Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information for

Novel Iodine-doped Reduced Graphene Oxide Anode for Sodium Ion Batteries

Jianwei Li[a], Xifei Li[a,b]*, Dongbin Xiong[a], Youchen Hao[a], Huari Kou[a], Wen Liu[a], Dejun Li[a], Zhiqiang Niu[b]

[a]Tianjin International Joint Research Centre of Surface Technology for Energy Storage Materials, College of Physics and Materials Science, Tianjin Normal University, Tianjin 300387, China. Email: xfli2011@hotmail.com

[b]Key Laboratory of Advanced Energy Materials Chemistry (Ministry of Education), Collaborative Innovation Center of Chemical Science and Engineering, College of Chemistry, Nankai University, Tianjin 300071, China

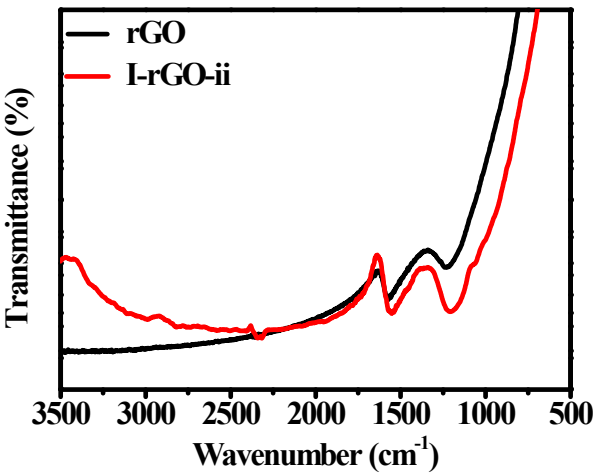

Fig S1. FT-IR spectra of rGO and I-rGO-ii.

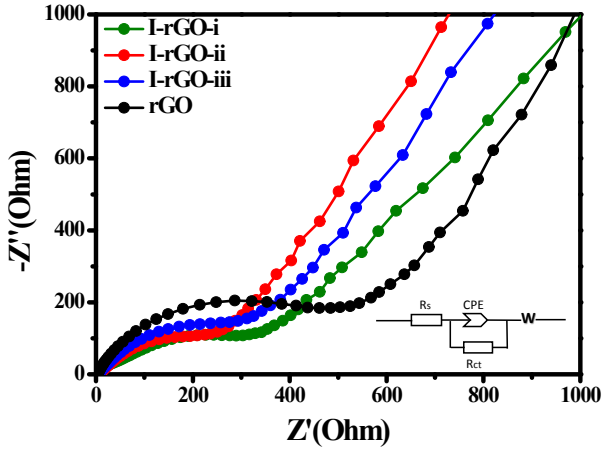

Fig S2. The electrochemical impedance spectroscopy of rGO, I-rGO-i, I-rGO-ii and I-rGO-iii in the 5 cycles.

Table S1. Comparison of electrochemical performance of heteroatom doped systems for SIBs.

Electrode	Performance		Reference
Nitrogen-doped reduced graphene oxide aerogel	0.1 A g^{-1}	287 mAh g^{-1}	[S1]
Fluorine and nitrogen co-doped graphene paper	0.05A g^{-1}	203 mAh g^{-1}	[S2]
Nitrogen-doped carbon nanotubes	0.2 A g^{-1}	179 mAh g^{-1}	[S3]
Nitrogen doped carbon sphere	0.2 A g^{-1}	206 mAh g^{-1}	[S4]
Sulfur-doped mesoporous carbons	0.2 A g^{-1}	173 mAh g^{-1}	[S5]
Nitrogen-doped graphene nanosheets	0.05 A g^{-1}	260 mAh g^{-1}	[S6]
Porous nitrogen doped carbon	0.1 A g^{-1}	241 mAh g^{-1}	[S7]
Iodine-doped reduce oxide graphene	0.05 A g^{-1}	275 mAh g^{-1}	This work

S1. J. Zhang, C. Li, Z. Peng, Y. Liu, J. Zhang, Z. Liu and D. Li, *Sci. Rep.*, 2017, 7, 4886.

S2. H. An, Y. Li, Y. Gao, C. Cao, J. Han, Y. Feng and W. Feng, *Carbon*, 2017, 116, 338-346.

S3. K. Ding, B. Gao, J. Fu, W. An, H. Song, X. Li, Q. Yuan, X. Zhang, K. Huo and P. K. Chu, *ChemElectroChem*, 2017, 4, 2542-2546.

S4. D. Li, H. Chen, G. Liu, M. Wei, L.-x. Ding, S. Wang and H. Wang, *Carbon*, 2015, 94, 888-894.

S5. X. Shi, Y. Chen, Y. Lai, K. Zhang, J. Li and Z. Zhang, *Carbon*, 2017, 123, 250-258.

S6. G. Ma, K. Huang, Q. Zhuang and Z. Ju, *Mater. Lett.*, 2016, 174, 221-225.

S7. J. Ou, L. Yang and X. Xi, Electronic *Mater. Lett.*, 2016, 13, 66-71.

Table S2. The relative surface element contents of the I-rGO-ii.

Samples	C	O	I
I-rGO-ii	96.72%	3.1%	0.18%