

Supplementary materials

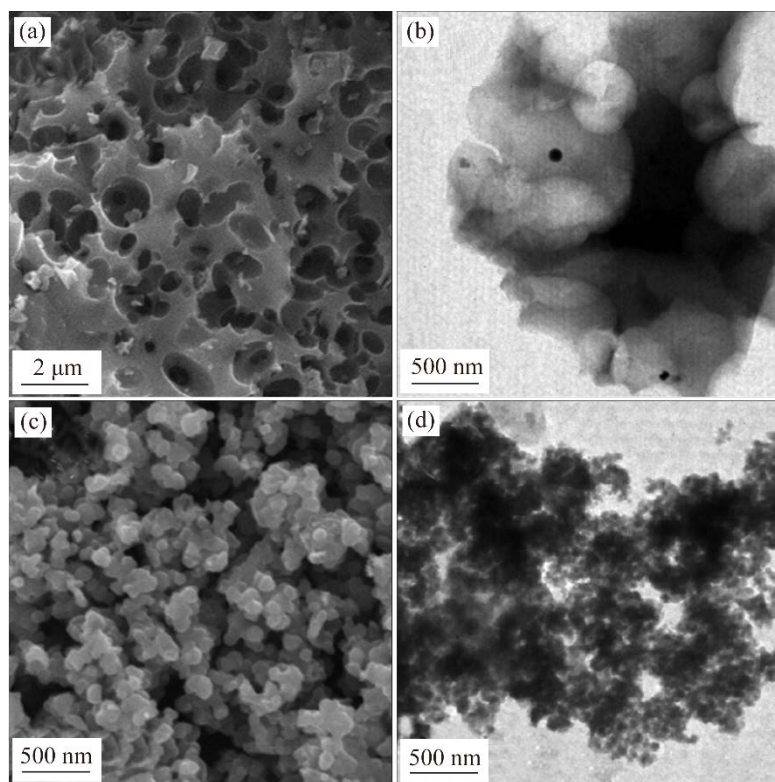


Figure S1 (a) SEM image of SCC; (b) TEM image of SCC; (c) SEM image of $\text{Sn}_4\text{P}_3\text{-NP}$; (d) TEM image of $\text{Sn}_4\text{P}_3\text{-NP}$

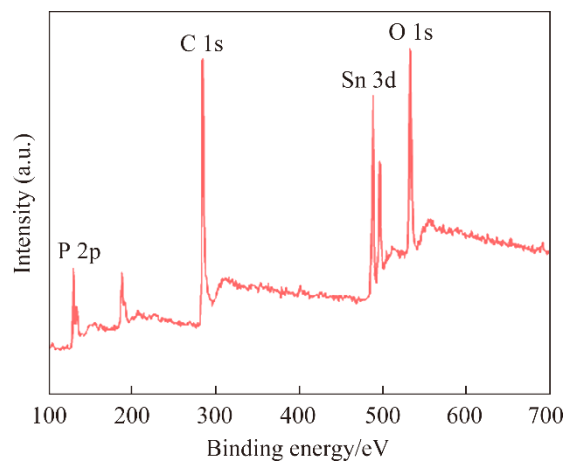


Figure S2 XPS full spectrum for $\text{Sn}_4\text{P}_3\text{-SCC}$

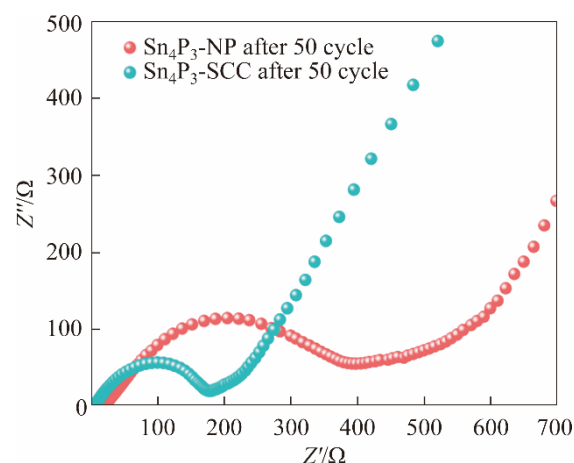


Figure S3 Nyquist plots of $\text{Sn}_4\text{P}_3\text{-SCC}$ and $\text{Sn}_4\text{P}_3\text{-NP}$ electrodes after 50 cycles

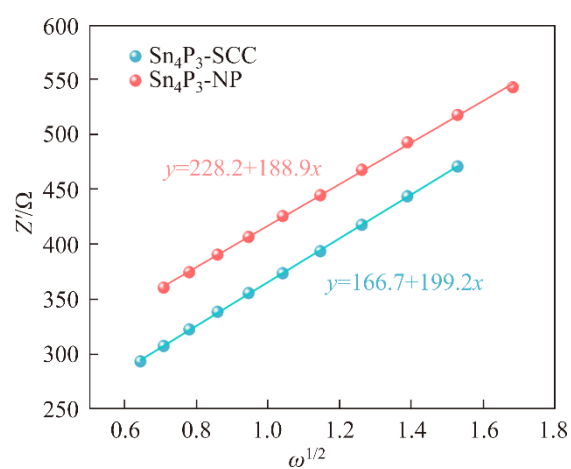


Figure S4 Fitted curves for Z' and $\omega^{1/2}$ in the low-frequency region for $\text{Sn}_4\text{P}_3\text{-SCC}$ and $\text{Sn}_4\text{P}_3\text{-NP}$ electrodes

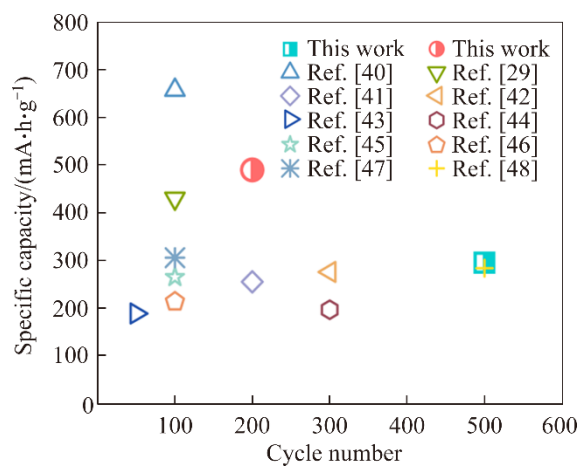


Figure S5 Comparison of the cycling performance between $\text{Sn}_4\text{P}_3\text{-SCC}$ material and other electrode materials reported in recent literatures