

Supporting information

One-step Synthesis of Novel Poly(terephthalate-alt-benzoquinone) with High Specific Capacity as the Stable Organic Cathode in Li-ion Battery

Chao Li,^a Haochen Tan,^a Jingfang Pei,^a Chuan Wang,^a Cong Fan,^{*a,d} Fangyi Huang,^a Bei Cao,^{*b} Minghui Hao^c, Yuanxun Li,^a Zhihong Wang^a and Jingze Li^{*a}

^a State Key Laboratory of Electronic Thin Films and Integrated Devices, School of Microelectronics and Solid-state Electronics, University of Electronic Science and Technology of China (UESTC), Chengdu 610054, P. R. China

^b State Key Laboratory of Synthetic Chemistry, Institute of Molecular Functional Materials, Department of Chemistry, The University of Hong Kong, Hong Kong, P. R. China

^c Hubei Collaborative Innovation Center for Advanced Organic Chemical Materials, Department of Chemistry, Wuhan University, Wuhan 430072, P. R. China

^d Institute of Electronic and Information Engineering of UESTC in Guangdong, Dongguan 523000, P. R. China

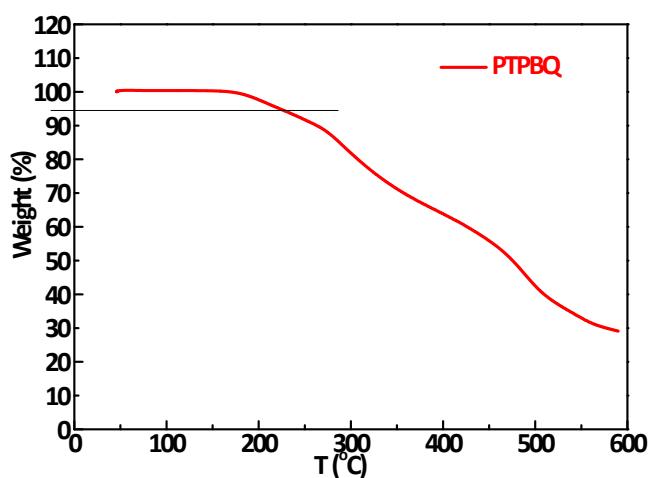


Fig. S1 The thermogravimetric analysis thermogram for PTPBQ.

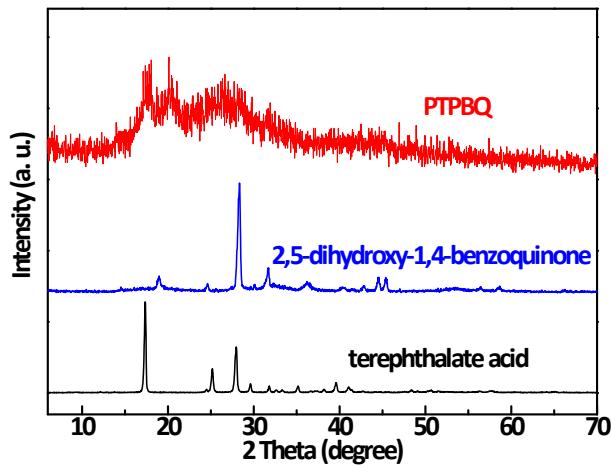


Fig. S2 The XRD patterns of PTPBQ, terephthalate acid and 2,5-dihydroxy-1,4-benzoquinone (BQ).

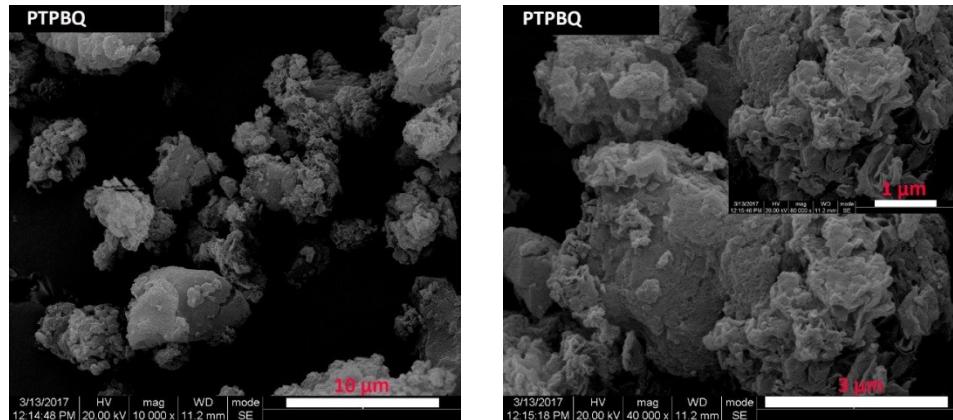


Fig. S3 The SEM images for the neat PTPBQ particles without technical modification.

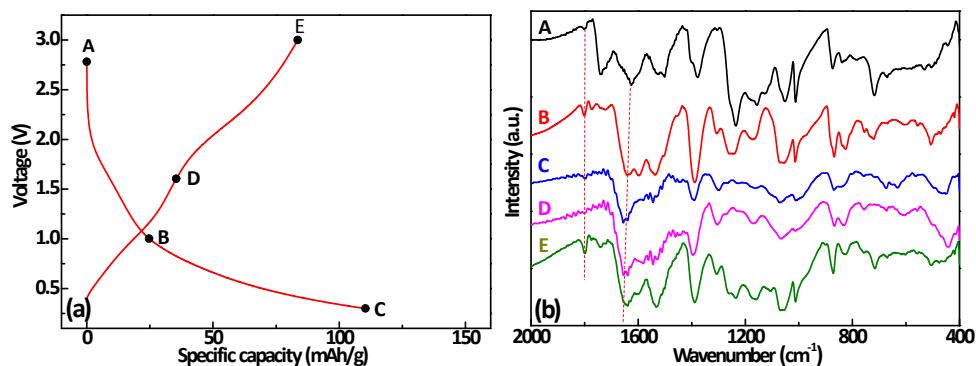


Fig. S4 (a) The selected points in the discharge-charge cycle for the PTPBQ in Li-ion cell; (b) The *ex-situ* IR spectra of the PTPBQ at the related status during this cycle.

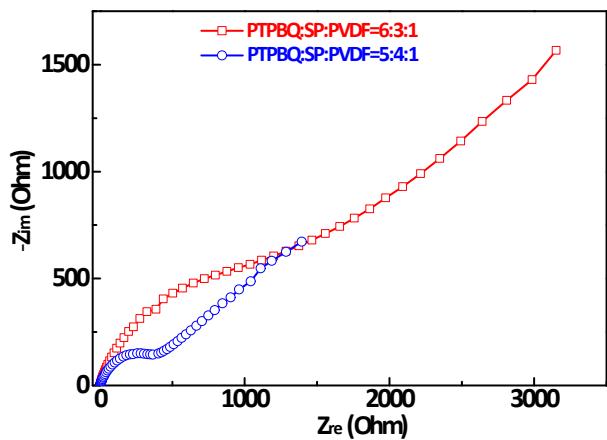


Fig. S5. The EIS plots for PTPBQ in Li-ion cells with different content at open-circuit voltage.

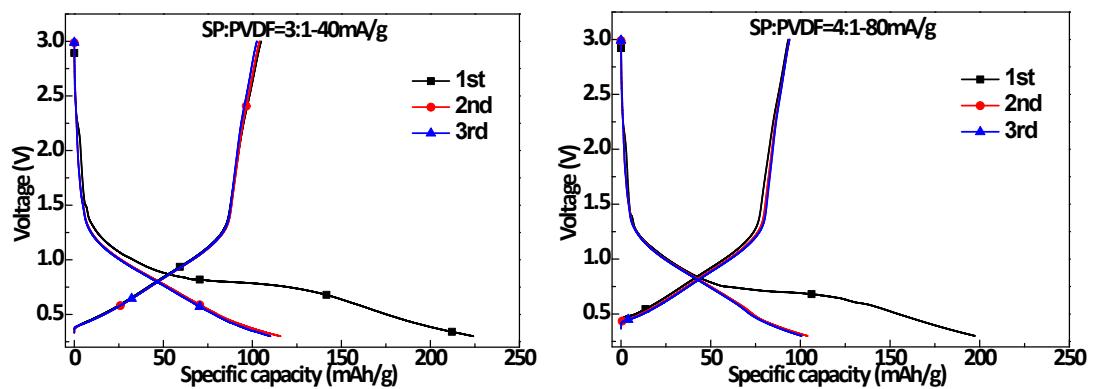


Fig. S6. The selected charge-discharge curves for the neat super P in Li-ion cells with different content.