Supporting Information for:

Silicon Dioxide Molecular Sieve with Deposition of Mono-layer Carbon in Channel and Carbon Nanotubes outside for Lithium-Sulfur batteries

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Sulfur content calculation

Before heat treatment, the mass of sulfur, matrix material, single crucible and crucible include the mixture of sulfur and matrix material were weighed and labeled m_1, m_2, m_3, and m_4, respectively. During the heat treatment process, sulfur would melt and gasify but the carbon quality would maintain constant. After this sulfur impregnation experiment, the crucible include the obtained product was weighed and labeled as m_5. The mass loss (m_4-m_5) was considered as the sulfur loss, so the sulfur mass in the final obtained product supposed to be m_1-(m_4-m_5). The final obtained product mass was m_5-m_3. So the sulfur mass fraction could be calculated by the follow formula:

$$(m_1-(m_4-m_5))/(m_5-m_3)$$

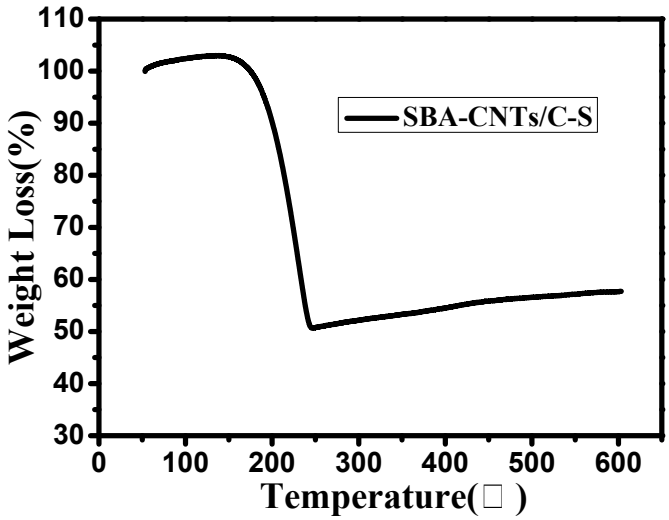

Fig. S1 TGA analysis of the SBA-CNTs/C-S

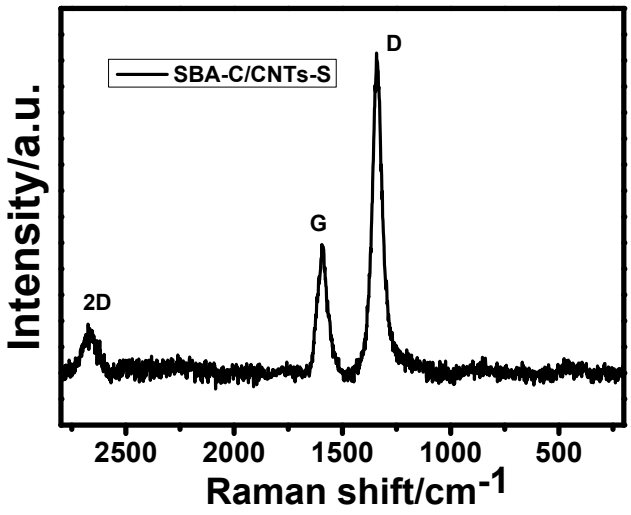

Fig. S2 Raman spectrograms of SBA-C/CNTs

Theoretical Sulfur Mass Content in SBA-C/CNTs is calculated by the follow formula:

$1.96*0.54/(1+1.96*0.54)\approx 51.42\%$