Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information for

MoS_2/Carbon Composites Prepared by Ball-milling and Pyrolysis for the High-rate and Stable Anode of Lithium Ion Capacitors†

Chong Wang[a], Changzhen Zhan[a], Xiaolong Ren[a], Ruitao Lv[a], Wanci Shen[a], Feiyu Kang[bc] and Zheng-Hong Huang*[ab]

a. State Key Laboratory of New Ceramics and Fine Processing, School of Materials Science and Engineering, Tsinghua University, Beijing 100084, P. R. China.

E-mail: zhhuang@tsinghua.edu.cn (Z.-H Huang)

b. Key Laboratory of Advanced Materials (MOE), School of Materials Science and Engineering, Tsinghua University, Beijing 100084, China

c. Engineering Laboratory for Functionalized Carbon Materials, Graduate School at Shenzhen, Tsinghua University, Shenzhen 518055, P. R. China.

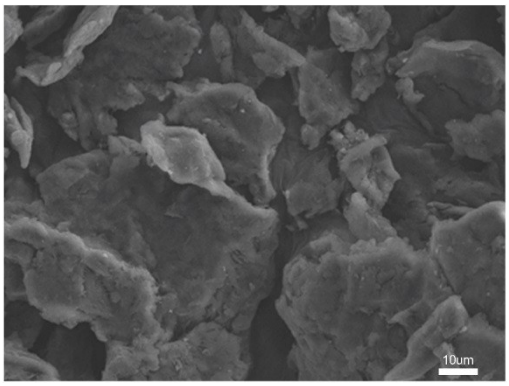

Fig. S1 SEM image of chitosan.

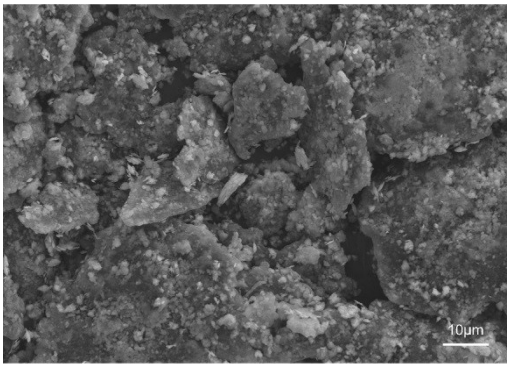

Fig. S2 SEM image of cg-MoS_2.

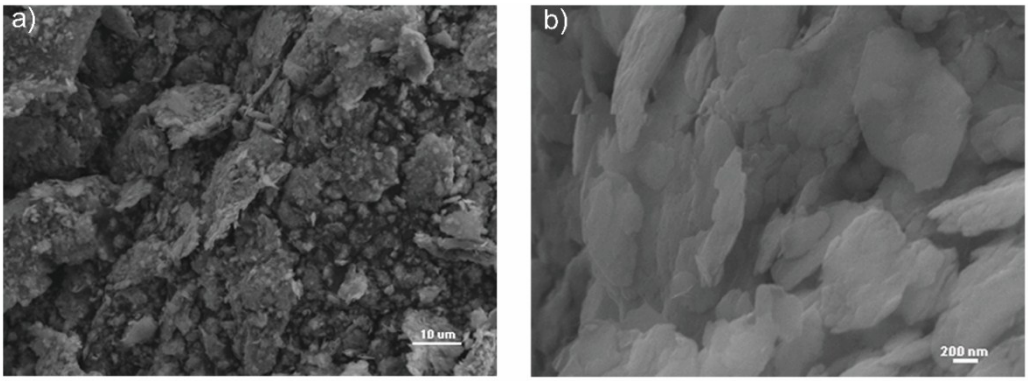

Fig. S3 SEM images of MoS_2/C.

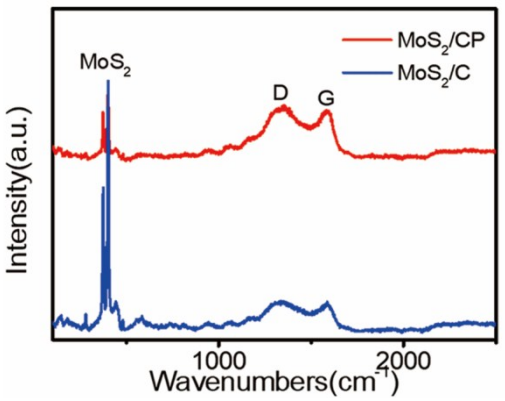

Fig. S4 Raman image of MoS_2/C and MoS_2/CP.

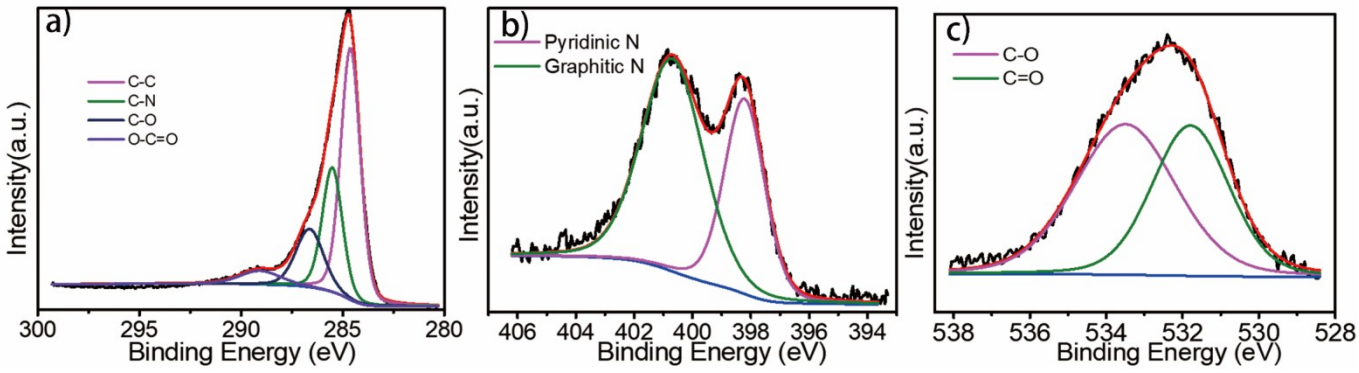

Fig. S5 XPS images of nitrogen-doped carbon matrix derived from chitosan: (a) C 1s, (b) N 1s, (c) O 1s.

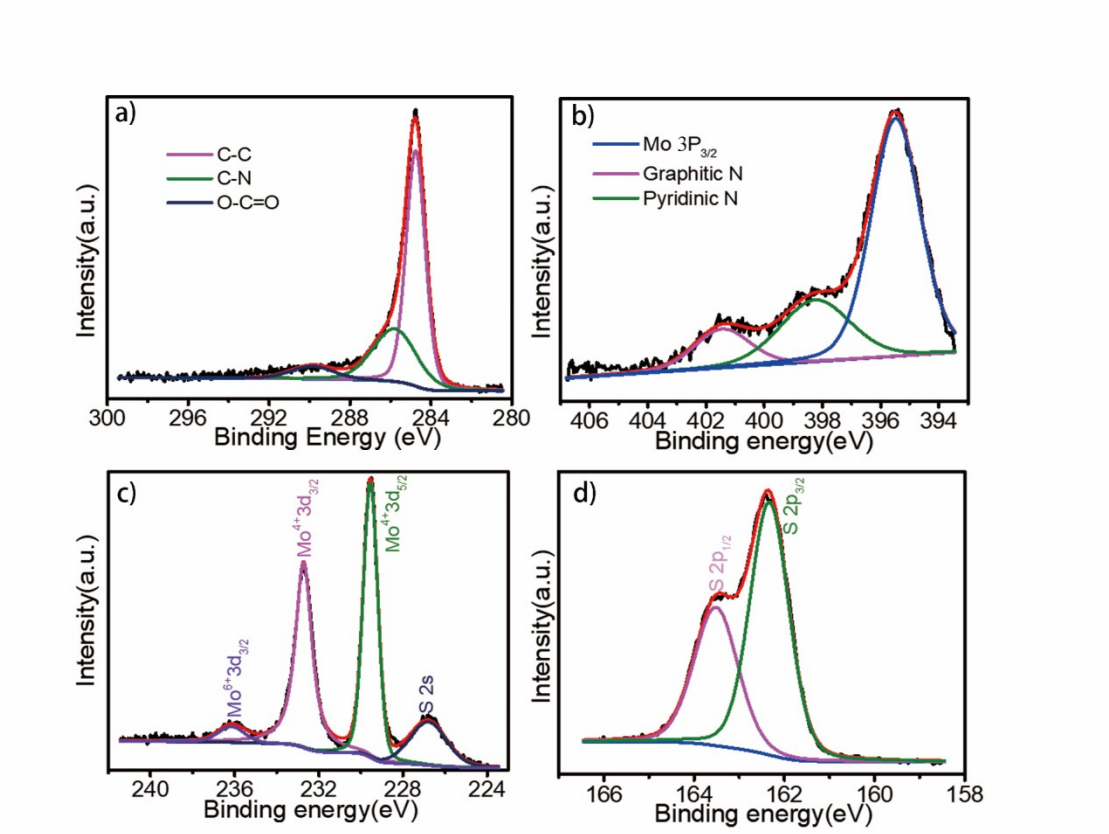

Fig. S6 XPS images of MoS_2/C: (a) C 1s, (b) N 1s, (c) Mo 3d, (d) S 2p.

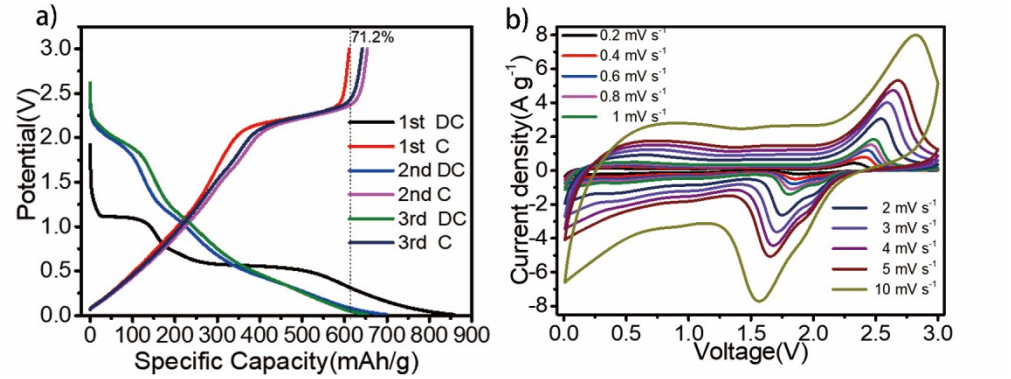

Fig. S7 GCD curves of MoS_2/C in the first 3 cycles at 1 A g^{-1} and CV curves at various scan rates.

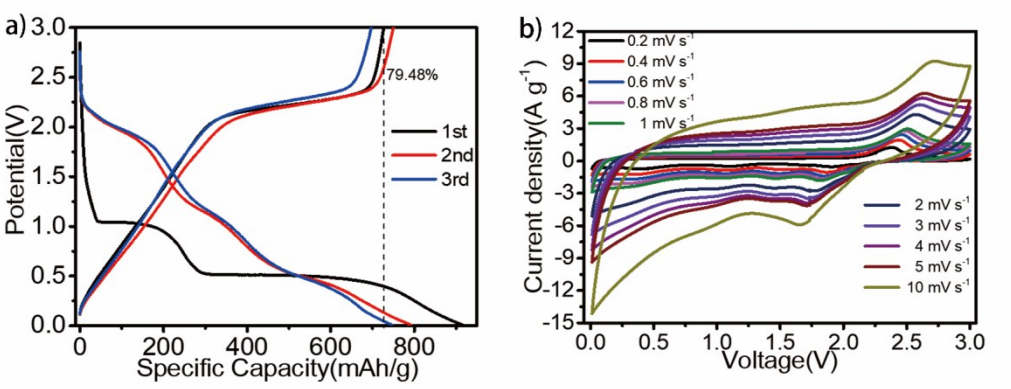

Fig. S8 GCD curves of bulk MoS_2 in the first 3 cycles at 1 A g^{-1} and CV curves at various scan rates.

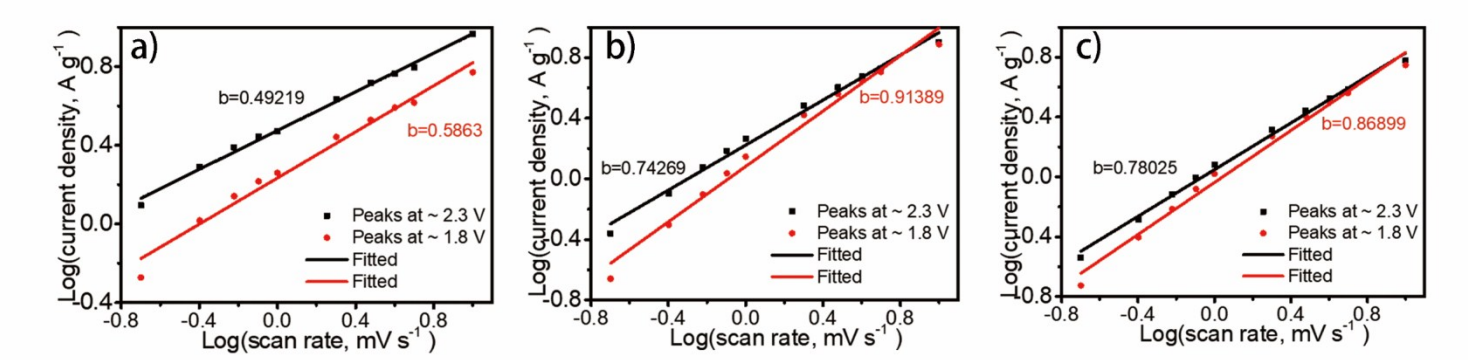

Fig. S9 Plots of logarithm peak current density and logarithm scan rate. (a) bulk MoS_2,(b) MoS_2/C ,(c) MoS_2/CP.

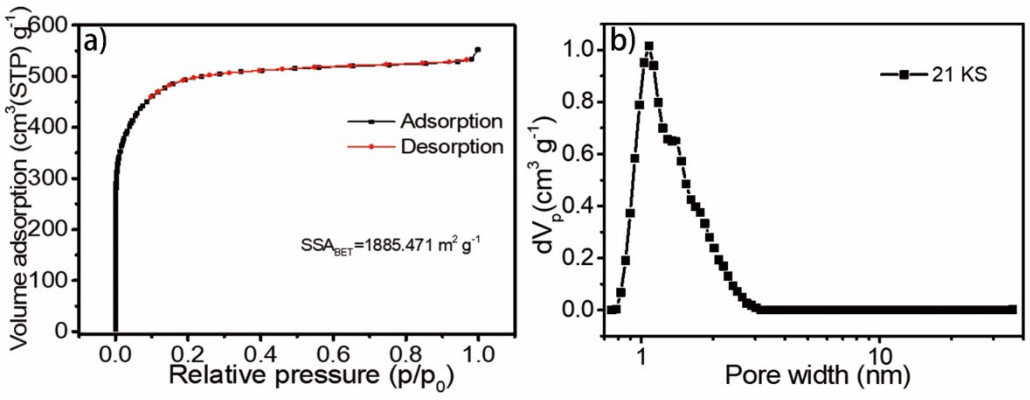

Fig. S10 N_2 adsorption/desorption isotherms and pore size distribution of 21KS.

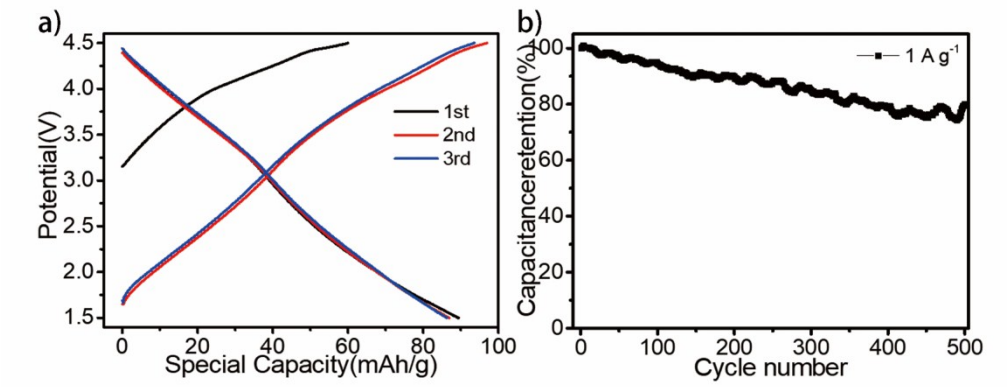

Fig. S11 The first 3 charge-discharge curves and cycle performance of 21 KS.

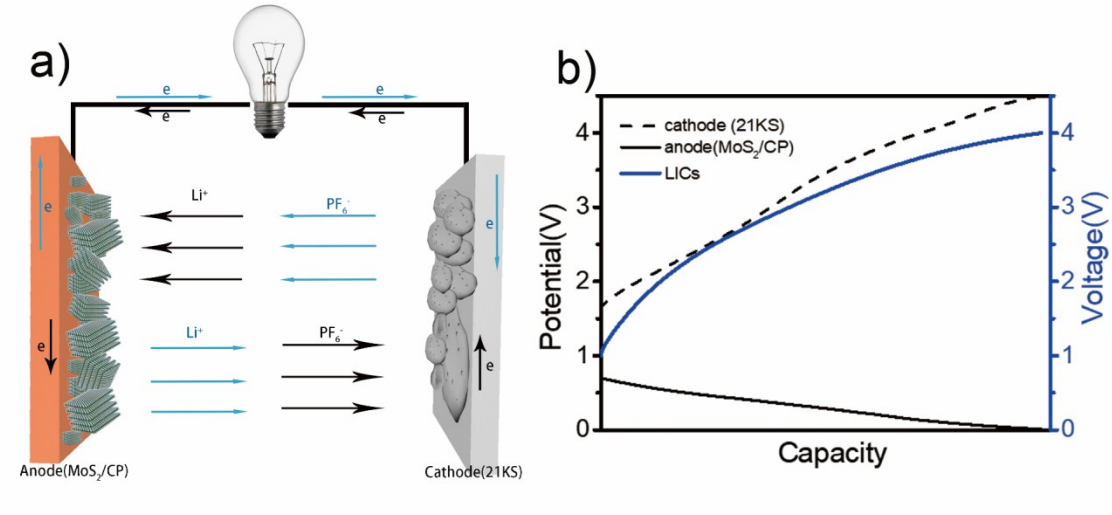

Fig. S12 The configuration graph (a) and potential distribution curves (b) of LICs.

Sample	Mo at%	S at%	C at%	N at%	O at%
Carbon matrix	\	\	83.61	7.53	8.86
MoS_2/C	6.5	13.12	65.4	6.19	8.76
MoS_2/CP	6.06	12.79	65.8	6.13	9.17

Table S1. The element content of carbon matrix, MoS_2/C and MoS_2/CP.