Supplementary Information for

Top-Down Fabrication of Three-Dimensional Porous V_2O_5 Hierarchical Microplates with Tunable Porosity for Improved Lithium Batteries†

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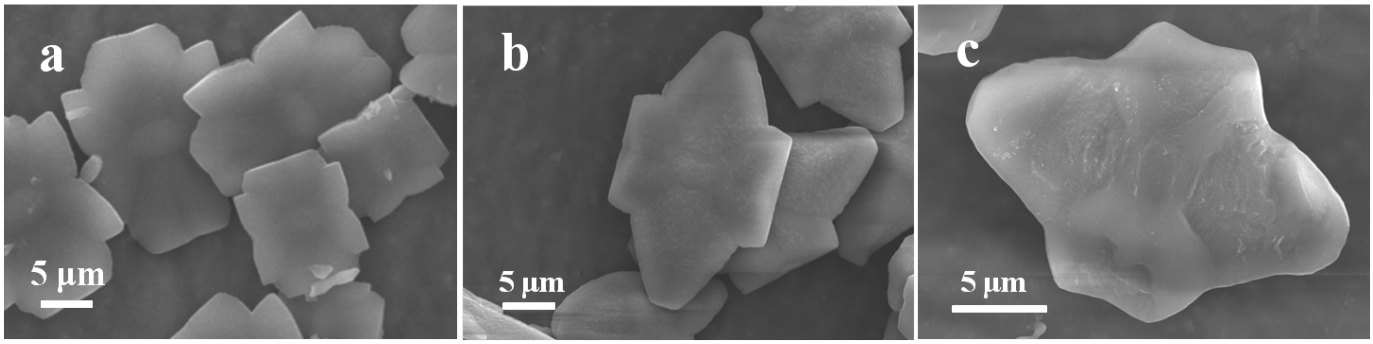

Figure S1. SEM images of the samples synthesized under different solvothermal times: (a) 0 h, (b) 6 h and (c) 12 h.

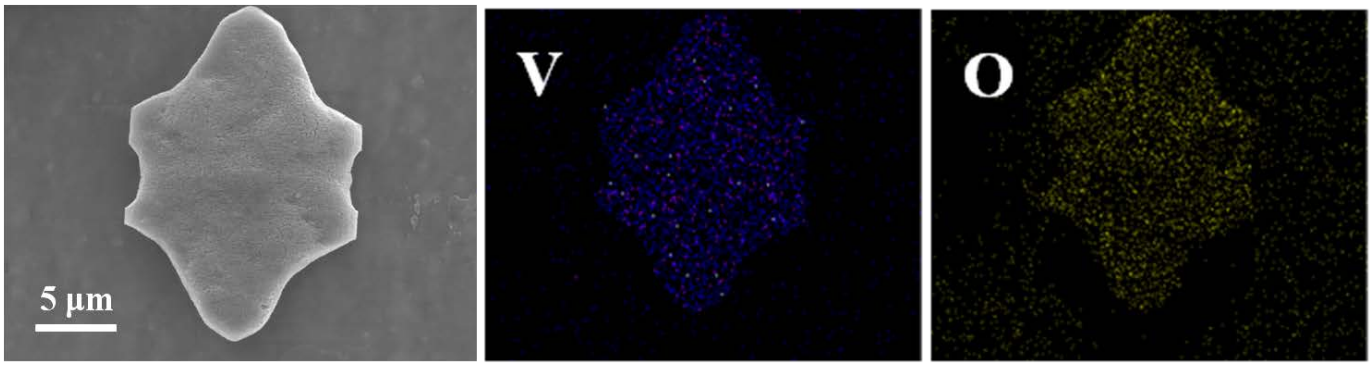

Figure S2. EDS mapping of the porous V_2O_5 hierarchical microplate.

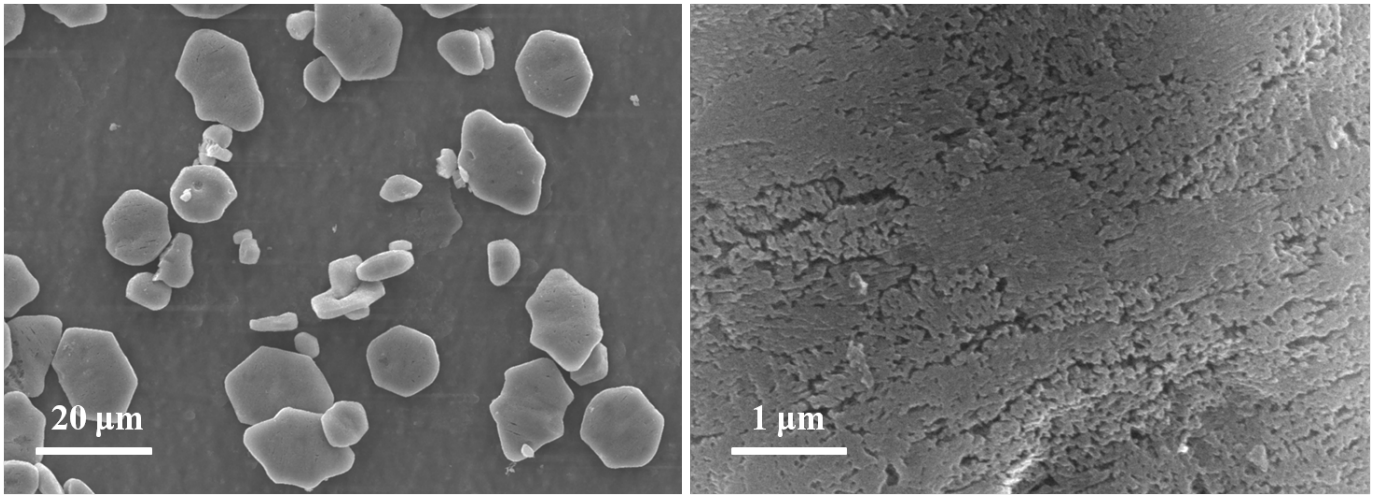

Figure S3. SEM images of the porous V_2O_5 hierarchical microplates calcinated at 350 ^{o}C.

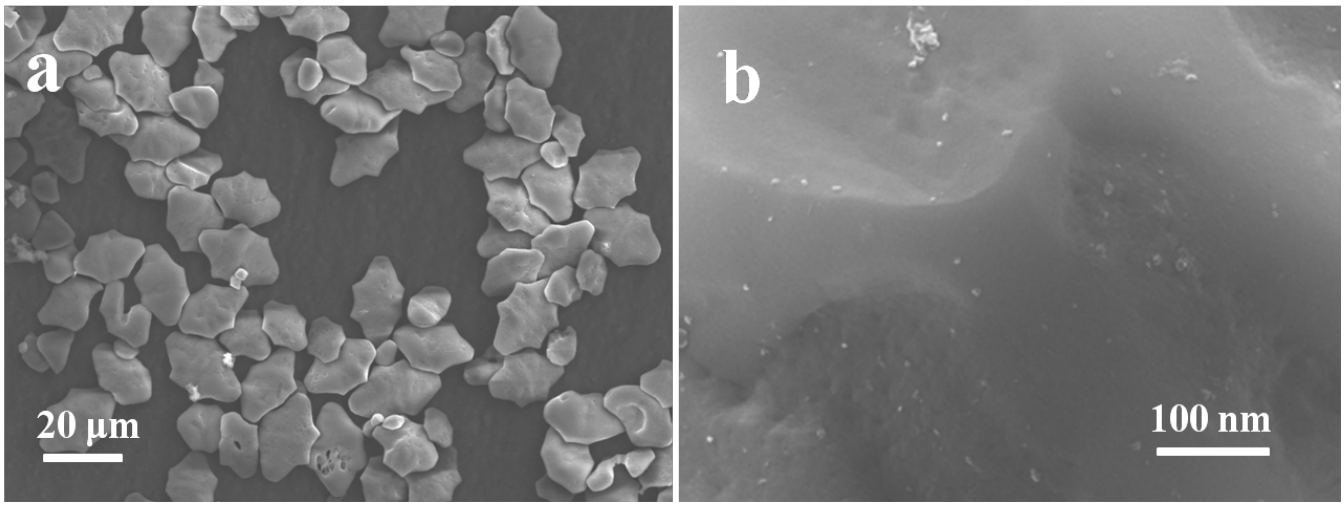

Figure S4. SEM images of NH_4VO_3 microplates.

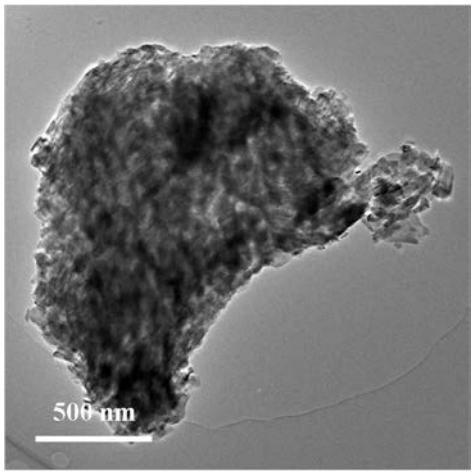

Figure S5. TEM image of irregular V_2O_5 particle.

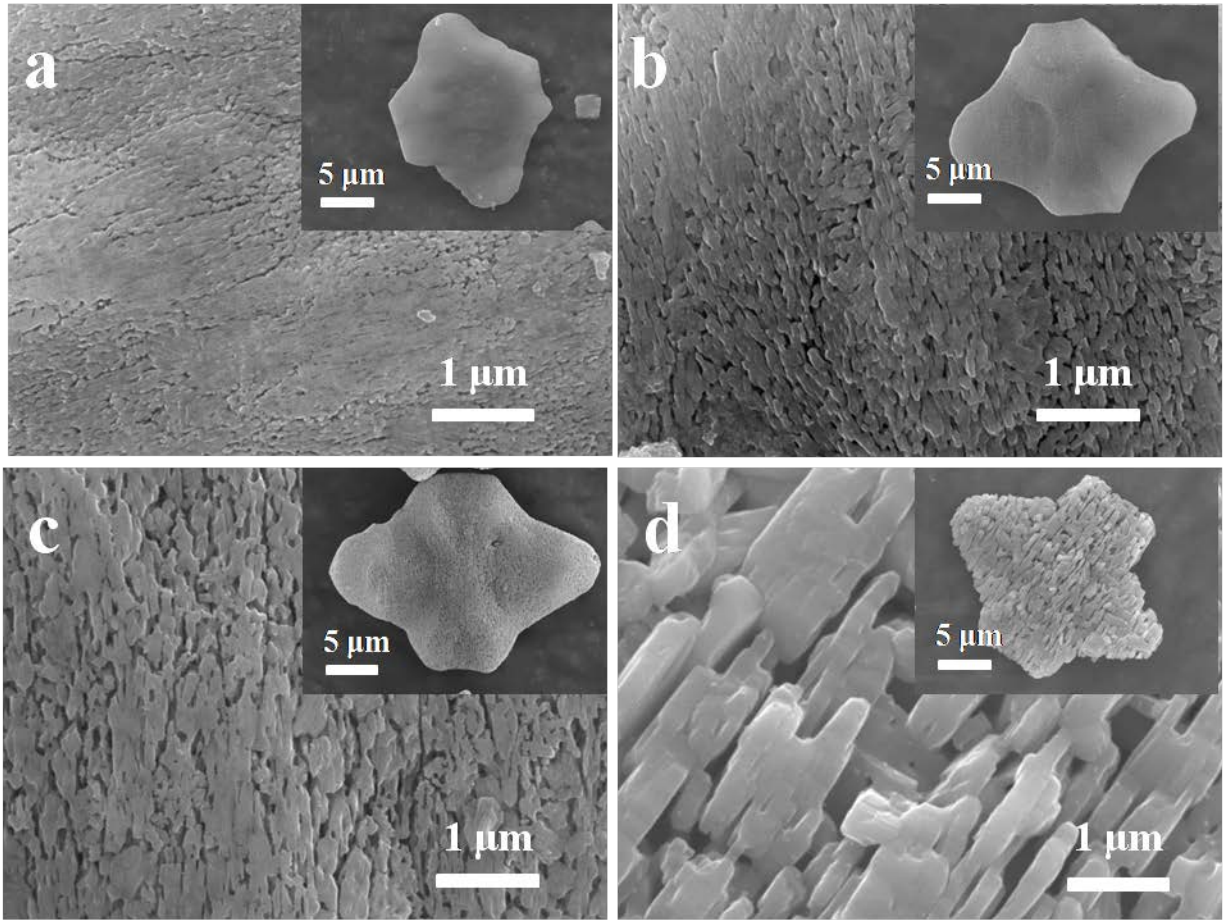

Figure S6. SEM images of quasi-hexagonal microplates annealed at 400 ^{o}C (a), 450 ^{o}C (b), 500 ^{o}C (c) and 600 ^{o}C (d).

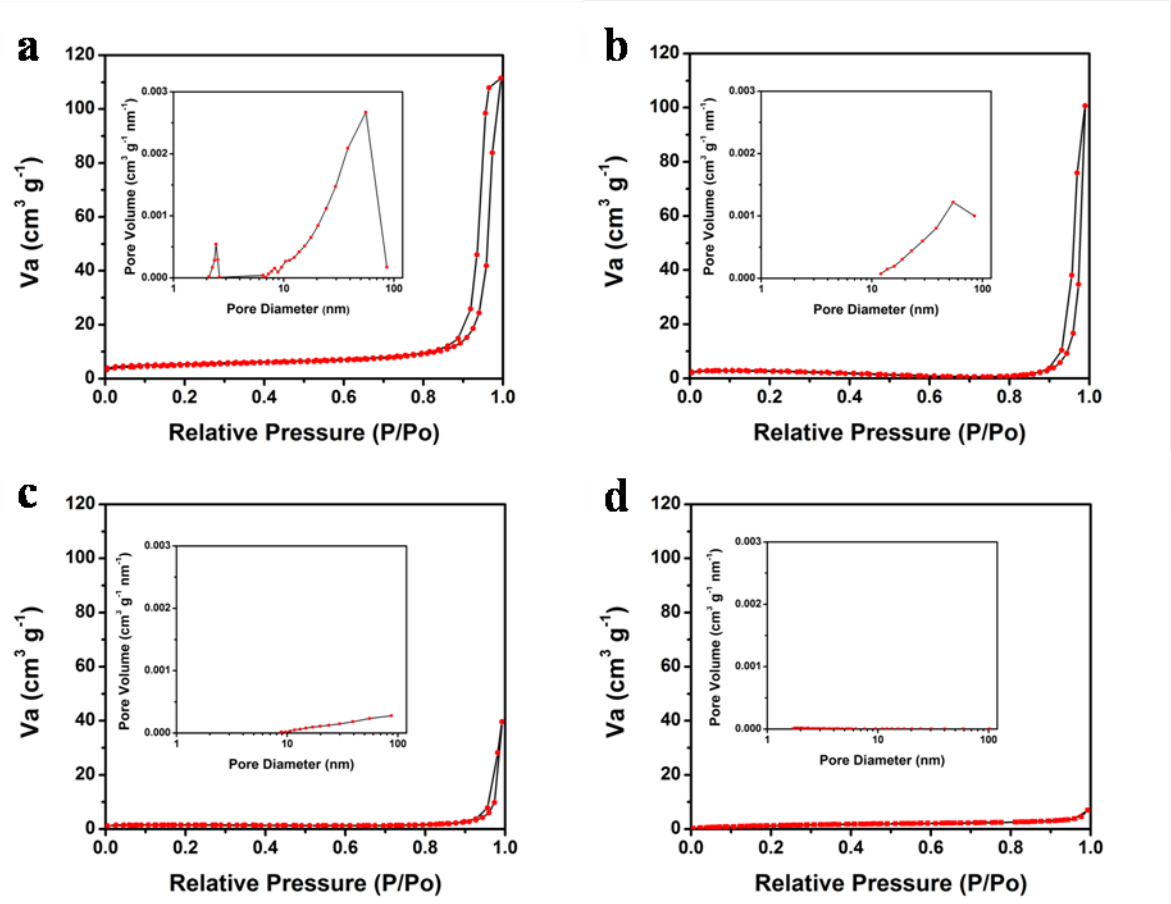

Figure S7. Nitrogen adsorption-desorption isotherms of porous V_2O_5 microplates and corresponding pore size distribution (inset) annealed at 400 ^oC (a), 450 ^oC (b), 500 ^oC (c) and 600 ^oC (d).

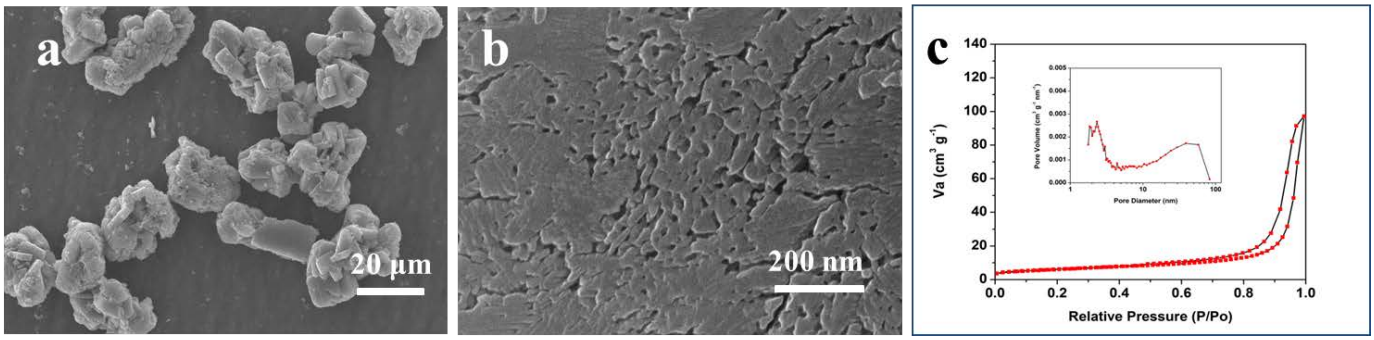

Figure S8. (a, b) SEM images of the sample obtained by calcining the bulk NH_4VO_3 at 350 ^oC; (c) Nitrogen adsorption-desorption isotherms of the sample and corresponding pore size distribution (inset).

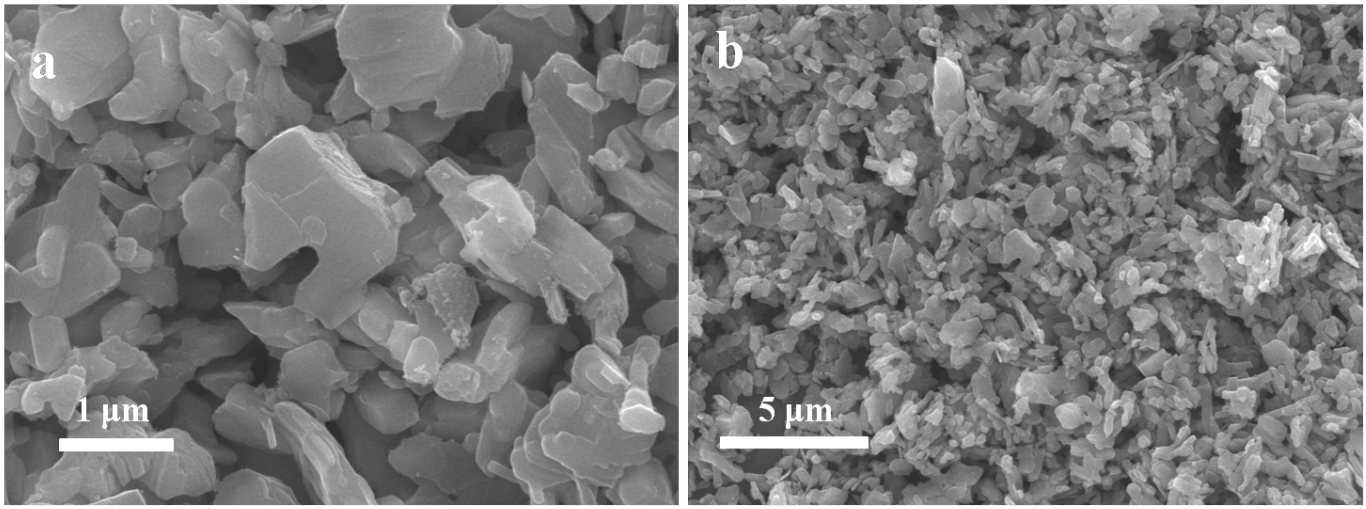

Figure S9. SEM images of the bulk V_2O_5.

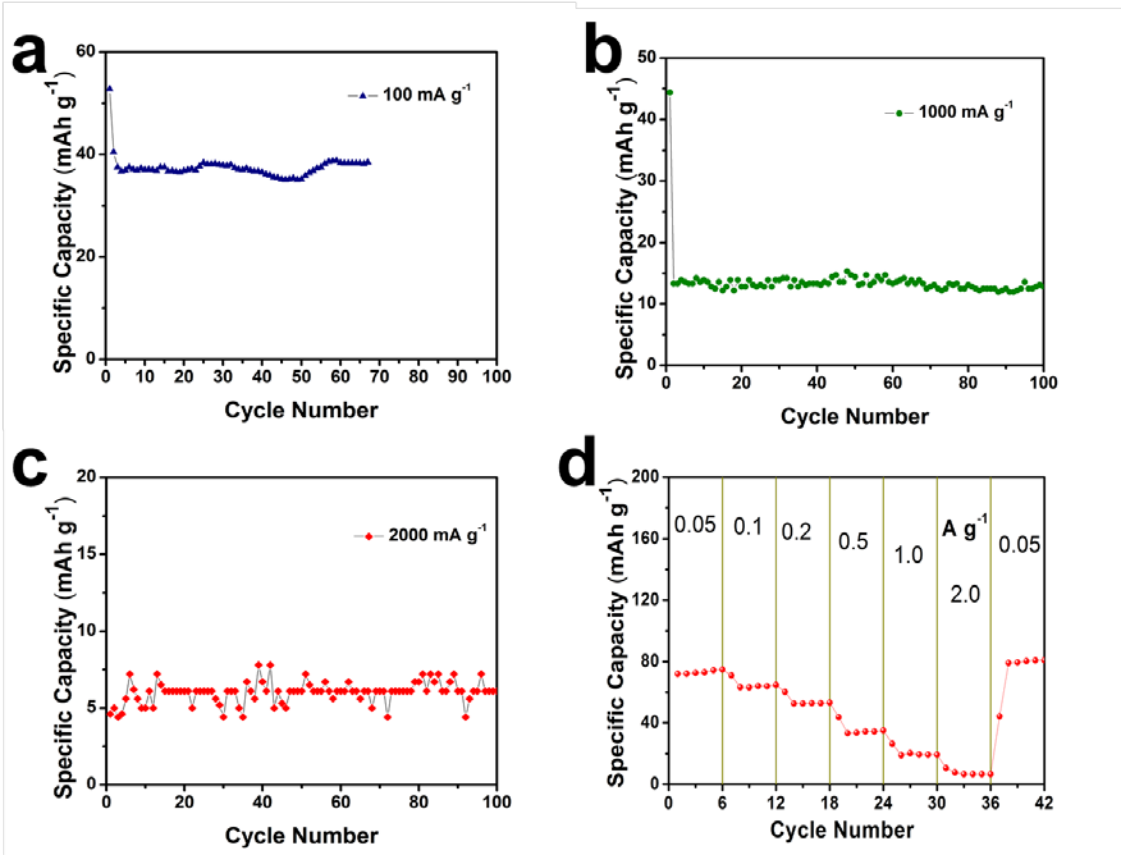

Figure S10. Electrochemical characterizations of the bulk V_2O_5: cycling performance at the current densities of 100 mA g^{-1} (a), 1000 mA g^{-1} (b), and 2000 mA g^{-1} (c); (d) The rate performance.

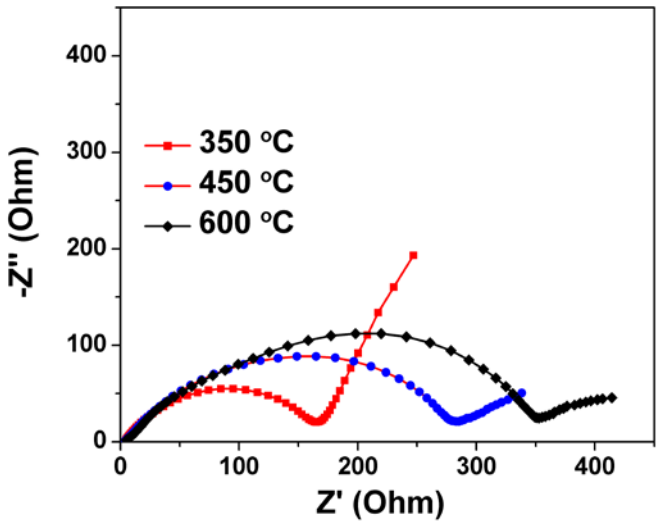

Figure S11. AC-impedance spectra of V_2O_5 electrodes prepared under different annealing temperatures.

Table S1. The electrochemical performances (cycling performance at relevant current rate or density, and rate capability) of the 3D porous V_2O_5 hierarchical microplates and the reported V_2O_5 materials.

Sample	Voltage range	Capacity (mAh g^{-1})/Cycle number	Current rate or density	Rate capacity (mAh g^{-1}) at relevant current rate or density
As-prepared 3D porous V_2O_5 hierarchical microplates in this work	2.4 – 4 V	123/100	1 A g^{-1}	112 at 2 A g^{-1}
V_2O_5 microspheres[1]	2.5 – 4 V	~ 135/100	~ 0.3 A g^{-1}	92.2 at 2.25 A g^{-1}
V_2O_5/CNTs composites[2]	2 – 4 V	104/200	0.75 A g^{-1}	169 at 1.5 A g^{-1}
Porous V_2O_5 nanotubes[3]	2.5 – 4 V	105/250	2 A g^{-1}	62.5 at 15 A g^{-1}
3D porous V_2O_5[4]	2.5 – 4 V	110/200	1.5 A g^{-1}	86.7 at 8.4 A g^{-1} (Charge at 0.15 A g^{-1})
V_2O_5 nanofibers[5]	2.5 – 4 V	127/30	0.02 A g^{-1}	no given

References

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