RGO-wrapped ZnS-SnS_2 Heterojunction Bimetallic Hollow Cubic Boxes as High Magnification and Long Lifespan Supercapacitor Anode Materials

Xiaoqin Li[1], Guoqing Feng[1], Lingling Zhou[1], Tiewei Zhao [1], Feng Jiang[1], Huiyu Li[1], Yongsheng Liu[1], Qing Yu[2], Hao Ding[2], Tian Zou[2], Shanhai Zhao[2], Jun cao[2] Yanyan Zhu[1*], Haijing Cao[1*]

[1]College of Mathematics and Physics, Shanghai University of Electric Power, Shanghai 200090, China

[2]United Nova Technology Co., Ltd., Shaoxing 312000, PR China

Yanyan Zhu Email: yyzhu@shiep.edu.cn

Haijing Cao Email: caohj@shiep.edu.cn

Supplementary information

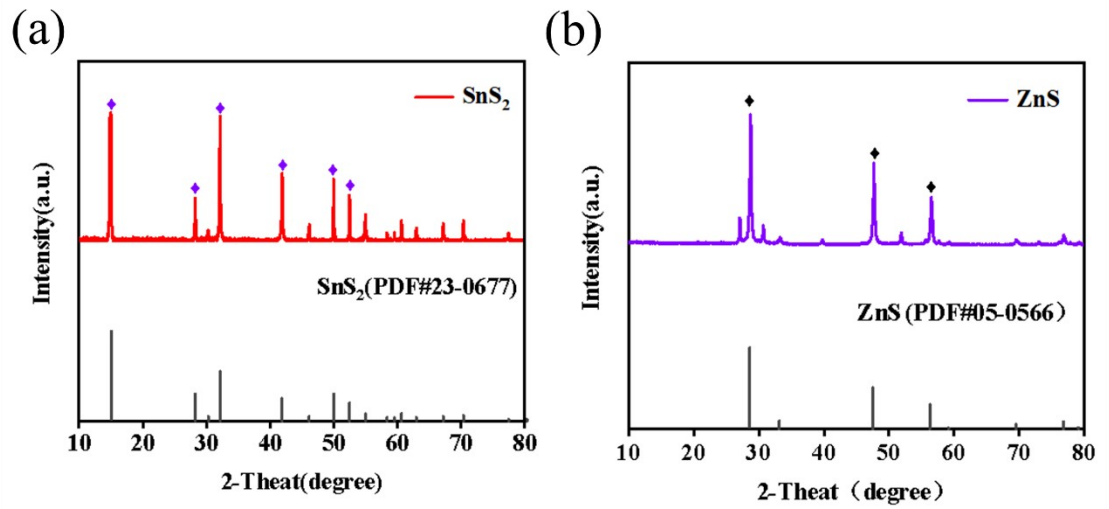

Fig.S1. (a) XRD image of SnS_2. (b) XRD image of ZnS.

The diffraction peaks at 14.95◦, 28.21◦, 31.12◦, 41.88◦, 49.95◦ and 52.44◦ in In Fig.S2a are consistent with (001), (100), (101), (102), (110) and (111) of SnS_2 plane related. In Fig.S2b, the diffraction peaks at 28.72°, 47.680°, and 56.51° are related to the (111), (220), and (311) planes of ZnS, respectively.

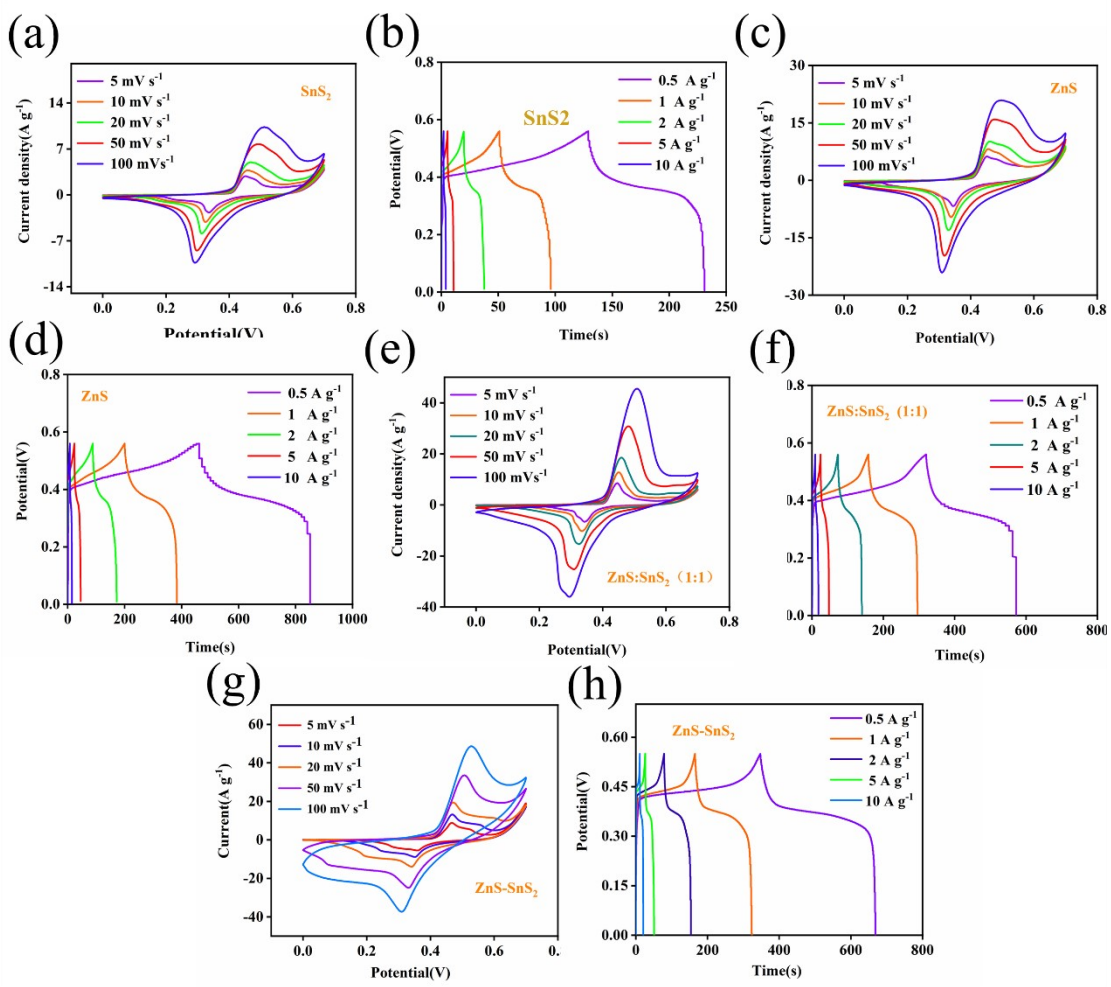

Fig.S2. (a) CV curve and (b) GCD curve of SnS_2 material. (c) CV curve and (d) GCD curve of ZnS material. (e) CV curve and (e) CV curve of ZnS:SnS_2(1:1) material(f) GCD curve. (g) CV curve and (h)GCD curve of ZnS-SnS_2 material.

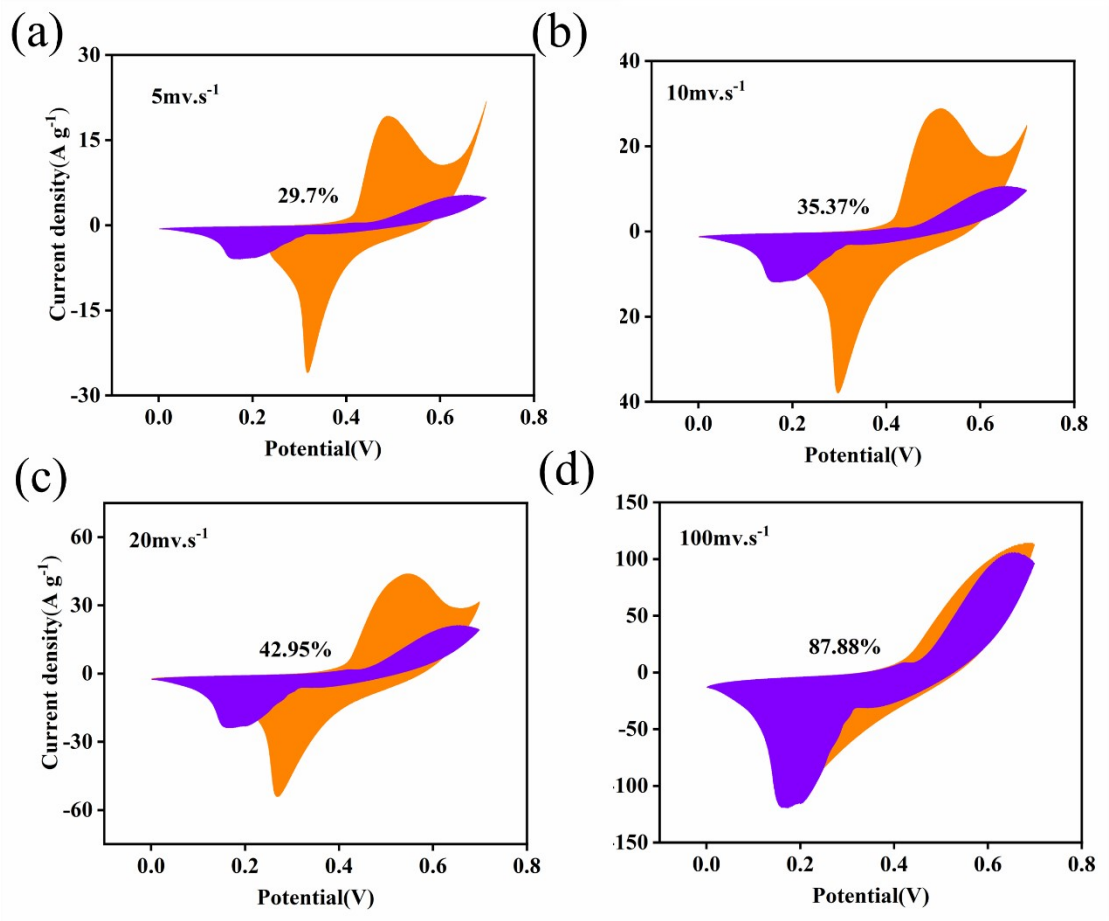

Fig.S3. Percentage of capacitive control at (a) 5mV.s^{-1}, (b) 10mV.s^{-1}, (c) 20mV.s^{-1} and 100mV.s^{-1} sweep rates.

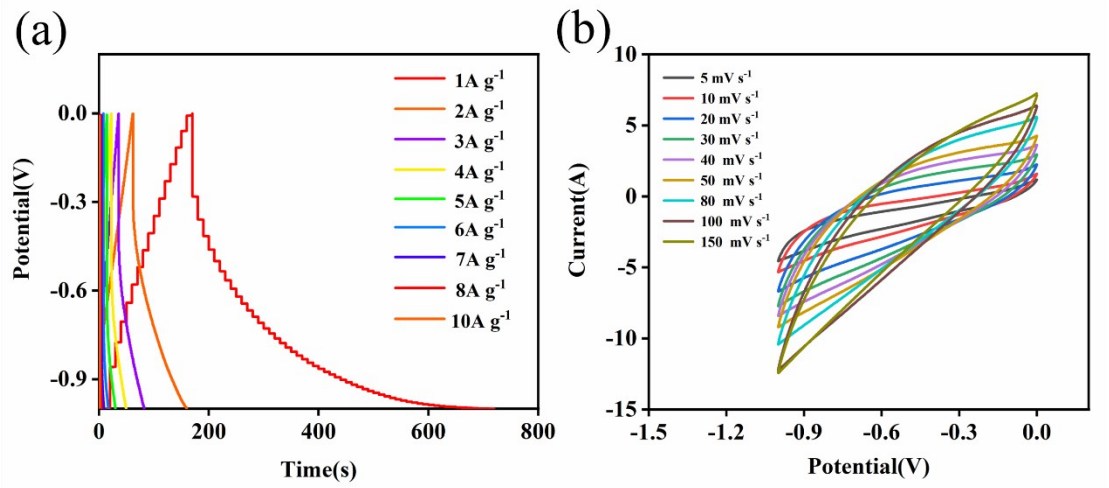

Fig.S4: (a) GCD curves of AC electrode at different current densities (b) CV curves of AC electrode at different scan speeds.

Table S1

Comparison of ZnS-SnS2@RGO//AC with other ZnS,SnS_2 related devices.

Materials	Specific capacitance	Current density or scan rate	Electrolyte	References
Ni/SnS_2@Ni$(OH)_2$-CC	158.1 mAh.g^{-1}	0.5 A g^{-1}	PVA-KOH	[1]

SnS_2/mK-BN/CNT	87 $F.g^{-1}$	2$A.g^{-1}$	1M $TEABF_4$	[2]
SnS_2//rGO	92.4 $F.g^{-1}$	1$A.g^{-1}$	1M NaOH	[3]
Mn-doped ZnS	98 $F.g^{-1}$	1$A.g^{-1}$	3M KOH	[4]
g-C_3N_4/ZnS	92.8 $F.g^{-1}$	0.5$A.g^{-1}$	6M KOH	[5]
ZnS-NiS1.97 hollow spheres	123.6$F.g^{-1}$	0.5$A.g^{-1}$	3M KOH	[6]
ZnS NWs/Cu_7S_4 NPs/rGO	112 $F.g^{-1}$	1$A.g^{-1}$	6M KOH	[7]
porous carbon/ZnS	82 $F.g^{-1}$	1$A.g^{-1}$	0.5M H_2SO_4	[8]
ZnS-SnS_2@RGO	52.5$F.g^{-1}$	1A g^{-1}	PVA-KOH	This work

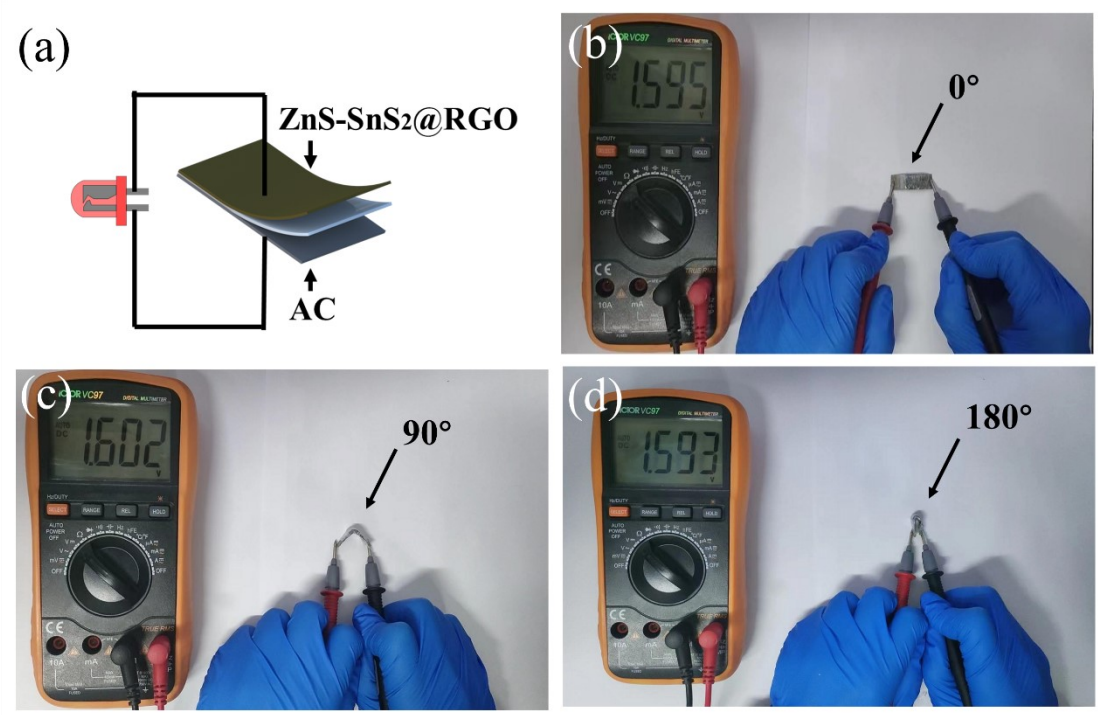

Fig.S5. Schematic diagram of ASC device(a). Device voltages were measured after the ASC device was collapsed at 0° (b),90° (c),180° (d).

Reference

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