Supporting information



Fig. S1 (a) Cycling test at 0.5 A g−1; (b) Cycling test at 5 A g−1.



Fig. S2. (a) Survey XPS spectra of SZVO; (b) O 1 s XPS spectra of SZVO; (c) V 2p XPS spectra of SZVO; (d) Zn 2p XPS spectra of SZVO.



Fig. S3. (a) Survey XPS spectra of ZVO; (b) O 1 s XPS spectra of ZVO; (c) V 2p XPS spectra of ZVO; (d) Zn 2p XPS spectra of ZVO.



Fig. S4 (a) rate performance of SZVO under different current densities; (b) rate performance of ZVO under different current densities.

 Fig. S5 (a) GITT curves of SZVO at 0.1 A g-1; (b) Zn2+ diffusion coefficient of SZVO. (c) GITT curves of ZVO at 0.1 A g-1; (d) Zn2+ diffusion coefficient of ZVO. (e) GITT curves of SVO@C at 0.1 A g-1; (f) Zn2+ diffusion coefficient of SVO@C.

**Table S1.** Zn2+ diffusion coefficient comparisons of SZVO, ZVO and SVO@C

|  |  |
| --- | --- |
| **Cathode** | **Zn2+ diffusion coefficient (cm2 s-1)** |
| SZVO | 6.39×10−11 – 1.71×10−9 |
| ZVO | 9.27×10−12 – 6.76×10−10 |
| SVO@C | 3.99×10−12 - 3.84×10−10 |