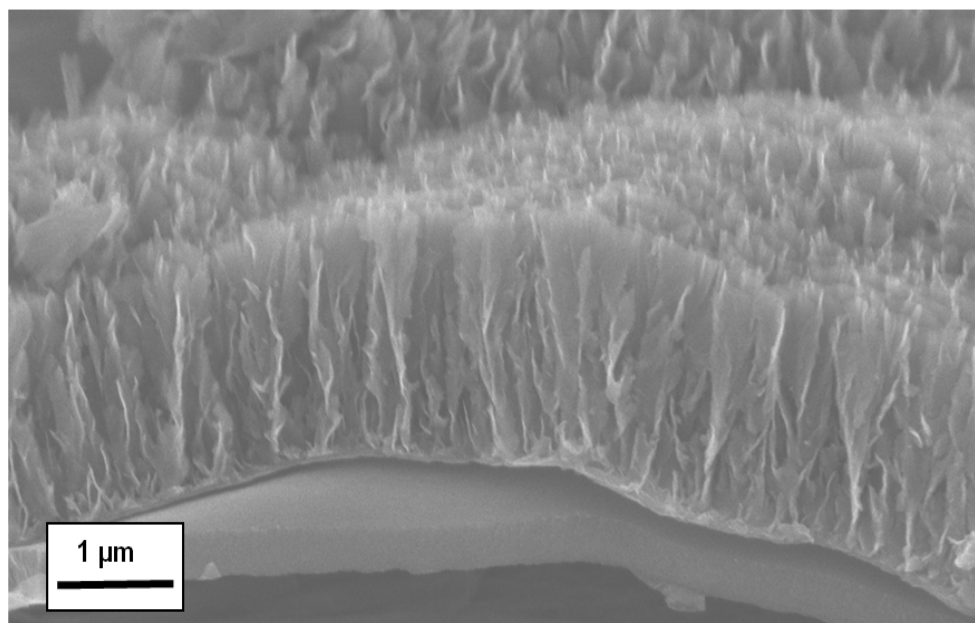
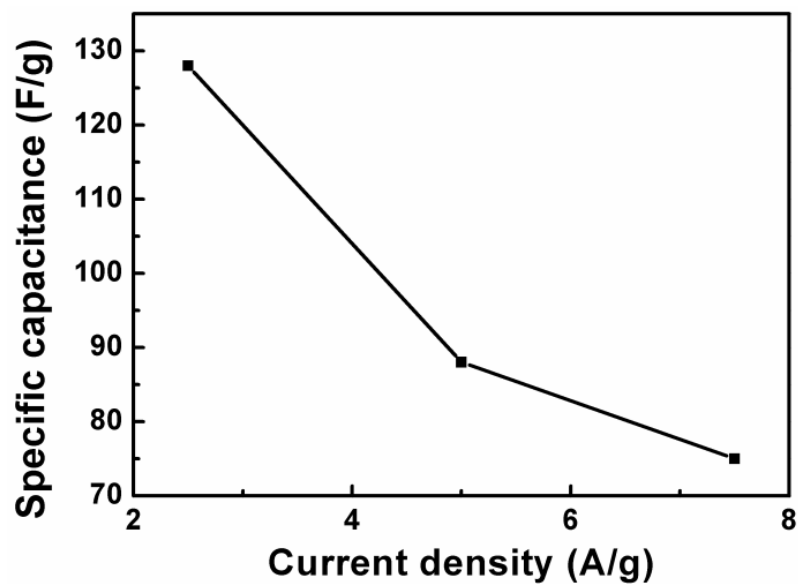


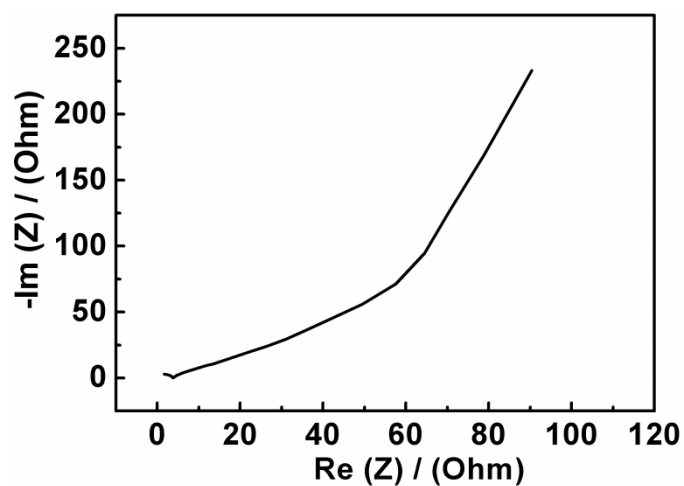
Supplementary Information



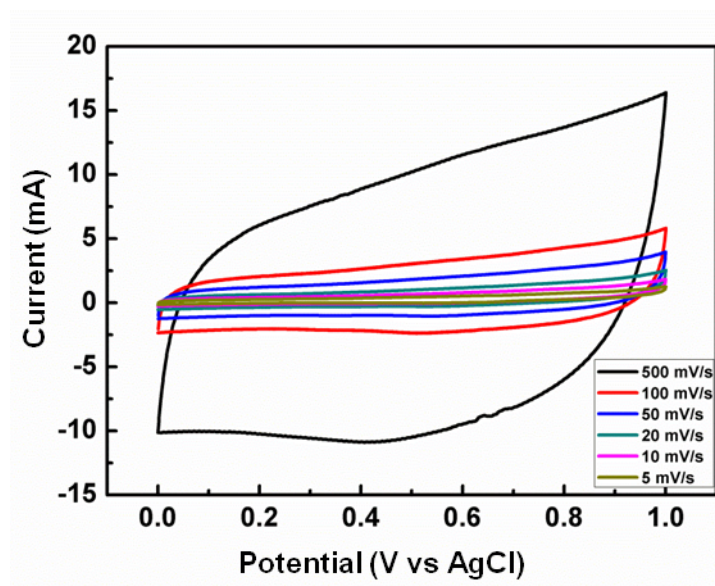
S1. Typical cross-sectional SEM image of HC-VGS with a height of $\sim 2\ \mu\text{m}$.



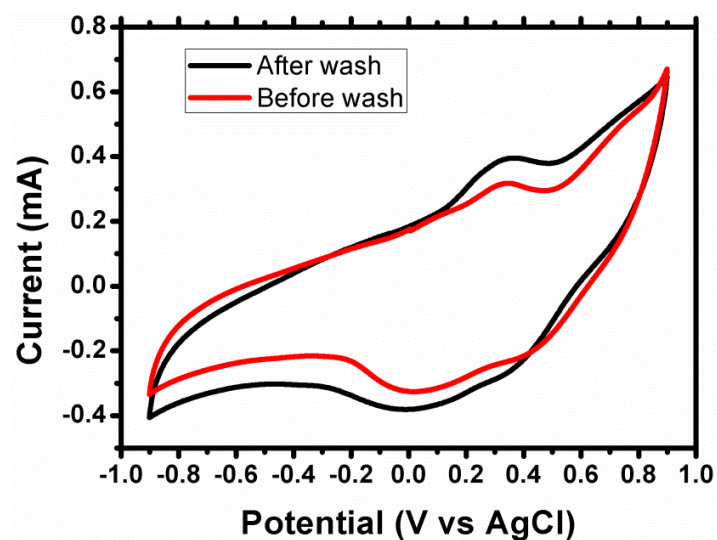
S2. Specific capacitance of VGS calculated from the charge/discharge curves.



S3. EIS measurement for pristine HC-VGS in 1 M Na₂SO₄ at room temperature using the three-electrode configuration.



S4. Electrochemical performance of HC-VGS in a three-electrode cell configuration. CV curves of HC-VGS at different scan rates of 5, 10, 20, 50, 100 mV/s and 500 mV/s, in 1 M Na₂SO₄ at room temperature.



S5. CV characterization for the attachment of curcumin onto HC-VGS. Measurements were performed in 20 mM phosphate buffer containing 0.15 M NaCl, at a scan rate of 25 mV/s, and at room temperature. The curcumin-functionalized HC-VGS was washed several times with 10% sodium dodecyl sulphate solution to remove non-specific binding.