Supporting Information

FeS Quatum Dots Embedded in 3D Ordered Macroporous Carbon Nanocomposite for High-performance Sodium-ion Hybrid Capacitors

Xiang Hu,[a,b] Yangjie Liu,[a,b] Junxiang Chen,[b] Jingchun Jia,[b] Hongbing Zhan[a,]*, Zhenhai Wen[b,]*

a College of Materials Science and Engineering, Fuzhou University, Fuzhou 350108, China

b CAS Key Laboratory of Design and Assembly of Functional Nanostructures, and Fujian Provincial Key Laboratory of Nanomaterials, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou, Fujian 350116, China.

* Corresponding authors

E-mail: hbzhan@fzu.edu.cn, wen@fjirsm.ac.cn

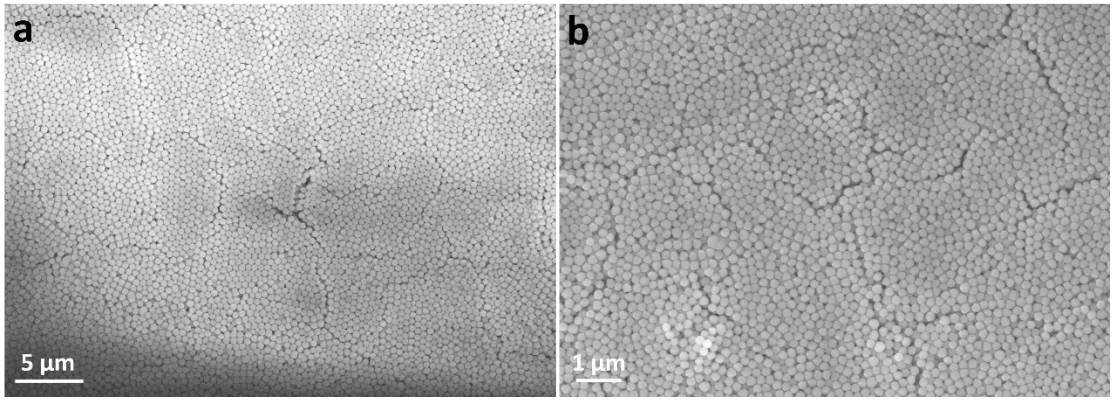

Figure S1. (a, b) SEM images of the ordered silica nanospheres.

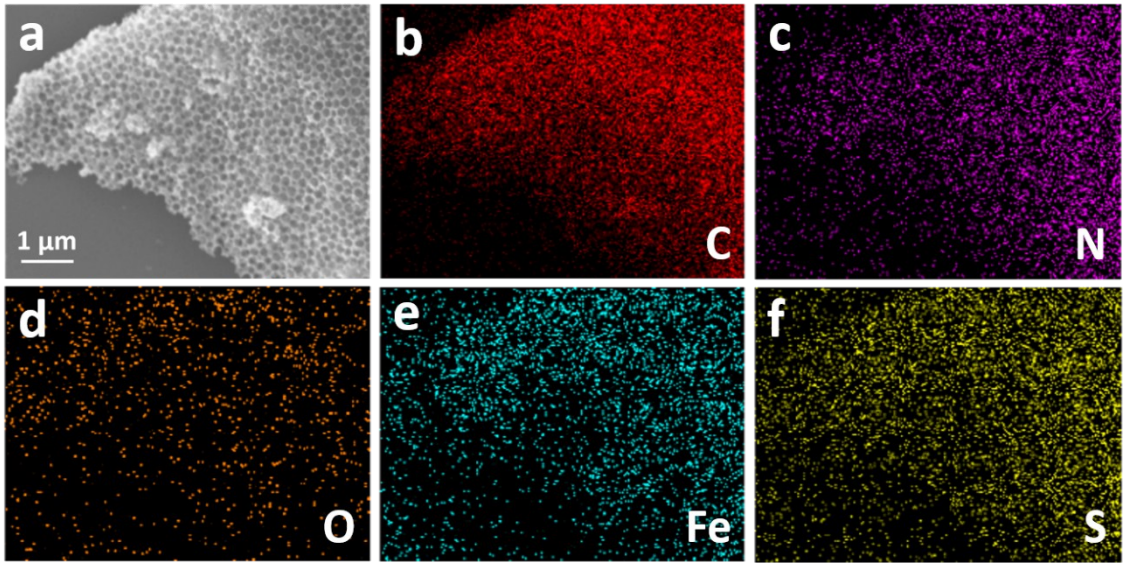

Figure S2. (a) FESEM image, and (b) corresponding EDS mapping images of 3D-IO FeS-QDs@NC.

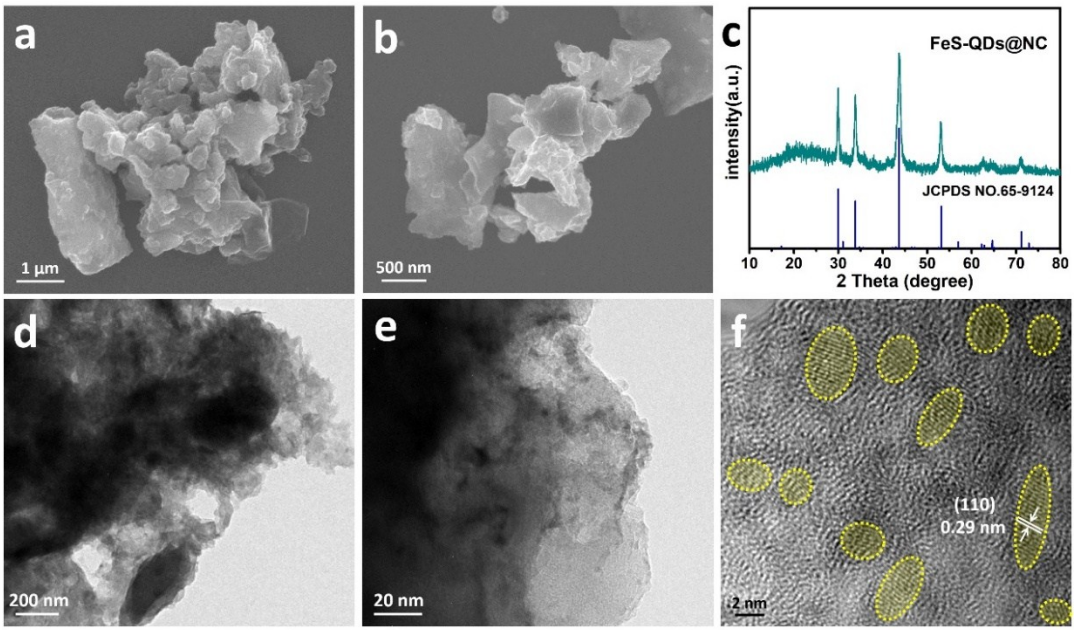

Figure S3. (a,b) SEM images, (c)XRD pattern, (d,e) TEM images and (f) HRTEM image of FeS-QDs@NC composites.

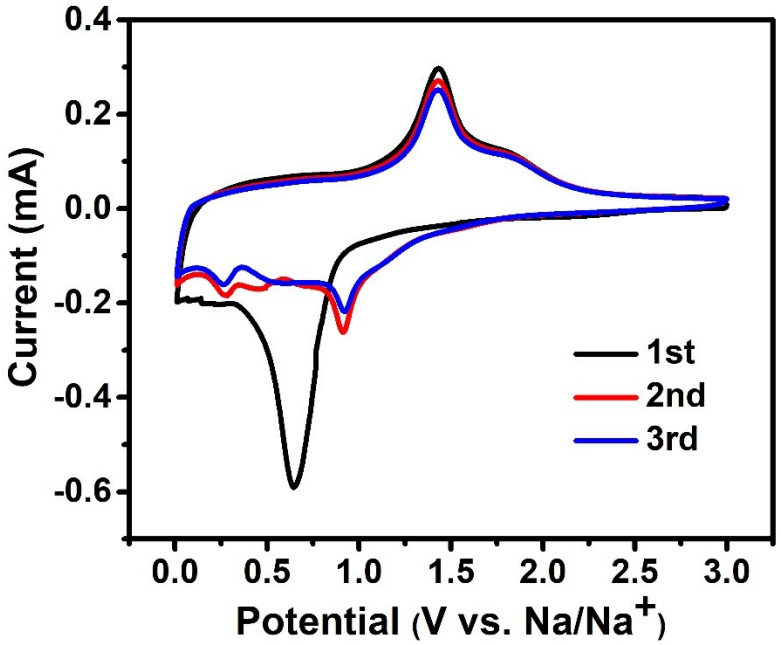

Figure S4. CV curve of FeS-QDs@NC electrode scanned at a rate of 0.1mV s^{-1}.

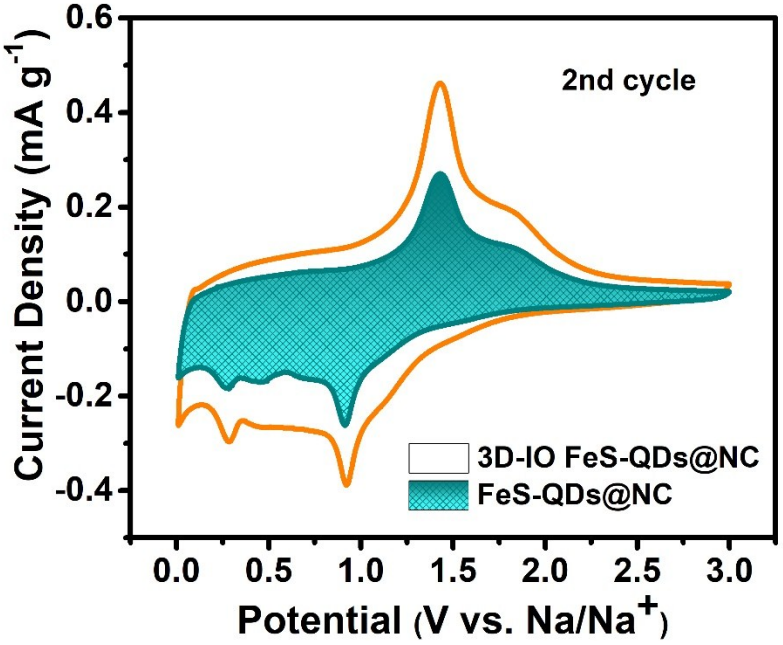

Figure S5. Second cycle CV curves of 3D-IO FeS-QDs@NC and FeS-QDs@NC electrode under a scanning rate of 0.1mV s^{-1}.

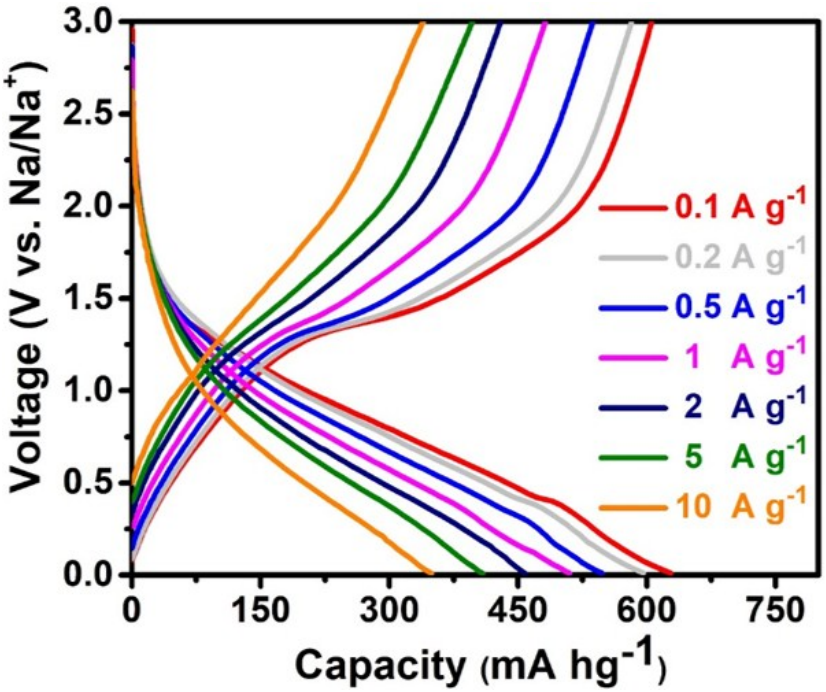

Figure S6. Voltage profiles of 3D-IO FeS-QDs@NC at various current rates from 0.1 to 10 A g^{-1}.

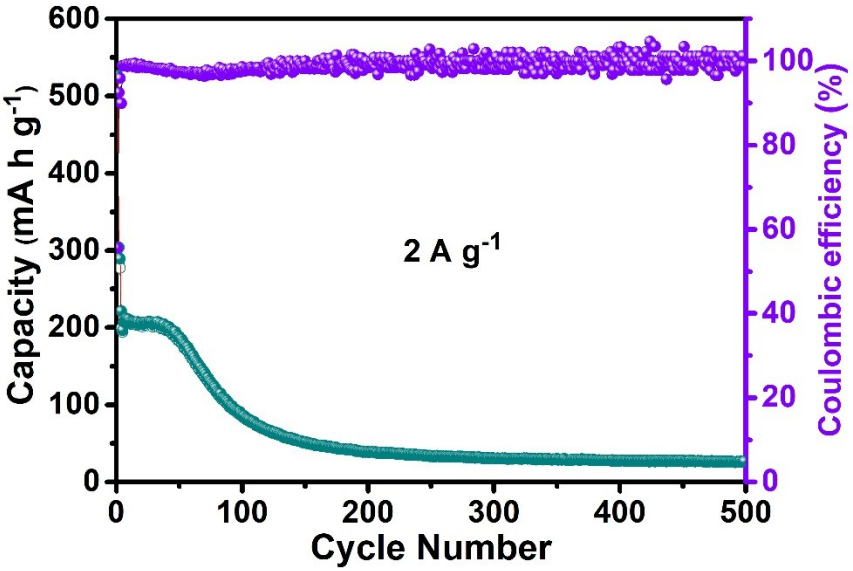

Figure S7. Long cycling stability of FeS-QDs@NC electrode at a constant current density of 2 A g^{-1}.

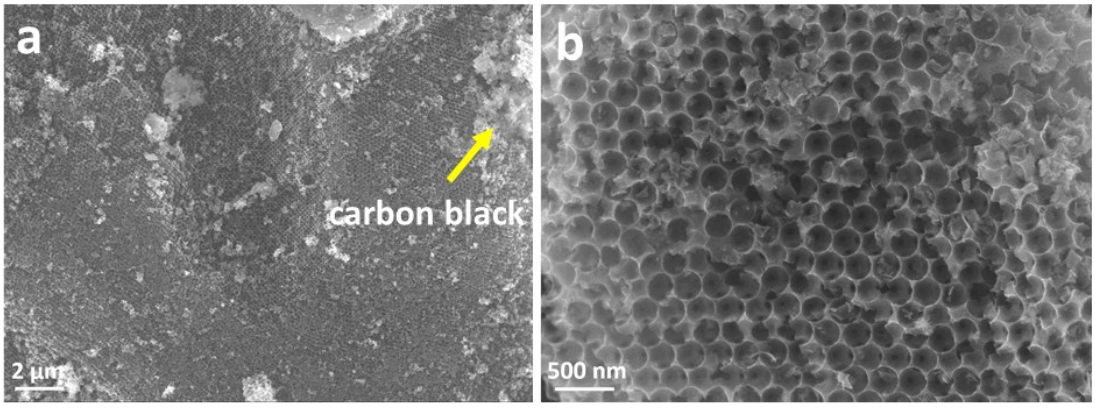

Figure S8. FESEM images of the 3D-IO FeS-QDs@NC electrode for SIBs after rate performance test.

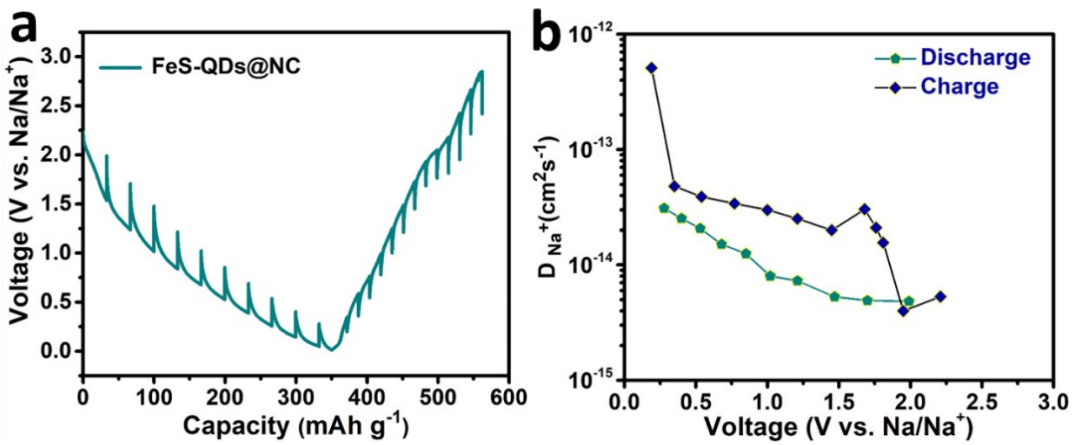

Figure S9. (a) Galvanostatic intermittent titration technique (GITT) curves of FeS-QDs@NC at the 50th cycles. (b) Diffusion coefficients calculated from GITT potential profiles.

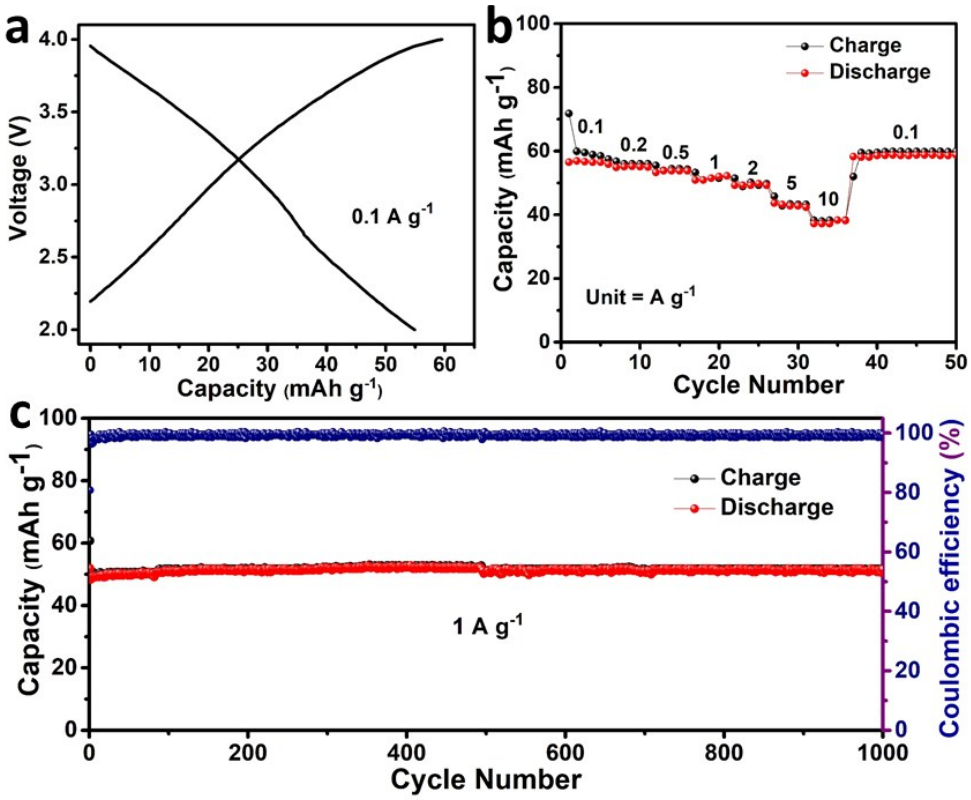

Figure S10. Electrochemical performances of AC cathode materials in voltage range of 2.0-4.0 V for SIBs. (a) Galvanostatic charge-discharge profiles at a current density of 0.1 A g^{-1}; (b-c) Rate capability at di□erent current densities and long-life cycling performance at the current density of 1 A g^{-1}.

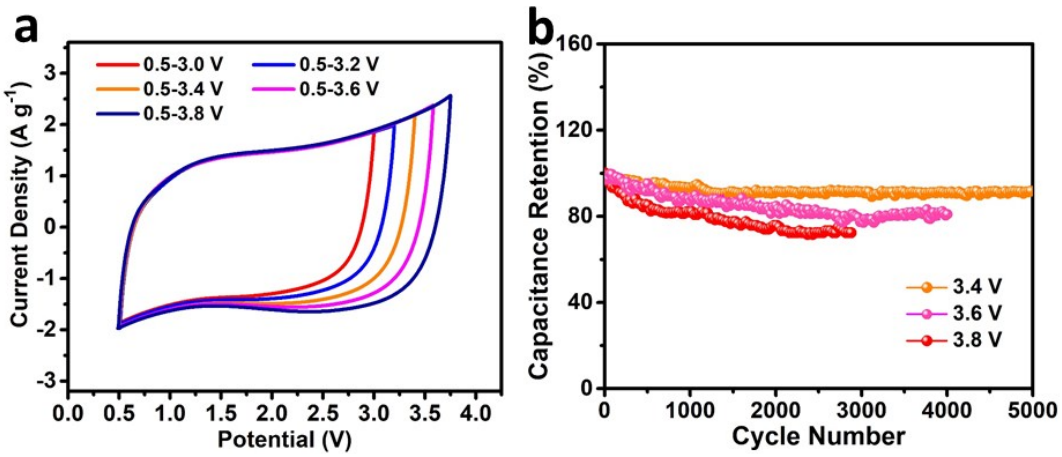

Figure S11. (a) CV curves of the SIHCs device in different potential windows at a scan rate of 10 mV s^{-1}. (b) cycling stability of the SIHCs at 1 A g^{-1} within different working potential ranges.

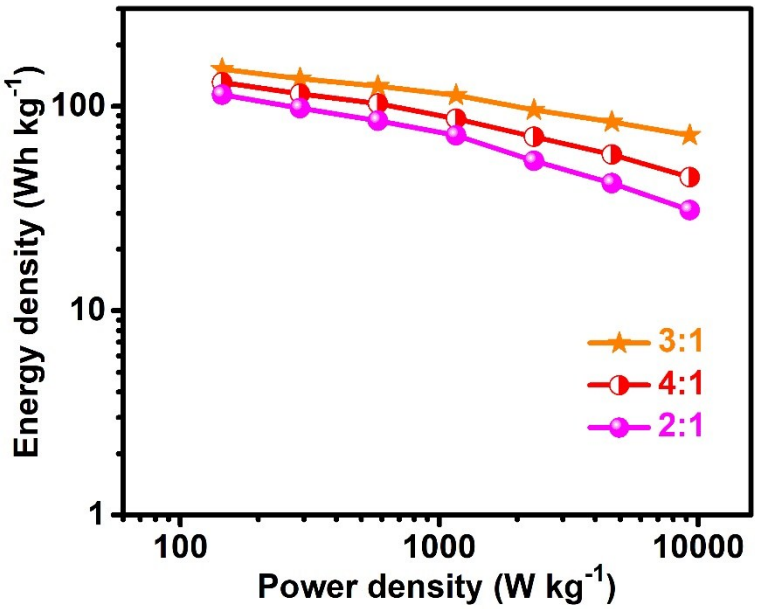

Figure S12. Ragone plots of SIHCs devices with different mass ratios of the active material in the anode vs. cathode in the voltage range of 0.5-3.4 V.

Table S1. Comparison of the electrochemical performance of some typical metal sulfide anode materials for Sodium-ion batteries.

Materials	Voltage range(V)	Current density (mA g^{-1})	Cycle number	Specific capacity (mAh g^{-1})	Reference
3D-IO FeS-QDs@NC	0.01-3.0	100	500	523	This work
		2000	2500	451	
α -MnS@N,S-NTC	0.005-2.5	250	200	291	1
$NiMo_3S_4$/CTs	0.01-3.0	480	1000	302	2
US-MoS_2@NG	0.4-3.0	1000	1000	198	3
amorphous MoS_3	0.05-2.8	2000	500	394	4
$MoS_2/Ni_3S_2@MoS_2$	0.001-3.0	2000	400	299	5
$Fe_{0.3}Nb_{0.7}S_{1.6}Se_{0.4}$	0.005-3.0	1000	750	260	6
NiS_2 nanosphere	0.4-2.9	500	1000	319	7
NiS240	0.001-3.0	100	50	499.9	8
$Ti_{0.25}Sn_{0.75}S_2$	0.01-2.5	400	1000	307	9
SnS@C	0.01-3.0	200	100	440.3	10
SnS_2/rGO	0.005-3.0	800	1000	300	11
$SnSe_{0.5}S_{0.5}$/C	0.01-3.0	200	100	430	12
VS_4-rGO	0.01-3.0	500	300	402	13
VS_2-SNSs	0.4-2.2	200	100	245	14

WS_2/CNT-rGO-200	0.01-3.0	640	100	423	15
ZnS nanospheres	0.01-3.0	500	50	283	16
$Cu_{1.8}S$	0.5-2.2	840	1000	250	17
FeS/C-15	0.01-2.3	500	200	349	18
FeS_2@C-45	0.1-2.0	2000	800	330	19
CoS_2-C/CNT	0.01-3.0	100	200	435	20

Table S2. Cyclability comparison of as-designed AC//3D-IO FeS-QDs@NC SIHCs with previous reported SIHCs.

System	Voltage range(V)	Current density (mA g^{-1})	Cycle number	Capacity retention (%)	Reference
AC//3D-IO FeS-QDs@NC	0.5-3.4	1000	5000	91	This work
PSC//NTO@CNT	0-3.0	400	4000	75	21
GF//$Na_2Ti_3O_7$/CT	1.0-3.0	500	2500	80.3	22
MG//DC	0-4.2	1000	1200	85	23
Nb_2O_5 nanosheets//PSC	1.0-3.0	1280	3000	80	24
AC//Ti(O,N)-MP-NWs	0.5-4.0	1000	500	82.9	25
TiO_2/CFC//CFs	1.2-4.3	1000	4000	90	26
QSS–NIC	0.5-3.5	500	2500	86.7	27
b-NMO/C//graphite	0.5-3.8	1000	100	72	28
TiO_{2-x}/CNT//AC/CNT	1.0-4.0	1000	2000	73	29
VO_2@mp-CNSs/CFC//NVP@mp-CNSs/CFC	1.0-3.8	1000	2000	78	30

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