Electronic Supplementary Material

$FeSe_2$ clusters with excellent cyclability and rate capability for sodium-ion batteries

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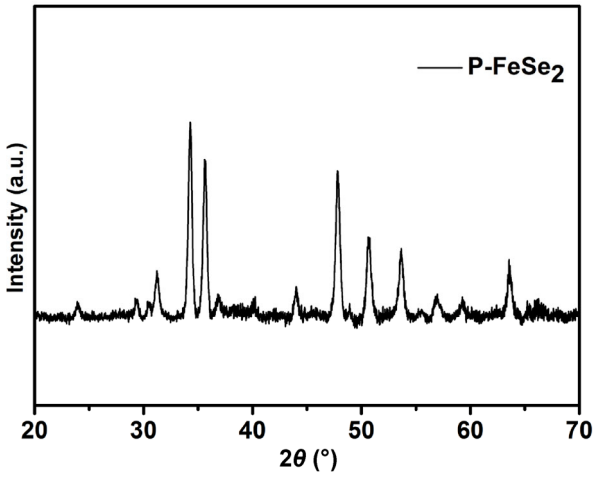

Figure S1 XRD pattern of as-prepared $FeSe_2$ particles.

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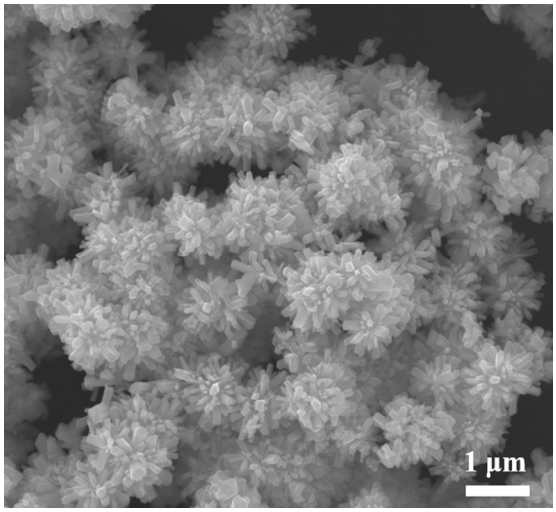

Figure S2 The low-magnification SEM image of obtained $FeSe_2$ clusters.

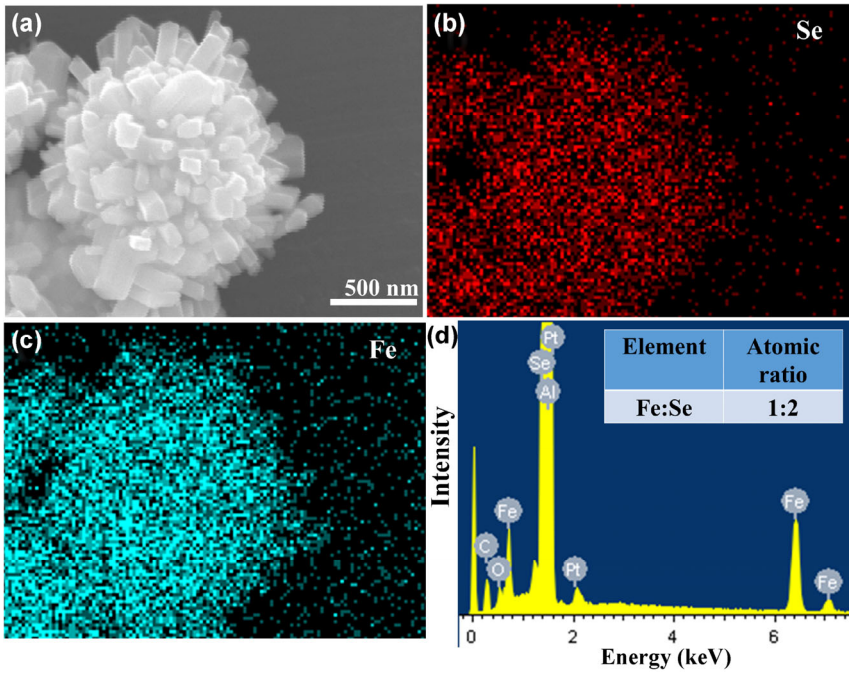

Figure S3 (a)–(c) Elemental mapping images, and (d) EDS pattern of the as-prepared $FeSe_2$ clusters.

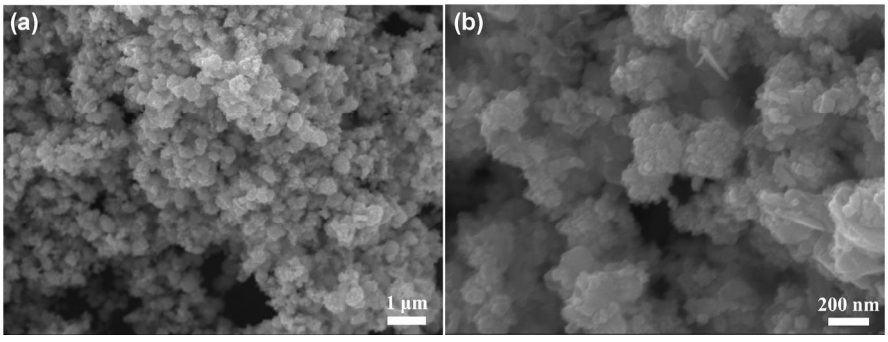

Figure S4 (a) and (b) The low- and high-magnification SEM images of as-prepared $FeSe_2$ particles, respectively.

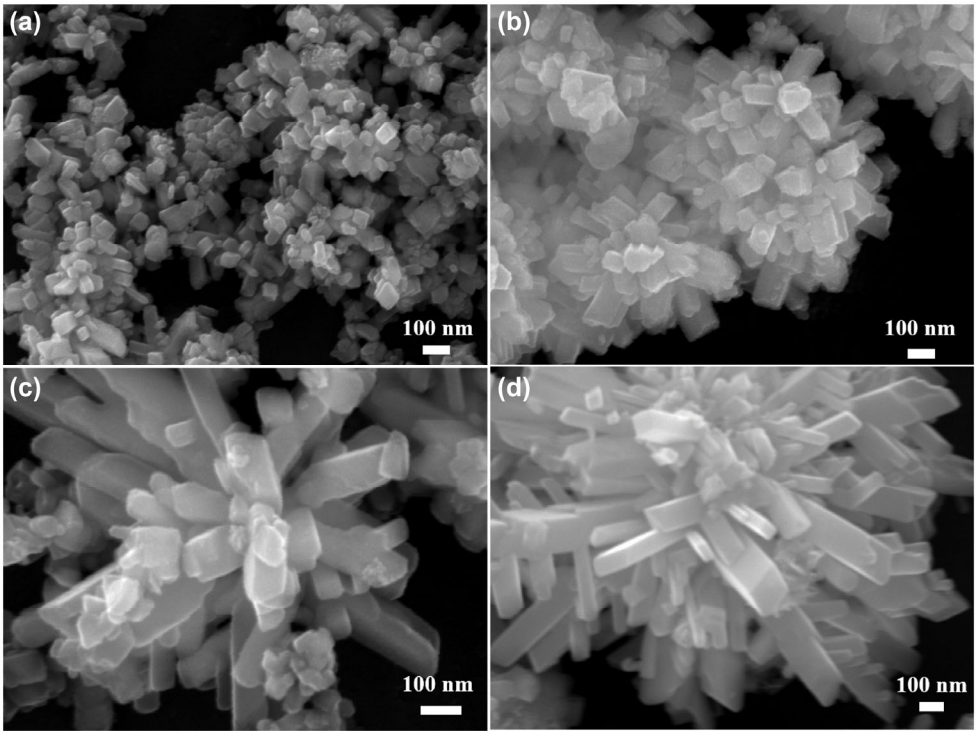

Figure S5 SEM images of as-prepared $FeSe_2$ clusters obtained at different times: (a) 1, (b) 3, (c) 6 and (d) 8 h.

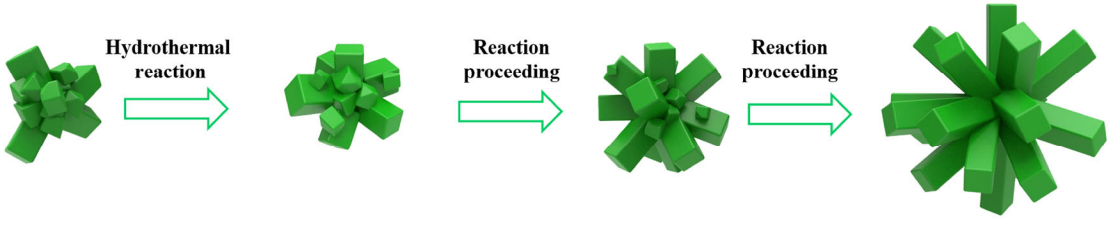

Figure S6 Schematic illustration for the growth process of $FeSe_2$ clusters.

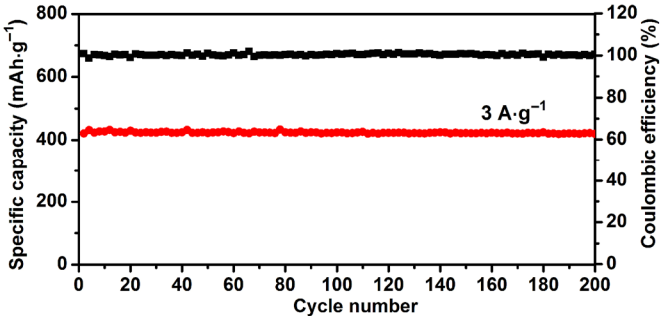

Figure S7 The cycling performance of $FeSe_2$ clusters at the current density of 3 $A \cdot g^{-1}$.

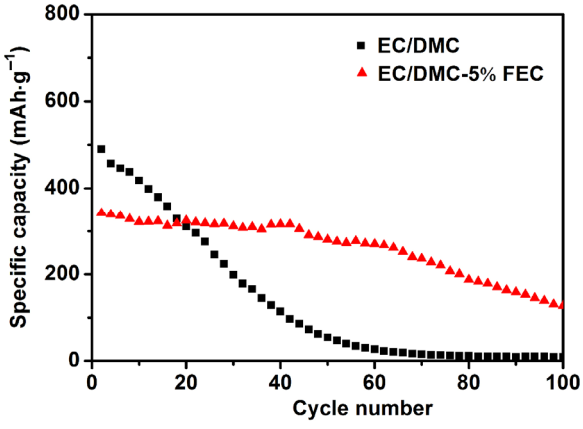

Figure S8 The cycling performance of $FeSe_2$ clusters in different electrolytes at the current density of 500 mA·g^{-1}.

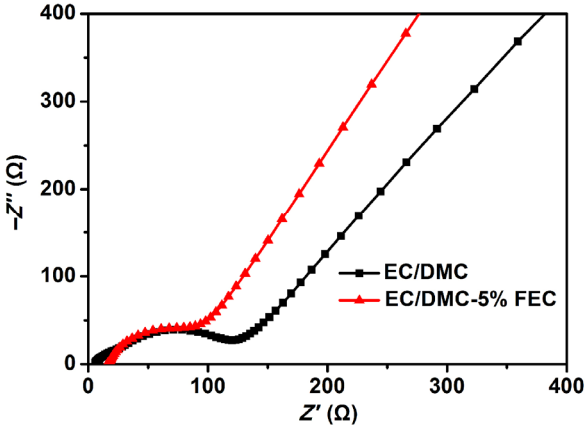

Figure S9 Nyquist plots of $FeSe_2$ clusters in different electrolytes.

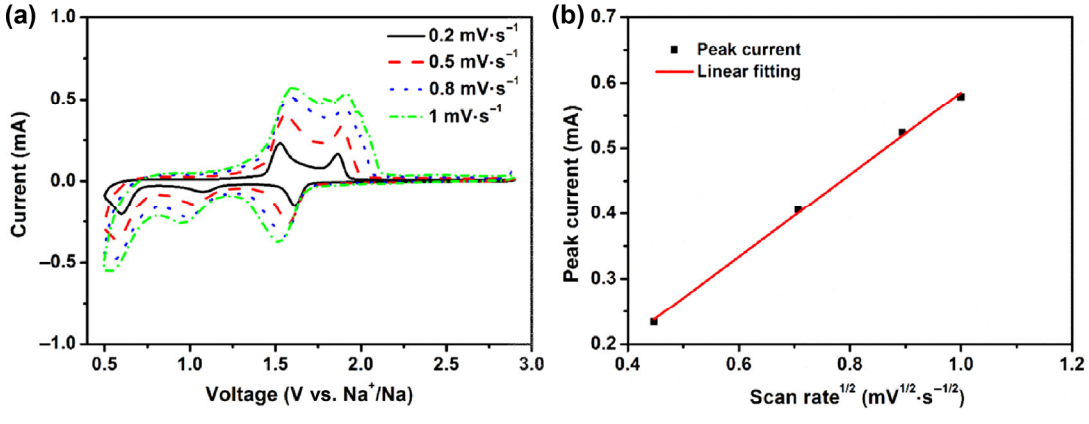

Figure S10 (a) CV curves of as-prepared $FeSe_2$ particles at different scan rates. (b) Randles–Sevick plot of $FeSe_2$ particles obtained from voltammetric data.

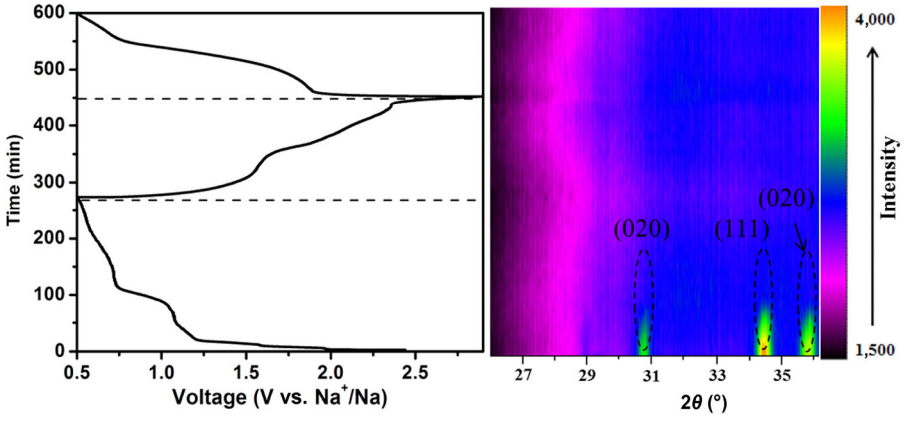

Figure S11 *In situ* XRD patterns collected during galvanostatic charge/discharge of $FeSe_2$ clusters within 0.5–2.9 V.

Table S1 Resistances value by fitting EIS results

	R_s (Ω)	R_{SEI} (Ω)	R_{ct} (Ω)
C-$FeSe_2$	10.22	7.23	24.34
P-$FeSe_2$	13	22.95	24.93