Supporting Information

Ultra-thin SnS₂ Nanoparticles on Graphene Nanosheets: Synthesis, Characterization and Li-ion Storage Applications

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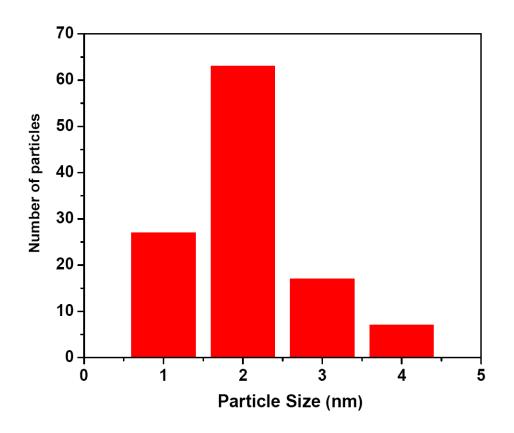


Figure S1. Particle size distribution profile of SnS_2 nanopartiles decorated on the graphene surface in SnS_2/GNS nanocomposite (calculated form HR-TEM images).

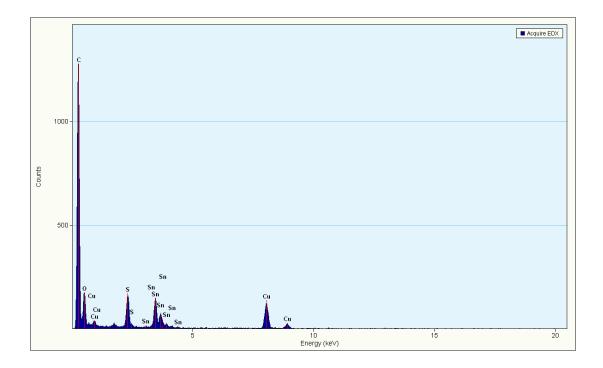


Figure S2. TEM-EDX profile of SnS_2/GNS nanocomposite on Cu grid indicates the presence of Sn, S and C in the SnS_2/GNS nanocomposite.

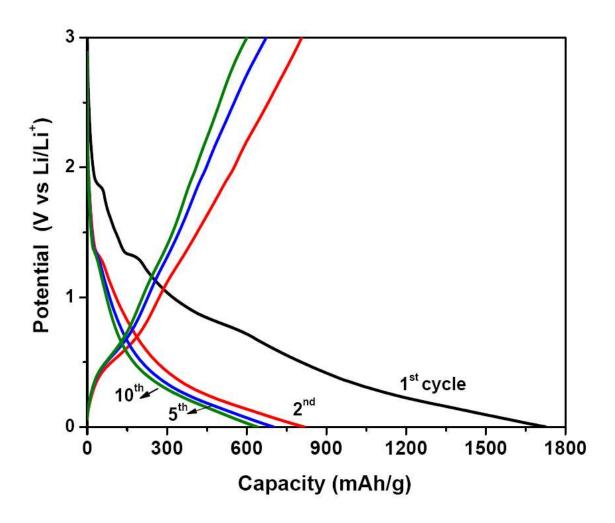


Figure S3. Li-ion charge-discharge profile of SnS_2/GNS nanocomposite at current density of 0.1C.

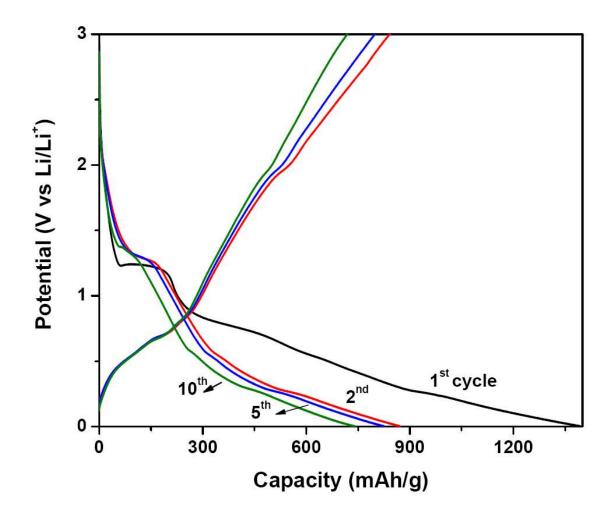


Figure S4. Li-ion charge-discharge profile of SnS_2/GNS -RG nanocomposite at current density of 0.1C

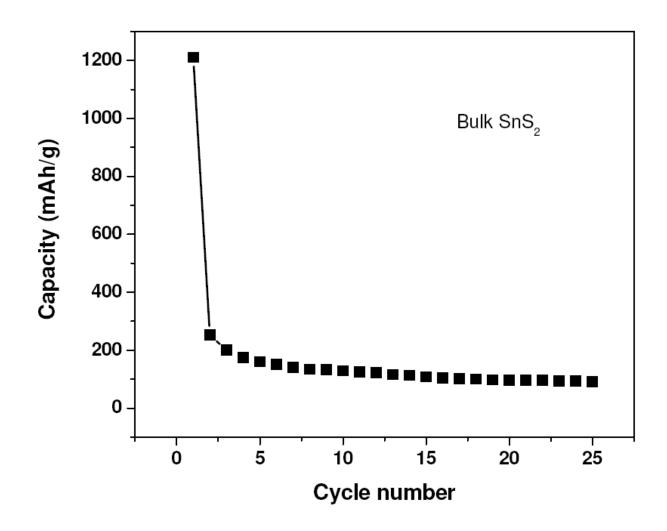


Figure S5. Capacity profile (up to 25 cycles) of GNS free bulk SnS_2 electrodes at current density of 0.1C

| $SnS_2 + xLi^+ + x\bar{e}$ | → | Li _x SriS ₂ | (3) |
|--|---|-----------------------------------|---------|
| $Li_xSnS_2 + (y-x)Li^+ + (y-x)\bar{e}$ | ÷ | $Li_y SnS_2$ | (4) |
| $L_{y}SnS_{2} + (4-y)L_{1}^{+} + (4-y)\bar{e}$ | → | $Sn + Li_2 S (0 < x < y > 1)$ | ≤2) (5) |