Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information

Ultrathin TiO_2-B nanowires with enhanced electrochemical performance for Li-ion batteries

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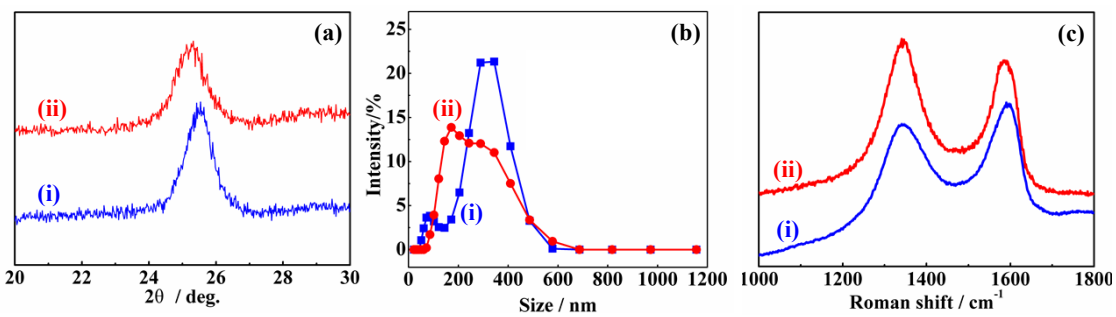

Fig. S1 (a) XRD patterns from 20º to 30º and (b) the size distribution obtained from dynamic light scattering (DLS) measurements of (i) TiO_2-B and (ii) TiO_2-B/RGO hybrid, respectively; (c) Raman spectra of (i) GO and (ii) TiO_2-B/RGO hybrid, respectively.

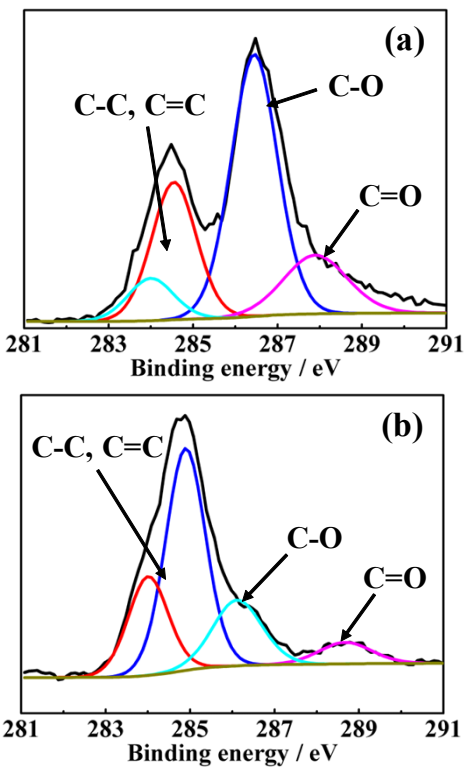

Fig. S2 C(1s) X-ray photoelectron spectra (XPS) of (a) GO and (b) TiO_2-B/RGO hybrid.

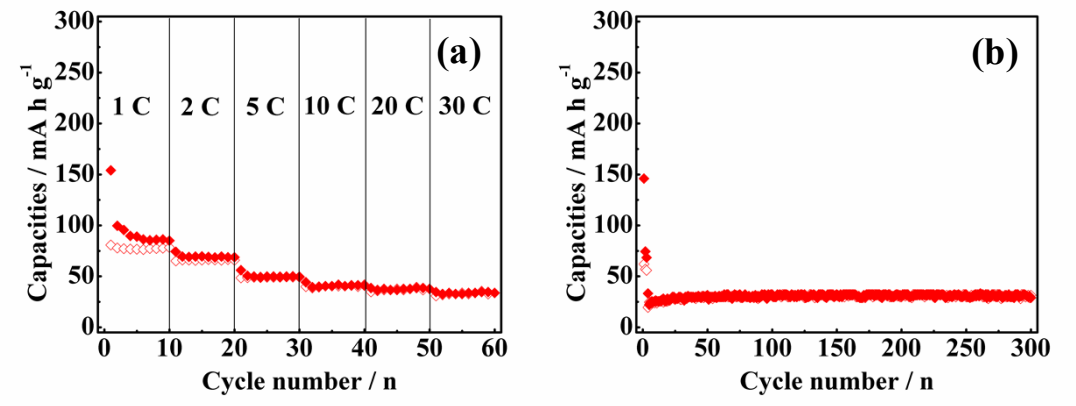

Fig. S3 Rate capabilities from 1 to 30 C (a) and cycling performances with a current density of 10 C (b) of the cell made of pure RGO.

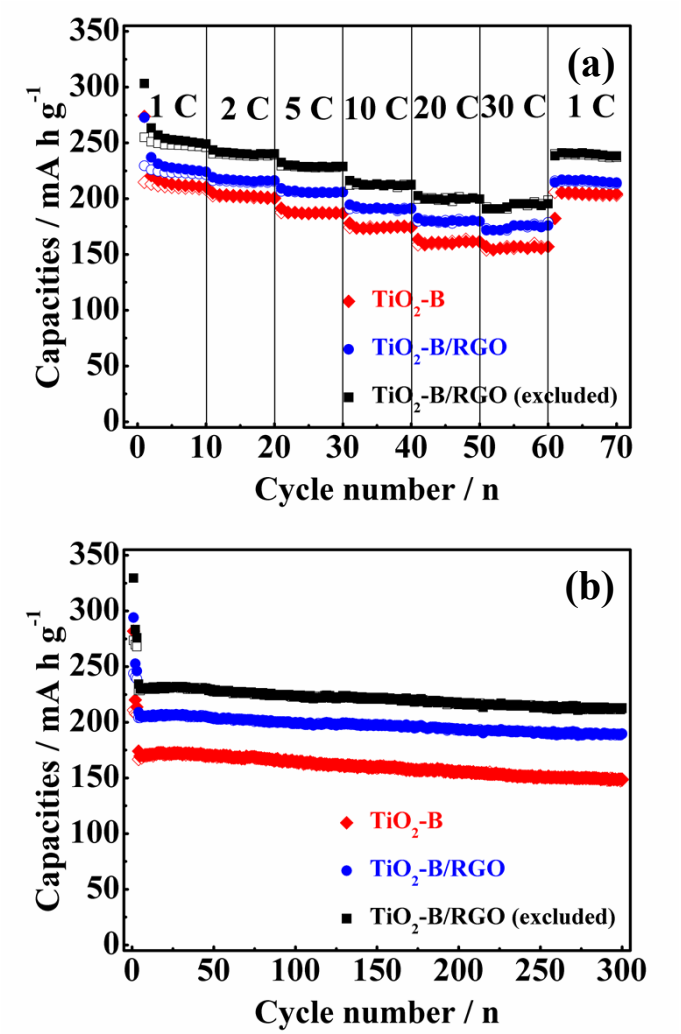

Fig. S4 (a) Rate capabilities from 1 to 30 C and (b) cycling performances at a current density of 10 C for TiO_2-B, TiO_2-B/RGO hybrid and TiO_2-B/RGO excluded RGO, respectively.

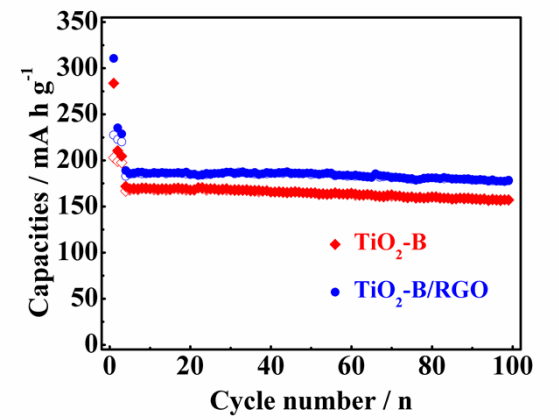

Fig. S5 Cycling performances with a current density of 10 C of the cell made of TiO_2-B and TiO_2-B/RGO hybrid based on a larger loading on the electrode (3.0 mg/cm^{-2}).

The cycling performances with a current density of 10 C of the cell made of TiO_2-B and TiO_2-B/RGO hybrid based on a larger loading on the electrode (3.0 mg/cm^{-2}) was show in the Fig. S5. Compared with thin loading on the electrode, it demonstrated a slightly lower reversible capacity at a current rate as high as 10 C after activating at 1 C for the initial three cycles. A capacity of 178.4 mA h g^{-1} was obtained after 100 cycles for the TiO_2-B/RGO hybrid. Whereas, TiO_2-B only retained a capacity of 157.4 mA h g^{-1} at the same current density.

Table S1 Impedance parameters calculated from equivalent circuit model.

Sample	R_s/Ω	R_{ct}/Ω
TiO_2-B	5.3	38.2
TiO_2-B/RGO	4.8	22.1