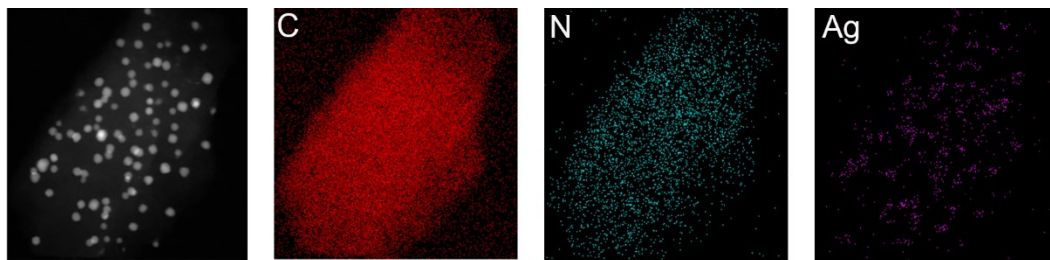


Figure S2. HAADF-STEM image and the corresponding elemental mapping images.

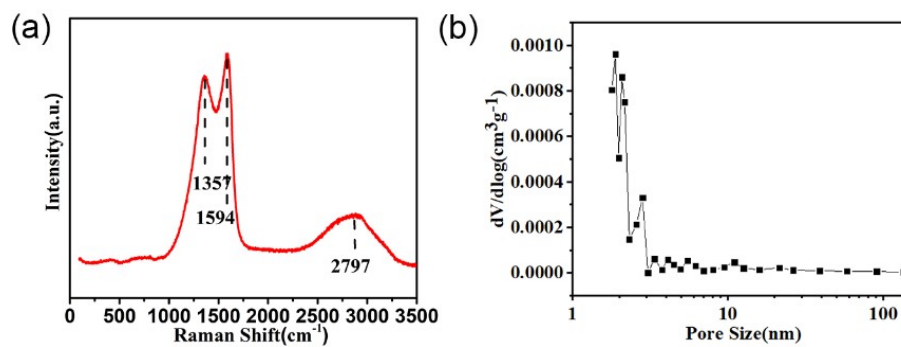


Figure S3. (a) Raman spectrum, (b) nitrogen adsorption/desorption isotherms, and (c) the pore size distribution of ADPCF.

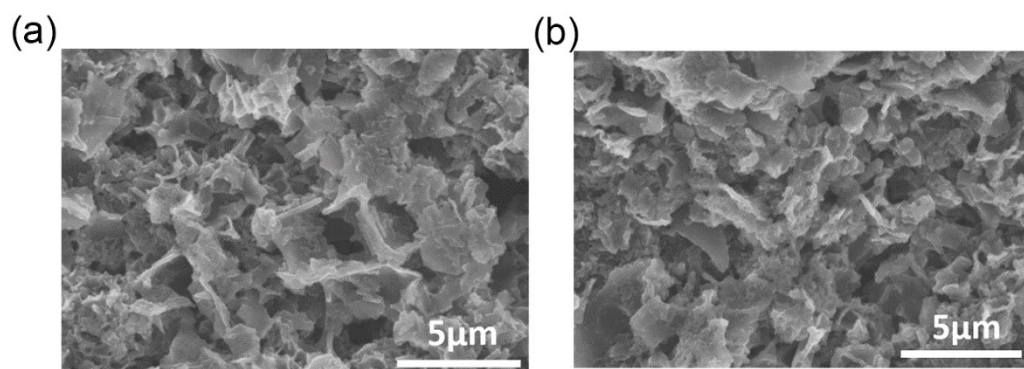


Figure S4. The morphologies of mashed ADPCF and ADCN electrodes.

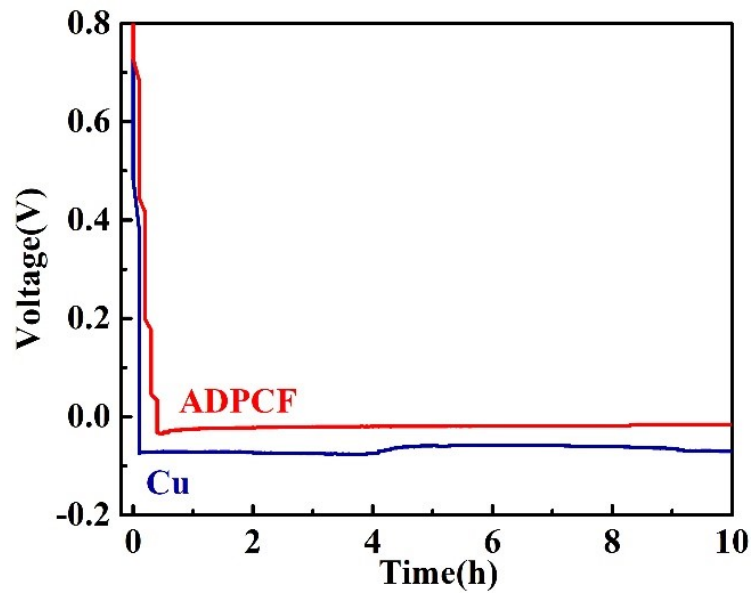


Figure S5. Voltage–time curves during initial deposition of Li metal onto Cu foil and ADPCF electrodes at current densities of 0.5 mA cm^{-2} .

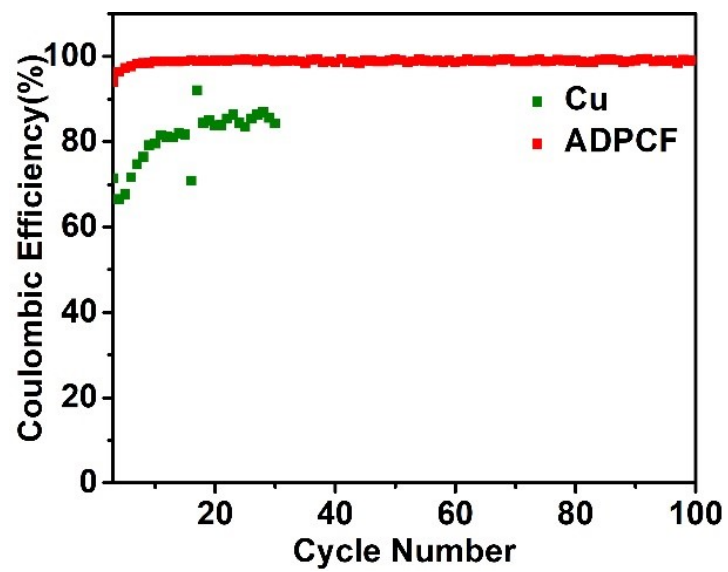


Figure S6. Coulombic efficiencies of half cells with Cu foil and ADPCF as the host materials with a cycling capacity of 1.0 mA h cm^{-2} at 0.5 mA cm^{-2} .