

## ***Supplementary Information***

### **Thermal stability of Sn anode material with non-aqueous electrolytes in sodium-ion batteries**

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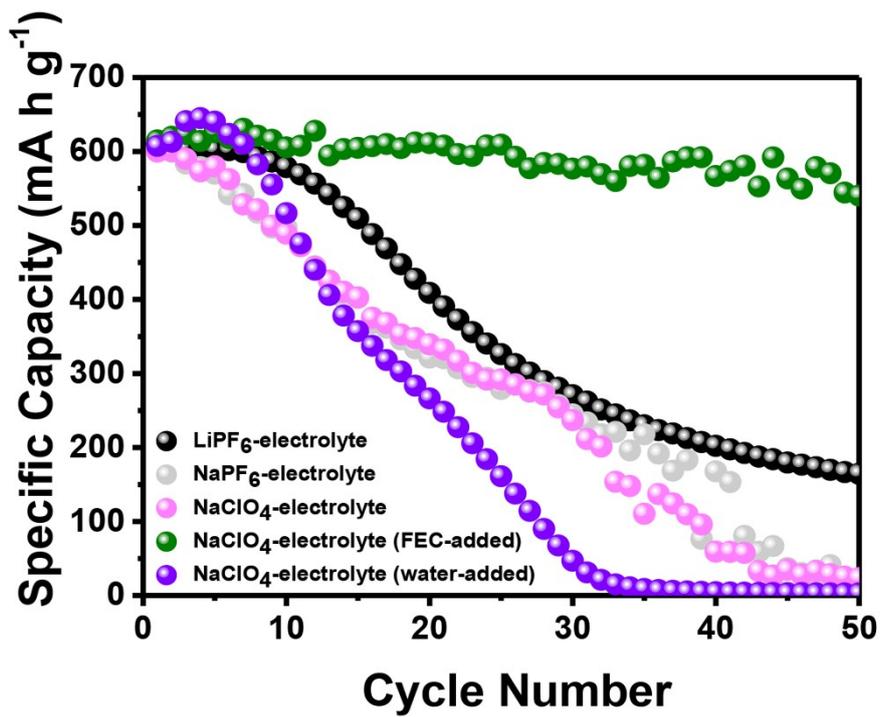
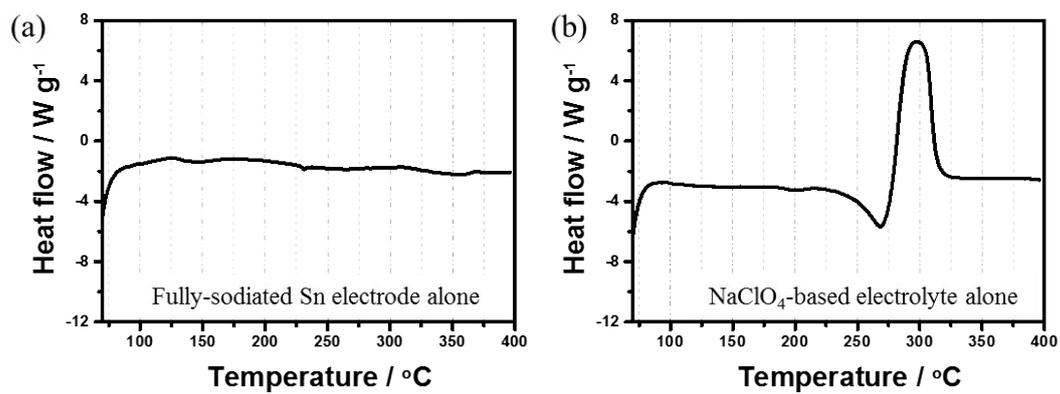
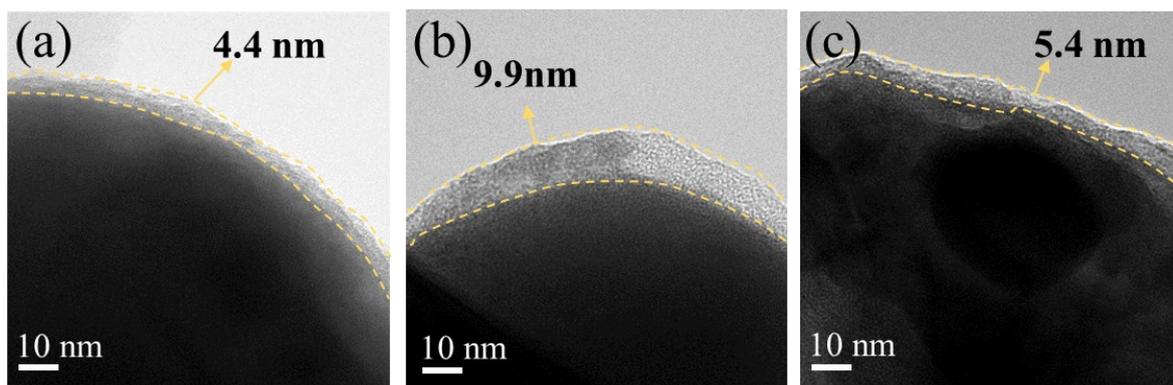


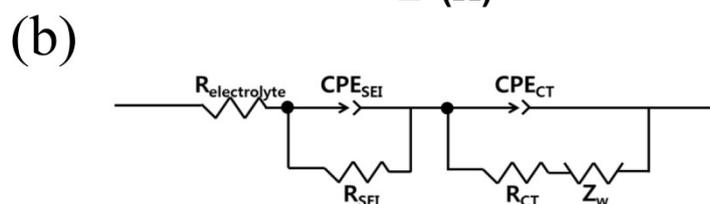
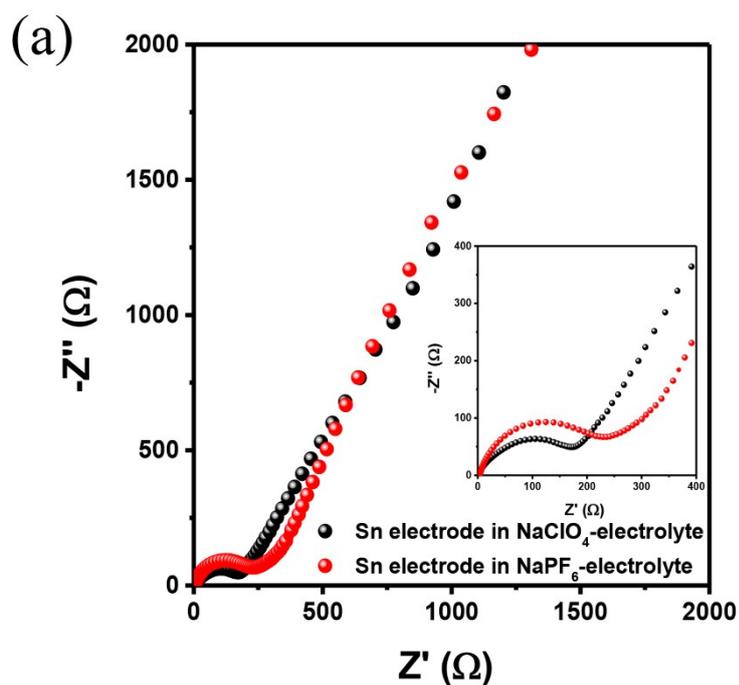
Fig. S1 Comparison of the cycle performance of the Sn electrodes cycled in various electrolyte.



**Fig. S2** DSC profiles of (a) the sodiated Sn electrode and (b) NaClO<sub>4</sub>-based electrolyte alone.



**Fig. S3** TEM images of the Sn electrodes cycled in various electrolyte; (a)  $\text{LiPF}_6^-$ , (b)  $\text{NaPF}_6^-$  and (c)  $\text{NaClO}_4^-$ -based electrolyte.



**Fig. S4** (a) Nyquist plots of the Sn electrode cycled in NaPF<sub>6</sub>- and NaClO<sub>4</sub>-based electrolytes. (b) Equivalent circuit diagram used for fitting the impedance spectra shown in Fig. S4a.

**Table S1** Fitting results of the Nyquist plots using the equivalent circuit for the Sn electrodes cycled in NaPF<sub>6</sub>- and NaClO<sub>4</sub>-based electrolytes.

	$R_{\text{electrolyte}}$ ( $\Omega$ )	$R_{\text{SEI}}$ ( $\Omega$ )	$R_{\text{CT}}$ ( $\Omega$ )
NaClO <sub>4</sub> -based electrolyte	2.0	25.1	94.4
NaPF <sub>6</sub> -based electrolyte	3.5	70.0	231.4