

## Supporting Information

### The electrocapacitive properties of hierarchical porous reduced graphene oxide templated by hydrophobic CaCO<sub>3</sub> spheres

Yi Gu,<sup>a</sup> Hao Wu,<sup>a</sup> Zhigang Xiong,<sup>a</sup> Wael Al Abdulla,<sup>b</sup> and X. S. Zhao\*<sup>a</sup>

<sup>a</sup> School of Chemical Engineering, The University of Queensland, St Lucia, Brisbane, QLD 4072, Australia. Fax: +61-733654199; Tel: +61-733469997; E-mail: george.zhao@uq.edu.au.

<sup>b</sup> Australian Institute for Bioengineering and Nanotechnology (AIBN), The University of Queensland, St Lucia, Brisbane, QLD 4072, Australia.

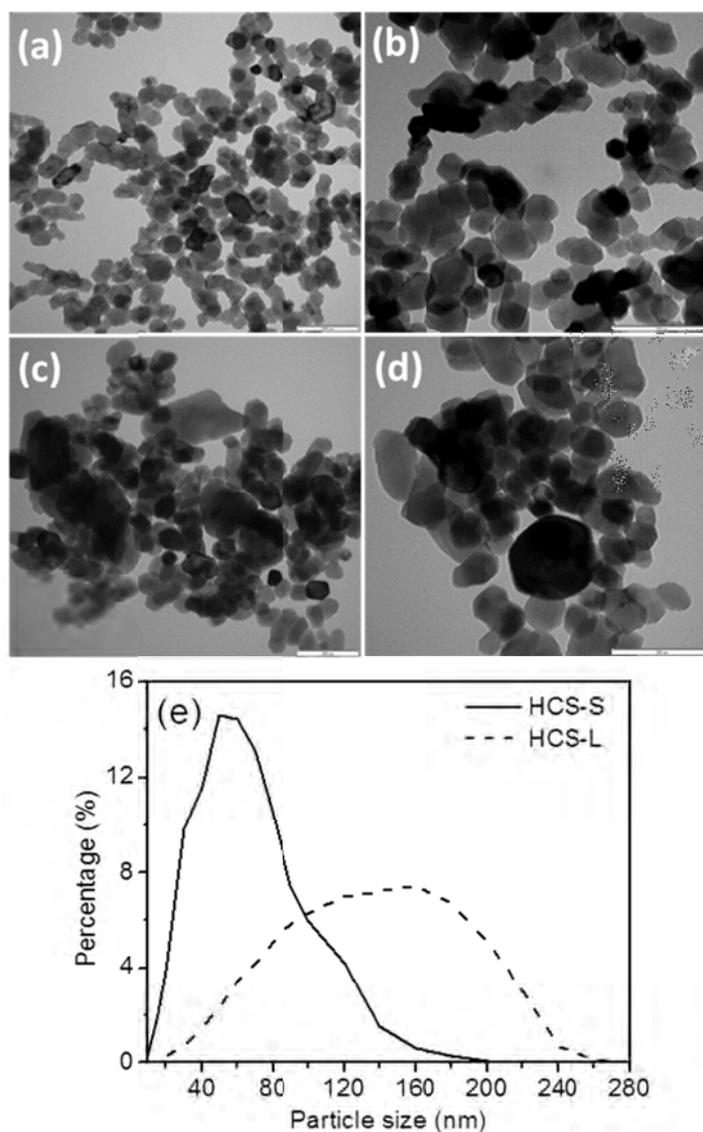


Fig. S1 TEM images of HCS-S (a and b) and HCS-L (c and d) with scale bar being 200 nm, and particle size distribution curves of HCS-S and HCS-L (e).

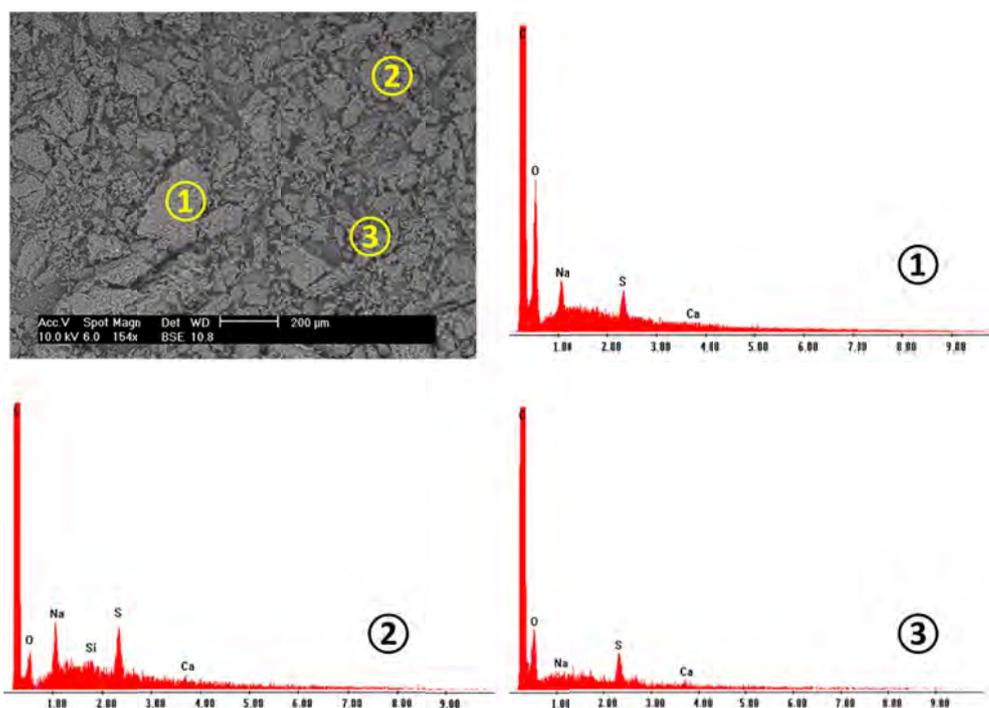


Fig. S2 SEM and EDX spectra of RGO-S (with labeled spots 1-3).

The elements Na and S might be contributed from the sulfonate-containing functional groups. (Recorded on the Philips XL30)

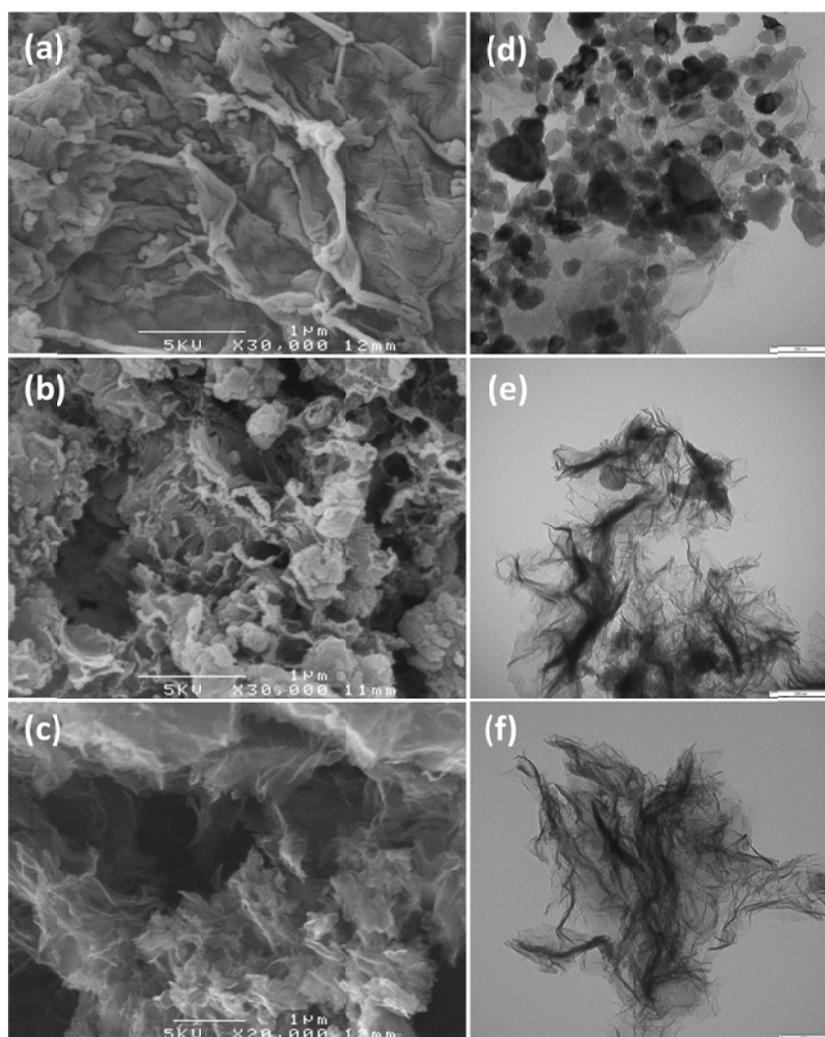


Fig.S3 FESEM images of (a) GO/HCS-L, (b) RGO-L/CaO, and (c) RGO-L. TEM images of (d) GO/HCS-L, (e) RGO-L/CaO, and (f) RGO-L. TEM scale bar is 200 nm.

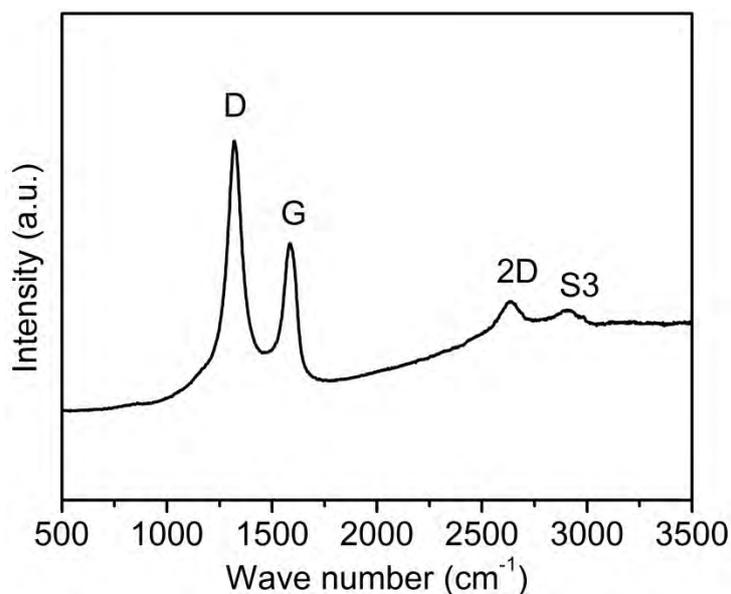


Fig. S4 Raman spectrum of RGO-L.

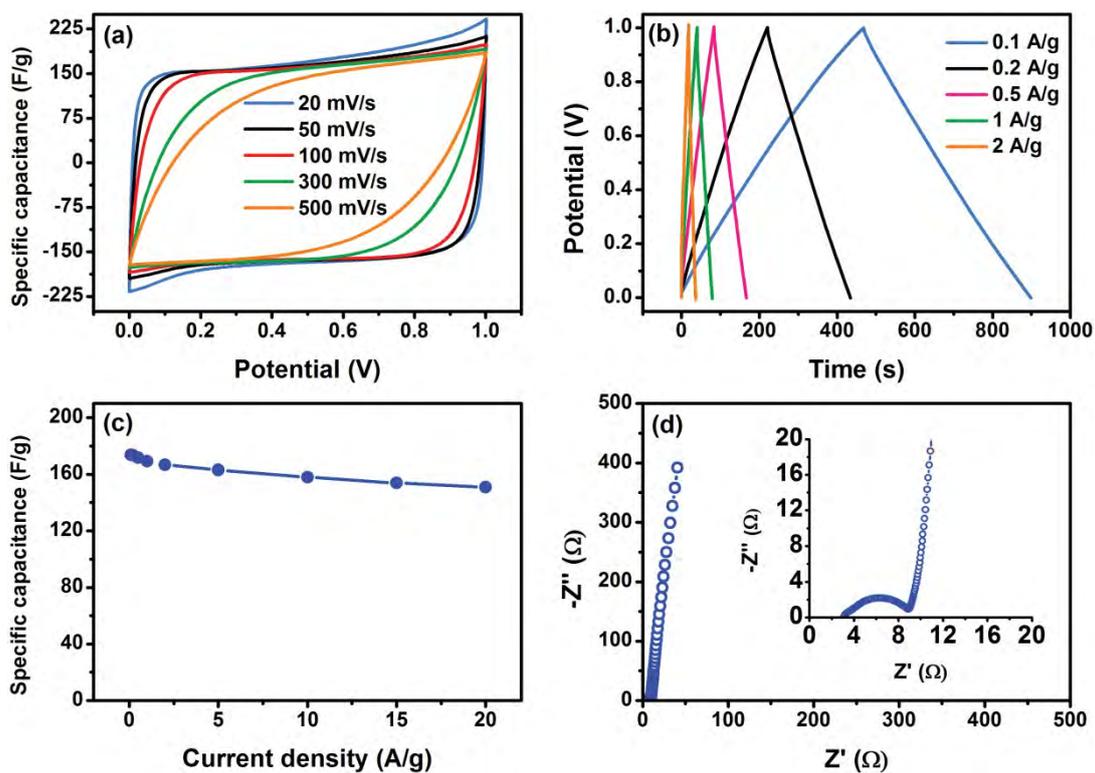


Fig. S5 Electrocapacitive performance of RGO-S at the mass loading of 5 mg/cm<sup>2</sup>: (a) CV curves at different scan rates, (b) GCD curves at different current densities, (c) variation of specific capacitance against current density, and (d) Nyquist plots.