Supporting Information

$Zn_3V_2O_8$ hexagon nanosheets: a high-performance anode material for lithium-ion batteries

Contents

Experimental Section:

Synthesis of $Zn_3V_2O_8$ nanoparticle

All chemicals used were analytic grade reagents used without further purification. In a typical process, 0.75mmol $ZnAc_2$ and 0.5mmol NH_4VO_3 were grinding evenly at room temperature in air. At last the powder was calcined at 600°C in air for 12 h to yield the final products.

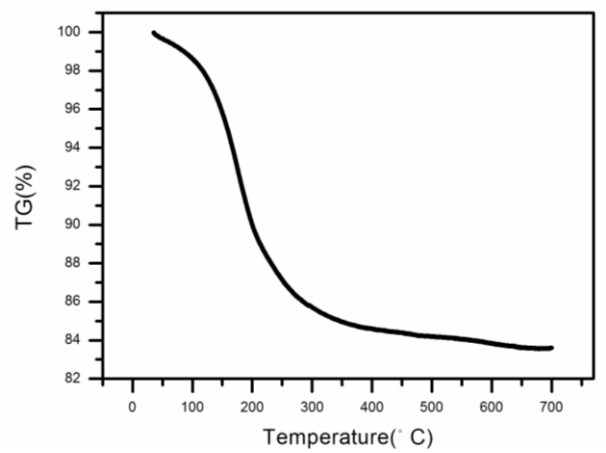

Figure S1. TG analysis of $Zn_3V_2O_7(OH)_22H_2O$.

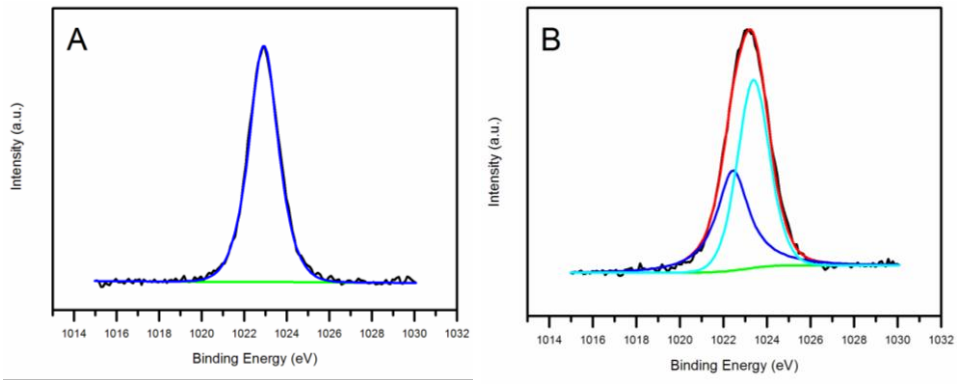

Figure S2. XPS images of $Zn2p_{3/2}$, (A) as-prepared; (B) discharge down to 0.01V

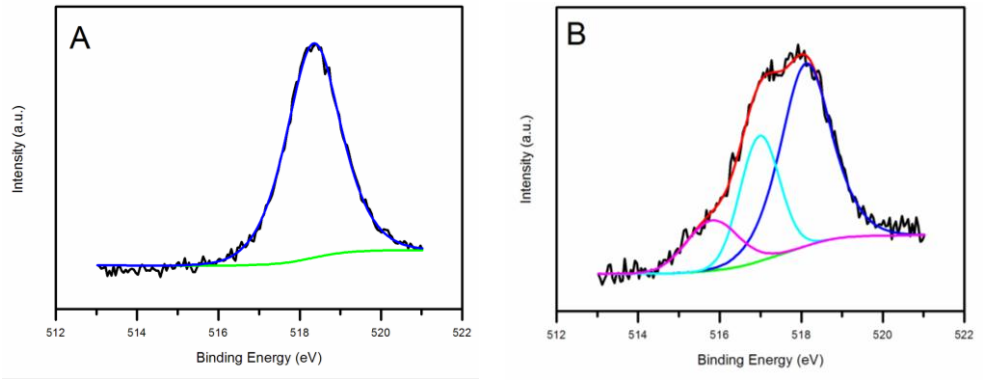

Figure S3. XPS images of V2$p_{3/2}$, (A) as-prepared; (B) discharge down to 0.01V

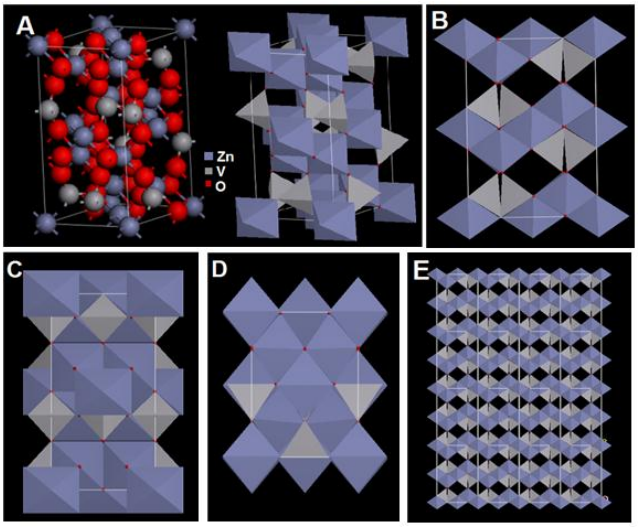

Figure S4. (A) the crystal structure of $Zn_3V_2O_8$, perspective views from (B)a, (C)b, (D)c planes, respectively, (E)a planes of 4×4×4 supercell.

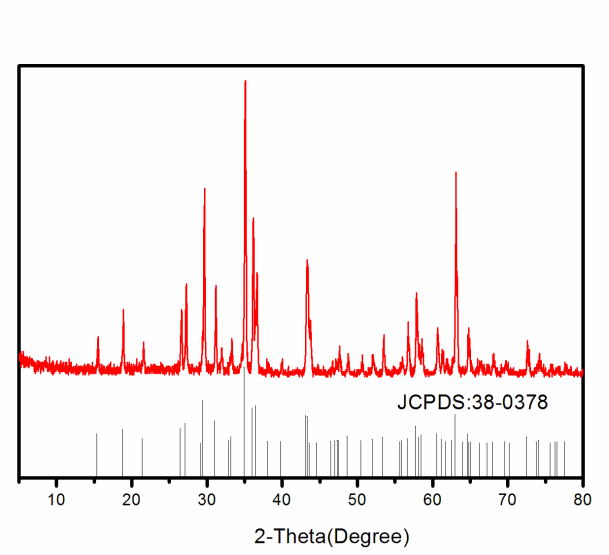

Figure S5. XRD patterns of $Zn_3V_2O_8$ nanoparticles.

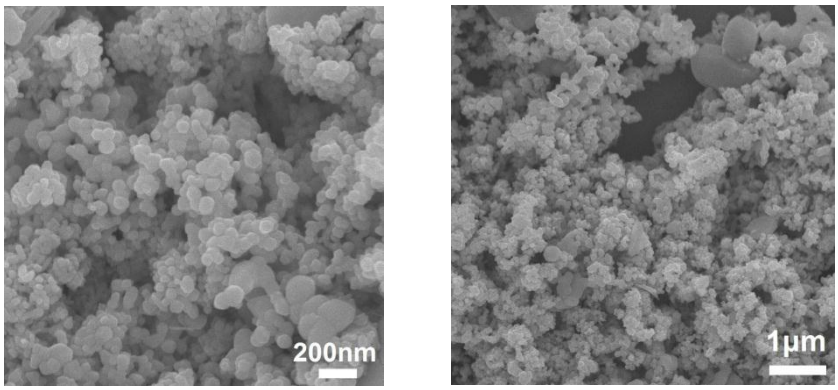

Figure S6. The SEM image of $Zn_3V_2O_8$ nanoparticles.

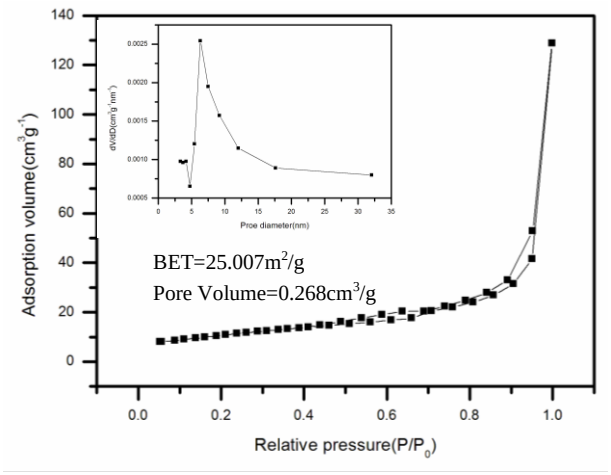

Figure S7. Nitrogen adsorption and desorption isotherms of $Zn_3V_2O_8$ hexagon nanosheets, with the corresponding pore-size distribution (inset) calculated by the BJH method from the desorption branch.

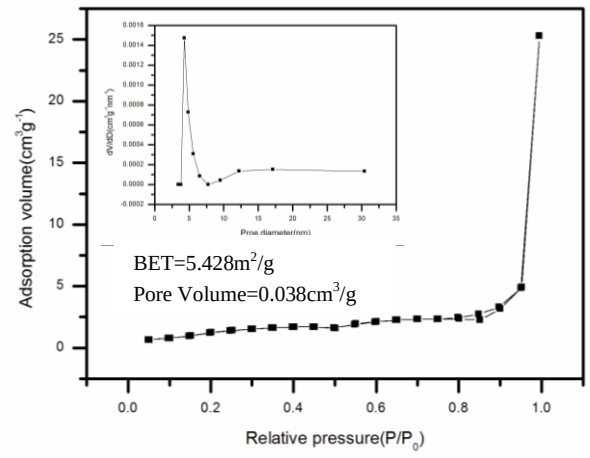

Figure S8. Nitrogen adsorption and desorption isotherms of $Zn_3V_2O_8$ nanoparticles, with the corresponding pore-size distribution (inset) calculated by the BJH method from the desorption branch.

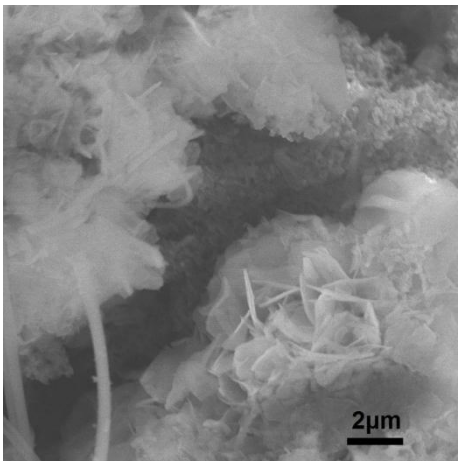

Figure S9. The SEM image of $Zn_3V_2O_8$ nanosheets electrode after 150 charge/discharge cycles.