

Supporting Information for

Monolithic Nitrogen-Doped Graphene Frameworks as Ultrahigh-Rate Anodes for Lithium Ion Batteries

Xilai Jia,^{a*} Guolin Zhang,^a Tihong Wang,^a Xiao Zhu,^a Fan Yang,^a Yongfeng Li,^a Yunfeng Lu,^{c*}
and Fei Wei^{b*}

^aState Key Laboratory of Heavy Oil Processing, China University of Petroleum, Beijing, Changping 102249, P. R. China. E-mail: jiaxily@gmail.com

^bBeijing Key Laboratory of Green Chemical Reaction Engineering and Technology, Department of Chemical Engineering, Tsinghua University, Beijing 100084, People's Republic of China. E-mail: wf-dce@tsinghua.edu.cn

^cDepartment of Chemical and Biomolecular Engineering, University of California, Los Angeles, California 90095, United States. E-mail: luucla@ucla.edu

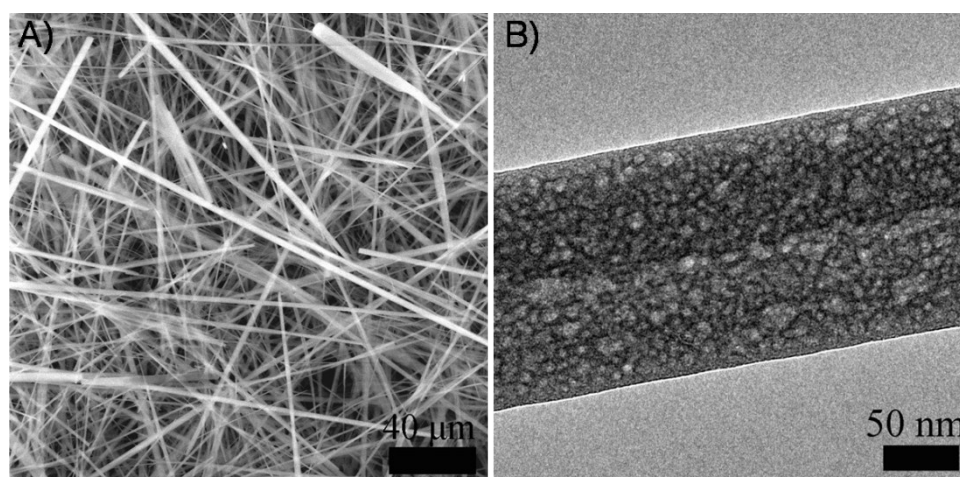


Fig. S1 A) SEM and B) TEM images of MgO precursor nanowires.

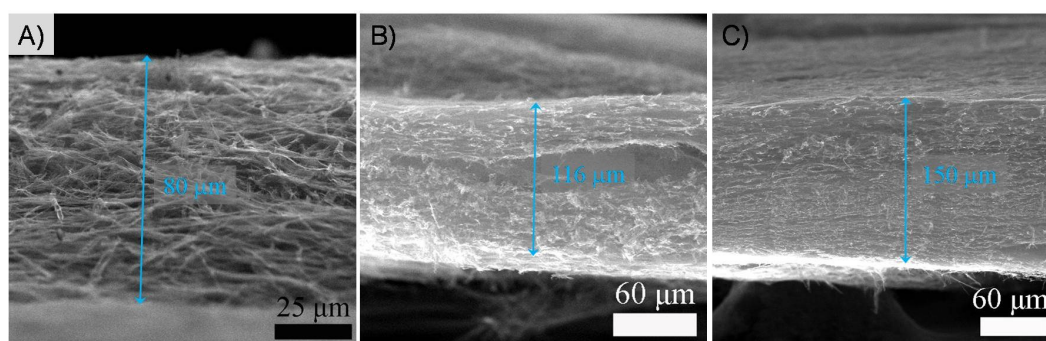


Fig. S2 The monolithic NPGF films with different thickness.

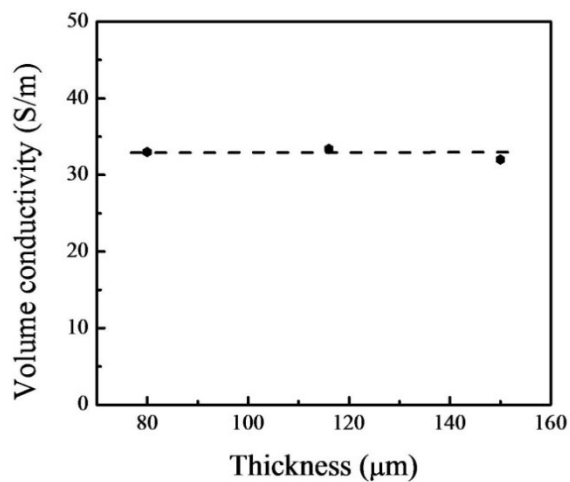


Fig. S3 The electric conductivities of NPGF films with different thickness.

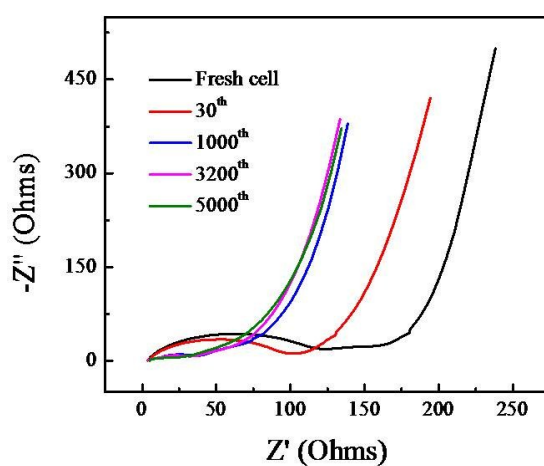


Fig. S4 Electrochemical impedance spectra of the NPGF electrode at fresh half-coin cell, 30th, 1000th, 3200th, and 5000th cycles over the frequency range of 10^5 -0.01 Hz.

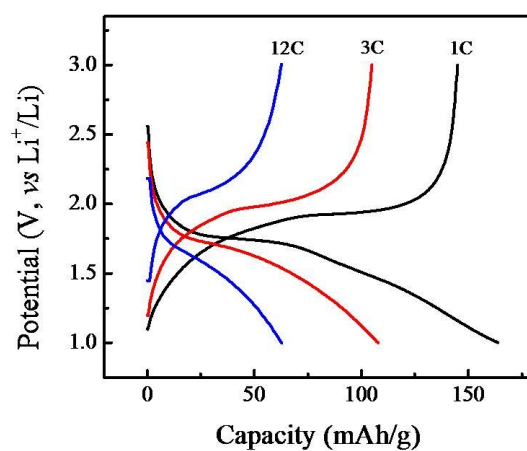


Fig. S5 Charge/discharge curves of TiO_2 @NPGF film electrode at 1, 3, and 12 C rates (the electrode was prepared by dropping TiO_2 solution onto NPGF film; TiO_2 was 70-wt% in electrode).