Supporting Information for

NiS Nanorod-Assembled Nanoflower Grown on Graphene: Morphology Evolution and Li-ion Storage Application

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Figure S1 shows SEM images of NiS from different precursor concentrations: (a) when the concentration of nickel chloride and thiourea is reduced by 50%, the obtained NiS nanoflowers are 0.5-1.1 μm in size. (b) when a doubled concentration of nickel chloride is used, larger sphere sizes (~1.3-1.8 μm) can be observed.

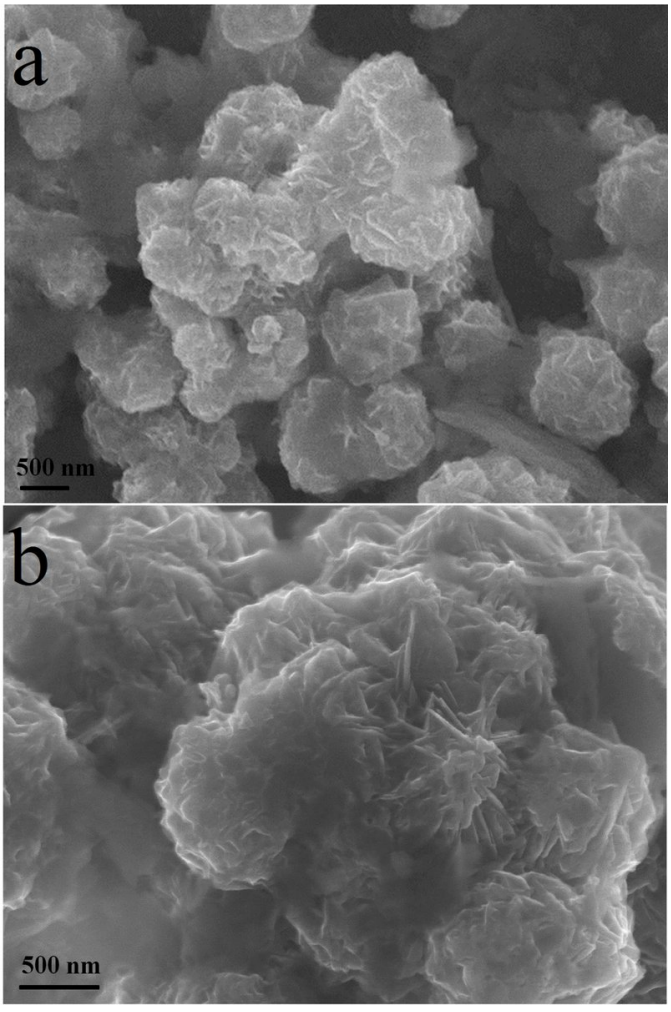

Figure S2 shows SEM and TEM images of NiS nanoparticles prepared from L-cysteine instead of thiourea.

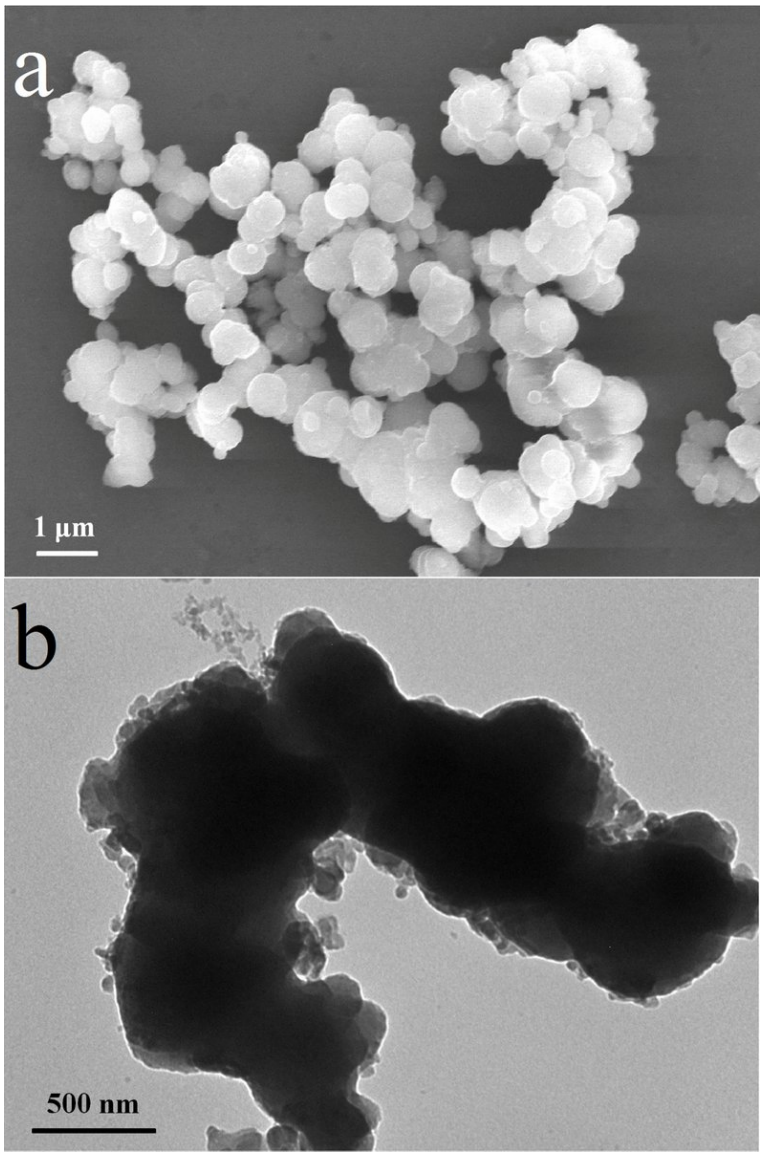

Figure S3 shows TEM images of NiS/GNS composites with different mass ratios: (a-b) NiS:GNS=4:1, (c-d) NiS:GNS=3:1, and (e-f) NiS:GNS=2:1.

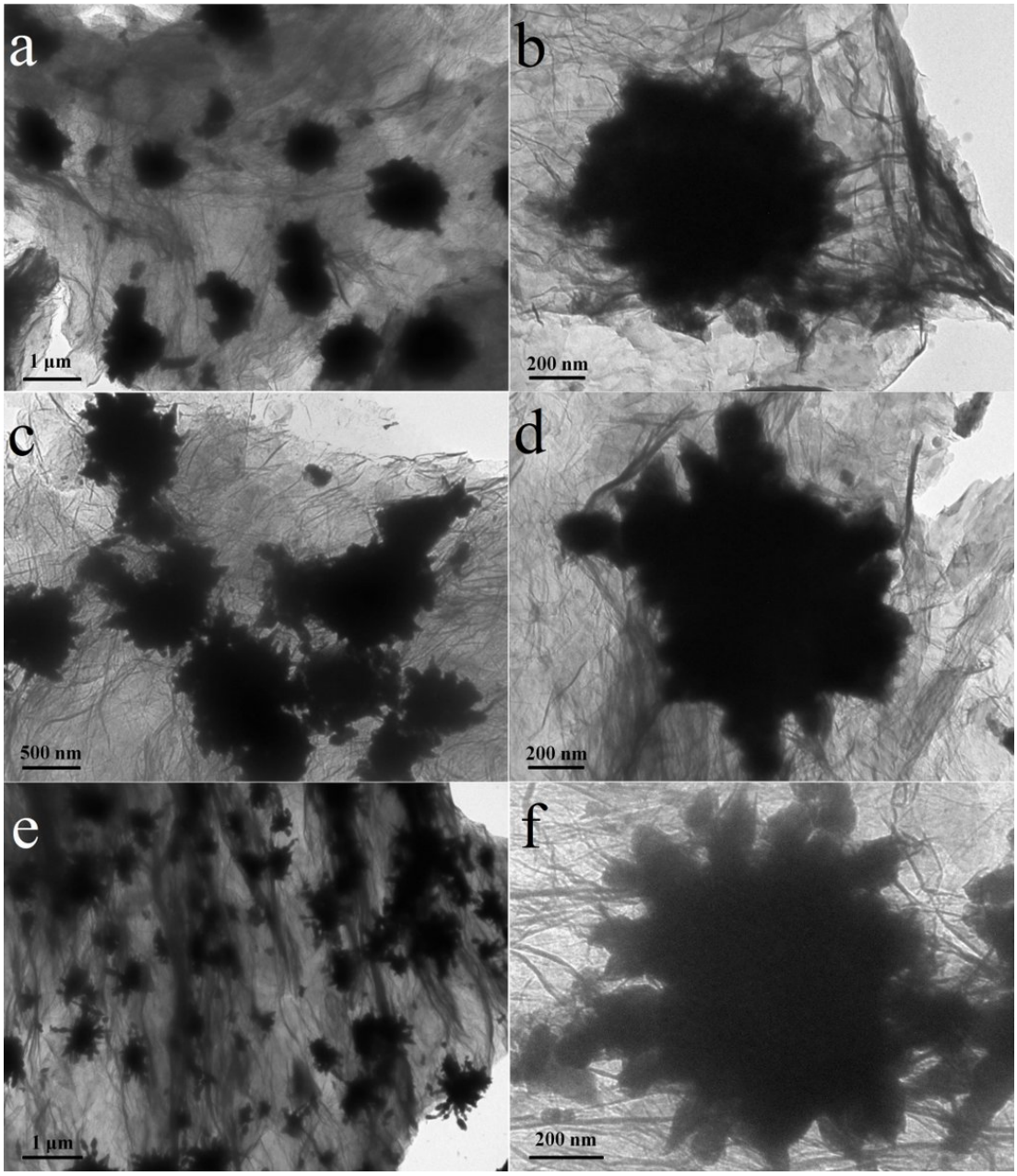

Figure S4 shows the energy dispersive spectroscopy (EDS) of NiS/GNS (1:1) composite. It is confirmed that C, Ni, and S elements are present in the composite.

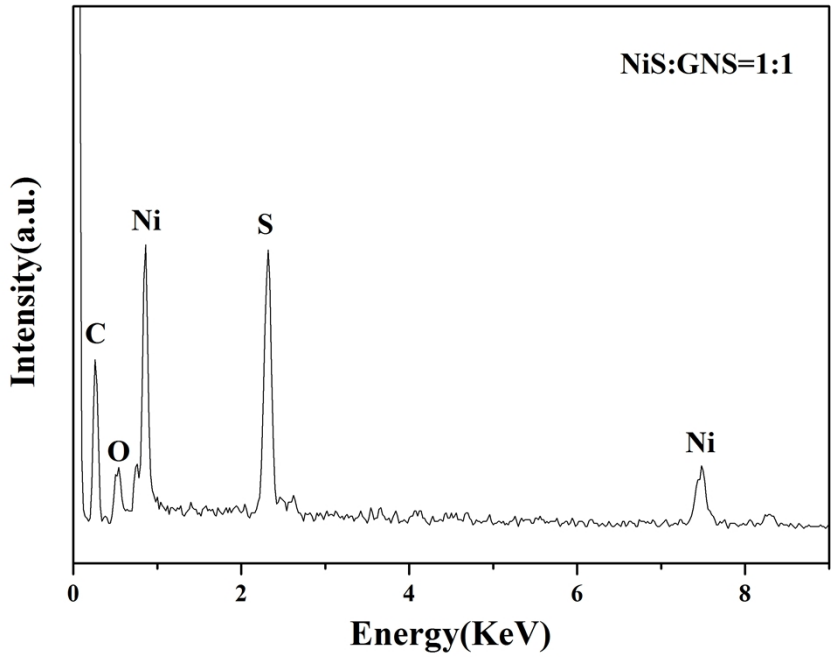

Figure S5 shows the Raman spectra of GNS and NiS-graphene composite (1:1) and Brunauer-Emmett-Teller (BET) analysis of NiS-GNS composite with the nitrogen adsorption-desorption isotherm

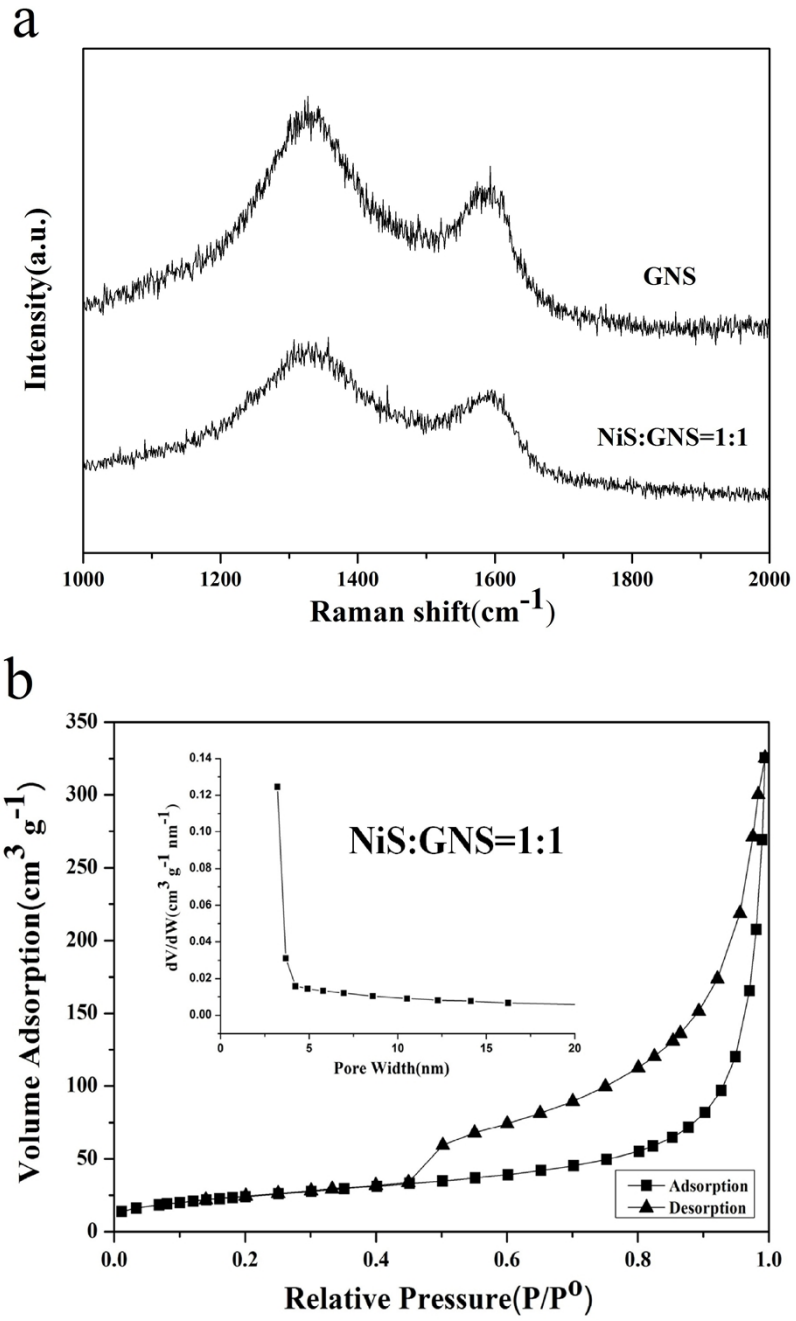

Figure S6 shows cyclic voltammery (CV) curves of the NiS/GNS composites at a scan rate of 0.1 mV s^{-1} between 5 mV and 3 V. Two cathodic peaks (~1.72 and1.21 V) and two anodic peaks (2.05 and 2.20 V) can be identified.

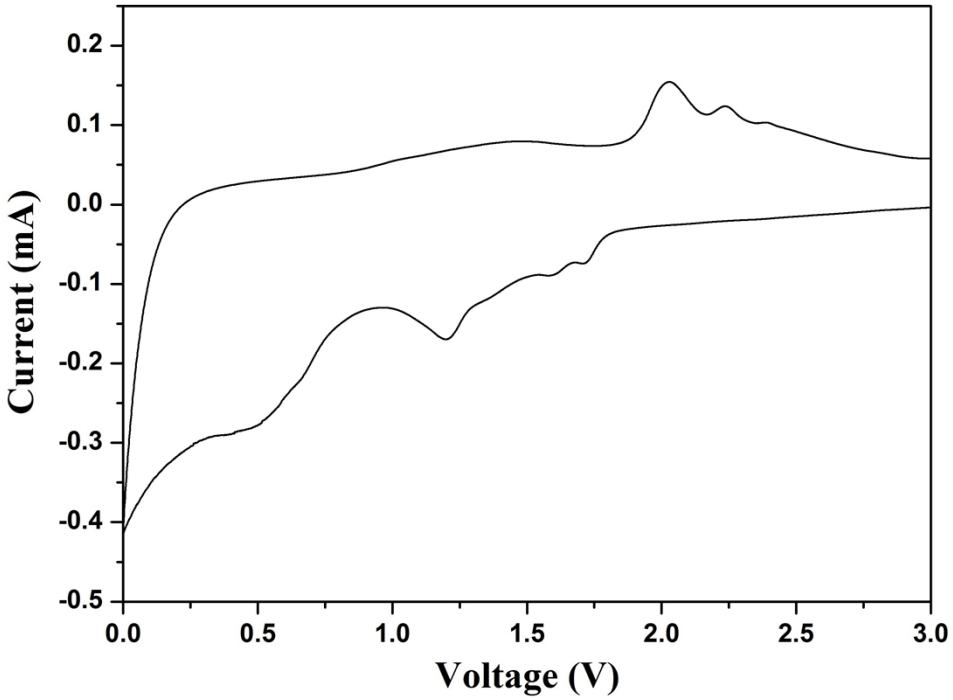

Figure S7 shows the cycling performances of NiS-GNS composite at various current rates.

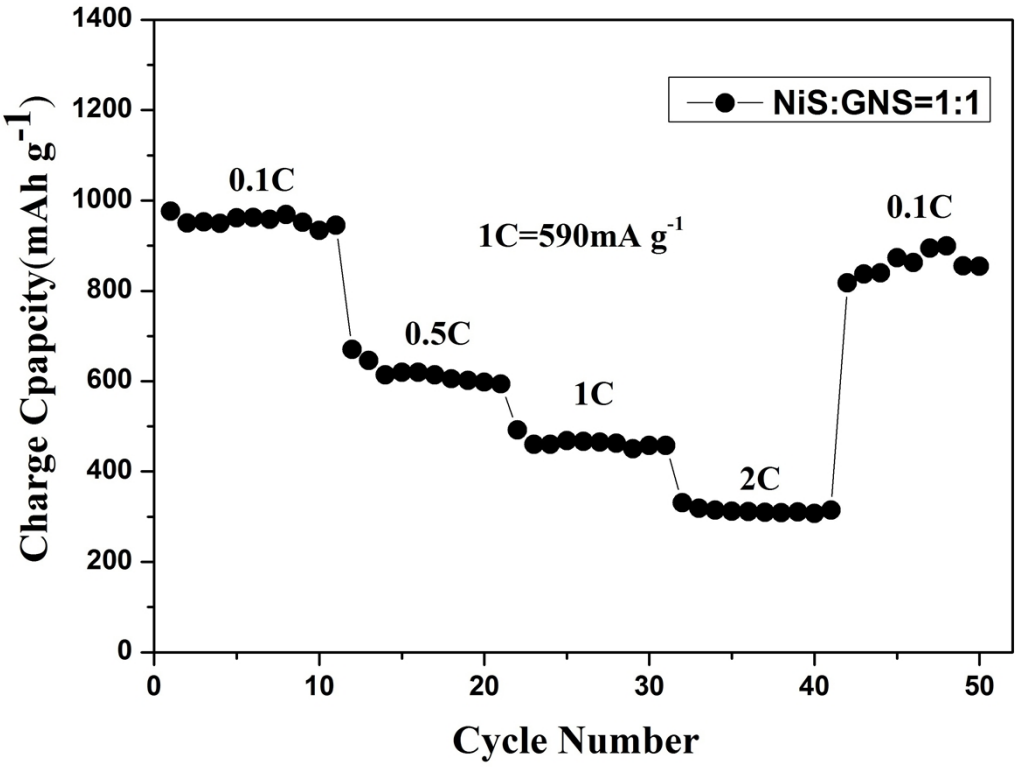

Figure S8 shows the Nyquist plots of pristine NiS and NiS/GNS after 5 cycles.