

Supplementary data

Tuning Kinetics of SnS/Ni₃S₄ Binary Sulfides for High Rate and Long Cyclic Lithium-ion Batteries

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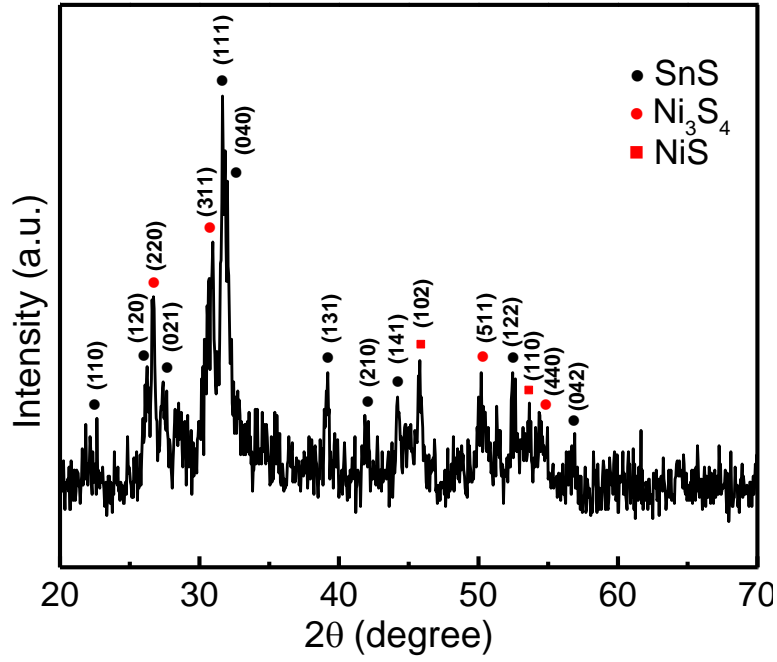


Figure S1. XRD pattern of SN-0.5.

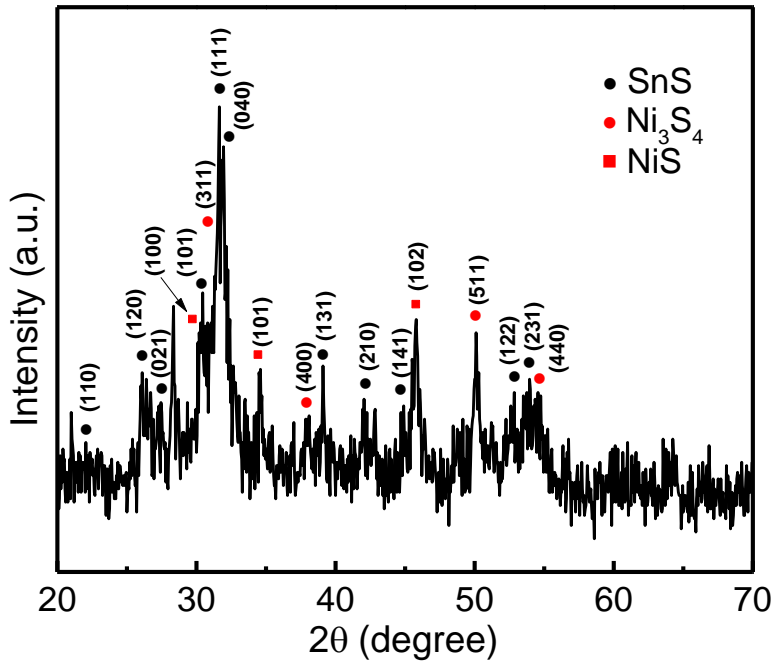


Figure S2. XRD pattern of SN-1.

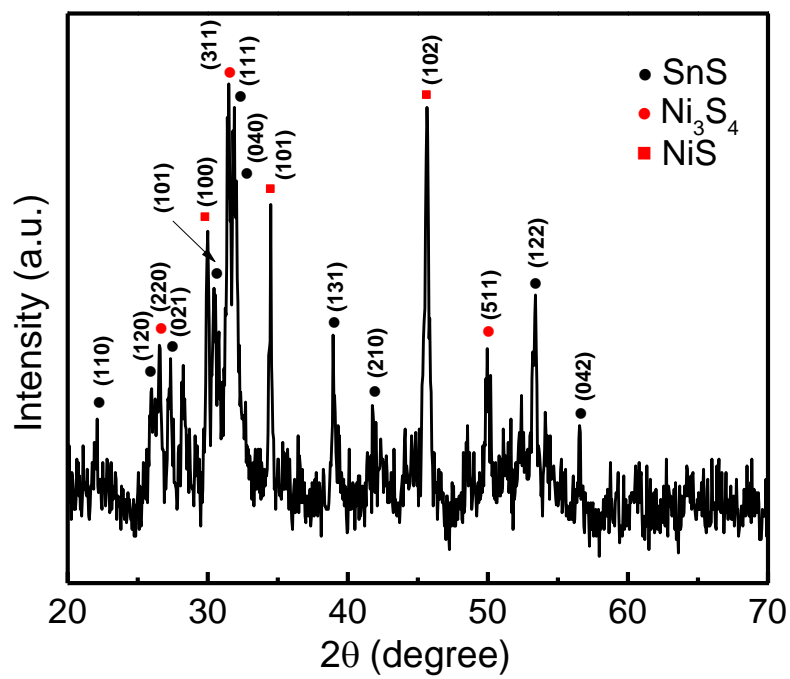


Figure S3. XRD pattern of SN-3.

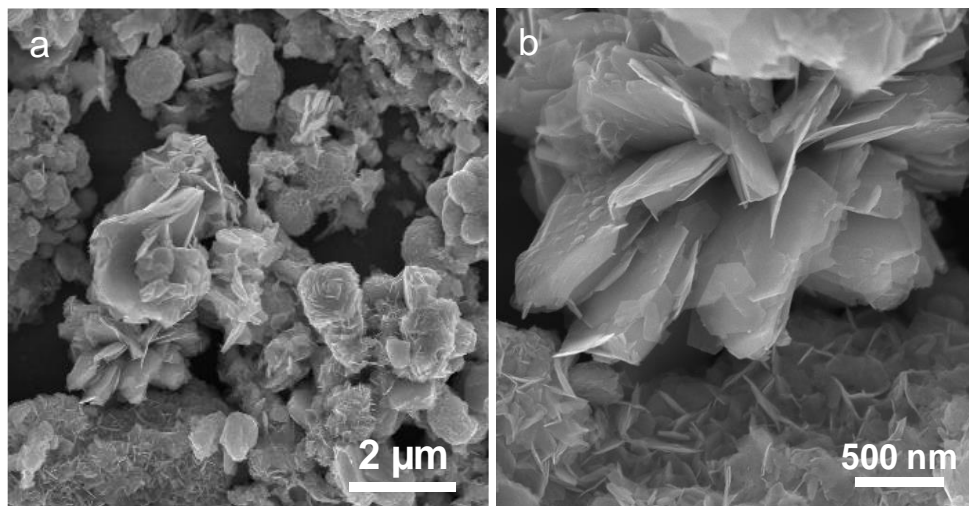


Figure S4. (a-b) SEM images of SN-1.

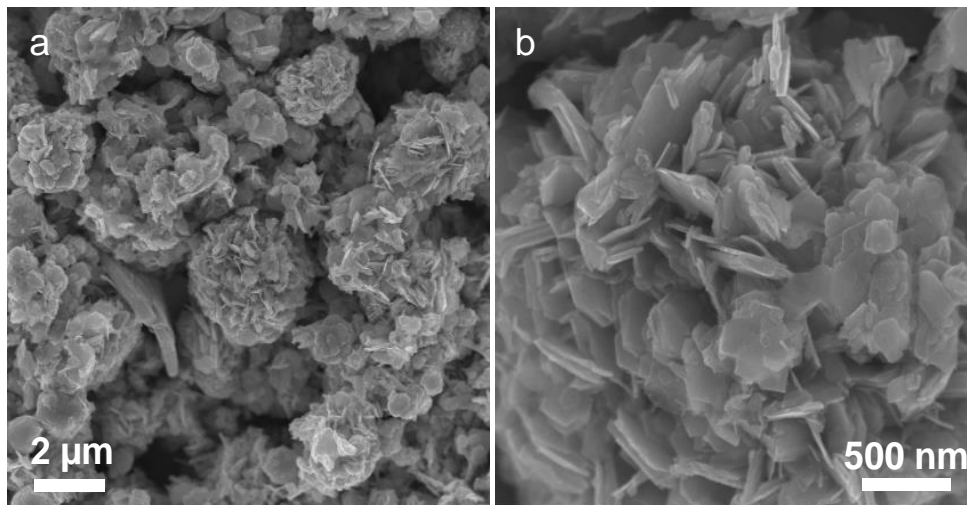


Figure S5. (a-b) SEM images of SN-0.5.

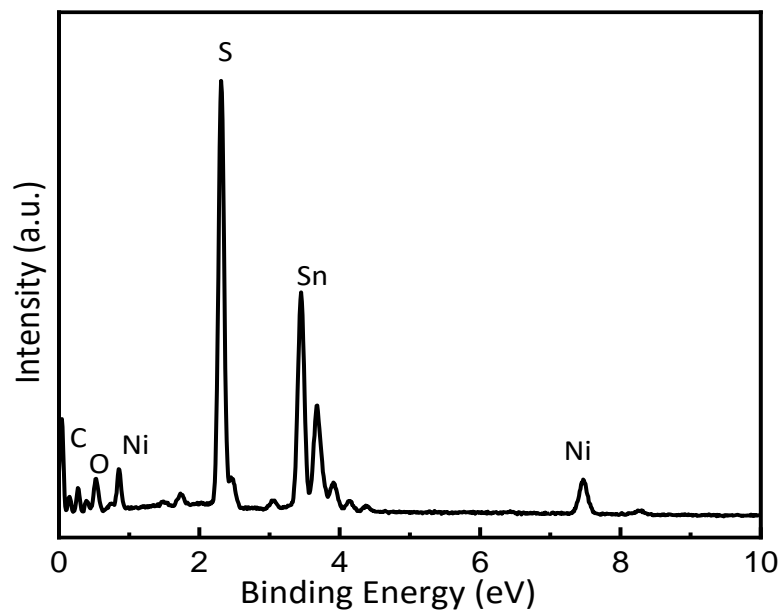


Figure S6. EDX spectrum of SN-1 binary nanocomposite.

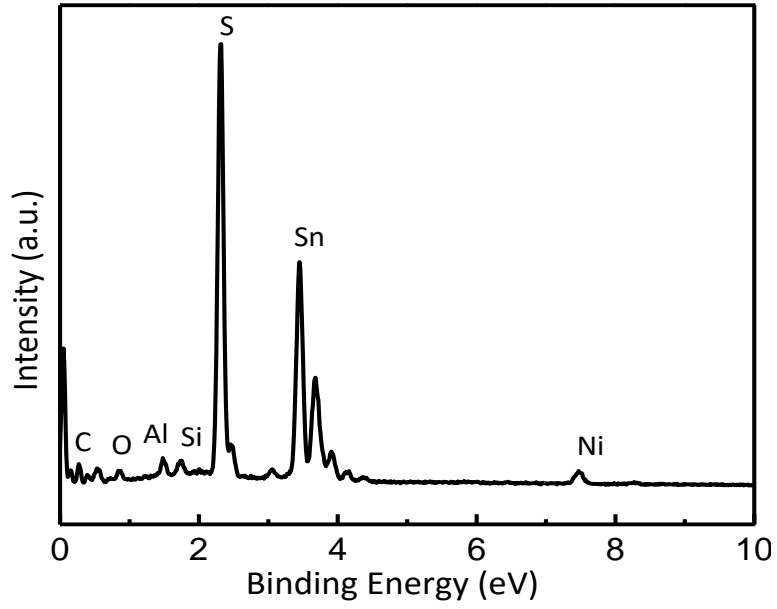


Figure S7. EDX spectrum of SN-0.5 binary nanocomposite.

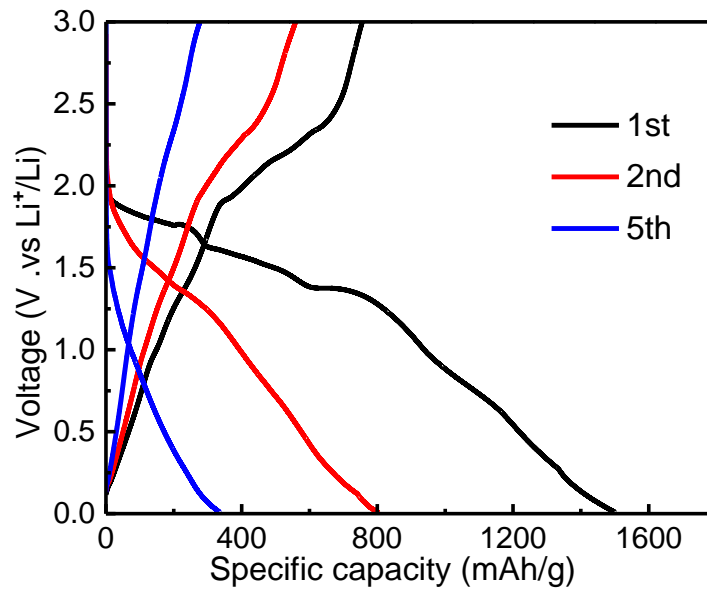


Figure S8. Galvanostatic charge/discharge profile for 1st, 2nd and 5th cycles of SnS.

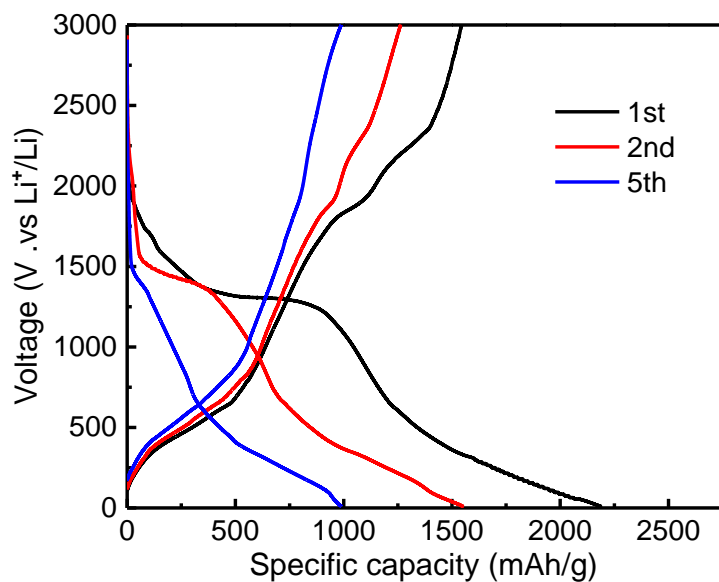


Figure S9. Galvanostatic charge/discharge profile for 1st, 2nd and 5th cycles of SN-1 binary composite.

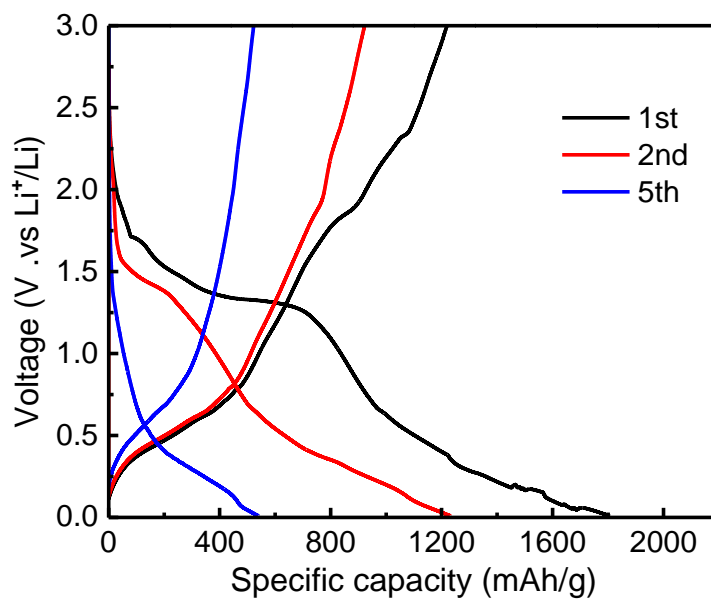


Figure S10. Galvanostatic charge/discharge profile for 1st, 2nd and 5th cycles of SN-0.5 binary composite.

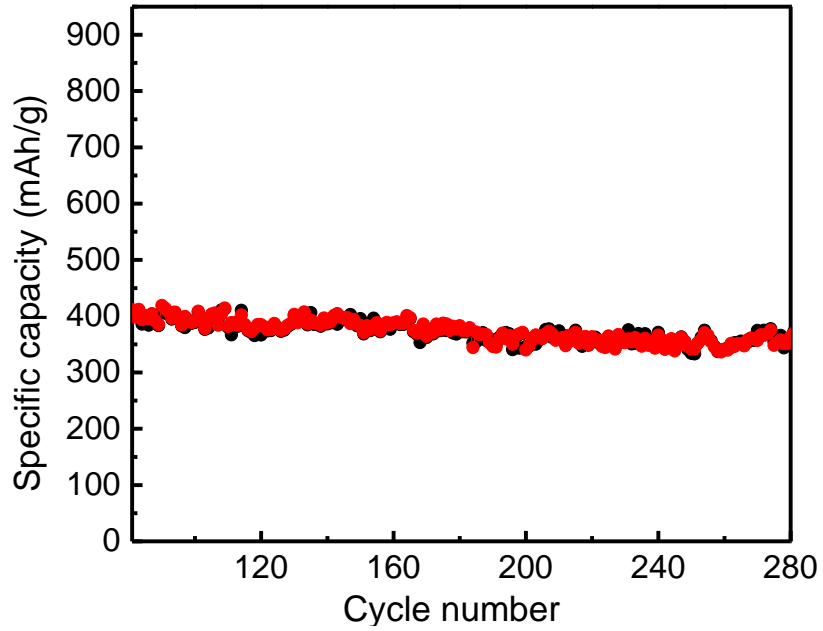


Figure S11. Cyclic performance of the SN-2 binary nanocomposite up to 280 cycles.

Table: S1 EIS fitting parameters of the SnS, SN-0.5, SN-1 and SN-2 binary composite electrodes.

| Sample ID | R_{ct} (Ω) |
|-----------|-----------------------|
| SnS | 118.7 |
| SN-0.5 | 100.7 |
| SN-1 | 83.16 |
| SN-2 | 78.27 |

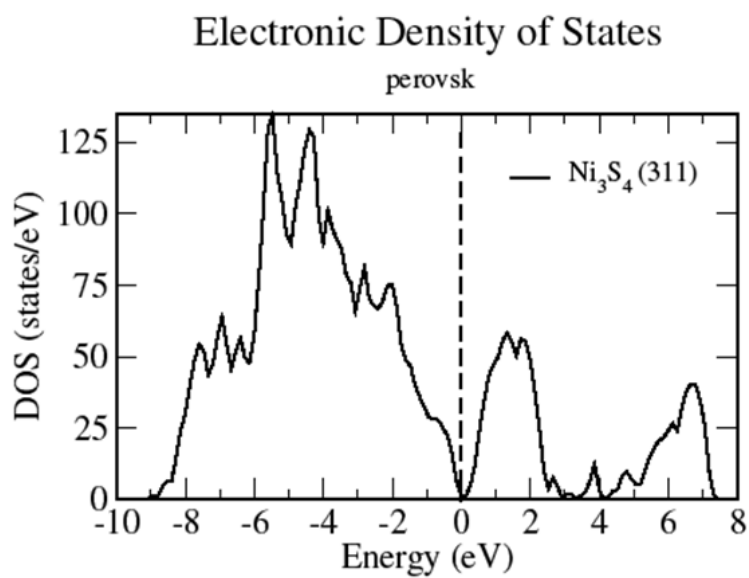
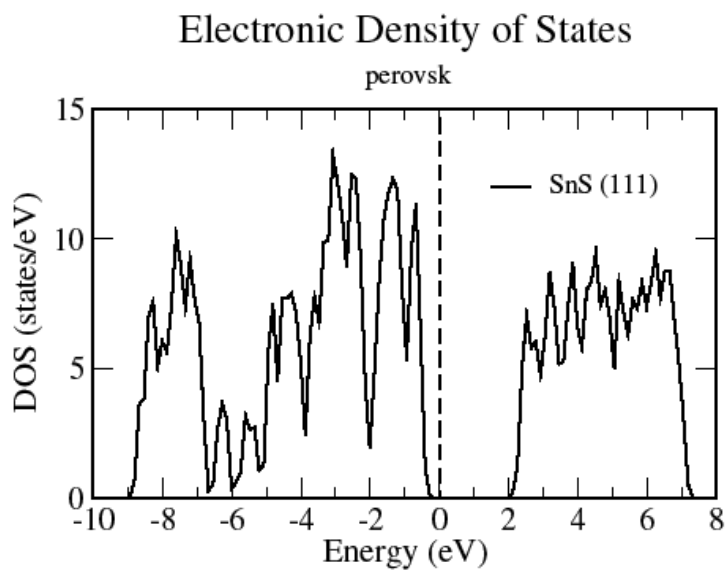


Figure S12. Comparison of electronic structure of SnS (111) and Ni₃S₄ (311) surfaces calculated with hybrid HSE06 functional