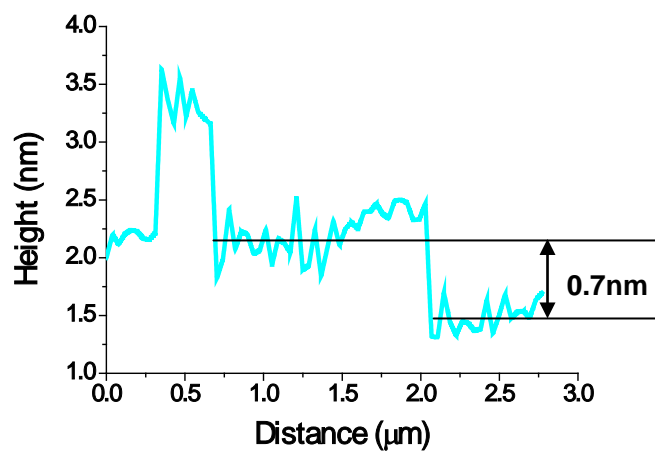
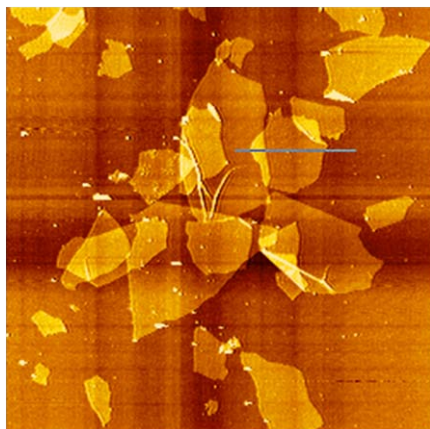


Supplementary Information

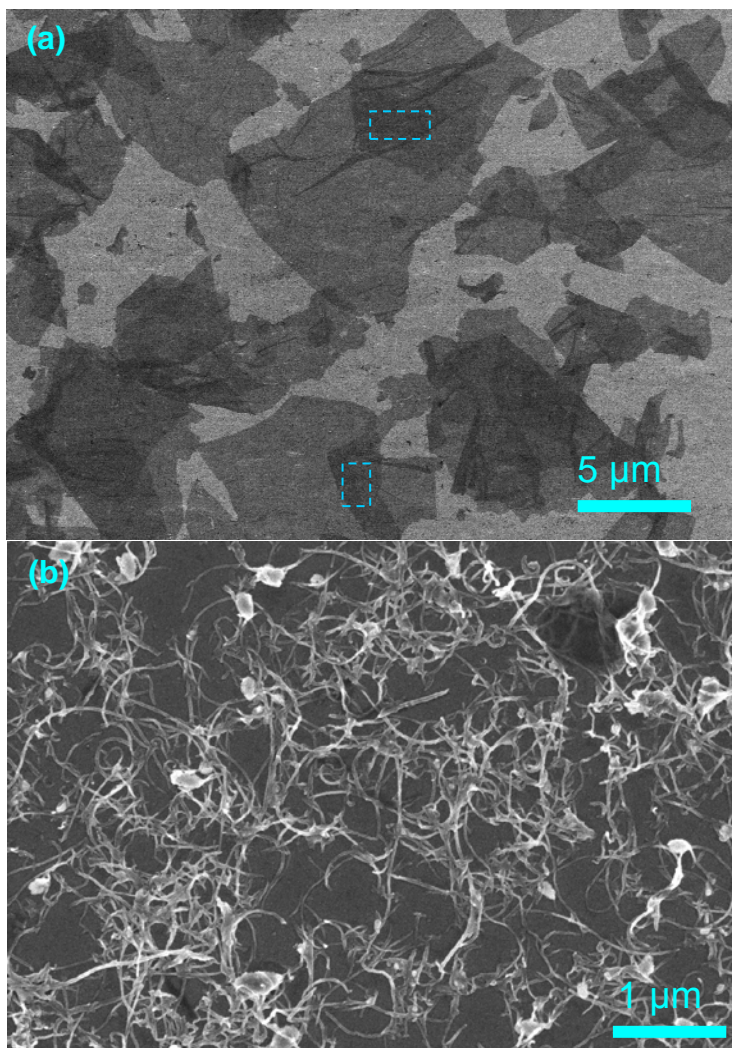
Supplementary Figures



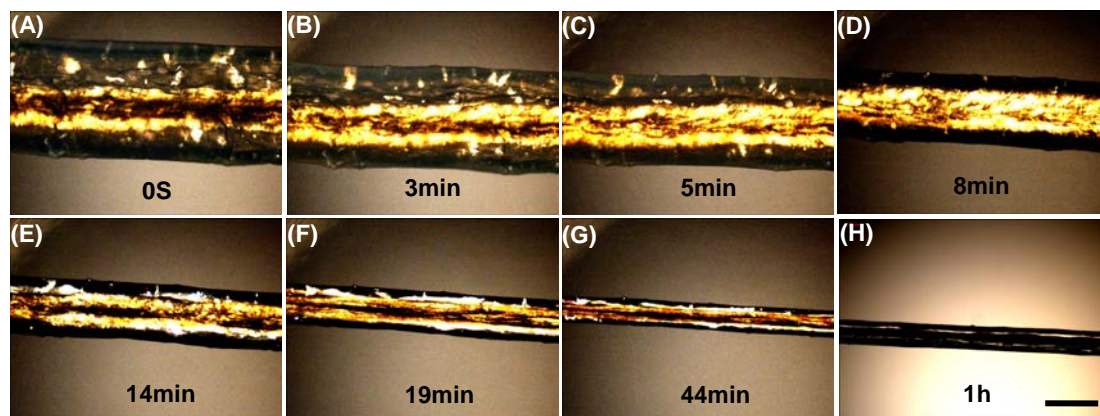
Supplementary Figure 1 Photograph of experimental apparatus for coaxial spinning.



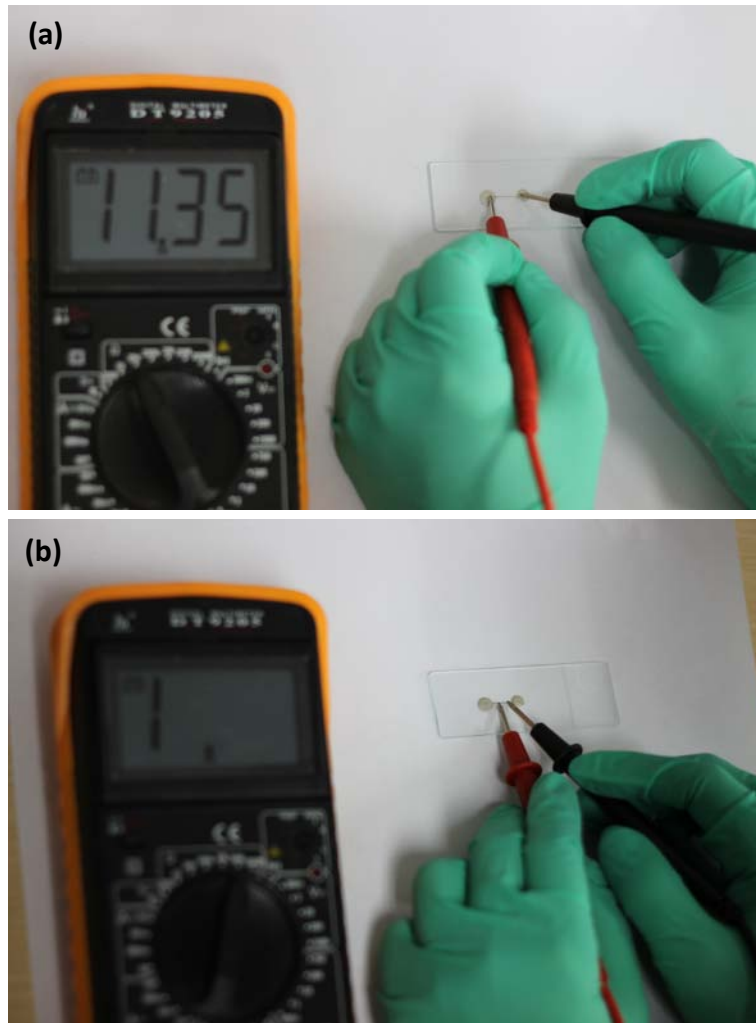
Supplementary Figure 2 AFM images of GO.



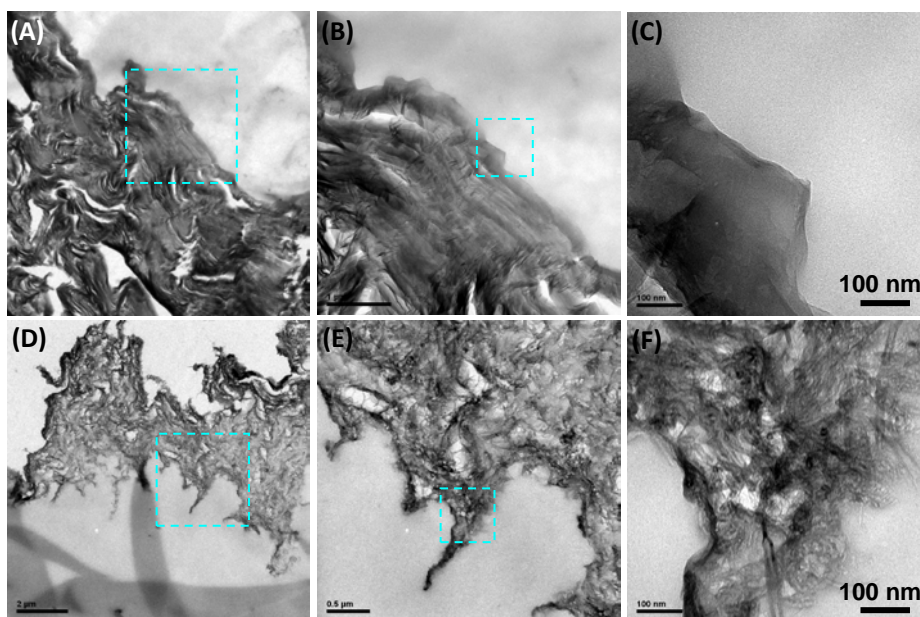
Supplementary Figure 3 SEM images of GO (a) and CNT (b).



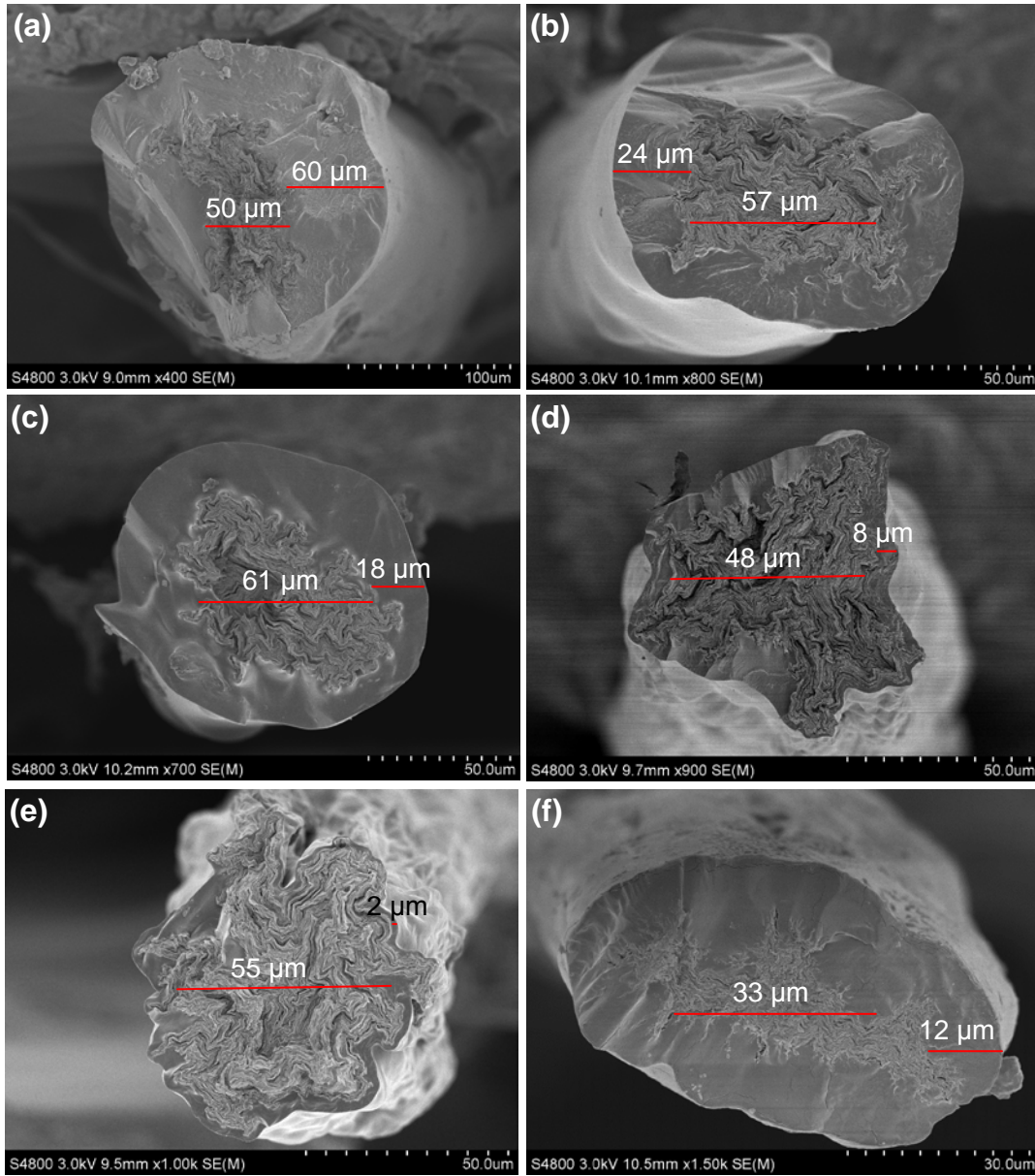
Supplementary Figure 4 POM images of GO@CMC coaxial fibre with different solidification time after drawing from the washing bath. (The scale bar in H is 100 μm)



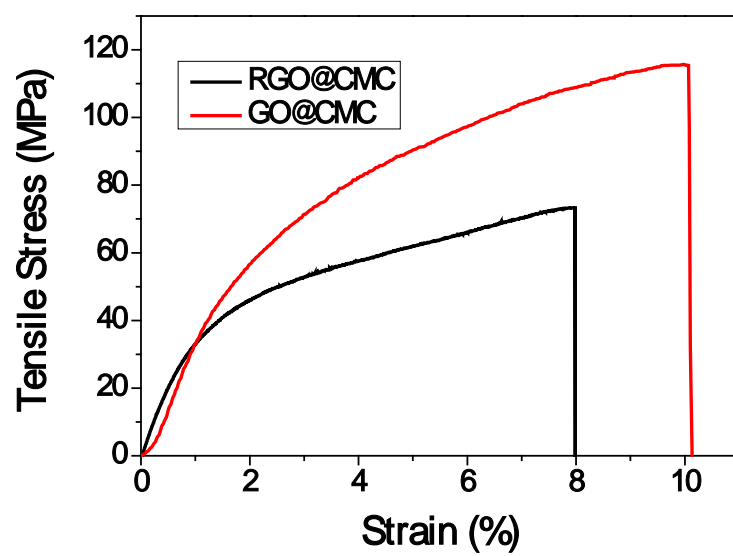
Supplementary Figure 5 Resistance measurement of coaxial fibres (Measured from the ends of core, the coaxial fibre is electrically conductive with resistance of 11.35 k Ω . Measured from the side face, the coaxial fibre is insulative and the resistance is out of range.)



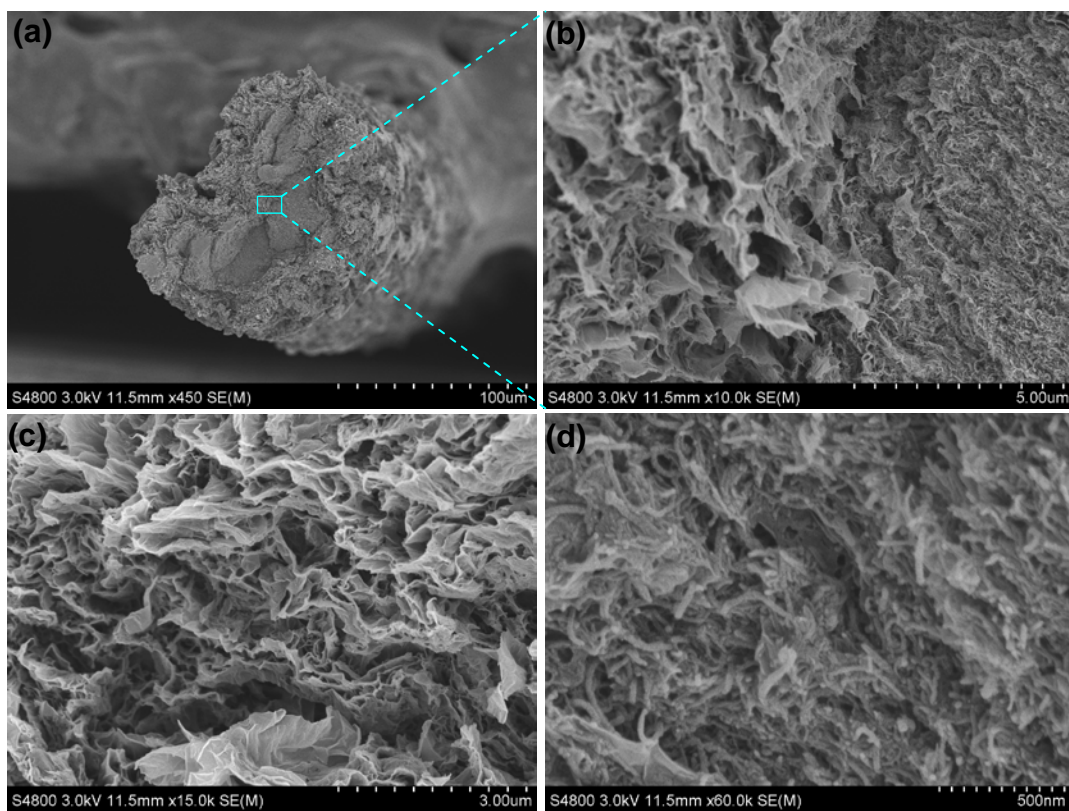
Supplementary Figure 6 TEM images of GO@CMC (A-C) and CNT@CMC (D-F) coaxial fibre.



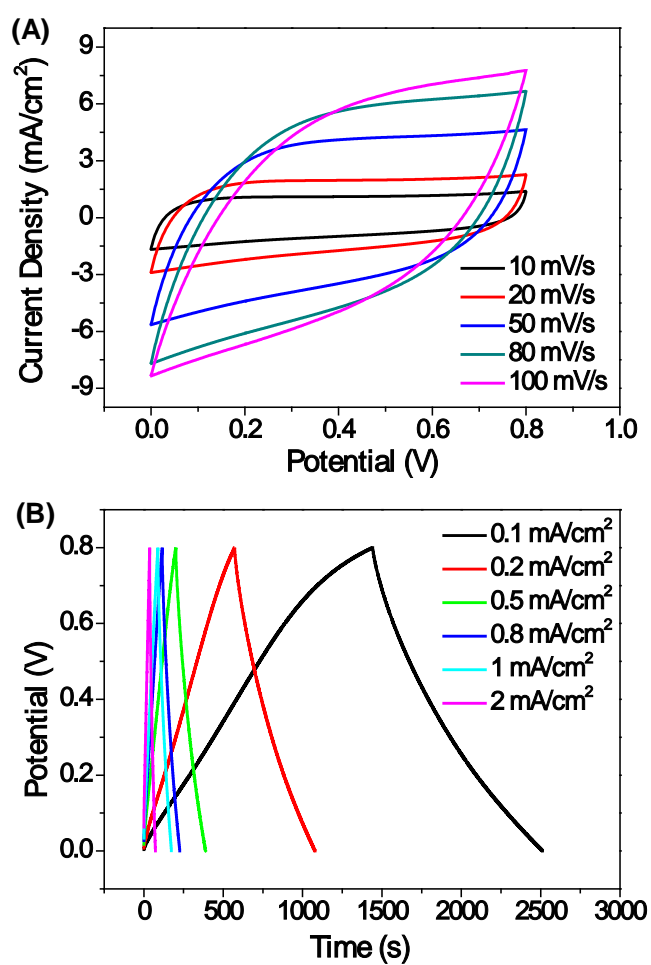
Supplementary Figure 7 SEM images of GO@CMC coaxial fibre with different diameters of core and thickness of sheath.



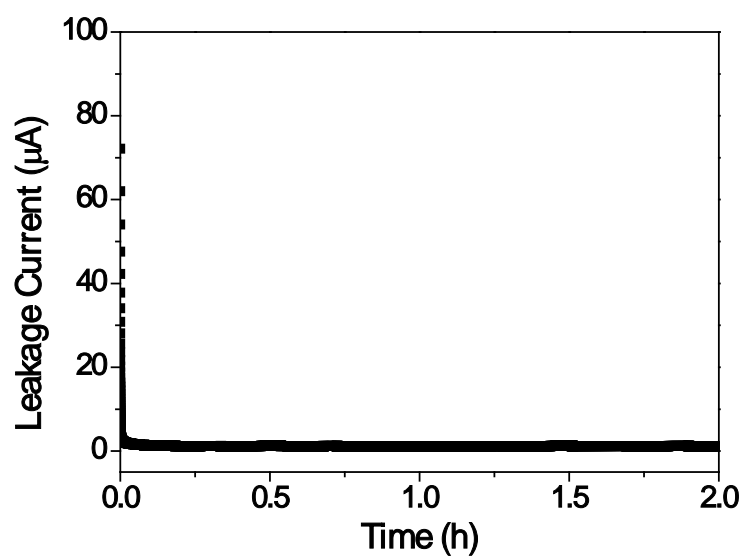
Supplementary Figure 8 Typical stress-strain curves of GO@CMC and RGO@CMC coaxial fibre.



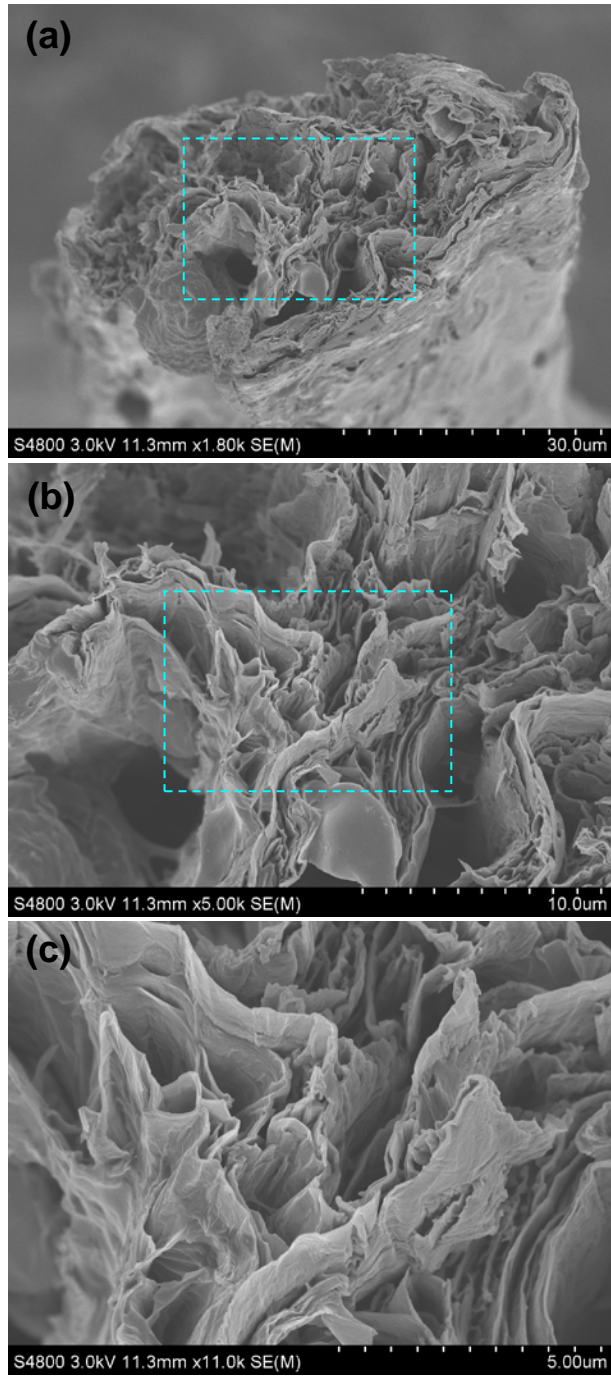
Supplementary Figure 9 SEM images of all-carbon RGO+CNT@RGO coaxial fibre, c and d are the magnified images of the shell and core, respectively.



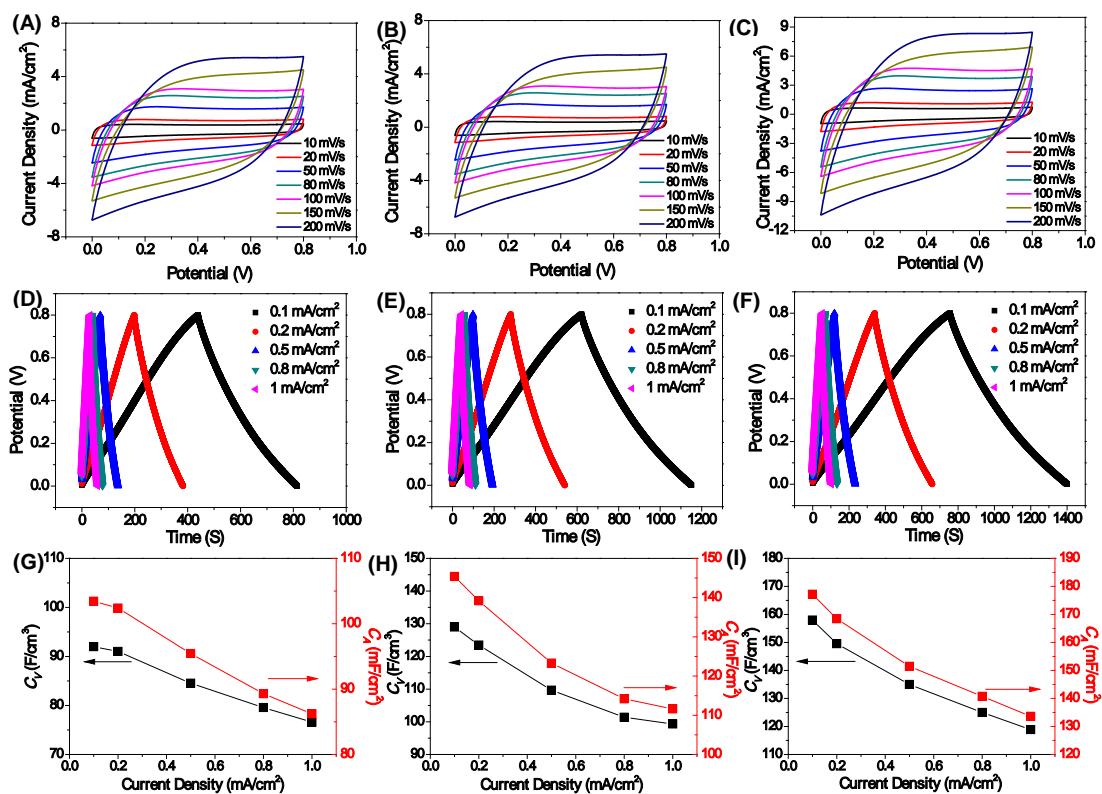
Supplementary Figure 10 CV (A) and GCD (B) curves of RGO+CNT@CMC YSCs with liquid electrolyte of 1 M H₂SO₄ aqueous solution.



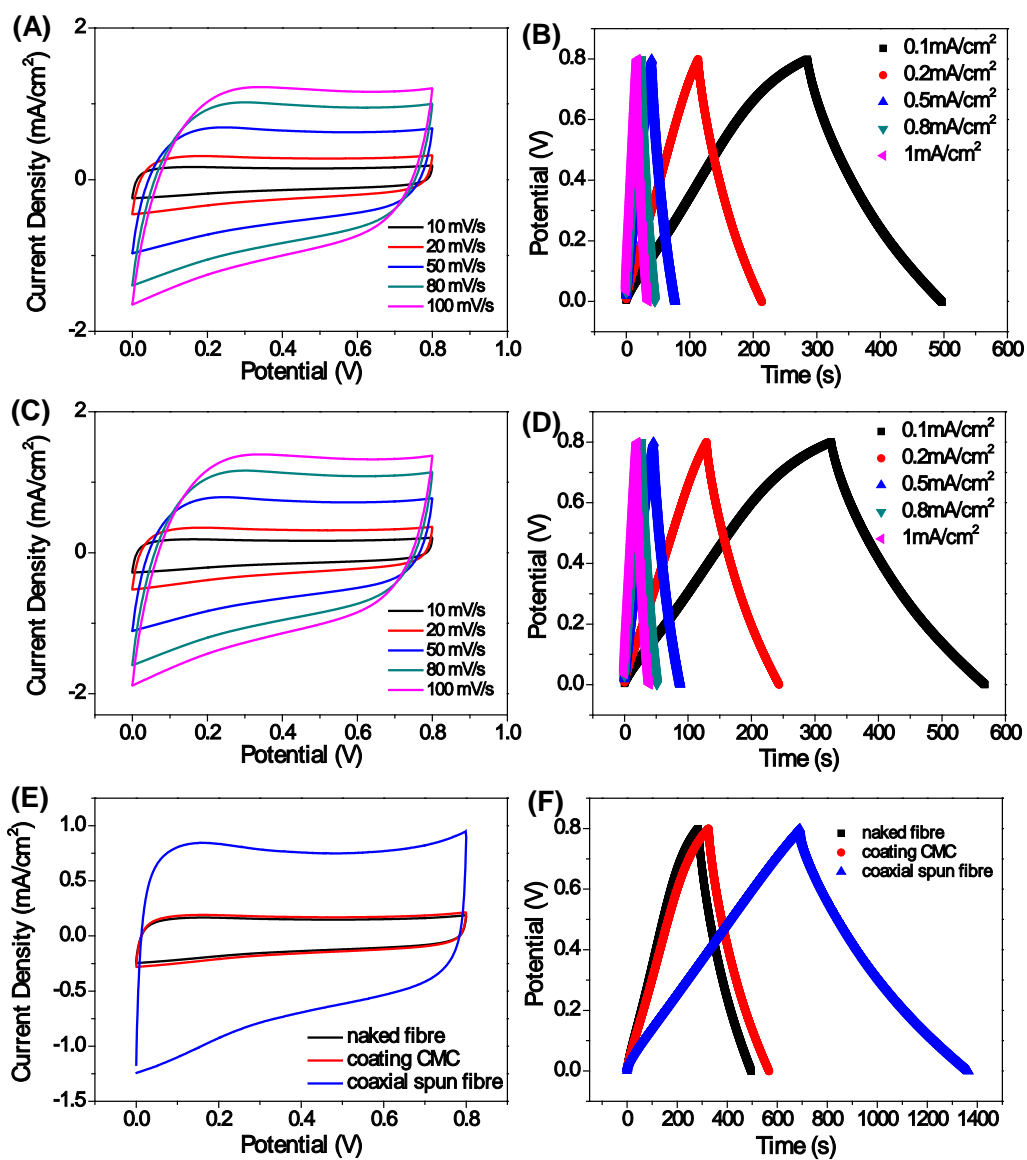
Supplementary Figure 11 Leakage current curves of the solid-state RGO+CNT@CMC YSCs.



Supplementary Figure 12 SEM images of RGO fibre.



Supplementary Figure 13 CV, GCD and rate capability curves of RGO+CNT@CMC fibres with CMC thickness of 2 (A, D, G), 10 (B, E, H) and 25 μm (C, F, I).



Supplementary Figure 14 CV and GCD curves of dry RGO+CNT fibres before (A, B) and after (C, D) coating a CMC layer, and the comparison with coaxial wet-spun fibres at scan rate of 10 mV and current density of 0.1mA/cm².