

Supporting Information

Synchronous embedded growth of Mo₂C nanodisk arrays immobilized on porous carbon nanosheets for ultra-stable sodium storage

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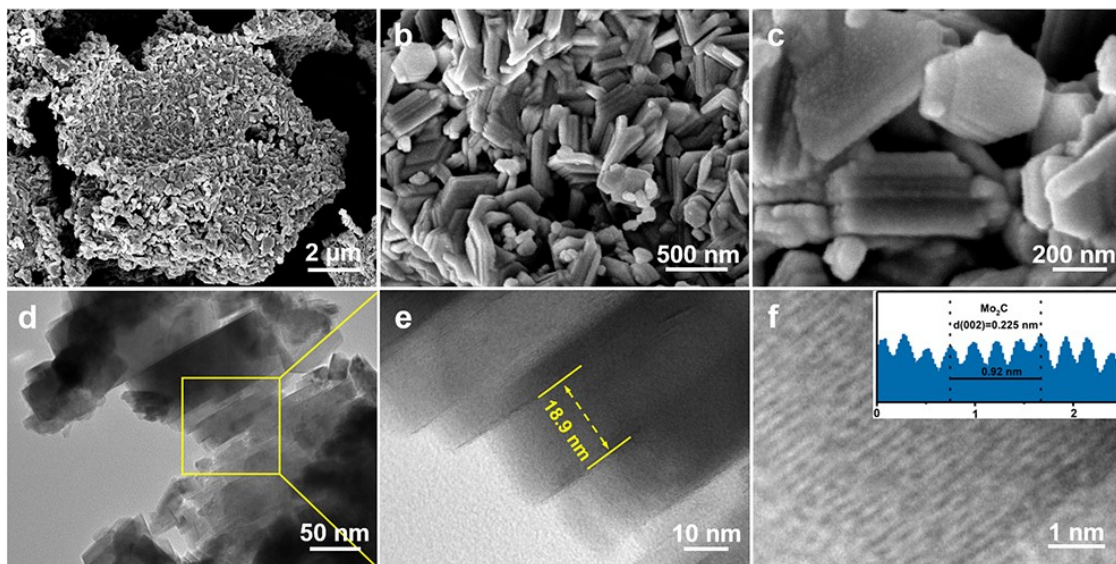


Fig. S1 (a-c) FESEM images, (d, e) TEM images, and (f) HRTEM image (inset is the corresponding schematic illustration of the interlayer spacing) of Mo₂C.

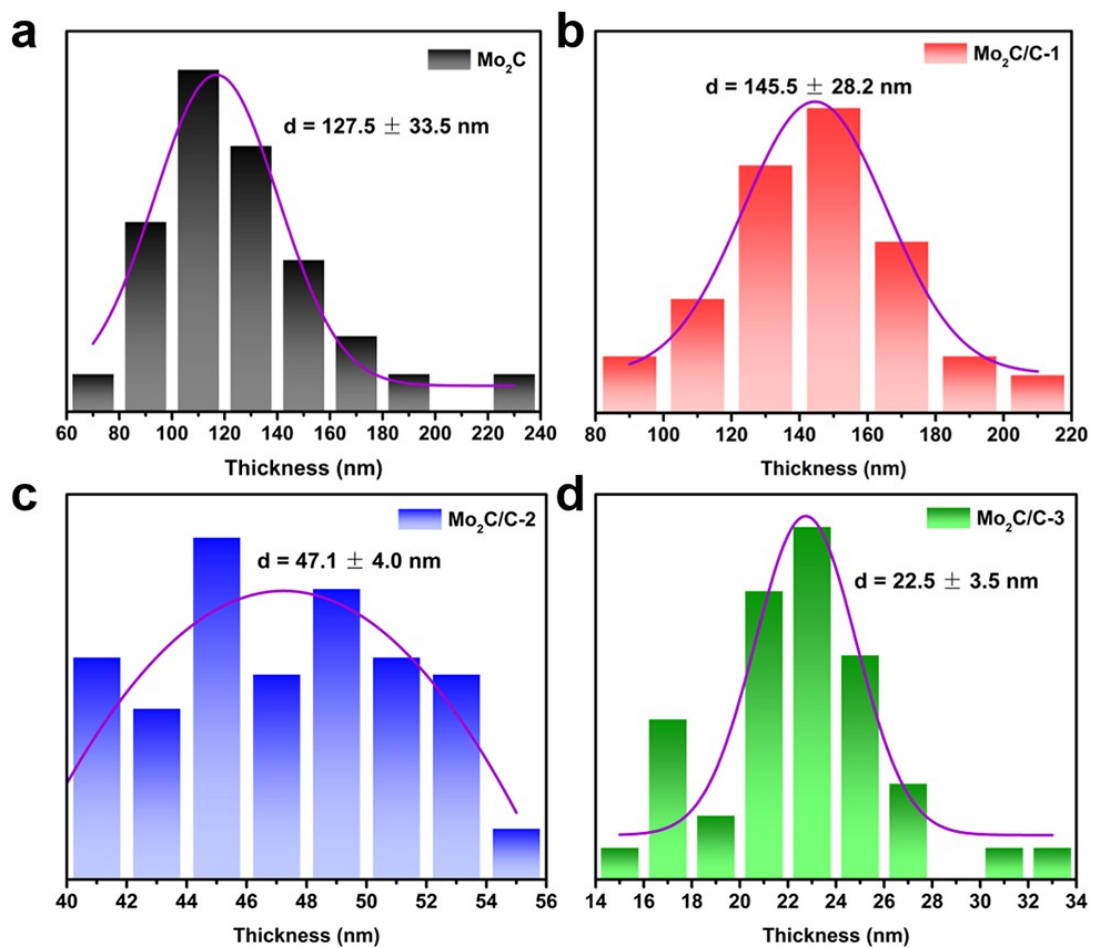


Fig. S2 Thickness distribution diagrams of Mo_2C NDs in (a) Mo_2C , (b) $\text{Mo}_2\text{C/C-1}$, (c) $\text{Mo}_2\text{C/C-2}$, and (d) $\text{Mo}_2\text{C/C-3}$.

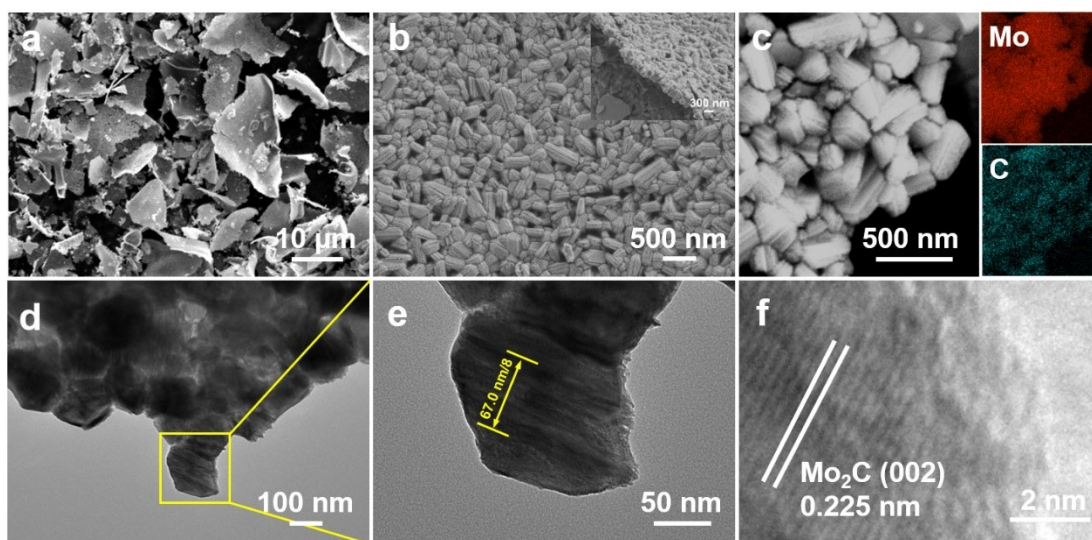


Fig. S3 (a, b) SEM images, (c) FESEM-EDS, (d, e) TEM images, and (f) HRTEM image of Mo₂C/C-1.

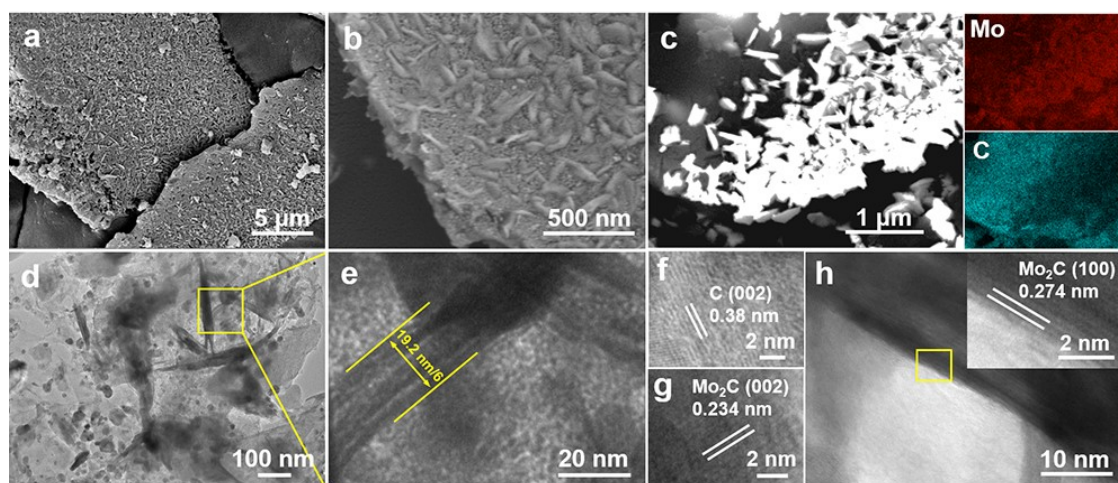


Fig. S4 (a, b) SEM images, (c) FESEM-EDS, (d, e) TEM images, and (f-h) HRTEM images of Mo₂C/C-3.

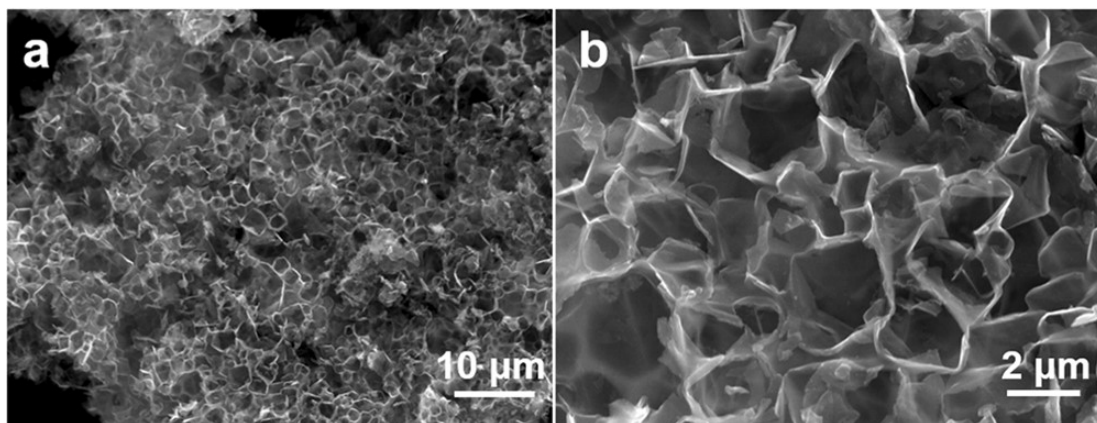


Fig. S5 (a, b) SEM images of PC.

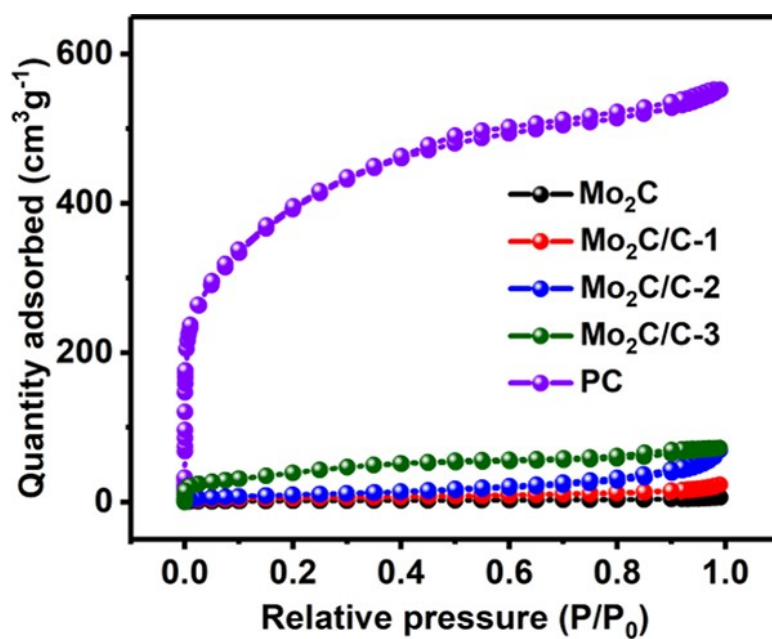


Fig. S6 N_2 adsorption/desorption isotherms of $\text{Mo}_2\text{C}/\text{C}$ composites and PC.

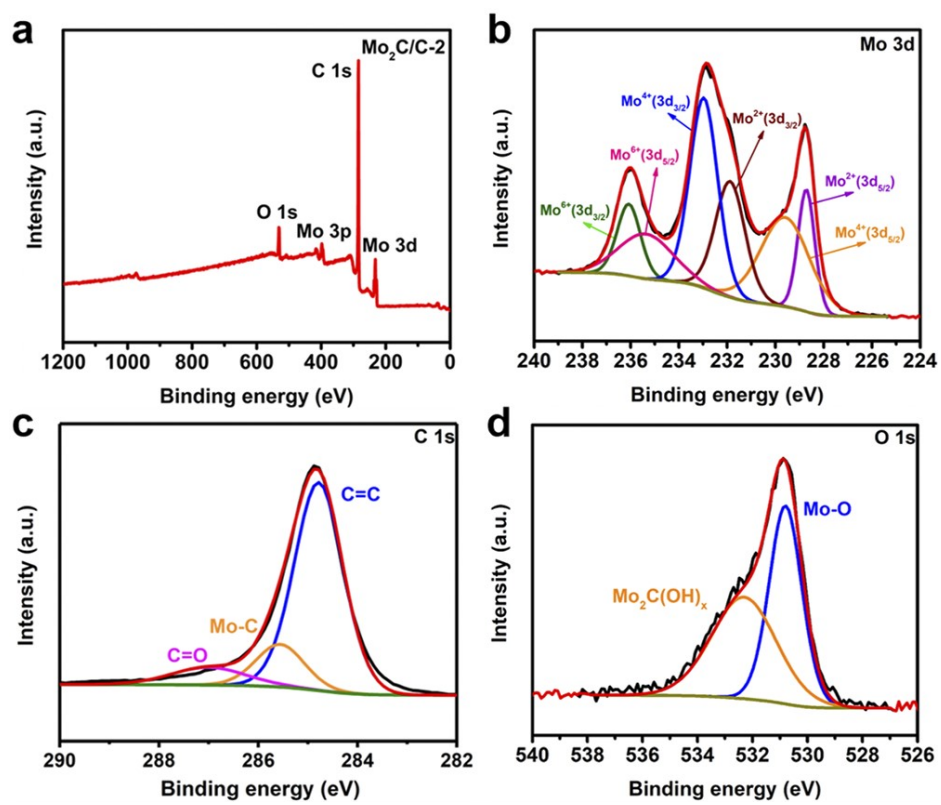


Fig. S7 (a) XPS survey spectra and high-resolution XPS spectra of (b) Mo 3d, (c) C 1s, and (d) O 1s for Mo₂C/C-2.

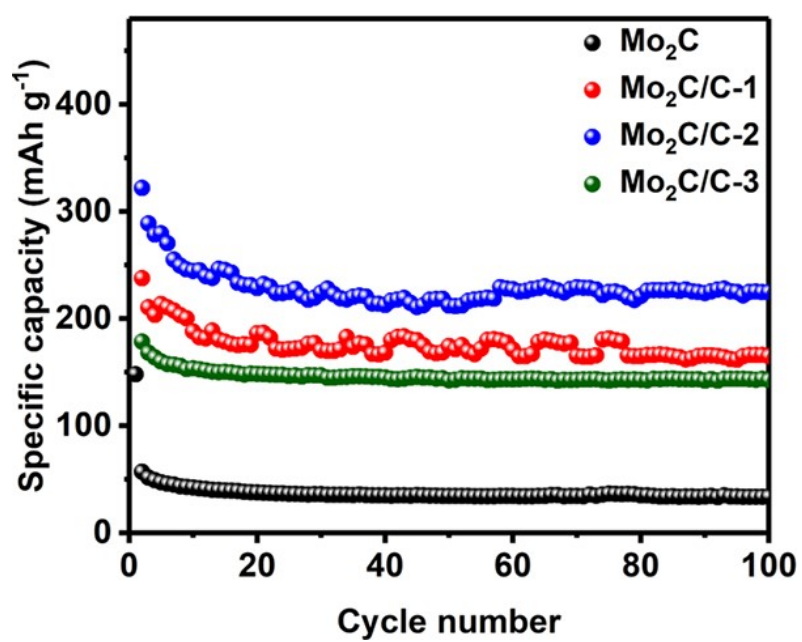


Fig. S8 Cycling stability at 0.1 A g⁻¹ of Mo₂C/C samples.

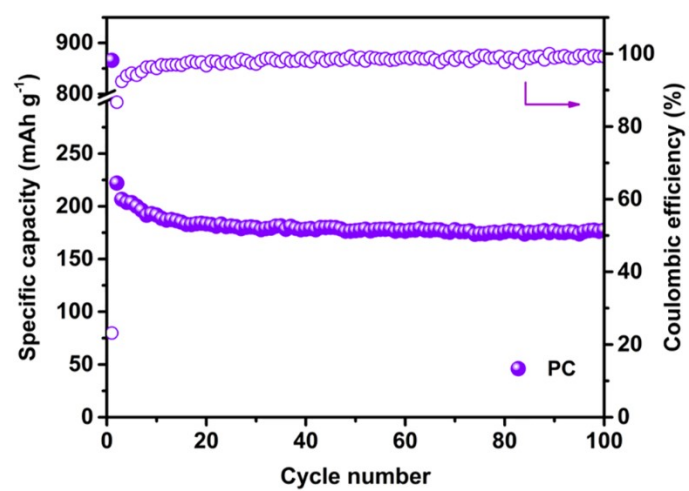


Fig. S9 Cycling stability at 0.1 A g⁻¹ of PC as anode material.

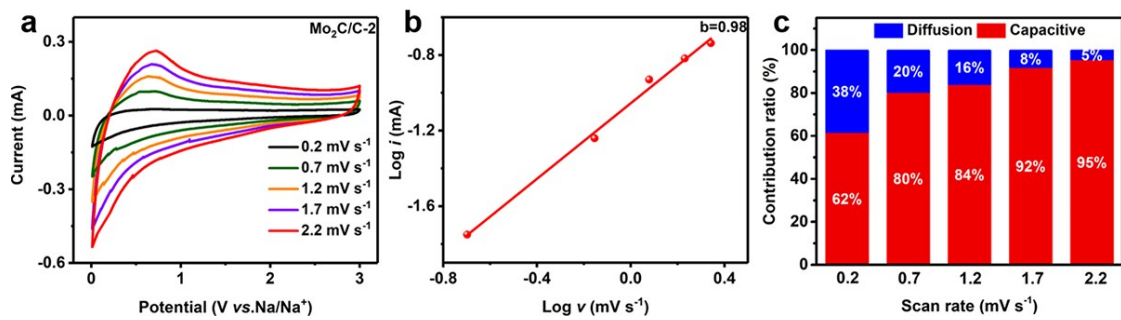


Fig. S10 (a) CV curves at various scan rates ranging from 0.2 to 2.2 mV s⁻¹, (b) Determination of the b-value according to the relationship between the peak current and scan rate, and (c) Normalized contribution ratio of the pseudo capacitive (red) and diffusion-controlled (blue) capacities at different scanning rates for Mo₂C/C-2.

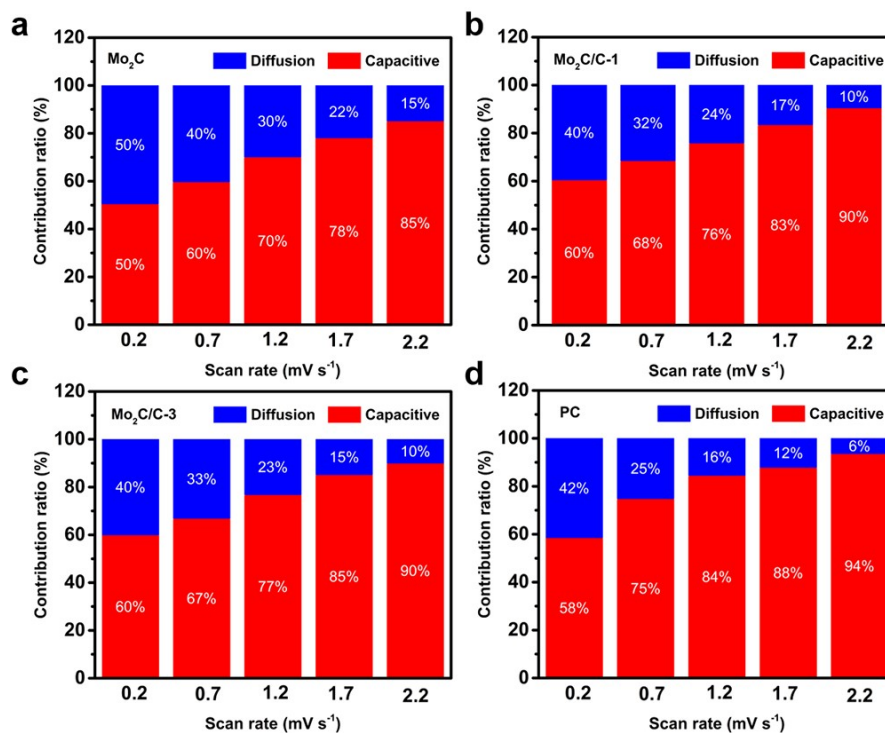


Fig. S11 Normalized contribution ratio of the pseudo-capacitive (red) and diffusion-controlled (blue) capacities at different scanning rates for (a) Mo_2C , (b) $\text{Mo}_2\text{C/C-1}$, (c) $\text{Mo}_2\text{C/C-3}$, and (d) PC.

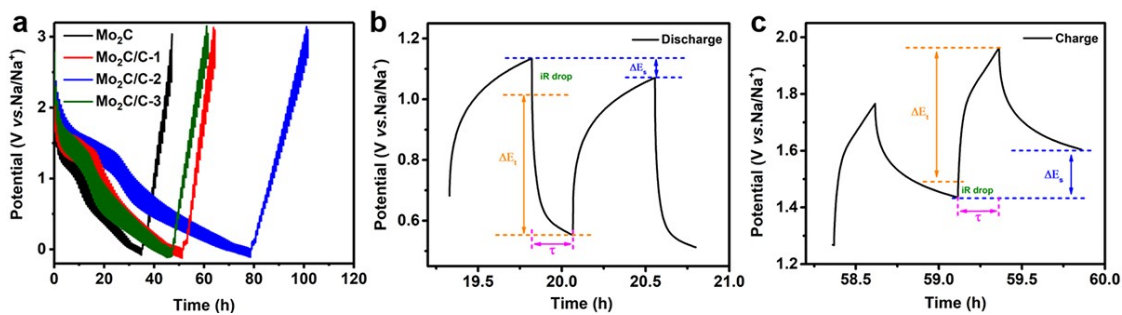


Fig. S12 (a) GITT plots of Mo₂C/C electrodes at the first cycle. (b, c) Schematic diagrams of the calculated parameters for Mo₂C/C-2 electrode during the charge/discharge process as indicated.

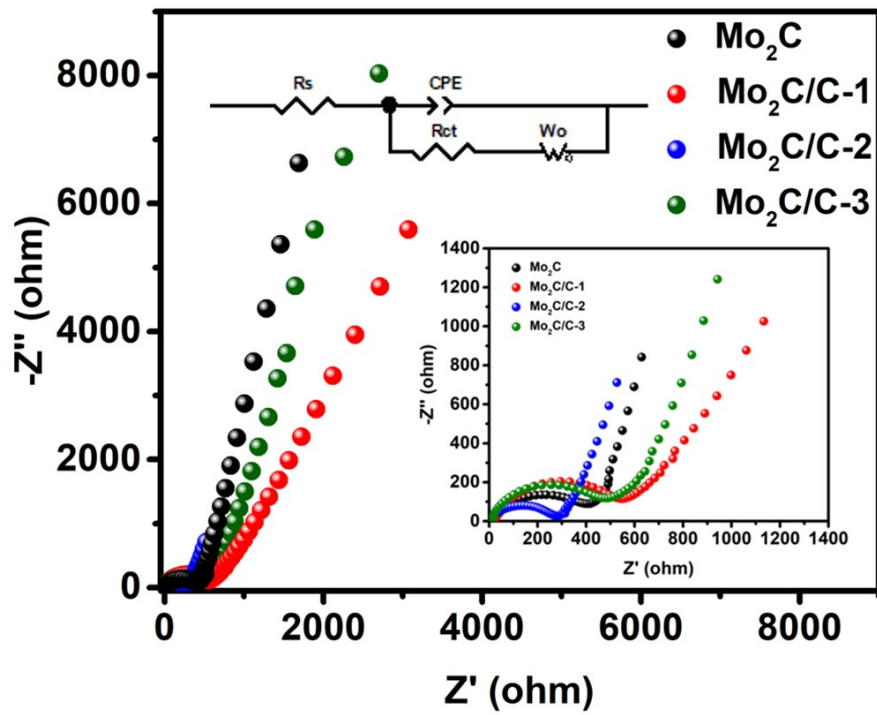


Fig. S13 Nyquist plots of $\text{Mo}_2\text{C/C}$ anodes as indicated.

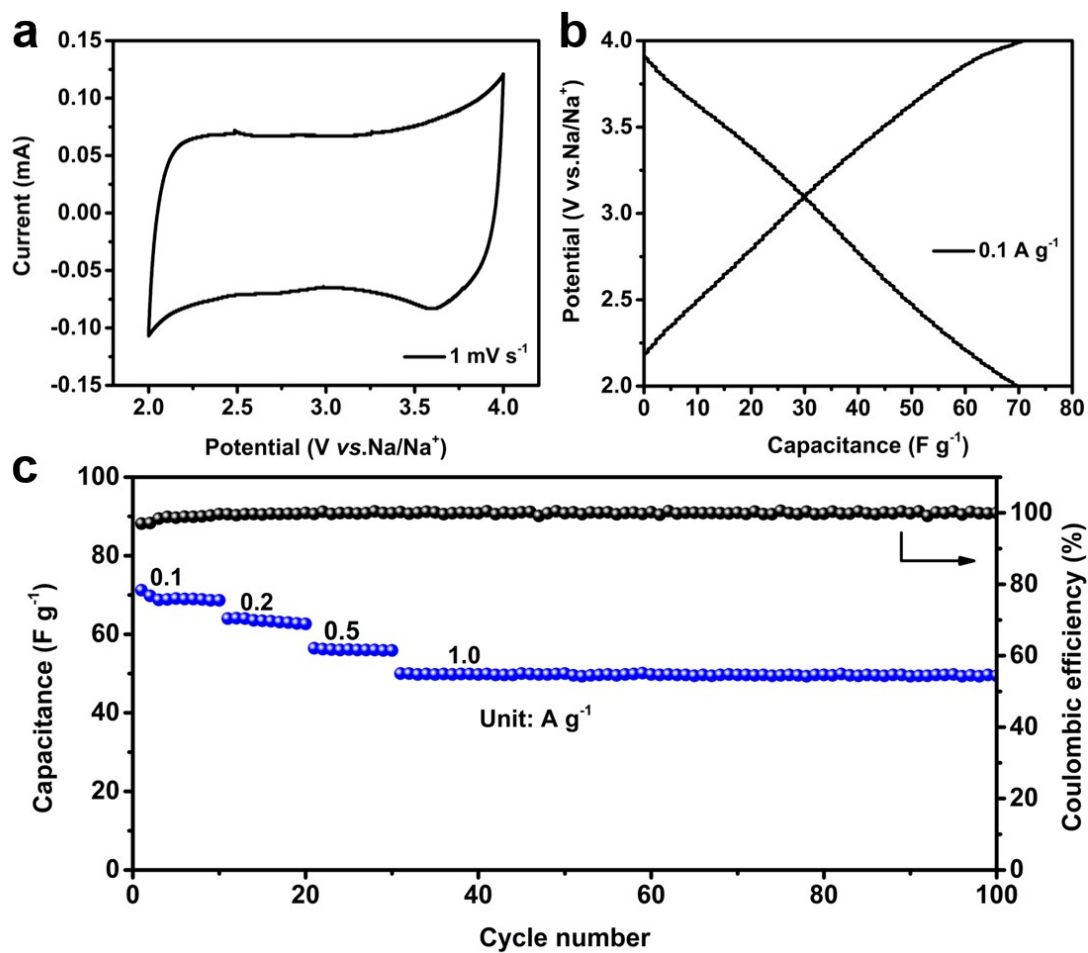


Fig. S14 Electrochemical performance of PC: (a) CV curve at 1 mV s^{-1} , (b) GCD plot at 0.1 A g^{-1} , and (c) Rate capacities in the current range from 0.1 to 1 A g^{-1} .