*Electronic Supplementary Information*

# Highly stable GeOx@C core-shell fibrous anodes for improved capacity in lithium-ion batteries

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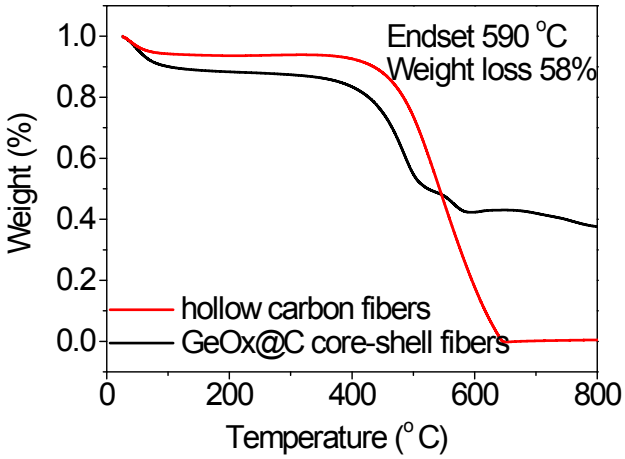


Figure S1. TGA of hollow carbon fibers and $GeO_x$@C core-shell fibers under air atmosphere

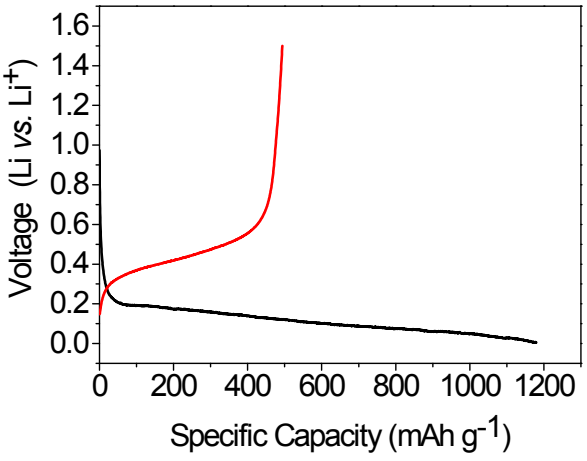

Figure S2. Charge/discharge potential profiles of pure $GeO_x$ for the first cycle

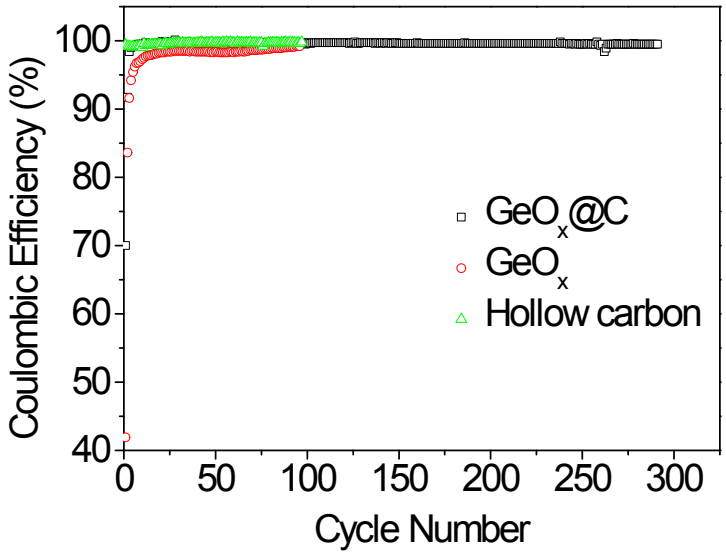


Figure S3. Coulombic efficiency of bare $GeO_x$, carbon and $GeO_x$@C electrodes at 160 mA $g^{-1}$

Table S1. Specific Capacity of $GeO_x$@C core-shell composite compared with reported Ge-based materials

| Samples | Current density ($mA\ g^{-1}$) | Cycle number | Special Capacity ($mAh\ g^{-1}$) | Ref. |
|---|---|---|---|---|
| Ge@CNF | 243 | 100 | 740 | 1 |
| Ge@CNF@C | 50 | 50 | 553 | 2 |
| $GeO_2$/C composite | 110 | 50 | 697 | 3 |
| Ge-graphene composite | 400 | 400 | 675 | 4 |
| c-Ge nanowire | 400 | 100 | 693 | 5 |
| Ge/RGO | 500 | 200 | 700 | 6 |
| Ge@C/RGO | 50 | 50 | 940 | 7 |
| mes-Ge | 150 | 20 | 789 | 8 |
| $GeO_2$/grapheme | 230 | 200 | 1021 | 9 |
| GeOx@C core shell fiber | 160 | 400 | 875 | This work |

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