

Fig.S1 (a)-(b) Top surface SEM images of the CoMoO₄/MECN (3.2h) at different magnifications. The MECN is almost entirely blocked by the compact CoMoO₄ that improved the resistance of the MECN electrode that weaken the overall electrochemical performance of the electrode.

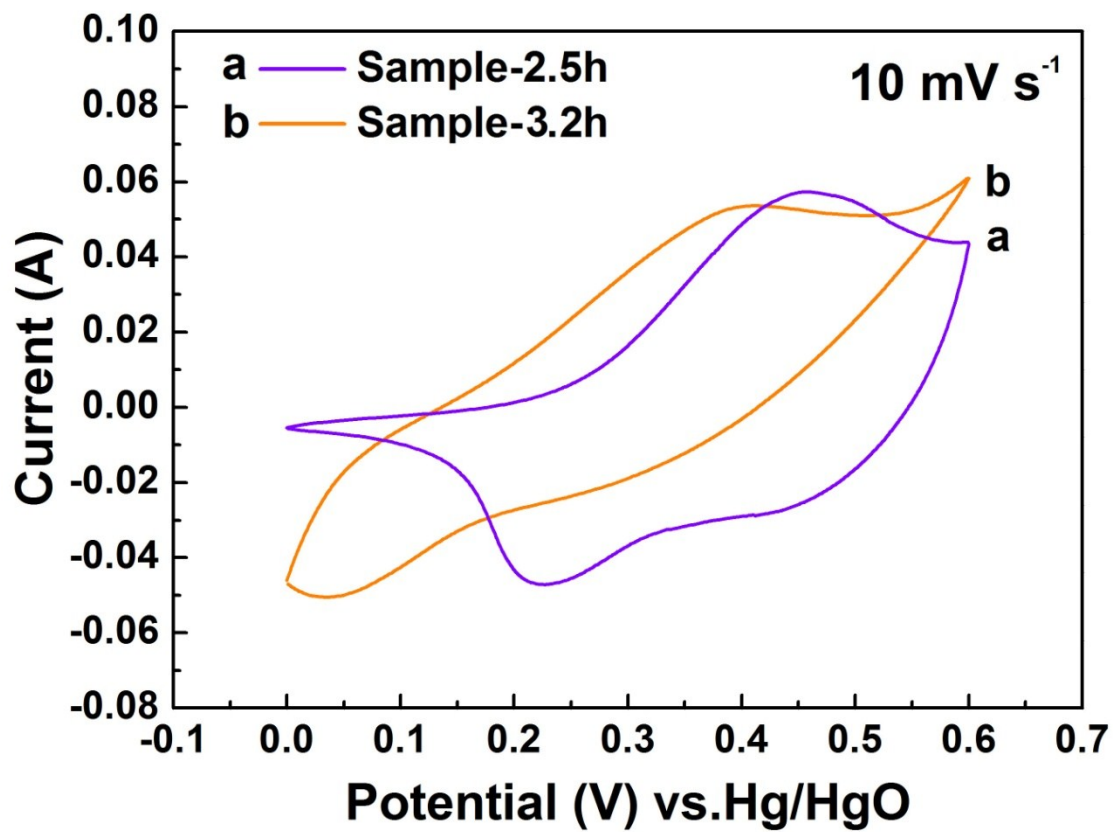


Fig.S2 Cyclic voltammetry curves of the CoMoO₄/MECN with reaction time of 2.5 and 3.2 hours at scanning rates of 10 mV s⁻¹.

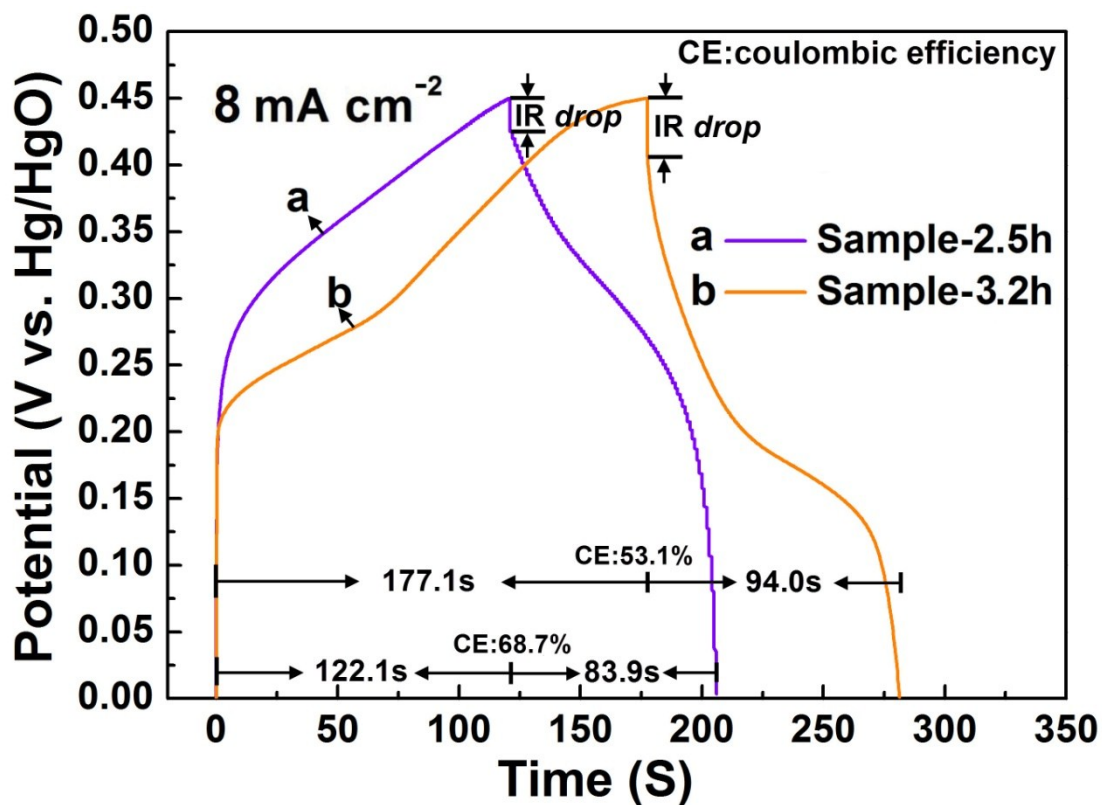


Fig.S3 10 mA cm⁻² charge/discharge curves of newly fabricated CoMoO₄/MECN supercapacitor for different synthesis time of 2.5 and 3.2 hours. The feature of the coulombic efficiency and IR drop of the two samples are indicated in the picture.

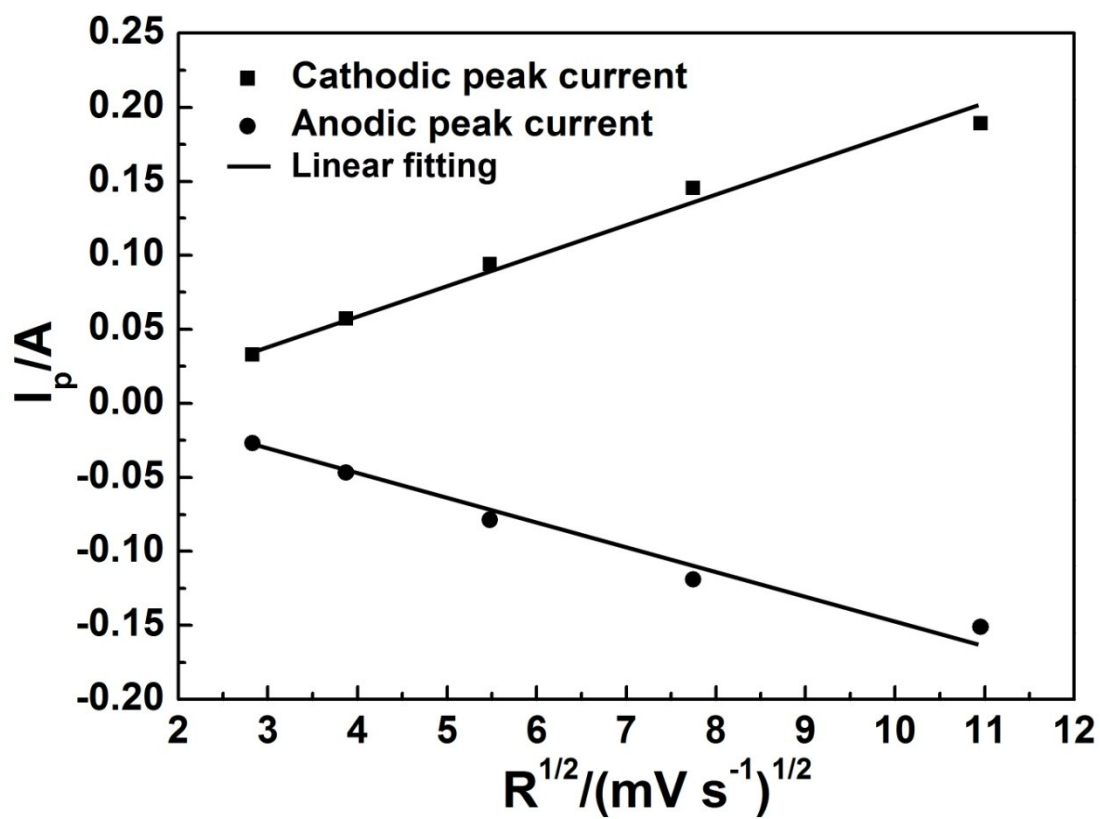


Fig.S4 The linear relationship between the peak currents and the square root of the scanning rates of Sample-2.5h.

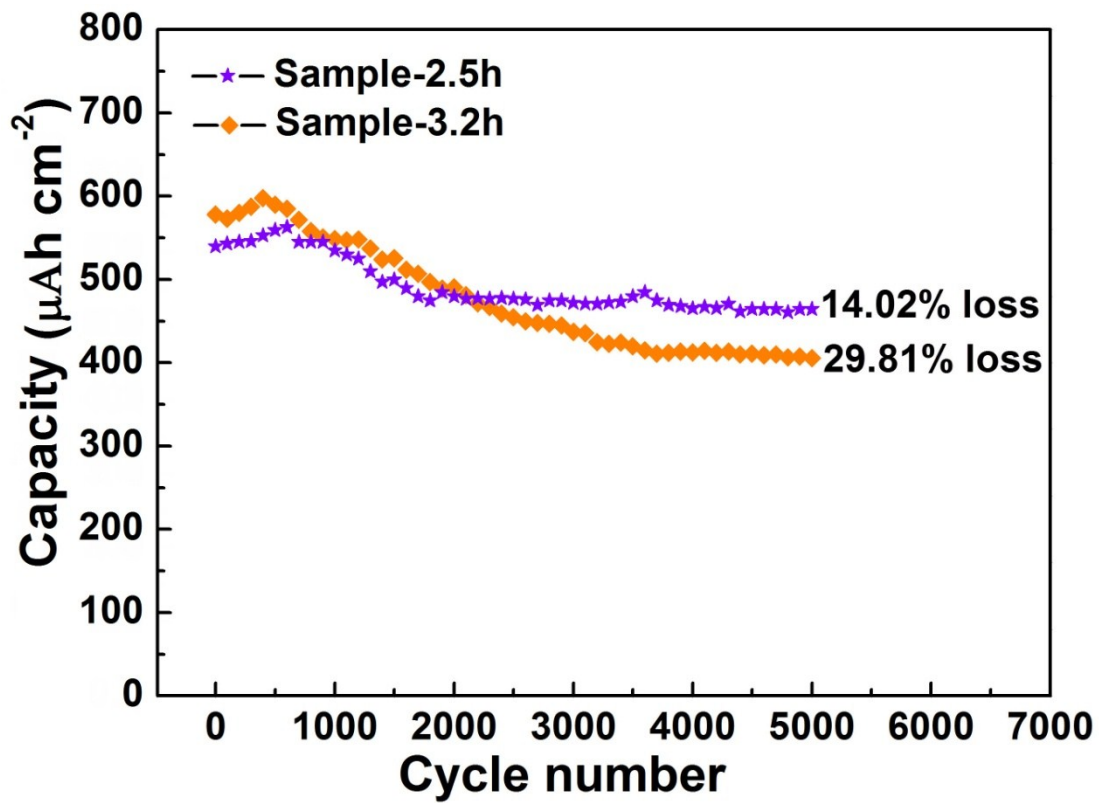
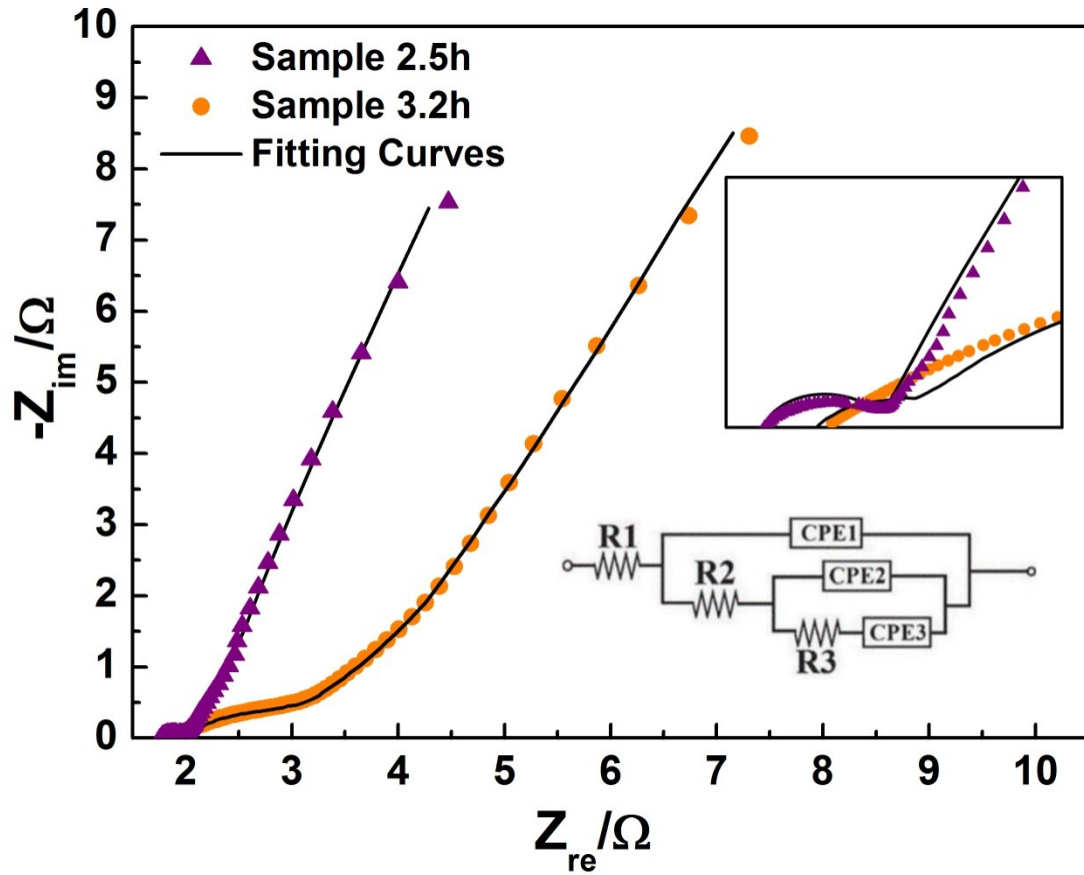


Fig.S5 Long-term performance of the $\text{CoMoO}_4/\text{MECN}$ assessed at a charging discharging current density of 20 mA cm^{-2} ;



Parameters	Sample-2.5h	Sample-3.2h
R1(Ω)	1.765	1.875
R2(Ω)	0.225	2.282
R3(Ω)	4.566	6.333
CPE1-n	0.784	0.948
CPE2-n	0.787	0.881
CPE3-n	0.982	0.817

Fig.S6 Nyquist plots of the Sample-2.5 and Sample-3.2 electrodes in a 2 M KOH solution with the equivalent circuit and element values fitting the impedance curve. The data can be explained according to the study on Fig.7(b) in the main article.