

Supporting Information for

**Graphene-wrapped CNT@MoS<sub>2</sub> hierarchical structure:  
synthesis, characterization and electrochemical application  
in supercapacitors**

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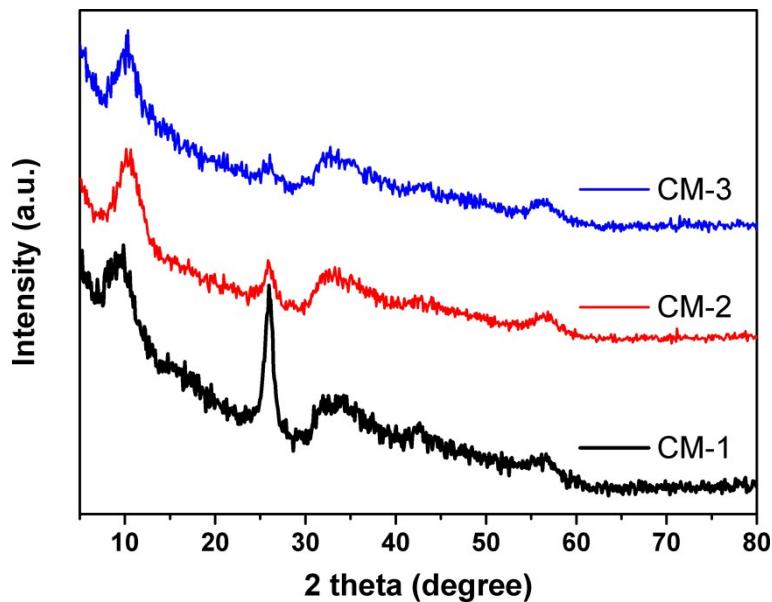
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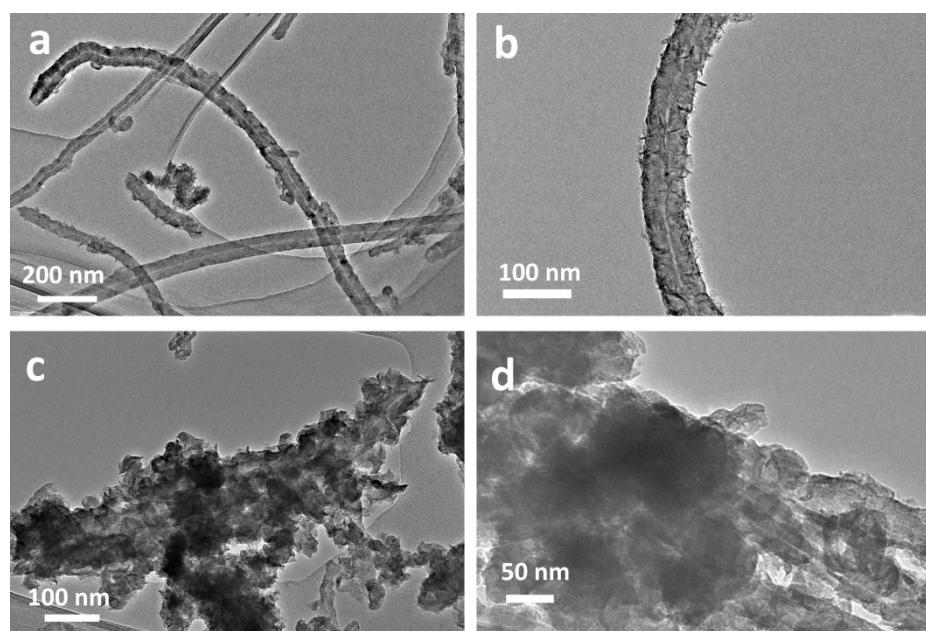
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**Fig. S1**



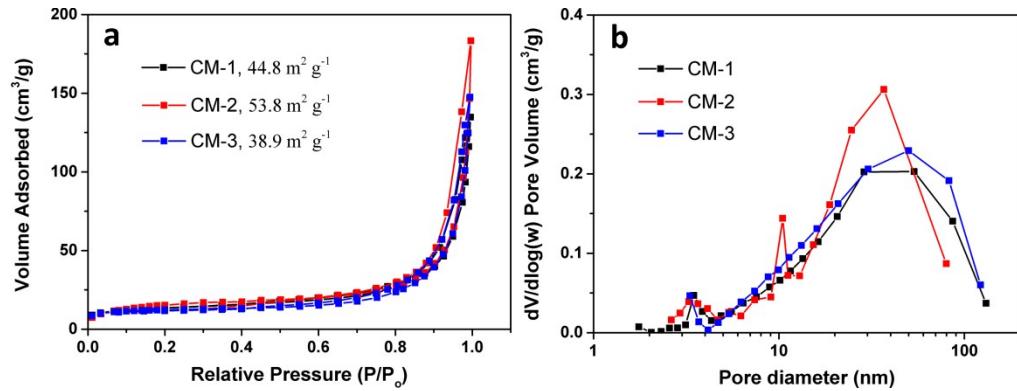
**Fig. S1** XRD patterns of CM-1, CM-2 and CM-3.

**Fig. S2**



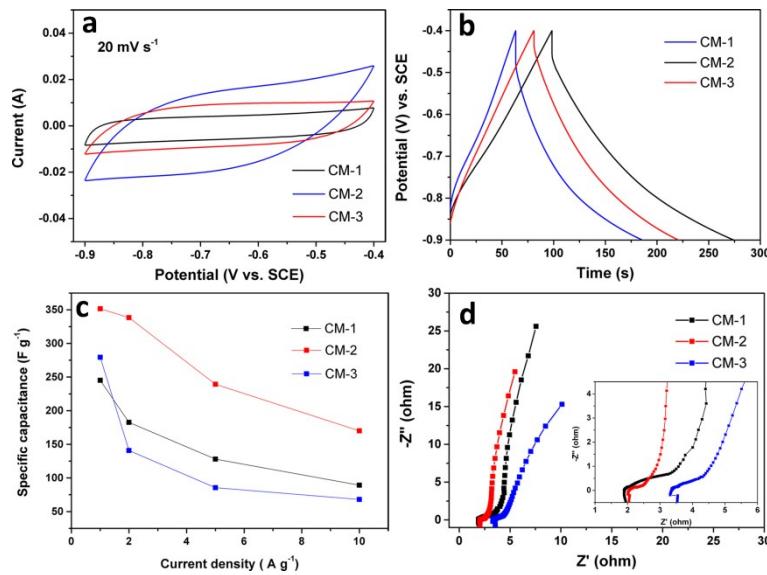
**Fig. S2** TEM and high-resolution TEM images of (a, b) CM-1 and (c, d) CM-3.

**Fig. S3**



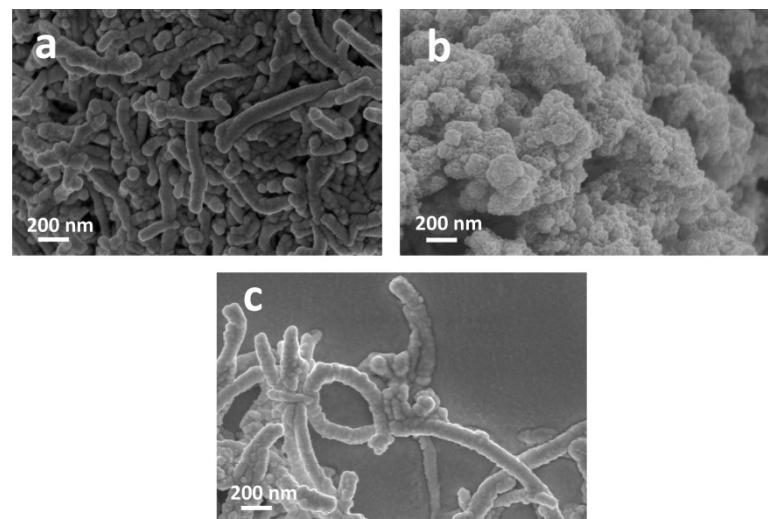
**Fig. S3** (a) Nitrogen adsorption/desorption isotherms and (b) the corresponding pore size distribution curves for CM-1, CM-2 and CM-3.

**Fig. S4**



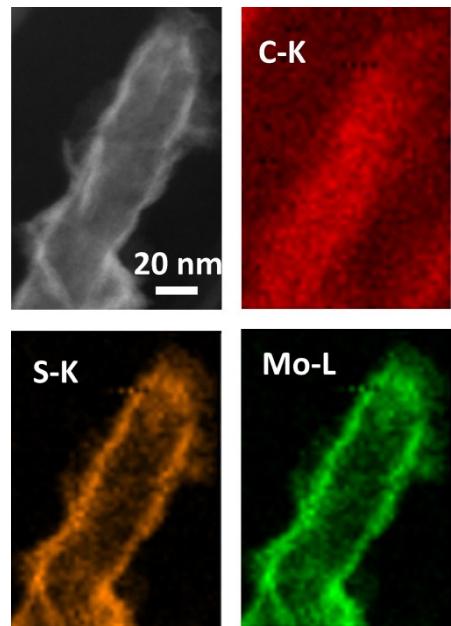
**Fig. S4** (a) CV and (b) GCD curves of CM-1, CM-2 and CM-3 at a voltage scan rate of  $20 \text{ mV s}^{-1}$  and a current density of  $1 \text{ A g}^{-1}$  in a  $1 \text{ M Na}_2\text{SO}_4$  electrolyte; (c) specific capacitance at the different charge-discharge current densities and Nyquist plots for CM-1, CM-2 and CM-3.

**Fig. S5**



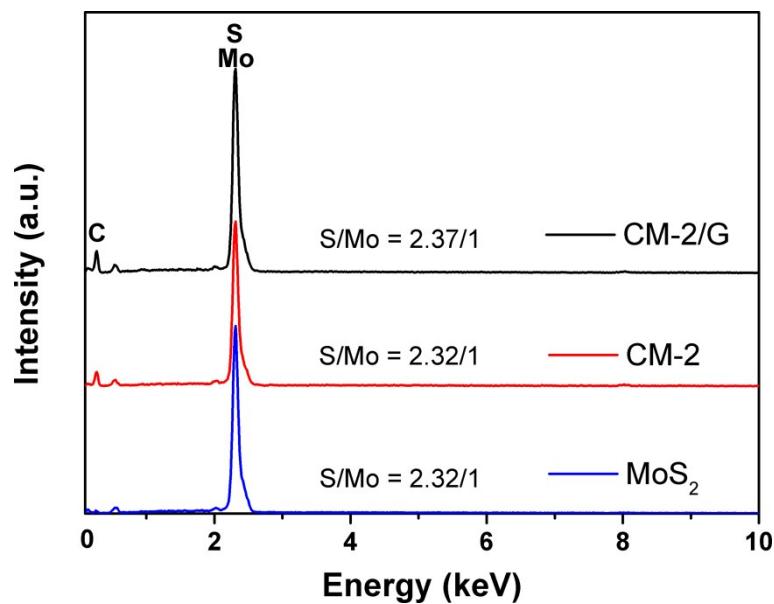
**Fig. S5** FESEM images of (a) CNT, (b) MoS<sub>2</sub> and (c) CM-2.

**Fig. S6**



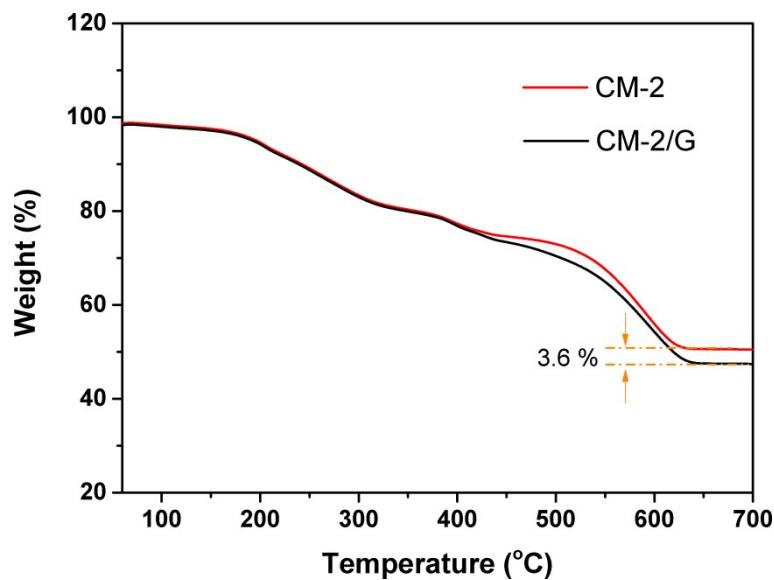
**Fig. S6** Elemental mapping results of CM-2.

**Fig. S7**



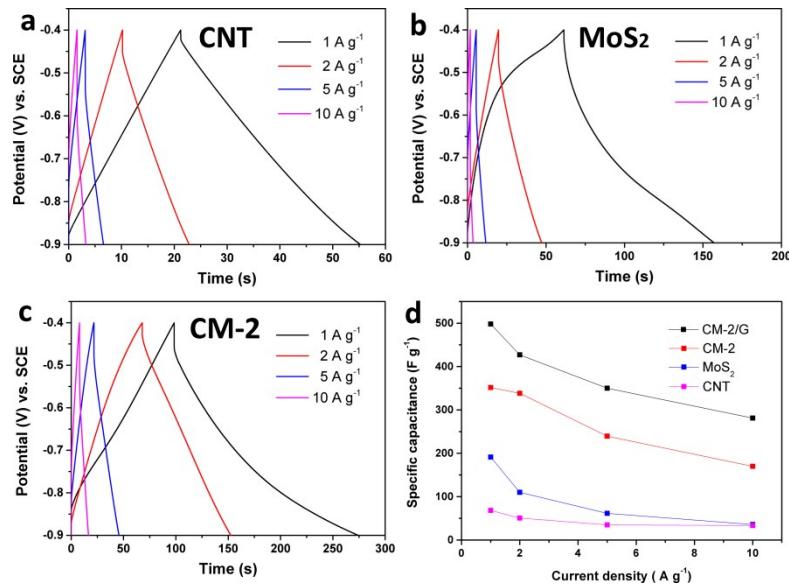
**Fig. S7** EDS curves of  $\text{MoS}_2$ , CM-2 and CM-2/G.

**Fig. S8**



**Fig. S8** TG curves of CM-2 and CM-2/G.

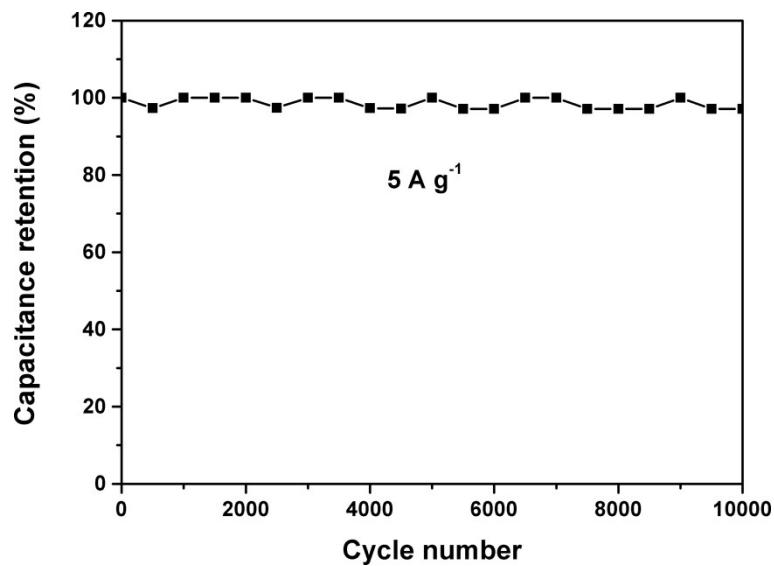
**Fig. S9**



**Fig. S9** GCD curves of (a) CNT, (b) MoS<sub>2</sub> and (c) CM-2 at various current densities

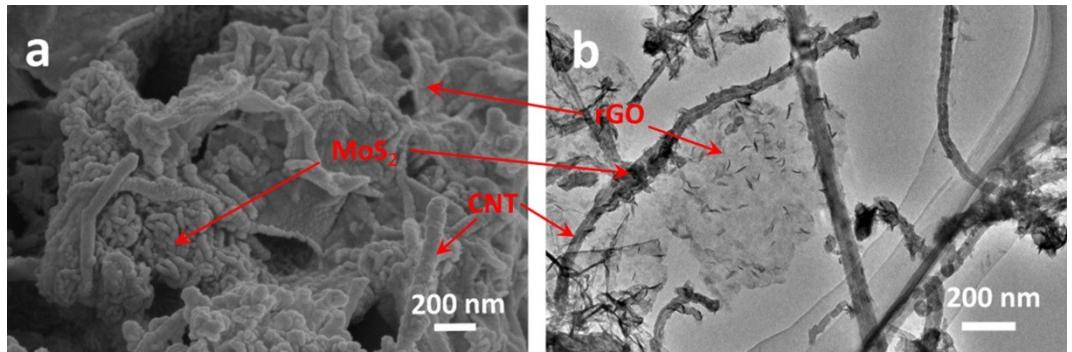
in 1 M Na<sub>2</sub>SO<sub>4</sub>. (d) Specific capacitance at the different charge-discharge current densities of CNT, MoS<sub>2</sub>, CM-2 and CM-2/G, respectively.

**Fig. S10**



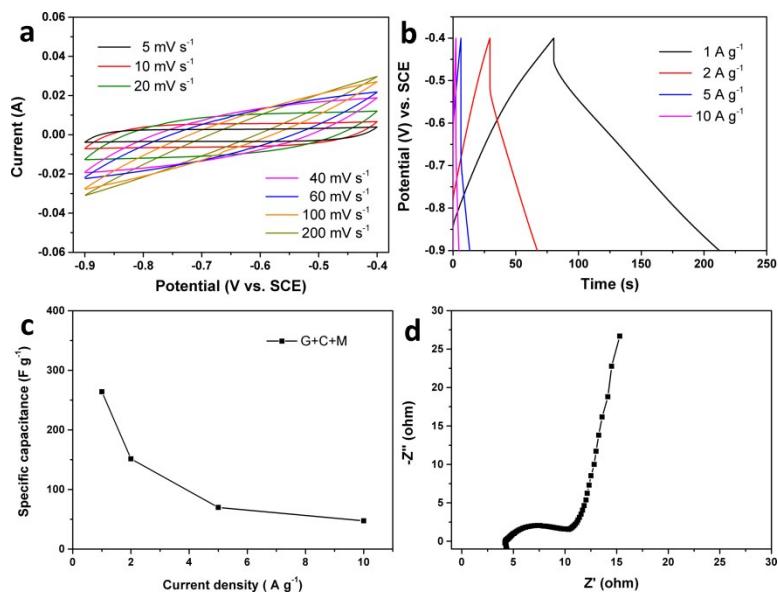
**Fig. S10** Coulombic efficiency measured at a current density of 5 A·g<sup>-1</sup> for the CM-2/G.

**Fig. S11**



**Fig. S11** FESEM and TEM images of G/CNT/MoS<sub>2</sub> mixture.

**Fig. S12**



**Fig. S12** (a) CV and (b) GCD curves of G/CNT/MoS<sub>2</sub> in 1 M Na<sub>2</sub>SO<sub>4</sub> electrolyte at various voltage scan rates and current densities, respectively. (c) Specific capacitance at the different charge-discharge current densities and (d) Nyquist plots of G/CNT/MoS<sub>2</sub>.