**Supplementary Material**

**Three-dimensional porous layered double hydroxides growing on carbon cloth as binder-free electrodes for supercapacitors**

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**Fig. R1** Capacitive performance of AC (a) CV curves at different scan rates and (b) GCD curves at different current densities.

In this paper, AC, the powder activated carbon, is prepared by KOH activation using petroleum coke as precursors, with a high specific surface area (SBET = 2012 m2·g-1). Its capacitance performance is shown in Fig. R1. The CV curves of AC (Fig. R1a) at different scan rates has no obvious redox peaks, implying its electric double-layer characteristic. Meanwhile, the GCD curves for AC (Fig. R1b) exhibit triangular shapes regularly, indicating its ideal capacitance performance and reversible behaviors. The specific capacitance (*C*sp) of AC can be calculated according to the following equation:

$C\_{sp}=I × Δt / (m ×ΔV)$ (1)

Where *I*, Δ*t*, *m*, Δ*V* represent the discharging current (A), the discharge time (s), the mass of active material in the electrode (g) and the total potential deviation (V) respectively. The corresponding *C*sp of AC obtained from the Fig. R1b are to be 183, 169, 155 and 140 F·g-1 at the current density of 0.5, 1.0, 2.0 and 5.0 A·g-1.



**Fig. S1** GCDcurves of Ni/Al-LDH/CC at different current densities.



**Fig. S2** GCDcurves of Ni/Al-LDH at different current densities.



**Fig. S3** Comparison of GCDcurves of AC and Ni/Al-LDH/CC at 0.3 A·g-1.



**Fig. S4** GCDcurves of AC//AC at different current densities.