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# Supporting Information

## Graphene supported mesoporous single crystal silicon on Cu foam as stable lithium-ion battery anode

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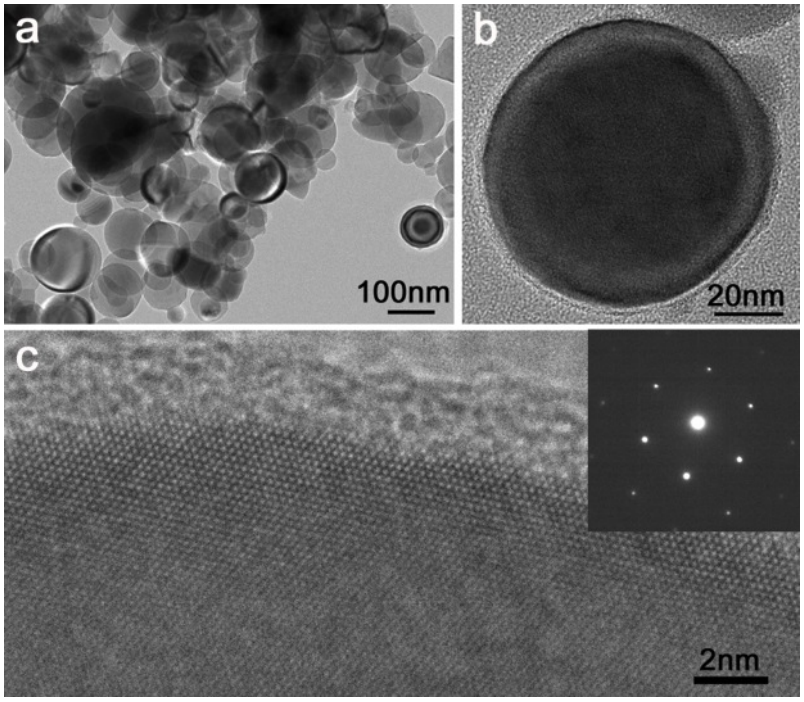


**Fig. S1**(a,b) TEM and (c) HRTEM images of PNPs Si nanoparticles, inset showing the corresponding SAED pattern of (220) plane.

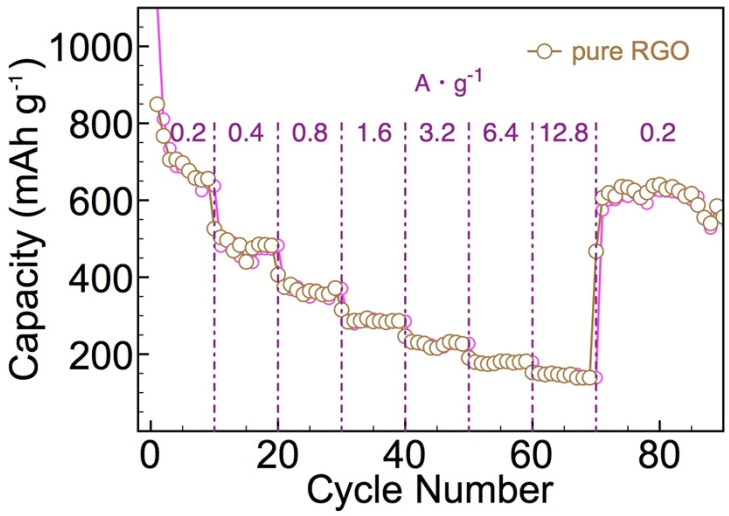


**Fig. S2** Rate performances of pure graphene from 200 to 12800 mA $g^{-1}$.

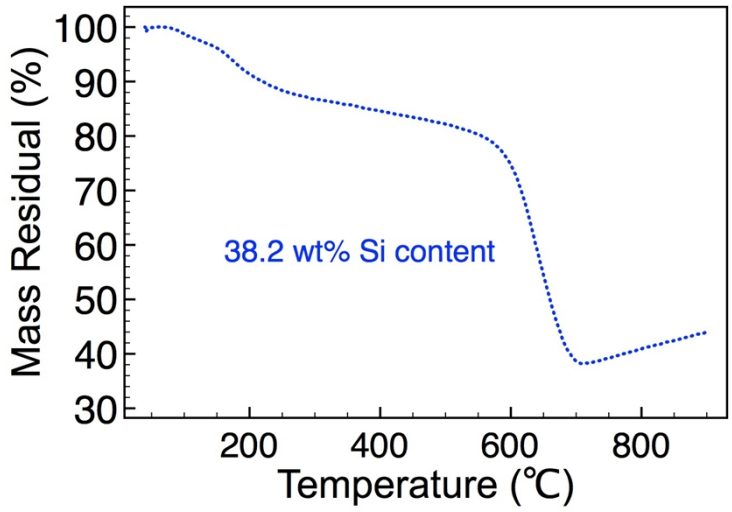


**Fig. S3** Thermogravimetric analysis of MSCs-Si/G hybrids, the result shows the mass fraction of Si is 38.2%.

Figure S3 shows the thermal gravimetric analysis (TGA) profile recorded during heating in air. A nearly 61.8% weight loss was recorded at 700 °C due to combustion of the graphene. And then the mass of the Si component increased because of the oxidation of Si.[1,2]

1. J. Ji, H. Ji, L. L. Zhang, X. Zhao, X. Bai, X. Fan, F. Zhang, and R. S. Ruoff, *Adv. Mater.*, 2013, **25**, 4673–4677.
2. X. Zhao, C. M. Hayner, M. C. Kung, and H. H. Kung, *Adv. Energy Mater.*, 2011, **1**, 1079–1084.