

Supporting Information

Controlled synthesis of zinc cobalt sulfide nanostructures in oil phase and their potential applications in electrochemical energy storages

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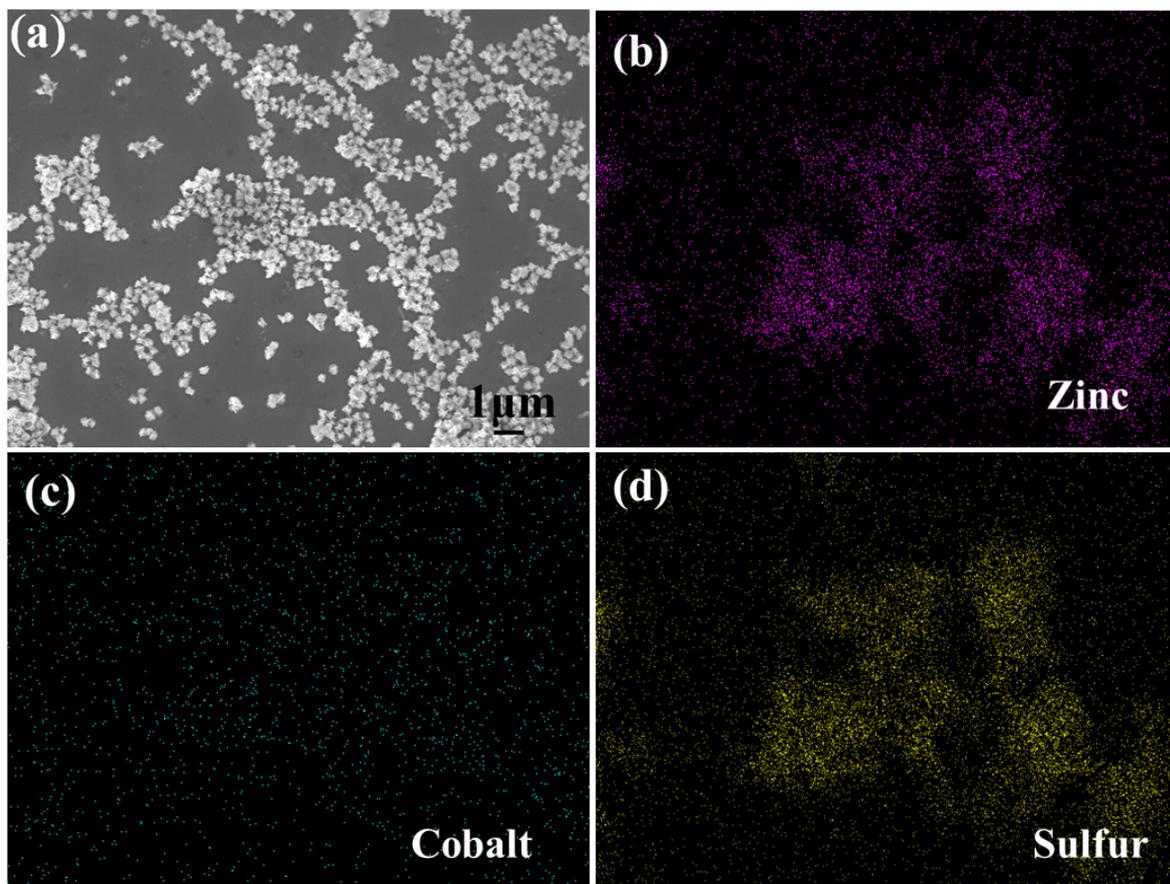


Figure S1 (a) SEM image for EDX of $\text{Zn}_x\text{Co}_{1-x}\text{S}$ nanoartichokes, (b-d) corresponding elemental mapping of Zn, Co and S.

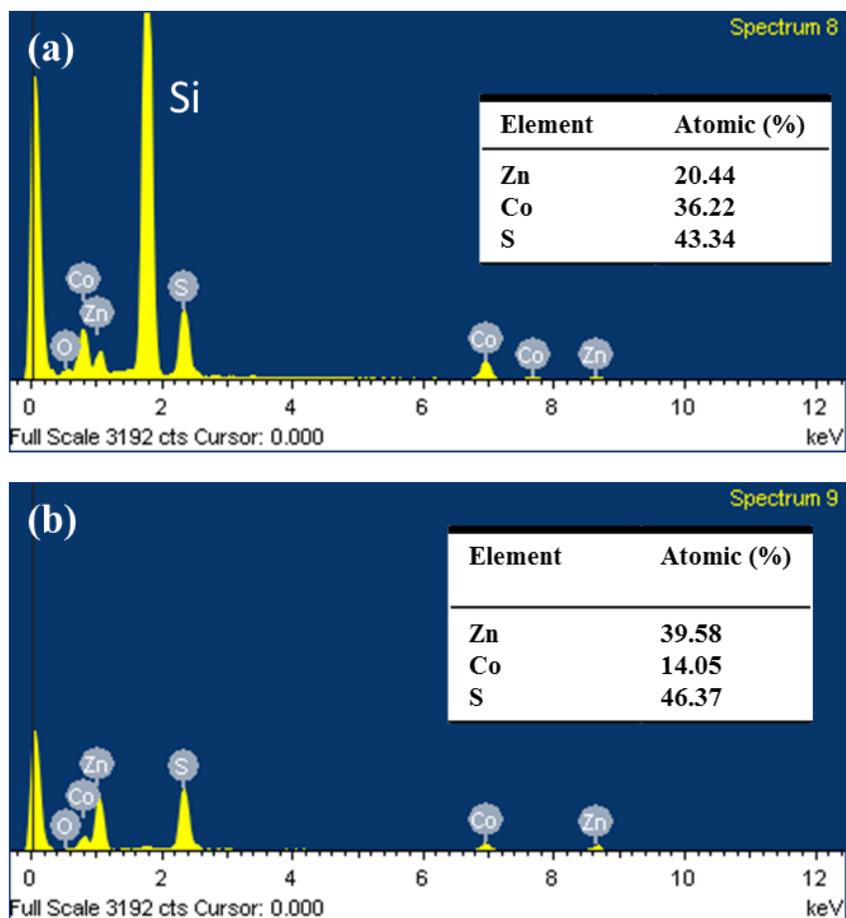


Figure S2 EDX of (a) the ratios between Zn and Co precursors is 1:2, (b) $Zn_xCo_{1-x}S$ nanoparticles.

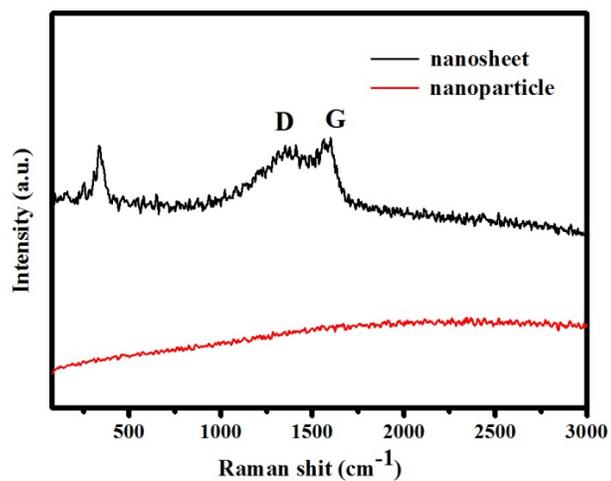


Figure S3 Raman spectra of $Zn_xCo_{1-x}S$ nanoartichokes and nanoparticles.

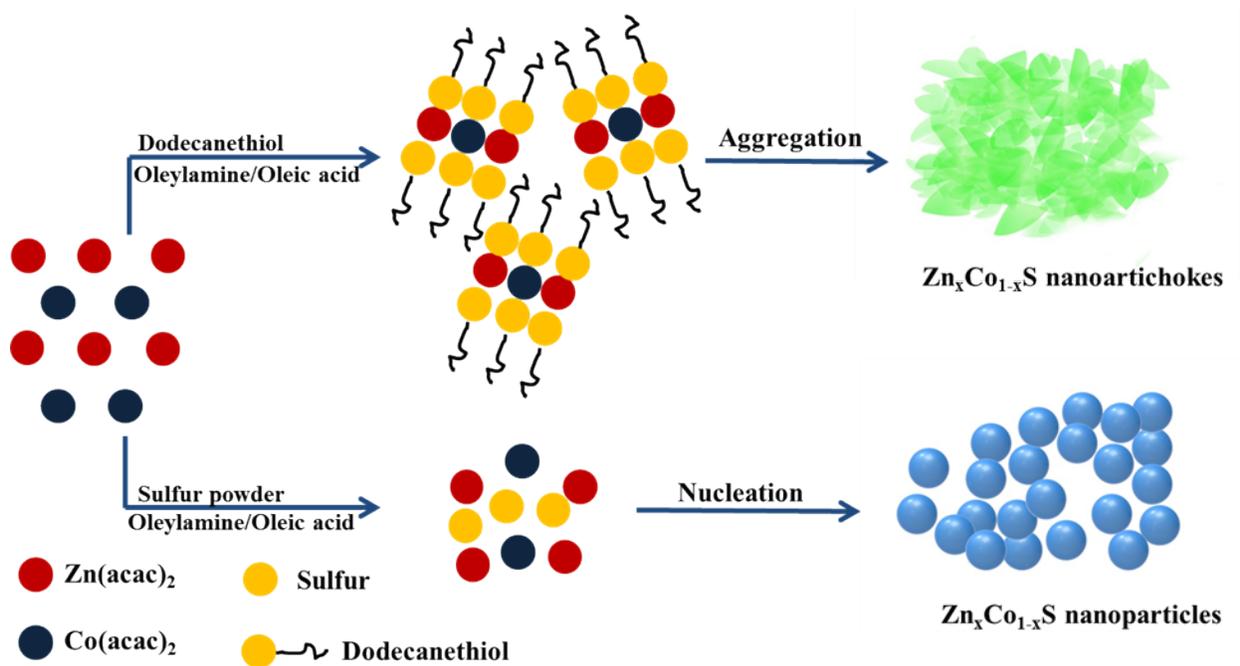


Figure S4 Schematic illustration of the formation of $Zn_{0.76}Co_{0.24}S$ nanoartichokes and nanoparticles.

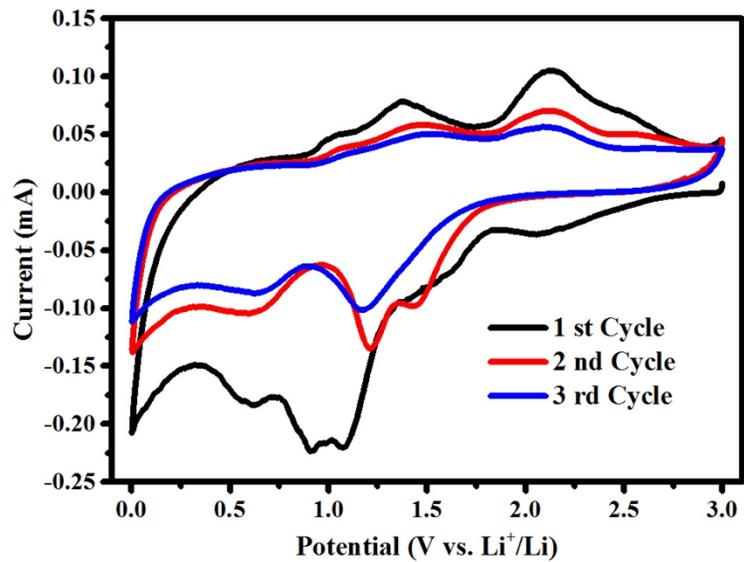


Figure S5 CV of the first three cycles of $\text{Zn}_{0.76}\text{Co}_{0.24}\text{S}$ nanoparticles obtained between 0.005 and 3.0 V at a scan rate of 0.2 mV s^{-1} .

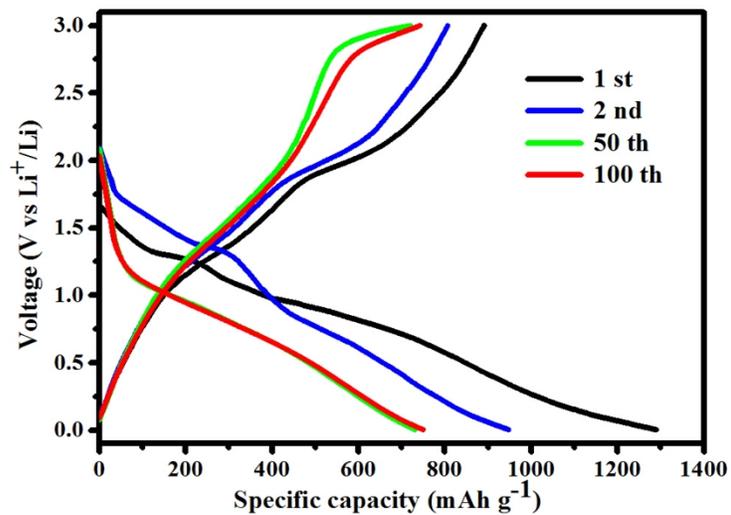


Figure S6 The charge/discharge voltage profiles of Zn_{0.76}Co_{0.24}S nanoartichokes between 0.005 and 3 V (vs Li⁺/Li) at a current density of 0.2 A g⁻¹.

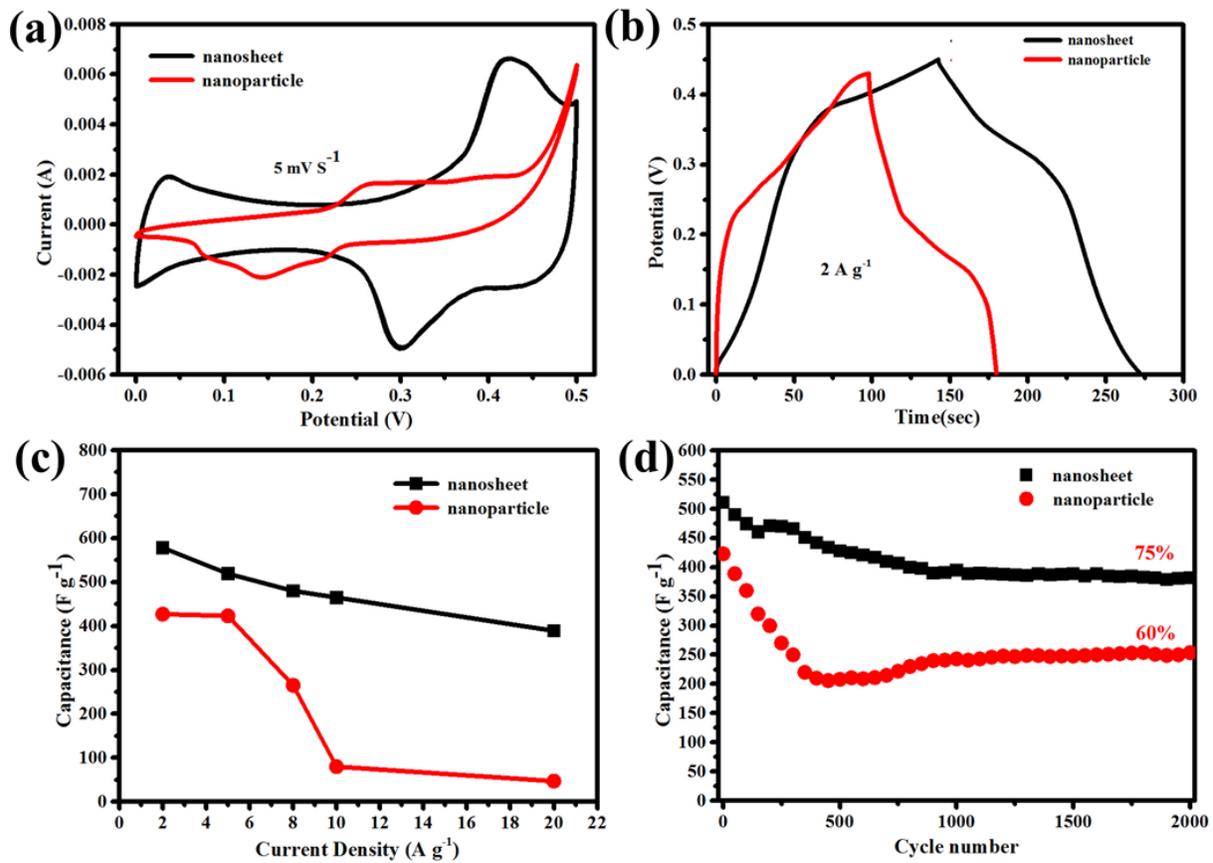


Figure S7 (a) CV curves measured at a scan rate of 5 mV s⁻¹, (b) GCD plots tested at the current density of 2 A g⁻¹ (c) Effects of current density on specific capacitance and (d) capacitance as a function of cycle number of Zn_{0.76}Co_{0.24}S nanoartichokes and nanoparticles in a high concentration electrolyte (6 M KOH).

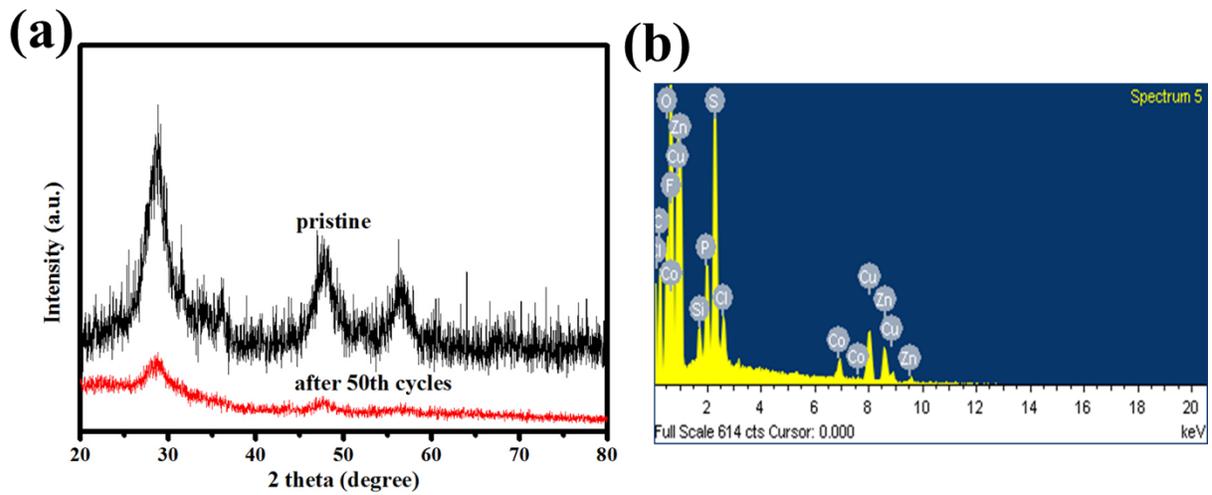


Figure S8 (a) XRD patterns of $Zn_{0.76}Co_{0.24}S$ nanoartichokes before and after discharging/charging for 50 cycles at a current density of 200 mA g^{-1} , (b) EDX of the $Zn_{0.76}Co_{0.24}S$ nanoartichokes after discharging/charging for 50 cycles at a current density of 200 mA g^{-1} .