Supporting Information for

Facile synthesis of Co$_3$V$_2$O$_8$ interconnected hollow microsphere anode with superior high-rate capability for Li-ion battery

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Supplementary Figures

**Fig. S1** Typical SEM images of the precursor particles obtained in solutions at step A.

(A) 0 min; (B) 30 min; (C) 60 min.

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**Fig. S2** Typical SEM images of the precursor particles obtained in solutions at step B (A-F). $\text{Co}_3\text{V}_2\text{O}_8$-IHM precursor particles: (A) 60 min; (B) 90 min; (C) 120 min; (D) 180 min; (E) 240 min. $\text{Co}_3\text{V}_2\text{O}_8$-SMP precursor particles: (F) 240 min. Typical SEM images of the $\text{Co}_3\text{V}_2\text{O}_8$-IHM (G, H) and $\text{Co}_3\text{V}_2\text{O}_8$-SMP (I) precursor particles obtained in solutions after step C.
Fig. S3 Typical SEM images of $\text{Co}_3\text{V}_2\text{O}_8$-IHM (A) and $\text{Co}_3\text{V}_2\text{O}_8$-SMP (B, C).

Fig. S4 XRD patterns of as-prepared precursor particles after hydrothermal reaction (step C).
**Fig. S5** XPS spectra of the Co$_3$V$_2$O$_8$-IHM.

**Fig. S6** The N$_2$ adsorption-desorption isotherms of Co$_3$V$_2$O$_8$-IHM. The insets show the corresponding BJH pore size distribution curves.
Fig. S7 The corresponding first cycle voltage capacity profiles of $\text{Co}_3\text{V}_2\text{O}_8$-IHM (A) and $\text{Co}_3\text{V}_2\text{O}_8$-SMP (B) at different current densities during rate performance test.

Table S1 The data of EIS test of $\text{Co}_3\text{V}_2\text{O}_8$-IHM after different cycles.

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<th>20th</th>
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