Supporting Information

A Simple and Scalable Approach to Hollow Silicon Nanotube (h-SiNT) Anode Architectures of Superior Electrochemical Stability and Reversible Capacity

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EDAX spectra of hollow silicon nanotubes obtained after HCl etching:

Figure S1 shows the EDAX spectrum of the h-SiNTs obtained after the etching step. The spectra mainly contains peaks correspond to *Si, C, O* and *Pd*. The presence of oxygen peak can be attributed to the thin native surface oxide layer that usually forms on the nanotube surface owing to the expoure of bare silicon to ambient atmosphere. The presence of *C* can be attributed to the carbon tape used for mounting the sample inside the SEM chamber. The source of *Pd* peak is from the thin *Pd* film that was coated on the h-SiNTs prior to the mounting of the sample in SEM chamber for charge dissipation while imaging the sample. No peaks corresponding to *Mg* can be observed in this spectrum, which indicates that *MgO* completely reacts with *HCl* during the etching step and is removed by washing thoroughly giving rise to only h-SiNTs.

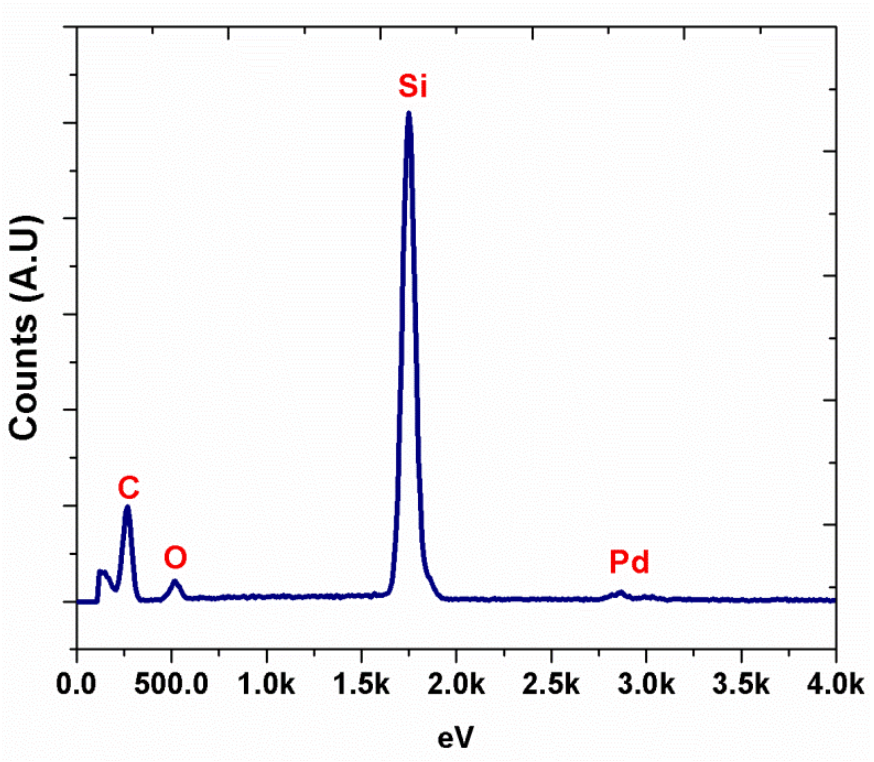

Figure S1: EDAX spectra of h-SiNTs

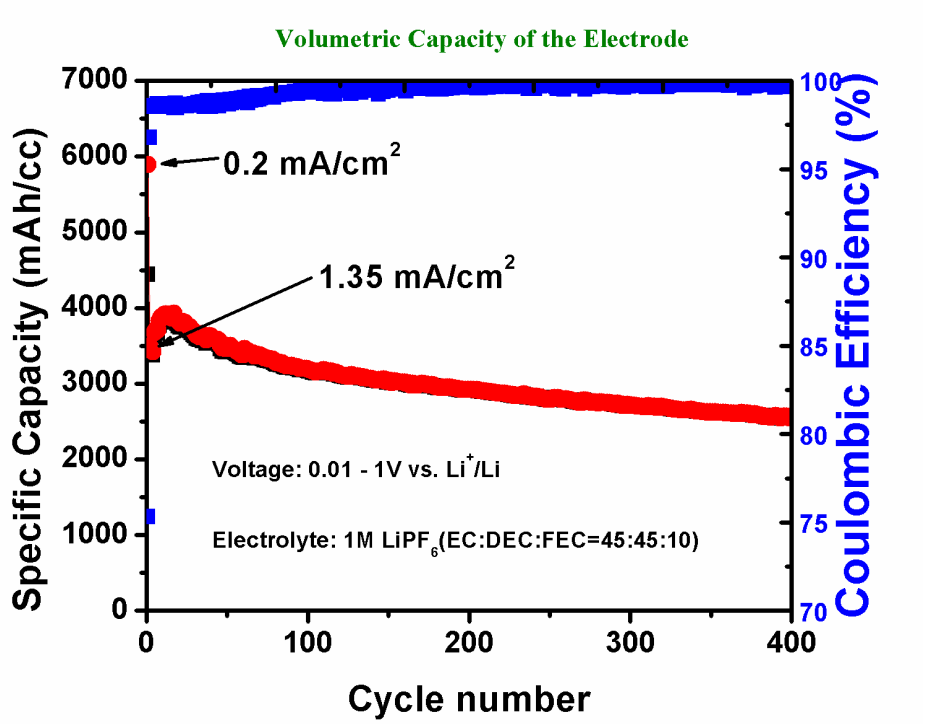

Figure S2: Volumetric cycling plot of h-SiNTs when cycled at 0.2 mA.cm^{-2}for the 1st cycle and 1.35 mA.cm^{-2}for the remaining cycles in the voltage range: 0.01 to 1 V vs. Li^{+}/Li. The volumetric capacity is calculated based on the electrode diameter of 0.9 cm (area=0.636 cm^{2}) and an electrode thickness of 15 microns.

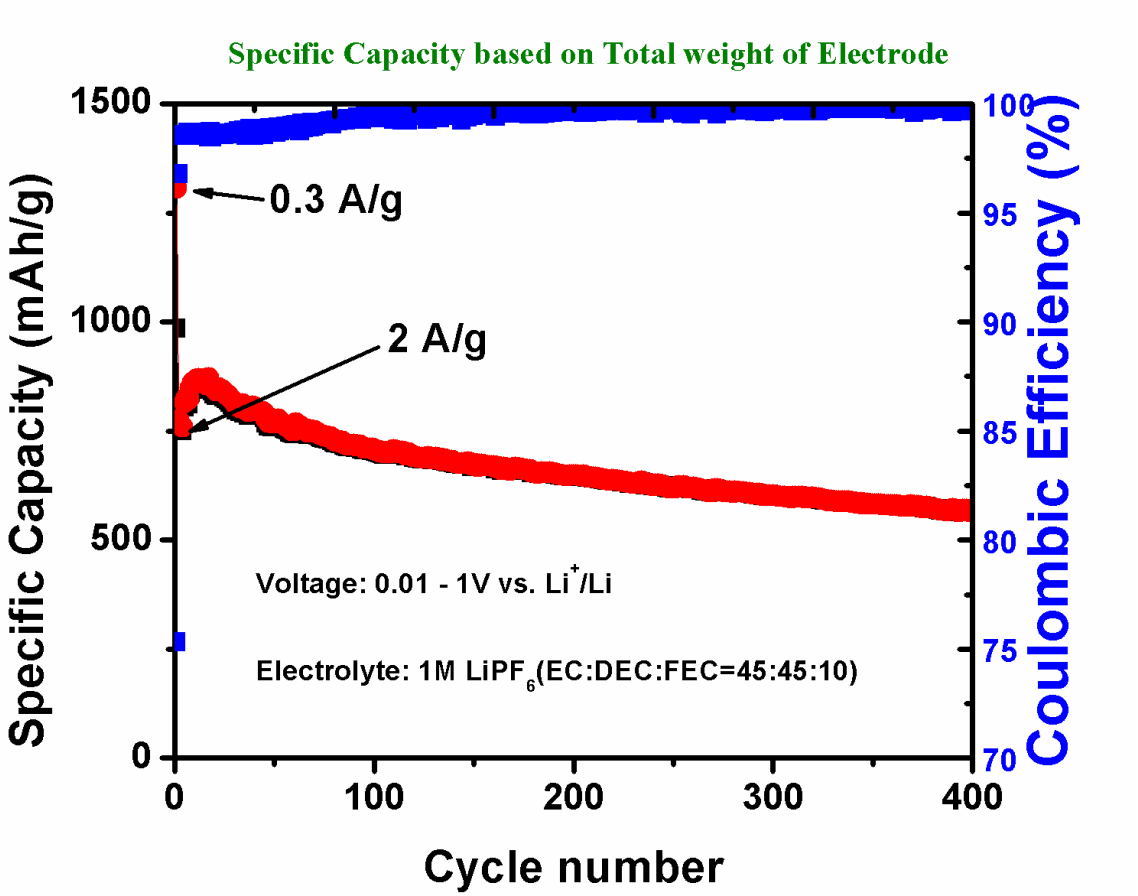

Figure S3: Specific capacity plot of h-SiNTs when cycled at 0.3 mA.g^{-1}for the 1st cycle and 2 A.g^{-1} for the remaining cycles in the voltage range: 0.01 to 1 V vs. Li^{+}/Li. The amount of binder and Super-P used in this case were 40wt% and 10wt% respectively.