Electronic Supporting Information for

Binder-free stainless steel@Mn$_3$O$_4$ nanoflower composite: a high-activity aqueous zinc ion battery cathode with high-capacity and long-cycle-life

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Fig. S1 SSWM@Mn₃O₄ synthesized at (a-c) 6 h, (d-f) 12 h and (g-i) 24 h.
**Fig. S2** SEM images of Mn$_3$O$_4$ powders.

**Fig. S3** (a) TEM image and corresponding elemental mapping of single Mn$_3$O$_4$ nanoflower (b) All elements, (c) Mn, (d) O, (c) EDS content analysis of Mn and O elements.
Fig. S4 Cycle performance at 100 mA g\(^{-1}\) of Mn\(_3\)O\(_4\) electrode.
Fig. S5 The CV curve of bare SSWM electrode

Fig. S6 Galvanostatic intermittent titration technique (GITT) profiles of the SSWM@Mn₃O₄ cell (100 mA g⁻¹ for 10 min followed by a 0.5 h rest).